NAVSHIPS 900,841(A) RESTRICTED

INSTRUCTION BOOK

for

RADIO RECEIVING EQUIPMENT NAVY MODEL RDR

RCA VICTOR DIVISION
RADIO CORPORATION OF AMERICA
CAMDEN, NEW JERSEY, U. S. A.

X1RA

NAVY DEPARTMENT BUREAU OF SHIPS

Contract NXsr-60008 *Approved 4 May, 1948*

IB-38387

LIST OF EFFECTIVE PAGES

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NAVY DEPARTMENT

BUREAU OF SHIPS
WASHINGTON 25, D. C.

4 May 1948

RESTRICTED

To: All Activities concerned with the Installation, Operation and Maintenance of the Subject Equipment.

Subj: Instruction Book for Radio Receiving Equipment, Navy Model RDR (NAVSHIPS 900,841(A)).

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E. W. MILLS
Chief of Bureau

FROM BUREAU OF SHIPS, NAVY DEPARTMENT, WASHINGTON 25, D. C.

RECORD OF CORRECTIONS MADE

CHANGE NO.	DATE	SIGNATURE OF OFFICER MAKING CORRECTION

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CONTRACTUAL GUARANTEE

(a) The contractor guarantees that at the time of delivery thereof the articles provided for under this contract will be free from any defects in material or workmanship and will conform to the requirements of this contract. Except as to vacuum tubes, batteries, rubber and material normally consumed in operation, the equipment, including all spare parts, is guaranteed for a period of one (1) year from the date of its delivery to and acceptance by the Government, with the understanding that all items found to be defective as to material, workmanship or manufacture will be repaired or replaced, f.o.b. any point within the continental limits of the United States designated by the Government, without delay and at no expense to the Government; provided, that such guarantee shall not obligate the Contractor to repair or replace any such defective items unless the defect appears within the aforementioned period and the Contractor is notified thereof in writing within a reasonable time and unless the defect is not the result of normal expected shelf life deterioration. This guarantee shall then continue as to corrected or replacing articles or, if only parts of such articles are corrected or replaced, to such corrected or replacing parts, until one year after the date of re-delivery.

(b) To the extent the equipment, including all parts and spare parts, as defined above, is of the Contractor's design or is of a design selected by the Contractor, it is also guaranteed, subject to the foregoing conditions, against defects in design, with the understanding that if ten per cent (10%) or more of the total quantity comprising such item furnished under the contract (but not less than two thereof) is found to be defective as to design, the entire item will be conclusively presumed to be of defective design and shall be subject to one hundred per cent (100%) correction or replacement by a suitably redesigned item.

(c) All defective items will be subject to ultimate return to the Contractor except that the exigencies of the naval service may necessitate expeditious repair of certain items in order to prevent extended interruption of communications and in such cases the return of the defective items for examination by the Contractor prior to repair or replacement shall not be mandatory. The report of a responsible authority, including details of the conditions surrounding the failure, will be acceptable as a basis for effecting expeditious adjustment under the provisions of this contractual guarantee.

(d) If the Government does not require correction or replacement of a defective or non-conforming article, the Contractor, if required by the contracting officer within a reasonable time after the notice of defect or nonconformance, shall repay such portion of the contract price as is equitable in the circumstances. Equitable in the circumstances is to be determined by mutual agreement between the Contractor and the contracting officer. Failure to agree to such adjustment shall be a dispute concerning a question of fact within the meaning of the section of this contract entitled "Disputes."

(e) Section 9 of the General Provisions, entitled "Guaranty" is hereby superseded and deleted, except as to vibrators, and as to which the terms of said section 9, limited to 90 days, shall apply.

INSTALLATION RECORD

Contract No. NXsr-60008 Date of Contract, 5 May 1944

Serial Number of equipment.....

Date of acceptance by the Navy.....

Date of delivery to contract destination.....

Date of completion of installation.....

Date placed in service.....

Blank spaces in this book shall be filled in at the time of installation.

ORDERING PARTS

All requests or requisitions for replacement material should include the following data:

1. Navy stock number or, when ordering from an Army supply depot, the Army stock number.
2. Name of part.

If the Navy stock number has not been assigned, the requisitions should specify the following:

1. Equipment model designation.
2. Name of part and complete description.
3. Manufacturer's designation.
4. Contractor's drawing and part number.
5. AWS, JAN, or Navy type designation.

FAILURE REPORTS

A FAILURE REPORT must be filled out for the failure of any part of the equipment (except tubes) whether caused by defective or worn parts, improper operation, or external influences. It should be made on Failure Report, form NBS-383 (Rev. 3-45), which has been designed to simplify this requirement. The card must be filled out and forwarded to BUSHIPS in the franked envelope which is provided. Full instructions are to be found on each card.

Use great care in filling the card out to make certain it carries adequate information. For example, under "Circuit Symbol" use the proper circuit identification taken from the schematic drawings, such as T803, in the case of a transformer, or R207, for a resistor. Do not substitute brevity for clarity. Use the back of the card to completely describe the cause of the failure and attach an extra piece of paper if necessary.

The purpose of this report is to inform BUSHIPS of the cause and rate of failures. The information is used by the Bureau in the design of future equipment and in the maintenance of adequate supplies to keep the present equipment going. The cards you send in, together with those from hundreds of other ships, furnish a store of information permitting the Bureau to keep in touch with the performance of the equipment of your ship and all other ships of the Navy.

This report is not a requisition. You must request the replacement of parts through your Officer-in-Charge in the usual manner.

Make certain you have a supply of Failure Report cards and envelopes on board. They may be obtained from any RMO.

SAFETY NOTICE
WARNING

This equipment employs voltages which are dangerous if contacted by operating personnel. Extreme caution should be exercised when working with the equipment.

DON'T change tubes or make adjustments inside the equipment with high voltage supply on. Do not depend upon switches for protection but always shut off power supply. Dangerous potentials may exist in the circuits with power controls in the off position. To avoid casualties always remove power, discharge and ground circuits prior to touching them.

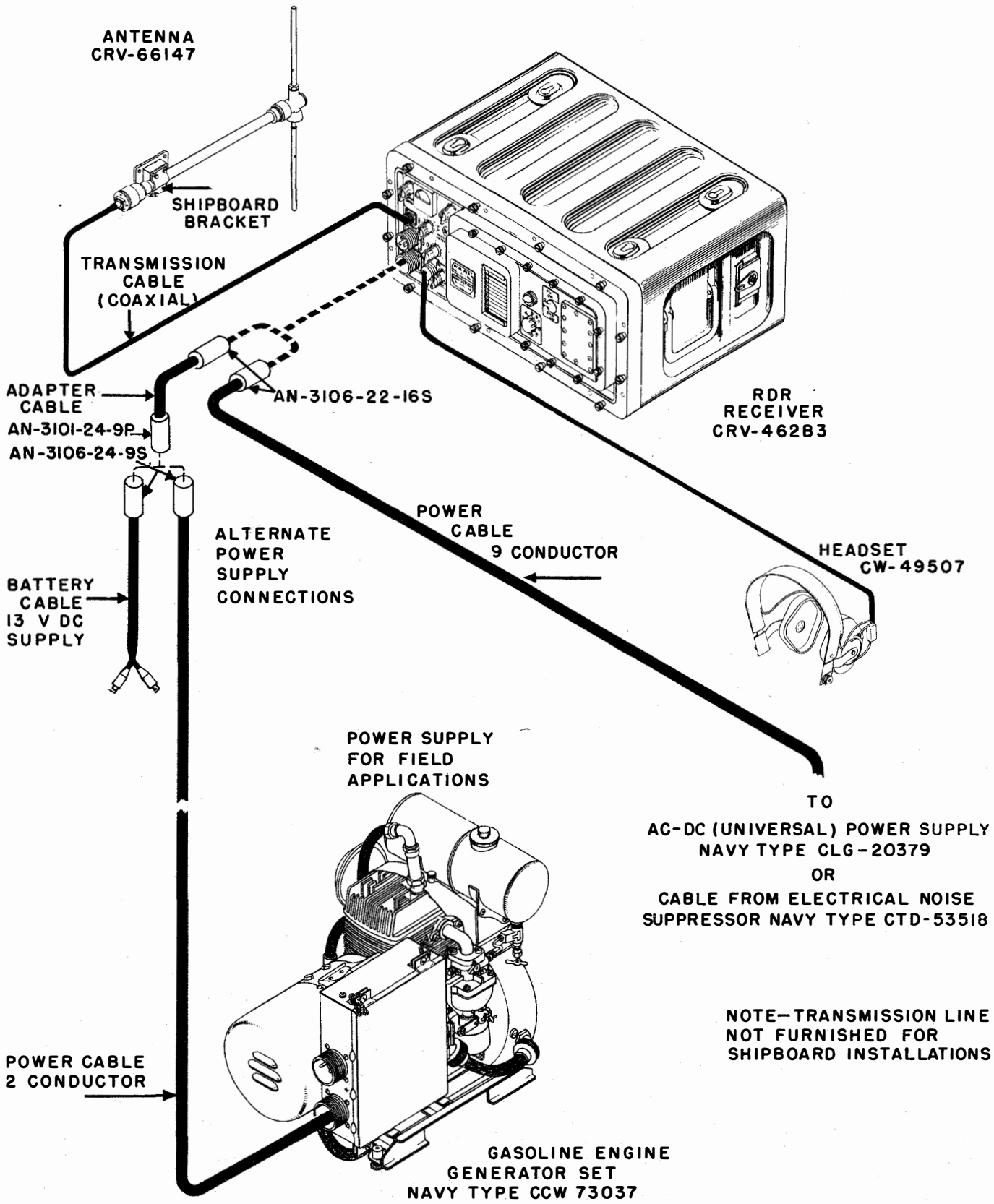
DON'T service or adjust alone. Under no circumstances should the equipment be serviced without the immediate presence of another person capable of rendering aid. In testing circuits, check for continuity and resistance in preference to checking voltages.

ATTENTION

Officers and operating personnel are directed to Chapter 67 of Bureau of Ships or superseding instructions on the subject of "Radio Precautions to be Observed."

RESUSCITATION

An approved poster illustrating the rules for resuscitation by the prone pressure method shall be prominently displayed in each radio, radar or sonar enclosure. Posters may be obtained upon request to the Bureau of Medicine and Surgery.



Frontispiece. Navy Model RDR Radio Receiving Equipment

SECTION 1
GENERAL DESCRIPTION

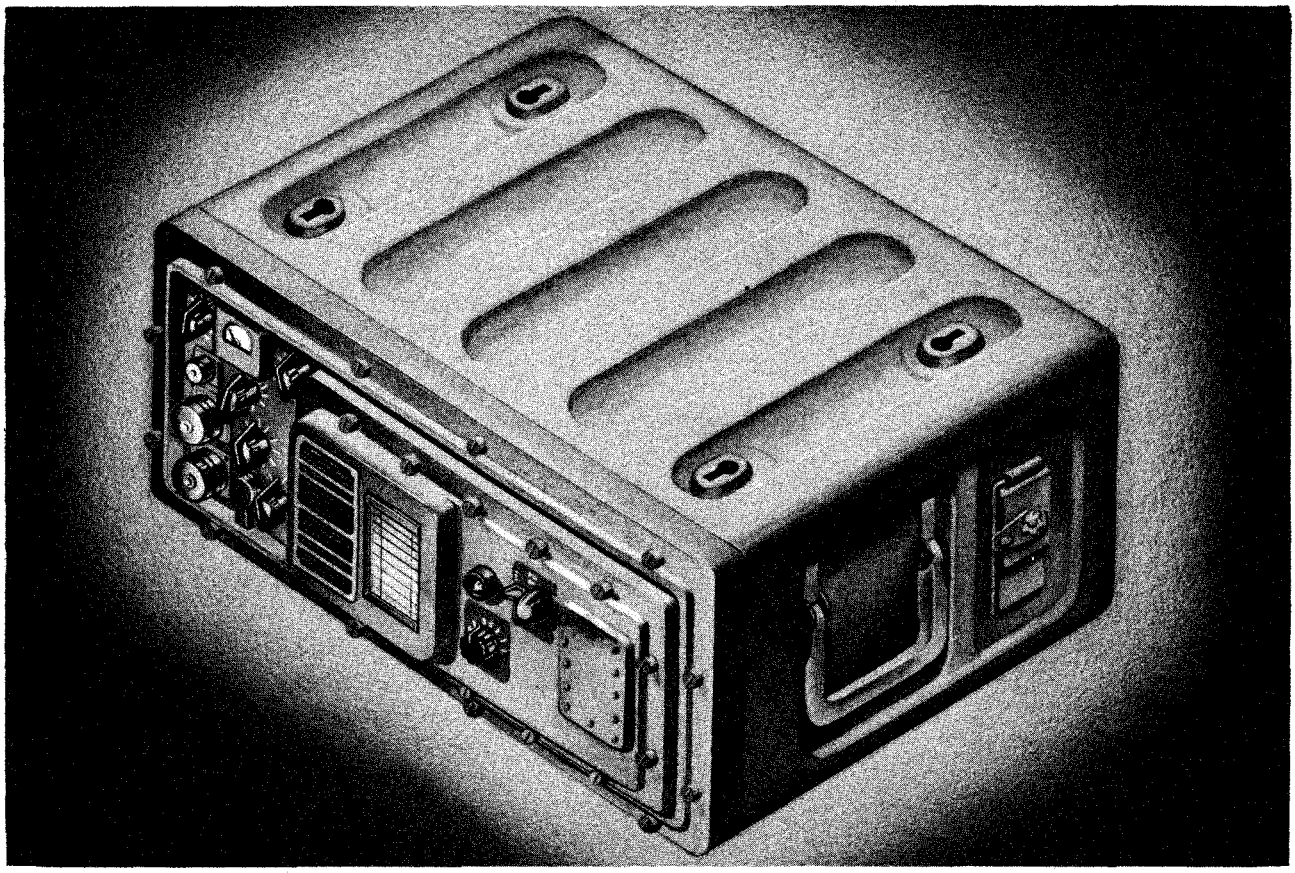


Figure 1-1. Navy Model RDR, Radio Receiver CRV-46283

1. GENERAL.

The RDR Radio Receiving Equipment consists of a high-sensitivity radio receiver, Navy Type CRV-46283, and accessories as listed in Table 1-1. The receiver is intended for selective operation on any one of ten present channel frequencies in the 225-390 megacycle band. The heterodyning frequencies in the receiver are crystal-controlled and the operating channel is subject to selection by a motor-driven selector mechanism which may be either locally or remotely actuated. Further characteristics of the equipment are its light weight, splashproof construction, and ability to operate on low-voltage direct-current power sources, all factors that suit the receiver to field use as well as fixed installations.

The RDR receiver was designed as a companion receiver to the MAR Radio Transmitting and Receiving Equipment and is housed in the same type case to permit grouping and mounting with MAR units. The antenna, Navy Type CRV-66147, furnished with the receiver is of the broad-band dipole type and operates on all channel frequencies without adjustment.

When installed with MAR equipment for shipboard use, the receiver is powered from an output connector provided on the AC-DC (Universal) Power Supply, Navy Type CLG-20379. In mobile and field applications, the usual practice is to employ 13-volt direct current from the vehicle electrical system or from a gasoline engine driven generator set, Navy Type CCW-73037.

For field application, two shipping chests are provided for use with the receiving equipment. One chest, Navy Type CAAQ-10525, provides space for transporting the receiver and includes an antenna carrying case for storing the RDR antenna. The other chest, Navy Type CANR-10621, contains a Gasoline Engine Generator Set, Navy Type CCW-73037, with necessary supplies of spare parts, and tools, together with containers for gasoline and lubricating oil required for powering the receiver in isolated locations.

The major components of the equipment are shown in Figure 1-1 and listed in Table 1-1. Equipment accessories and chest contents are listed in Tables 1-2 and 1-3 respectively.

TABLE 1-1. MAJOR COMPONENTS OF RDR RADIO RECEIVING EQUIPMENT

QUANTITY	NAVY TYPE NUMBER	DESCRIPTION
1*	CRV-46283	RDR Radio Receiver
1	CRV-66147	Antenna Assembly
1 set	—	Equipment Accessories
1 set	—	Equipment Spare Parts
**	CANR-10621	Shipping Chest and Contents
**	CAAQ-10525	Shipping Chest and Contents
**	—	Equipment Spare Parts, Gasoline Engine Generator Set

*The CFC-40148 crystal oven and all crystals used in it are Government furnished equipment. Original and/or replacement supplies may be obtained through the usual Naval Supply channels.

**These units are optional and are required only for field applications of the receiver.

Dimensions and weight of the components are given in Table 1-9. The technical summary and tube complement are tabulated in Tables 1-6 and 1-7 respectively.

TABLE 1-2. EQUIPMENT ACCESSORIES

QUANTITY	NAVY TYPE	DESCRIPTION
1	CPH-62225	Power cable, 8-foot, 9-conductor
1	CPH-62307	Adapter cable
1	CPH-62223	Battery cable, with clips
1	CW-49507	Headset
1	CW-49534	Headset extension cord
10	—	Fuses, 30-ampere, 250-volt
10	—	Fuses, 1-ampere, 250-volt
4	—	Sets (16) dynamotor brushes
4	—	Sets (8) selector motor brushes
1	—	Each type of tube in receiver
2	—	Pilot lights
10	10495	Silica Gel dryer assemblies
1	—	Connector assembly, audio output
1	—	Tube (Ballast Resistor)

TABLE 1-3. ANTENNA ASSEMBLY

QUANTITY	DESCRIPTION
1	Antenna, Navy Type CRV-66147
1	Shipboard mounting bracket
1	Coaxial cable coupling, UG 29/U
2	Coaxial connectors, UG 21/U
1	Wrench

TABLE 1-4. CONTENTS OF SHIPPING CHESTS
NAVY TYPE CANR-10621 SHIPPING CHEST

QUANTITY	NAVY TYPE	DESCRIPTION
1	CCW-73037	Gasoline Engine Generator Set
1	CBDV-10602	Metal carrying case for engine
1	CAD-18002	Can, gasoline
1	CAD-18003	Can, oil
1	CPH-62251	Cable assembly, 25-foot, 2-conductor
1	—	Set spare parts and tool kit

TABLE 1-4. (Continued)
NAVY TYPE CAAQ-10525 SHIPPING CHEST

QUANTITY	NAVY TYPE	DESCRIPTION
1	—	50-foot Antenna Cable with connectors
1	—	Antenna Carrying Case containing: 1 Vise assembly 1 Cable assembly, 10-foot 1 Cap assembly 1 Wrench 2 Rubber plugs

NOTE: Space is provided in the Shipping Chest for a CRV-46283 Receiver. The antenna can be placed in the Carrying Case and protected against moisture by means of the cap assembly and rubber plugs.

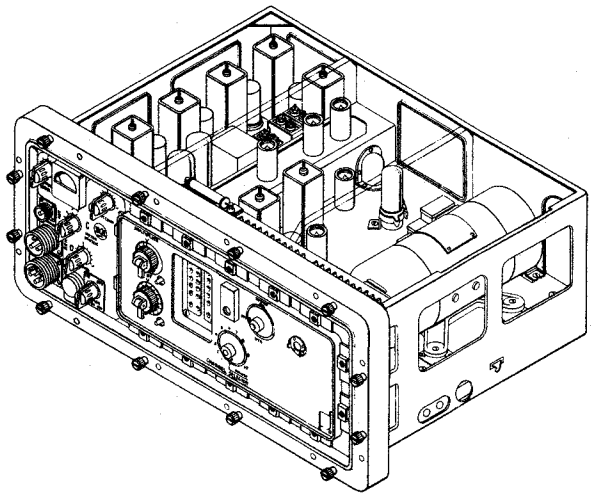


Figure 1-2. Chassis of RDR Radio Receiver, Type CRV-46283

2. RDR RADIO RECEIVER, NAVY TYPE CRV-46283.

The case of the RDR receiver is made of light-weight metal, corrugated for rigidity and fitted with handles at the ends for ease in handling. A screwdriver and Allen wrench are clipped to the case (one at each end) for use in removing or replacing the cover that seals the front of the receiver. The top and bottom of the case are fitted with keyhole slot members that serve to mount the receiver. With the cover in place over the receiver panel, the unit is completely waterproof and buoyant in fresh water. Two silica-gel dryer units are installed in the bottom of the case to offset moisture seepage, with extra units provided in the spares.

The front control panel of the RDR receiver is built integral with the chassis frame to form a drawer-like structure, shown in Figure 1-2, which slides into the outer case. A gasket between panel and case, and packing glands on the various panel controls result in the assembly being splashproof in the operating condition and immune to most weather conditions.

The receiver controls and connectors for attaching interconnecting cables are grouped at the left of the front panel of the receiver. A removable cover at the right of the panel normally covers and protects the crystal oven and selector mechanism dials. The panel-light cap and the knobs for the power and channel selector switches are mounted on this cover. The receiver chassis, with the cover removed from the crystal oven and selector, is shown in Figure 1-2.

a. RADIO CIRCUITS.—The chassis of the receiver is divided into six sections, four of which make up the receiver circuits proper, the other two containing the dynamotor and the selector mechanism respectively. The arrangement of the sections is indicated in the top view of the chassis, Figure 1-3.

Of these six sections, only two, the intermediate-frequency and audio-frequency amplifiers, are built into the chassis. The other sections are built as individual assemblies that may be removed for replacement, alignment, or repair.

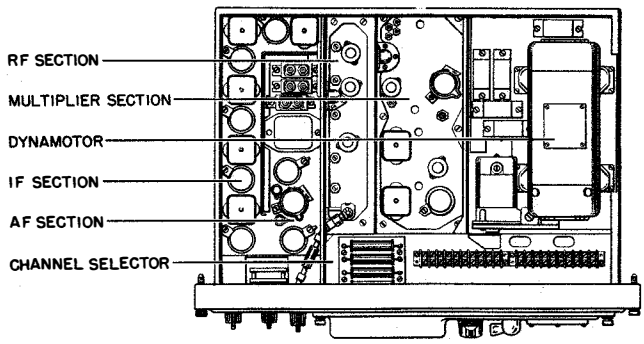


Figure 1-3. Radio Receiver CRV-46283 Chassis, top view

(1) RADIO-FREQUENCY SECTION, NAVY TYPE CRV-46269.—The three tubes in the radio-frequency section, Navy Type CRV-46269, form: A radio-frequency stage, V201; the third tripler for the heterodyning frequency, V203; and the first detector or mixer, V202.

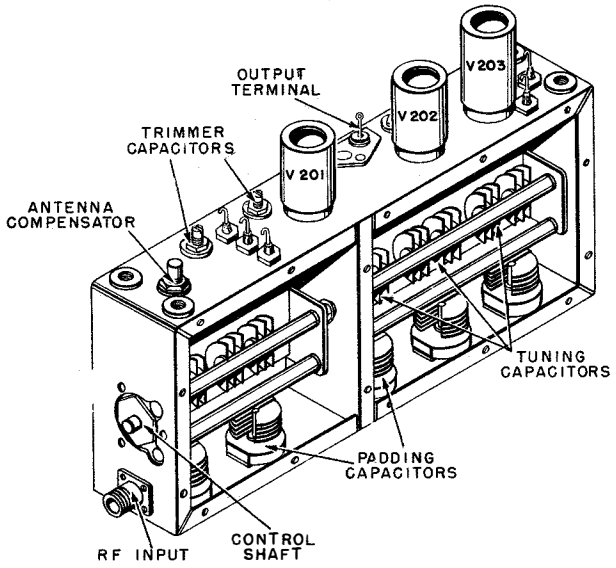


Figure 1-4. Radio-Frequency Section, CRV-46269

The circuit components are assembled in a rectangular metal case with a removable side cover, shown in Figure 1-4, to form a replaceable unit.

A common tuning shaft through the center of the case operates the five pairs of variable tuning capacitors required to resonate the tuning circuits. Necessary circuit components, and the trimmer and padder capacitors, are mounted inside the case with provision for external adjustment.

When the unit is installed in the chassis, the tuning shaft is coupled to the R-F dial on the selector panel. The antenna trimmer capacitor, C201, in the unit is coupled to the ANT COMP knob on the control panel of the receiver.

(2) FREQUENCY-MULTIPLIER SECTION, NAVY TYPE CRV-35116.—The multiplier section provides the heterodyning frequencies for the receiver and is assembled as a separate unit in a flat rectangular chassis with a bottom cover. The four multiple section variable capacitor, of which only three sections are used, is mounted in the interior of the case with the common tuning shaft extending from the end of the case. When installed in the receiver, this shaft is coupled to the selector marked MULTIPLIER on the selector panel. Resistors, trimmer, and padder capacitors arranged for external adjustment and other small circuit components are mounted inside the case.

The three tubes, two permeability-tuned transformers, and a ballast resistor are located on top of the chassis as shown in Figure 1-5.

In operation, the crystal that controls the heterodyning frequency is selectively switched into the double grid oscillating circuit of V504. The fundamental frequency of the crystal oscillator circuit is doubled in the plate circuit of V504 and tripled twice by tubes V503 and V502 to develop the 18th harmonic of the crystal frequency, which is then fed to the tripler and mixer in the radio frequency section. The ballast resistor, R530, stabilizes the functioning of the tubes by maintaining a constant heater voltage.

(3) INTERMEDIATE-FREQUENCY AMPLIFIER.—The intermediate-frequency amplifier, shown in Figure 1-6, is assembled in the receiver chassis, the smaller circuit components being located beneath the chassis section on which the intermediate-frequency transformers and tube sockets are mounted.

The five transformers, Z301 to Z305, are tuned to 30.2 megacycles by fixed capacitors and adjustable cores, and with the associated tubes, V301 to V304, provide four stages of amplification. The last transformer couples the output of the amplifier to one diode in V305. This diode section functions as the second detector while the other, coupled to the plate of V304, provides potentials for the AVC circuit.

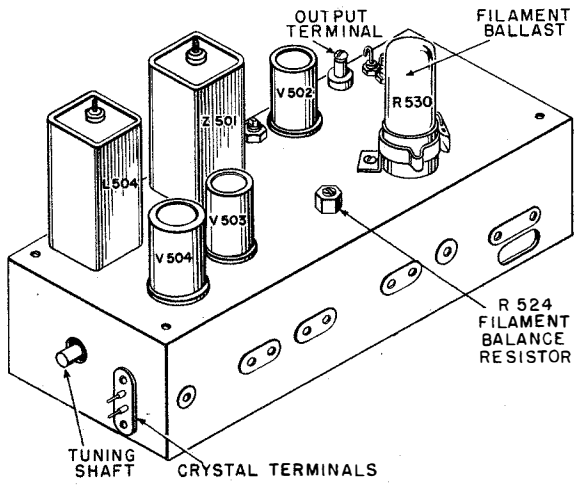


Figure 1-5. Frequency-Multiplier Section, CRV-35116

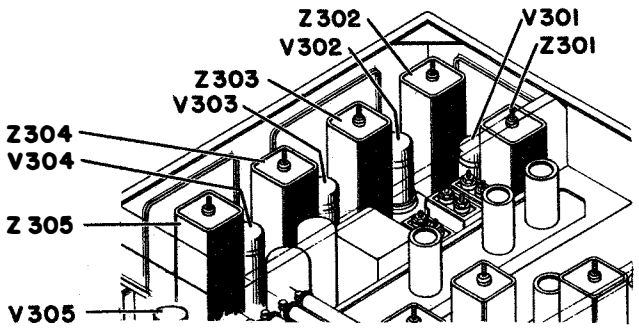


Figure 1-6. Intermediate-Frequency Amplifier

(4) AUDIO-FREQUENCY AMPLIFIER. — The audio-frequency amplifier is mounted on the chassis next to the i-f section in the receiver but is shielded therefrom. It comprises three tubes, V401 to V403, a filter assembly, Z401, and three capacitors mounted on top of the chassis, as shown in Figure 1-7. The other components of the circuit are located beneath the chassis.

Tube V401 functions as a noise limiter and meter rectifier; V402 as the silencer amplifier and first-stage audio amplifier, while V403 is the audio output tube. The filter, Z401, is of the band-pass type to pass frequencies between 300 and 3000 cycles to the output of the receiver.

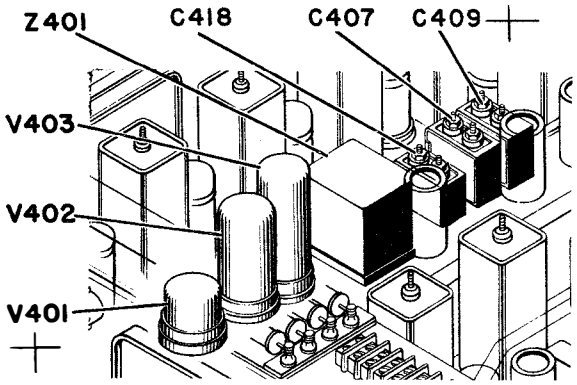


Figure 1-7. Audio-Frequency Amplifier

b. DYNAMOTOR.—The dynamotor is utilized to develop the high-voltage direct current required for the operation of the receiver, from a 13-volt direct-current source. The unit is mounted on a cast metal base which fits into the chassis frame. The dynamotor and five filter capacitors are mounted on top of the base as shown in Figure 1-8. Resistors, fuses, and two relays are mounted under the base.

The dynamotor is attached to the base by means of four shock mount assemblies. Louvers in the case and a fan built into the unit assure proper cooling at full load. The rated output of the dynamotor is 500 ma at 385 volts, the normal demand being 350 volts for plate circuits and 20 volts for bias supply.

The RDR Field Change No. 2, which affected all receivers, modified the original assembly of this unit to provide improved filtering in the input and output circuits of the dynamotor by the addition of a filter unit beneath the base. The relays in the unit are for voltage regulation and control of the motor in the selector mechanism.

When the receiver is operated on an AC-DC (Universal) Power Supply Unit in conjunction with MAR equipment, the dynamotor is not used. All voltages for the receiver are then obtained from the power supply unit.

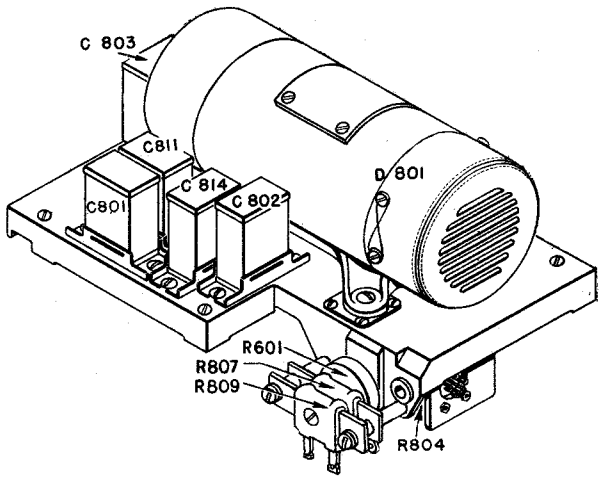


Figure 1-8. Dynamotor Section

c. CHANNEL SELECTOR.—The channel selector is a motor-driven mechanism that simultaneously tunes the r-f and multiplier units and switches the proper crystal into the heterodyning oscillator circuit for each channel frequency. Ten channel frequencies can be preset and any channel selected at will by setting of the channel selector switch on the panel of the receiver.

(1) SELECTOR MECHANISM.—The mechanism is built in a cast frame in which are mounted two selectors, the crystal oven jack plate, and the control switches.

The driving motor is attached to the rear of the unit and drives the selectors and motor-actuated switches through a system of gearing built into the frame of the device. The illustration, Figure 1-9, shows the front of the unit with the panel removed.

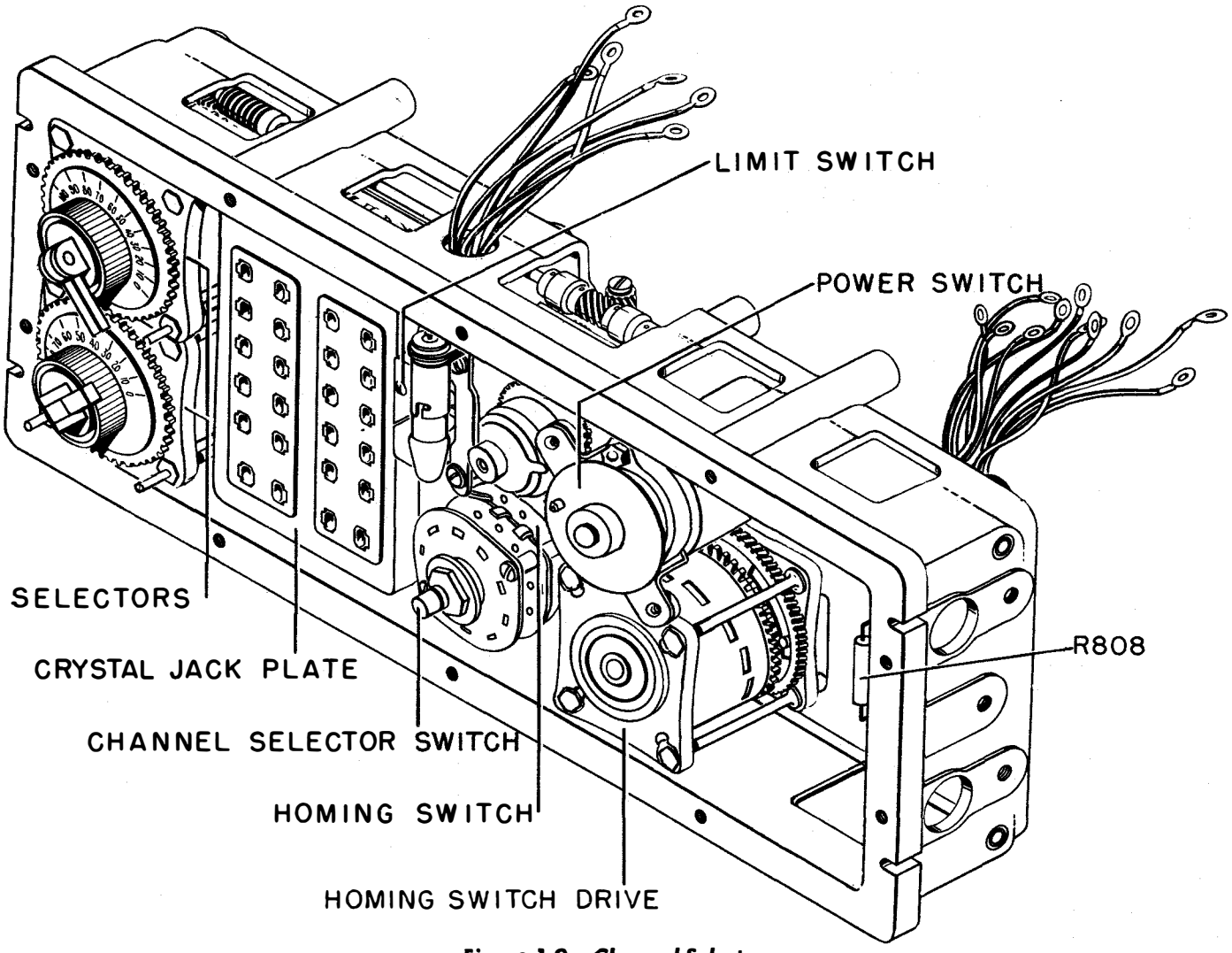


Figure 1-9. Channel Selector

The selectors can be preset to ten channel frequencies by a tuning procedure given on page 3-23, (3) Tuning.

All ten channels may be preset and any channel selected, as desired, by means of the selector switch. Placing the switch in the REMOTE position transfers control of the selector mechanism to a terminal board in the receiver which may be connected to a remote control system.

Each of the mechanical selector units includes an outer drum which has ten slots spirally arranged around its circumference. Ten spring-actuated pawls are mounted within the interior of the drum. The pawls may be selectively released by properly positioning the drum.

The released pawl engages a notch in an associated disk which is clamped to the shaft of the unit. This action adjusts the tunable elements in the receiver to the channel frequency corresponding to the drum position.

(2) REMOTE CONTROL ADAPTER.—Although not supplied with the RDR equipment, an adapter, Navy Type CRV-491481, may be used to extend the advantages of the channel selector system to a remote point. The adapter consists of a case which houses filter circuits, rotary switch, relay, and is provided with cable connectors. The unit can be attached to the cover of the selector mechanism in place of the small access plate and then connected to terminals on the bottom of the receiver chassis. Slight changes are also necessary on terminal board E132.

Cables may be attached to the adapter and to a remote control unit to permit operation of the channel selector and silencer circuit, and to provide audio output of the receiver, at a remote position.

The adapter kit is furnished complete with all hardware necessary for installation and is described in NAVSHIPS 900,931.

(3) CRYSTAL OVEN, NAVY TYPE CFT-40148. —The crystal oven is government-furnished and consists of a molded case, the separable base of which is fitted with 24 pins that fit into a jack plate in the selector housing of the receiver, as shown in Figure 1-10. A jack plate into which ten crystal holders may be plugged is provided inside the oven.

The heating unit (which mounts over and covers the crystal holders) is fitted with two thermostatically controlled heating coils. The oven element plugs into the jack plate inside the oven to make contact with four of the pins on the base of the oven. Both the outer plastic cover and the oven unit must be removed to replace the crystal holders.

The crystals employed are also government-furnished and are of the hermetically sealed miniature type CR-7E/U, Navy Type -40163.

Of the two heating coils provided in the oven, one is a booster intended to bring the temperature of the oven to the minimum operating point as rapidly as possible after the equipment is first switched on. When the minimum temperature has been reached, the booster heater is cut off by thermostatic action; the second heating unit continues to function, with thermostatic control maintaining the oven temperature within the operating limits.

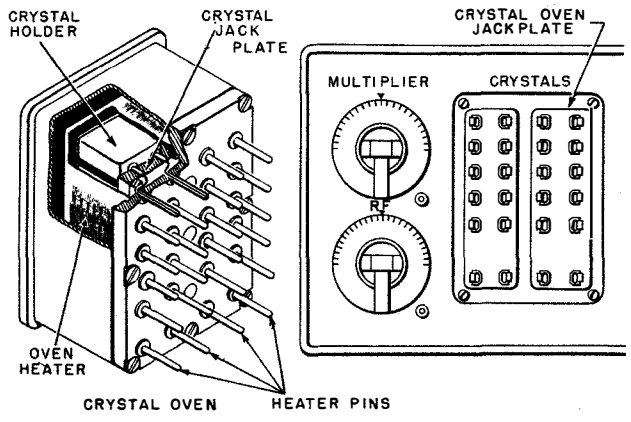


Figure 1-10. Crystal Oven CFT-40148, and Jack Plate

d. EQUIPMENT ACCESSORIES.—The accessories and operating spares furnished with the equipment are detailed in Table 1-2 and consist chiefly of tubes, spares for the components most subject to failure, interconnecting cables, and a headset with extension cord.

(1) HEADSET AND EXTENSION CORD.—A headset, Navy Type CW-49507, and headset extension cord, Navy Type CW-49534, are furnished with the equipment. The leather-covered band of the headset, which is illustrated in Figure 1-11, is adjustable in length; the earpieces are offset from the band. The headset unit has a resistance of 600 ohms, is splashproof, and is fitted with snap fasteners for the attachment of a Navy Type CW-51071 lip microphone.

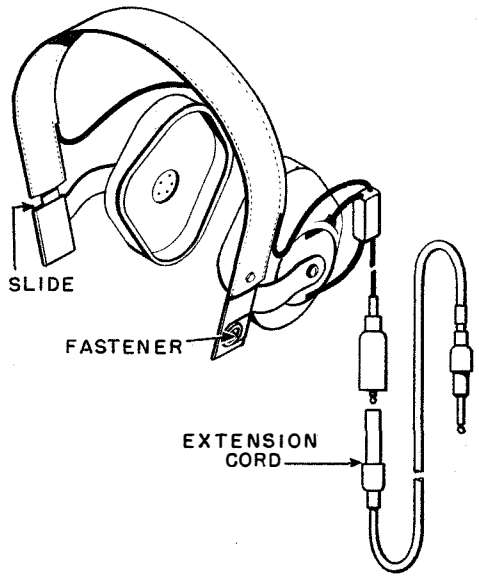


Figure 1-11. Headset CW-49507 and Extension Cord CW-49534

3. ANTENNA, NAVY TYPE CRV-66147.

The antenna is a half-wave, center-fed, dipole. The radiating rods are threaded into place in the assembly and may be removed for packing and transportation. The bracket shown in the illustration, Figure 1-12, is for shipboard or other fixed installation and may be mounted on either a horizontal or vertical support.

a. DIPOLE.—The tubular body of the antenna is fitted at one end with a connector and at the other with a support for the radiating rods. One rod is grounded to the body of the antenna; the "live" rod is supported by an insulated stud that connects to the central conductor in the antenna body.

The antenna has a matching section built into the tubular body and presents an impedance of approximately 50 ohms. Its characteristics are such as to result in good matching with the RG 8/U transmission line over the frequency range of 225 to 390 megacycles.

b. TRANSMISSION LINE CABLE.—In shipboard installations, the transmission line cable must be made up from RG 8/U or RG 10/U coaxial cable. The equipment includes plugs only for making the assembly.

When the antenna accessories shipping chest, Navy Type CAAQ-10525, is included in the equipment for field applications, a 10-foot cable is furnished with the antenna carrying case and a 50-foot cable in the shipping chest; both of these cables are equipped with connector plugs.

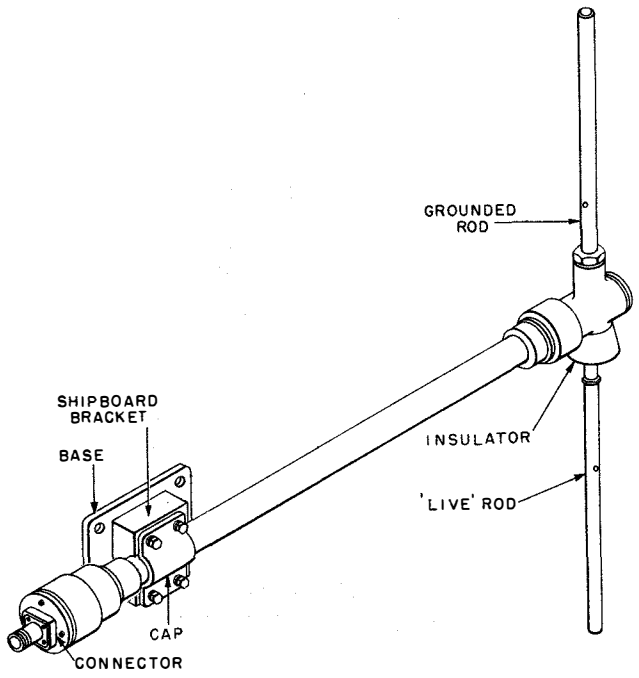


Figure 1-12. Antenna with Shipboard Bracket CRV-66147

4. SHIPPING CHEST, NAVY TYPE CANR-10621, AND CONTENTS.

The shipping chest, shown in Figure 1-13, includes the gasoline engine generator set which provides in a compact form a complete power source for operating the RDR receiver. Designed originally for operation with MAR equipment, it has sufficient output to power two receivers.

In addition to the Gasoline Engine Generator Set, Navy Type CCW-73037, and its metal carrying case, Navy Type CBDV-10602, the Shipping Chest, Navy Type CANR-10621, contains cans for fuel and oil, operating spares, tools, and a 25-foot cable to connect the generator set to the receiver.

a. GASOLINE ENGINE GENERATOR SET, NAVY TYPE CCW-73037.—The metal carrying case, fitted with a watertight cover, serves to protect the generator set during transit and in handling up to the actual time of setup for operation. As shown in Figure 1-14, the generator set consists of a gasoline engine direct-connected to a direct-current generator. A generator output control box is mounted on the side of the generator. The gasoline engine generator assembly is mounted on a shock absorbing base.

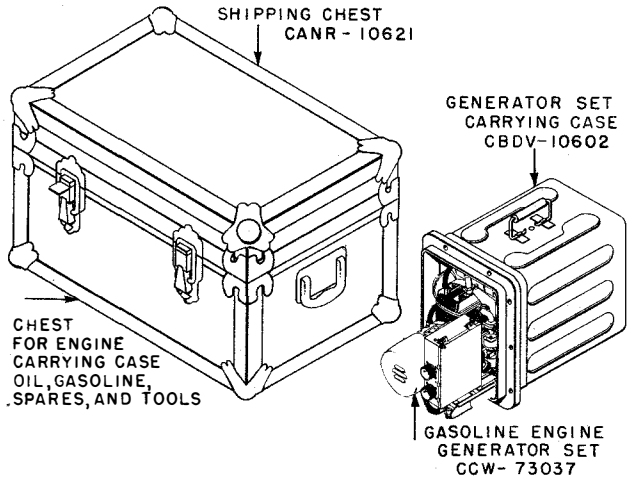


Figure 1-13. Shipping Chest, CANR-10621, and Gasoline Engine Generator Set, CCW-73037

(1) GASOLINE ENGINE.—A single-cylinder, four-cycle engine, rated at 0.9 HP, is used to drive the generator set. The engine employs splash-type lubrication, and forced air cooling is provided by a fan on the flywheel.

The fuel tank capacity (1 quart) is sufficient to operate the engine for two hours under full load. The air intake of the gravity fed carburetor is fitted with a dry-type air filter which has a removable filter cartridge.

A high-tension magneto is used for ignition. Both the ignition cable and the spark plug are shielded to reduce radio interference. A mechanical governor maintains the engine speed at approximately 4200 RPM at all loads. Closures are provided on the crankcase breather and fuel tank so the unit can be transported in a tilted or inverted position without danger of leakage or spilling of either gasoline or oil.

(2) GENERATOR.—The generator is a four-pole, shunt-wound machine having a nominal rating of 411 watts. The unit has a rising voltage characteristic, developing 13.3 volts at 17-ampere output and 13.7 volts with a 27-ampere load.

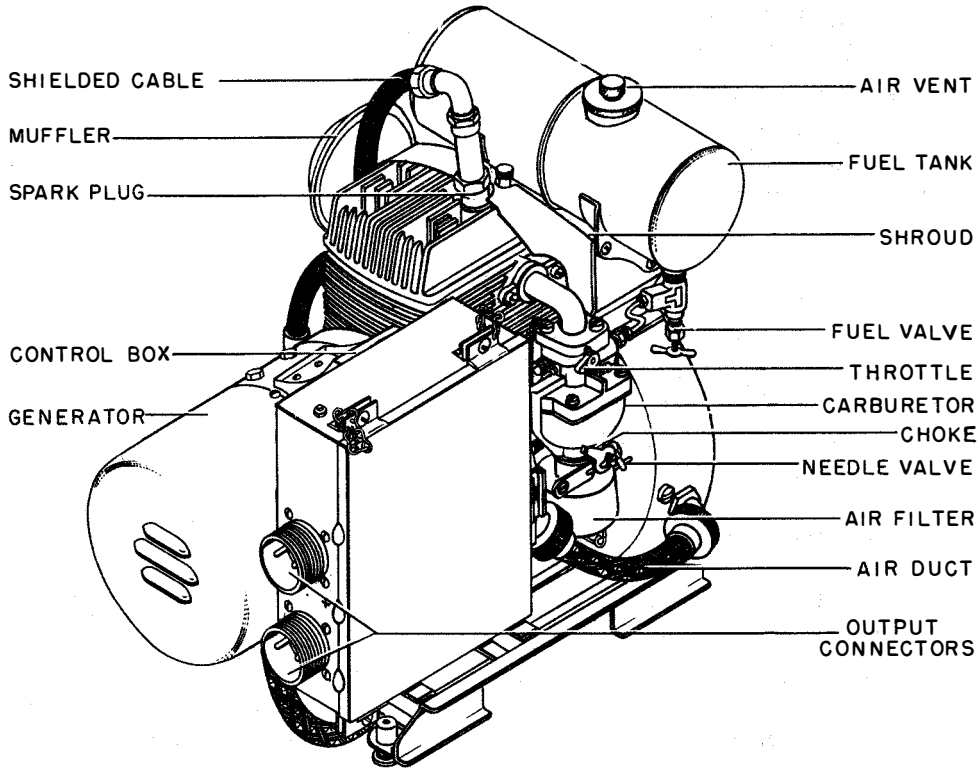


Figure 1-14. Gasoline Engine Generator Set, CCW-73037

One end bell of the generator field housing is attached directly to the engine crankcase. The inner end of the generator armature fits over the splined end of the engine crankshaft to couple the units. The generator therefore requires only one bearing. This bearing is located at the commutator end of the armature. A fan, which is fitted to the end of the armature shaft, circulates cooling air through the unit. Leads from the generator pass through a flexible shield and connect to a terminal block in the control box.

(3) CONTROL BOX.—The control box of the generator set contains a noise filtering network and the voltage regulating elements for the generator. Two receptacles are mounted on the side of the control box, and either of these receptacles may be used when connecting the output of the generator to the receiver power input. The components in the control box are cooled by air conducted, through a flexible tube, from the engine blower housing.

The generator control elements consist of a reverse-current relay, an adjustable rheostat, an automatic voltage regulator, and a DPST toggle switch. The toggle switch enables the unit to be operated with voltage regulation when the switch is in the RADIO position, or without voltage regulation for battery charging when the switch is in the BATTERY position. In the latter condition the regulation of the generator provides for a rapid drop in voltage with increasing load current.

The filter network is provided to prevent electrical noise developed in the generator set from reaching the receiver through the connecting cables, and being radiated from these cables and associated equipment.

b. SHIPPING CHEST, NAVY TYPE CANR-10621. —The shipping chest is of the heavy-luggage type with metal-faced corners and edges. The hinged lid is held by latch-type catches, with provisions for padlocking. Carrying handles are attached to the chest, which is finished in dull Marine Corps green and stenciled to indicate its contents.

5. SHIPPING CHEST, NAVY TYPE CAAQ-10525, AND CONTENTS.

This shipping chest is of the heavy-luggage type similar to that furnished with the Gasoline Engine Generator Set, differing only in size. The chest includes the antenna carrying case, a 50-foot transmission line, and is fitted with padded blocks to hold the RDR receiver.

The purpose of this chest is to provide accessories that facilitate the erection and connection of the antenna in the field. In addition, the chest provides space for the transportation of the RDR receiver.

The carrying case for the antenna included in the CAAQ-10525 Shipping Chest is long and narrow and approximately square in cross section, as shown in Figure 1-15. The case is hinged along its length and fitted with latch-type catches. A shoulder strap facilitates carrying of the case. The case is not of watertight construction but is buoyant in fresh water.

The case contains a chain clamp for mounting the antenna on a pole, tree, or similar support, and a 10-foot length of coaxial cable fitted with connectors.

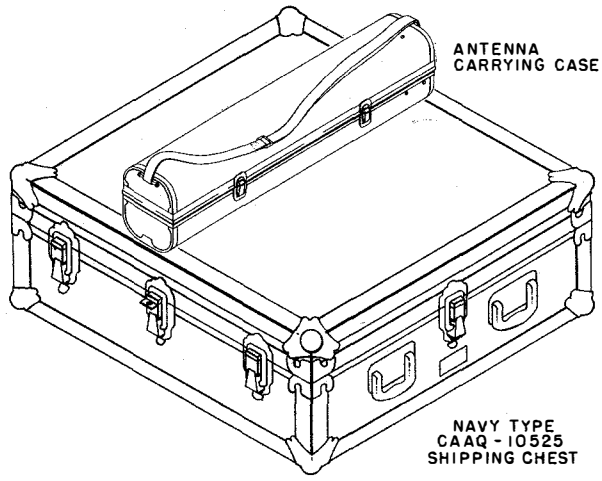


Figure 1-15. Shipping Chest, CAAQ-10525, and Antenna Carrying Case

Space is provided for stowing the antenna when disassembled. A screw cap and rubber plugs, furnished with the carrying case, are used to seal the antenna structure to protect it from moisture should the case be accidentally submerged.

6. QUICK REFERENCE DATA.

TABLE 1-5. CONTRACT REFERENCE DATA

Equipment	Navy Type RDR Radio Receiving Equipment
Contract	NXsr-60008
Contractor	Radio Corporation of America RCA Victor Division, Camden, N. J.
Cognizant Naval Inspector	Inspector of Naval Material, U. S. N. RCA, Front and Cooper Streets, Camden, N. J.

TABLE 1-6. TECHNICAL SUMMARY

CHARACTERISTIC	RDR RECEIVER
Frequency Range	225 to 390 megacycles
Frequency Stability	±0.007%
Frequency Control	Crystal
Type of Crystal	Sealed miniature type CR-7E/U Navy Type -40163
Preset Frequencies	10
Crystal Frequencies	4725.926 to 7781.487 kc
Type of Circuit	Superheterodyne
Type of Reception	MCW and voice (A2-A3)
Intermediate Frequency	30.2 megacycles
Sensitivity	8 microvolts
Selectivity	220 kc bandwidth at 6 db
Silencer Circuit	Operates on 6 db change
AVC Gain	Essentially flat above 75% amplifier capability
Audio Output	1 watt in 600-ohm load, Headset
Output Frequencies	300 to 3000 cycles
Output Impedance	600 ohms
Antenna Characteristic	50 ohms
*Input Power	145 watts
Input Voltage	13V d-c or 13V a-c and 375V d-c

*Varies with change in input voltage. Intermittent load of crystal oven of 15 watts and selector motor load not included.

TABLE 1-7. TUBE COMPLEMENT TYPES AND QUANTITIES

JAN TYPE	NO. IN RECEIVER	SYMBOLS INVOLVED
6AG7	1	V504
6AK5	1	V202
6C4	2	V502, V503
6J6	1	V203
12A6	1	V403
12H6	2	V305, V401
12SG7	4	V301, V302, V303, V304
12SL7GT	1	V402
9003	1	V201
TOTAL	14	

TABLE 1-8. TYPICAL SHIPMENTS RDR EQUIPMENT (CRATED) SHIPBOARD INSTALLATION

NUMBER OF CASES	CONTENTS		DIMENSIONS—INCHES			VOLUME CUBIC FEET	WEIGHT POUNDS
	DESCRIPTION	NAVY TYPE	HEIGHT	WIDTH	DEPTH		
1	RDR Receiver	CRV-46283	13 1/4	27 1/4	20 3/4	4.4	91
1	Antenna Assembly	CRV-66147	7 1/8	31	8 1/4	1	26
1	Set Equipment Accessories		12 1/4	21 1/8	19 5/8	3	55
1	Set Equipment Spare Parts		20 3/4	29	25 1/2	12	175
4		TOTALS				20.4	347

FIELD APPLICATION

1	RDR Receiver	CRV-46283	13 1/4	27 1/4	20 3/4	4.4	91
1	Antenna Assembly	CRV-66147	7 1/4	31	8 1/4	1	26
1	Set Equipment Accessories		12 1/4	21 1/8	19 5/8	3	55
1	Shipping Chest and Contents	CANR-10621	17	34	26	8.7	218
1	Shipping Chest and Contents	CAAQ-10525	17	43	35	15	208
1	Set Equipment Spare Parts		20 3/4	29	25 1/2	12	175
1	Gasoline Engine Generator Set Spare Parts		14	23	19 1/2	3.5	94
7		TOTALS				47.6	867

TABLE 1-9. RDR EQUIPMENT FURNISHED DIMENSIONS AND WEIGHTS UNCRATED

QUAN. PER EQUIP.	NAME OF UNIT	NAVY TYPE DESIGNATION	OVERALL DIMENSIONS (INCHES)			VOLUME CUBIC FEET	WEIGHT POUNDS
			HEIGHT	WIDTH	DEPTH		
1	RDR Receiver	CRV-46283	9 1/2	21 1/4	16 1/4	1.9	54
1	Antenna	CRV-66147	22		25	0.8	3 1/2
*1	Shipping Chest and Contents	CANR-10621	20	28 1/4	21 7/8	7.1	152
*1	Shipping Chest and Contents	CAAQ-10525	13 1/4	37 1/4	30 3/4	8.8	106

*Optional equipment. Furnished only for Field Applications.

TABLE 1-10. POWER SUPPLY CHARACTERISTICS

	GASOLINE ENGINE GENERATOR SET	AC-DC (UNIVERSAL) POWER SUPPLY UNIT		
NAVY TYPE	CCW-73037	CLG-20379		
MANUFACTURER	Atlas Aircraft Products Corporation	Electronic Laboratories, Inc.		
MFR'S TYPE	Generator Model Gen. -5215-11 Engine Lauson Model LJC-194	Model 1608		
RECEIVER OPERATING CONDITION	INPUT TO AMPERES TO POWER SUPPLY			
		26V DC	115V AC/DC	230V AC/DC
NORMAL		8.1	1.8	0.9
SELECT		13.5	3.0	1.5

GENERATOR DATA
NAVY TYPE CCW-73037 GASOLINE ENGINE GENERATOR SET

OUTPUT	
VOLTS	13.7
AMPERES	30
WATTS	411

DUTY	INTERMITTENT
SPEED	4200 RPM
ROTATION	CCW
TEMP. RISE	50° C.

TABLE 1-11. MATERIAL REQUIRED BUT NOT FURNISHED

QUANTITY	DESCRIPTION	NAVY TYPE	USE	REQUIRED CHARACTERISTIC	REMARKS
As required	Coaxial Cable	RG 8/U or RG 10/U	Antenna transmission line	50-ohm impedance	For shipboard installations
1	Shock Mount	CRV-10629	Mounting receiver	160-lb suspension rating	Obtain from MAR Shipboard Installation Kit
As required	Gasoline		Engine fuel	High test preferred	Field Application
As required	Oil	See Table 5-5, Section 5	Engine lubrication	As shown in Table 5-5, Section 5	Field Application

TABLE 1-12. BASIC DIFFERENCES IN RDR EQUIPMENTS

SERIAL NOS.	MECHANICAL DESIGN	ELECTRICAL DESIGN
1—500	Silencer switch, S401 located on panel. No noise limiter switch.	
501—up	Silencer switch eliminated. S401 designated as noise limiter switch.	Switch, S401, removed from silencer circuit and inserted in noise limiter circuit.
1—769		Motor regulator, R809 not used.
770—up		Motor regulator, R809, ±5%, 2500 ohm, 4 watt.

TABLE 1-13. RDR FIELD CHANGES IN EFFECT

FIELD CHANGE NO.	SERIAL NOS. OF EQUIPMENT AFFECTED	MATERIAL FURNISHED AND OPERATIONS INVOLVED	PURPOSE OF CHANGE
1	1 to 900 MAR Shipboard Installation Kit.	5 Barry Mounts, Type C-2060. Four used to convert shock mount Navy Type CRV-10508, furnished with the kit to Navy Type CRV-10629. One mount for spares.	To provide proper shock mount assembly for use with RDR receiver.
2	All	Filter assembly and hardware to replace filter components in dynamotor section.	To provide more complete noise filtering in input and output circuits of dynamotor.

TABLE 1-14. SHIPPING DATA—SPARE PARTS
A—CRATED AND B—UNCRATED

RDR RECEIVING EQUIPMENT							
CONTENTS		BOX NO.	DIMENSIONS—INCHES HEIGHT	WIDTH	DEPTH	VOLUME CU. FT.	WEIGHT POUNDS
EQUIPMENT SPARES	A B	1	20¾ 18	29 24	25½ 21	12 5.25	175 110
TENDER SPARES	A B	1	17½ 15	35 30	22¾ 18	8 4.12	163 100
	A B	2	20¾ 18	29 24	25½ 21	12 5.25	187 120
STOCK SPARES	B B	1 2	14¾ 18¼	36 29	14¾ 23¾	4.5 7.3	121 137
GASOLINE ENGINE GENERATOR SET							
EQUIPMENT SPARES	A B	1	14 12	23 18	19½ 15	3.5 1.9	94 66
TENDER SPARES	A B	1	16¾ 15	29 24	19½ 15	5.5 3.1	132 98
	A B	2	14½ 12	29 24	21½ 15	5.3 2.5	150 113
	A B	3	20½ 18	29 24	22½ 18	7.5 4.5	167 120
	A B	4	20½ 18	29 24	22½ 18	7.5 4.5	159 112
STOCK SPARES (PACKING CASES ONLY)	A A A A A A	1 2 3 4 5 6	20¼ 27½ 20¼ 24½ 24½ 14	29½ 37 29½ 29 29 20½	19½ 25½ 19½ 20½ 20½ 19	6.8 15.0 6.8 8.4 8.4 3.2	97 174 139 180 154 148

SECTION 2
THEORY OF OPERATION

1. GENERAL.

The RDR Receiver is of the superheterodyne type and in general follows the arrangement of components usually employed in circuits of this type. The heterodyning frequency for each of the ten channels is individually crystal-controlled to minimize frequency drift. The crystal frequency is stabilized by a thermostatically controlled oven. The crystal fundamental frequency is doubled and then tripled three times to obtain the 54th harmonic required to operate the receiver on a 30.2-megacycle intermediate frequency.

A panel meter, M401, and an associated seven-position, double-wafer switch, S402, permits checking the heater and plate voltages with provision for indicating plate current in the multiplier section, grid drive on the 3rd tripler in the r-f section, and plate current in the third stage of the i-f amplifier. Correct indications for all positions of the switch are noted on a card clipped to the panel of the receiver, so the functioning of the various sections during adjustment and operation may be readily checked.

When taking heater voltage readings with the receiver powered by the AC-DC (Universal) Power Supply Unit (Navy Type CLG-20379), one section of the double diode, V401, in the audio-amplifier section is used as a rectifier to permit the meter to operate on alternating current. With a 13-volt d-c source it is possible to take readings with either the positive or negative side of the supply line grounded by properly setting the switch.

2. RDR RECEIVER, NAVY TYPE CRV-46283.

A block diagram of the receiver, in conjunction with a top view of the chassis, is given in Figure 2-1 which illustrates the electrical and physical relationship of the components. The four sections of the receiver comprising the radio circuits will be discussed in detail in the following order:

Radio-frequency Section
Frequency-multiplier Section
Intermediate-frequency Amplifier
Audio-frequency Amplifier

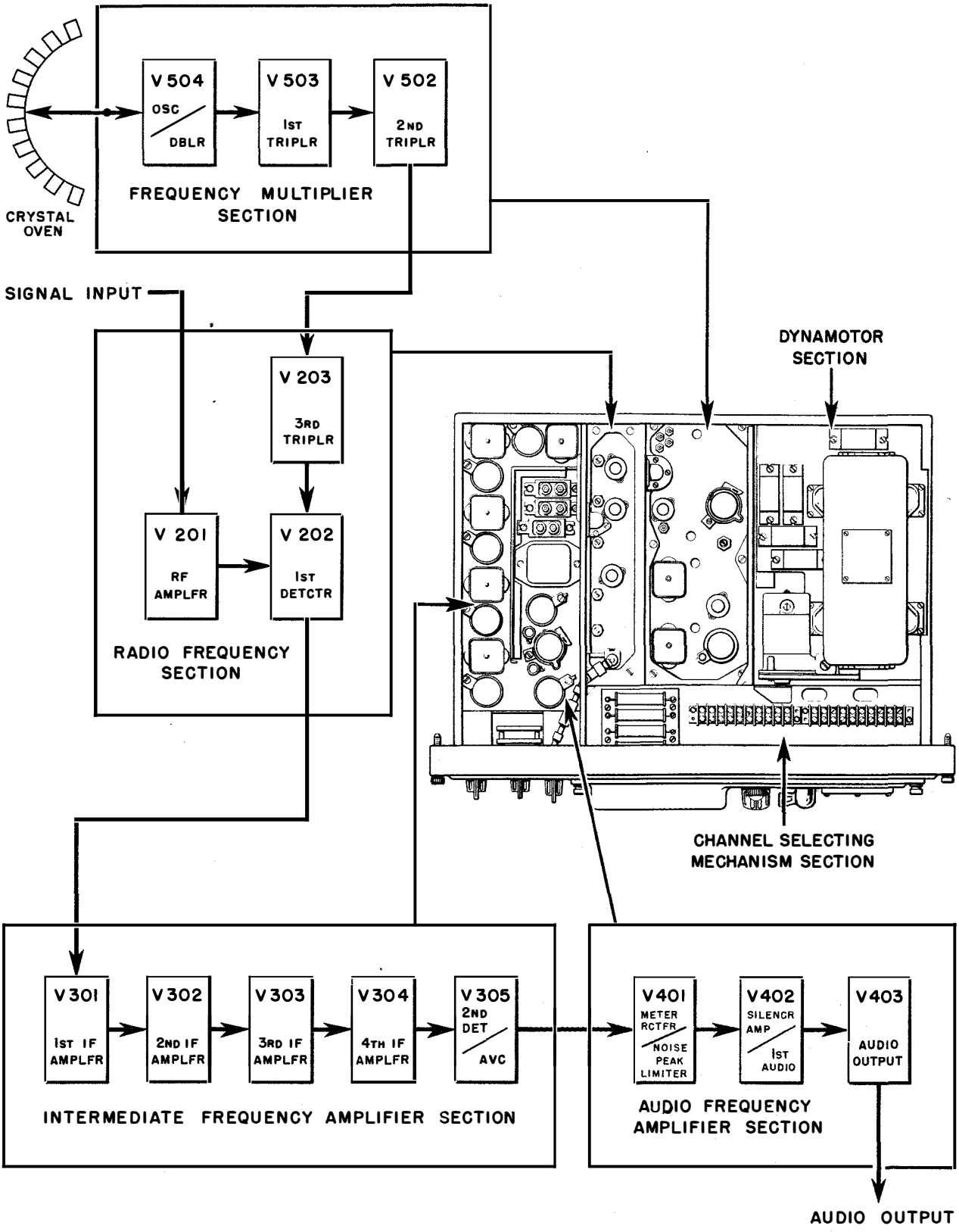


Figure 2-1. Block Diagram, RDR Receiver

a. RADIO CIRCUITS.

(1) RADIO-FREQUENCY SECTION, CRV-46269. —The radio-frequency tuning section of the receiver employs five resonant circuits, simultaneously tuned by the r-f dial on the selector panel. Four of the circuits tune the equipment to the channel frequency desired, the fifth resonating the output of the heterodyning frequency tripler tube, V203.

As shown in the illustration of a portion of the schematic and a simplified schematic in Figure 2-2, the tuned circuits consist of three inductances in series, with variable capacitors between the sections. Two tuned circuits precede the r-f amplifier tube, V201. The input from the antenna is tapped into inductance L203 to provide sufficient input into the first tuned circuit without excessive loading which might affect the tracking of that circuit on the different channel frequencies. An antenna compensating capacitor, C201, is connected as shown and is individually controlled by a knob on the panel through a system of geared shafts.

The first tuned circuit is coupled inductively to the tuned-grid circuit of the r-f tube, V201, partial electrostatic shielding being employed to assure uniform coupling throughout the frequency range. Adjustment of the coupling is such as to allow good energy transfer with high selectivity.

The tuning circuits employed for all the tubes in this section may be best explained by considering the simplified schematic included in Figure 2-2. For example, consider the simplified schematic as representative of the input circuit to the r-f tube, V201. The inductance L204 has such a value that, when the capacitors C203C and C203D are at minimum setting, a resonant half-wave line is formed, with respect to the ground,

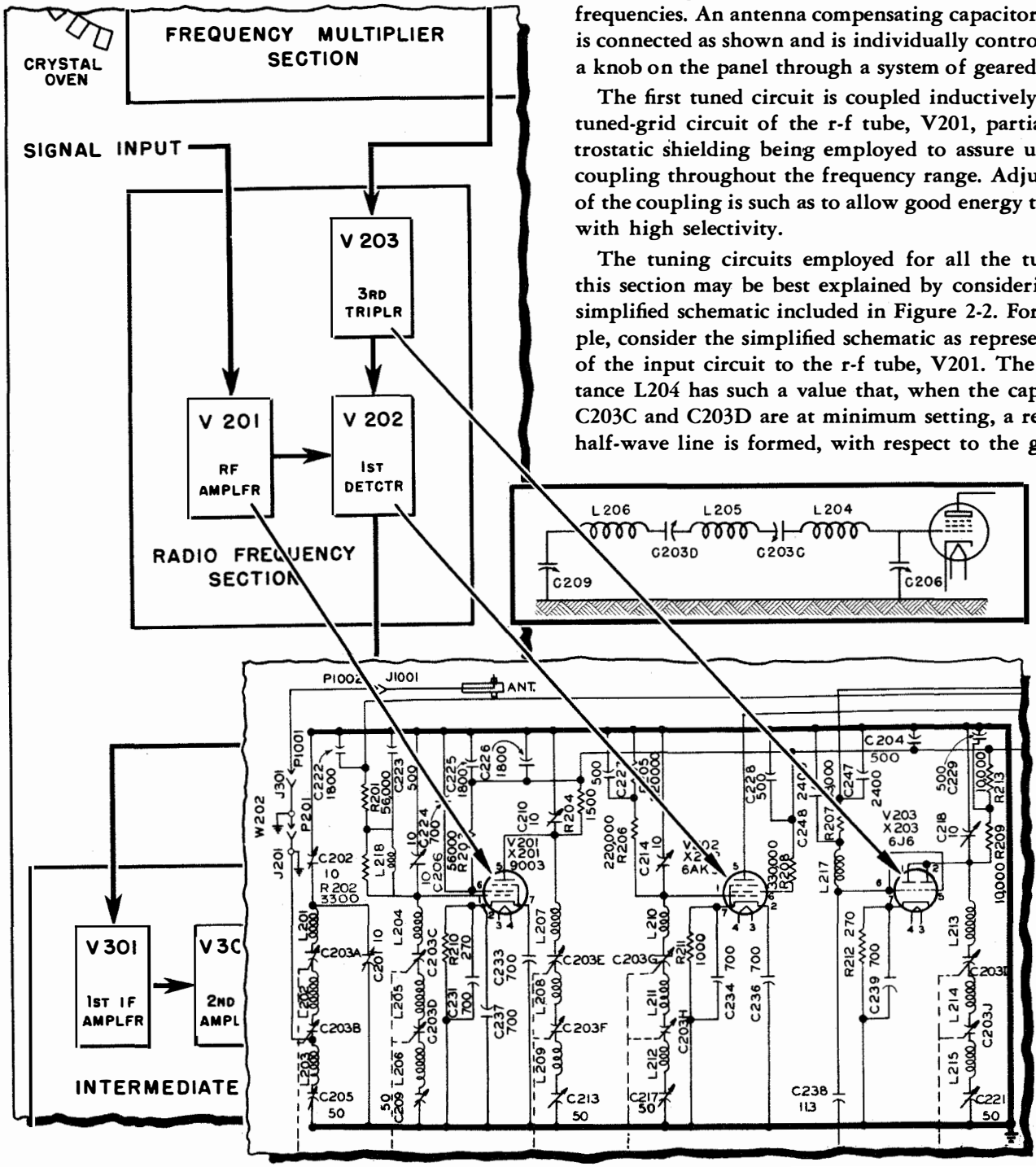


Figure 2-2. Radio-Frequency Circuits

for the frequencies at the high end of the tuning band. The inductances L205 and L206 have electrical lengths of less than one-half and one-quarter wavelength, respectively, in order to avoid resonance in the tuning band.

As capacitors C203C and C203D are increased in value, the additional inductances L205 and L206 are gradually introduced into the line. This has the effect of electrically lengthening the line and making it resonant to lower frequencies. Alignment between the tuned circuits is obtained by adjustment of trimming capacitor C206 in the circuit shown, which is connected to L204 at the point of current maximum for the high-frequency end of the band. A padding capacitor, C209, is provided for alignment at the point between the middle and the high end of the band.

The output circuit of the r-f amplifier is tuned and coupled inductively to the tuned input circuit of the first detector tube, V202.

The output of the second tripler in the frequency-multiplier section is fed to the tripler tube, V203, in the r-f section. An inductance, L217, connected to the grid of V203, and the coupling capacitor, C238, form a filter that assures uniform coupling to the tripler at all frequencies.

The plate circuit of the heterodyning tripler tube, V203, is resonated in the same manner as that employed with the r-f tuning circuits and is inductively coupled into the grid circuit of the first detector, V202.

(2) FREQUENCY-MULTIPLIER SECTION, CRV-35116.—The frequency multiplier develops the necessary heterodyning frequency from the fundamental frequency of the crystals employed with the equipment. Referring to the illustration, Figure 2-3, the crystal selected by the switching mechanism in any tuning sequence is connected to the grid and screen of the oscillator tube, V504, to form a Pierce oscillator.

The frequency generated in the oscillator section is the fundamental frequency of the crystal, and through electronic coupling this frequency is impressed on the plate circuit of the same tube. The plate circuit is tuned to twice the frequency of the fundamental by L504 and C505D, with the result that the frequency is doubled.

The output of V504 is coupled to the grid of the first tripler tube V503. This tube has its plate resonated by Z501 and C505C to three times its input frequency; hence a tripling action takes place to give an output frequency three times that of the input.

In turn, the output of V503 is coupled to the second tripler, V502, where the tripling action is repeated, the plate circuit of V502 being properly tuned by L502 and C505B. The plate and grid circuits of both triplers are filtered by resistors and capacitors to prevent intercoupling or feedback and self-oscillation. A tap is taken on the inductance, L502, in the plate circuit of V502 and the output coupled to V203, the tripler tube in the r-f section, thus providing the heterodyning frequency for the receiver.

The three tuned circuits in the frequency multiplier are simultaneously tuned by the MULTIPLIER selector dial on the panel. To assure proper tracking at all frequencies, the circuits are aligned by trimming capacitors.

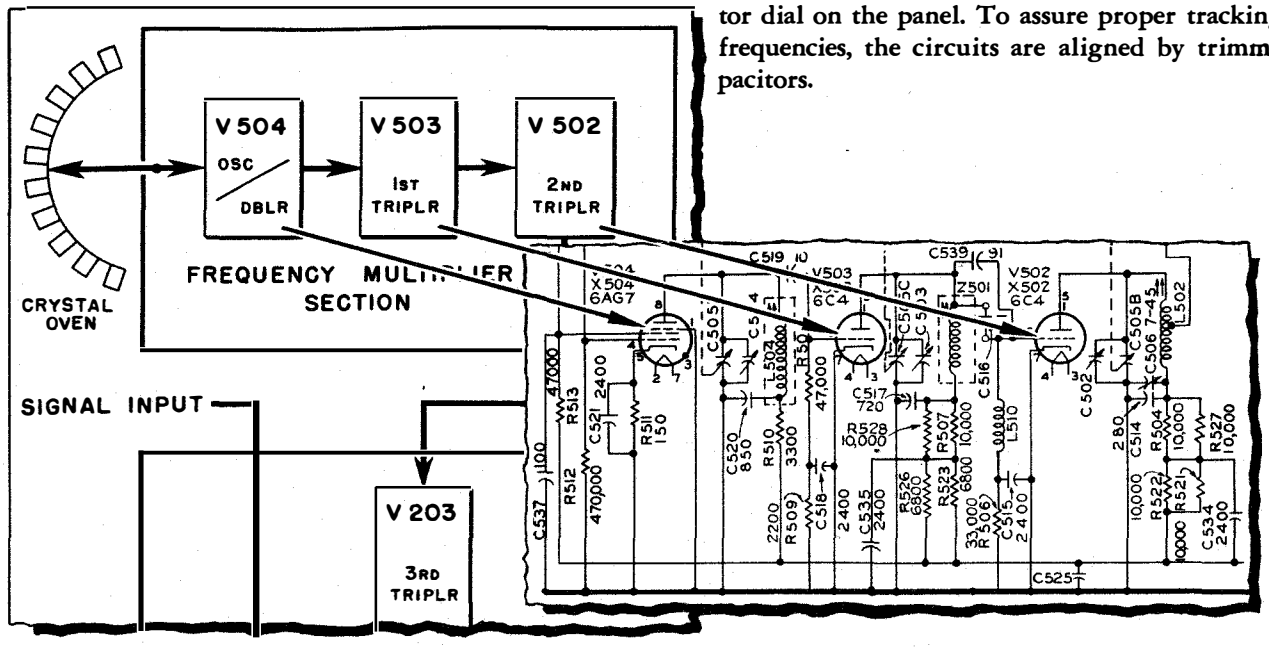


Figure 2-3. Frequency-Multiplier Circuits

(3) INTERMEDIATE-FREQUENCY AMPLIFIER.—The intermediate-frequency amplifier consists of four stages employing fixed tuned transformers Z301, Z302, Z303, Z304, and Z305, as coupling between the associated tubes V301, V302, V303, and V304, as shown in Figure 2-4. The transformers are wound with their coupling a little greater than critical, to broaden the top of the resonance curve. They are partially tuned by fixed capacitors connected across the windings; final alignment is made with adjustable cores.

cathode return of V302, permits the adjustment of the overall gain of the intermediate-frequency amplifier to the AVC biasing voltages.

The tube V305 is a double diode. One section is utilized as the second detector; the other section provides potentials for automatic volume control. The detector section is connected to the secondary of the last intermediate-frequency transformer, Z305. Rectified audio-frequency potentials appear across the load resistors, R401 and R402. The potentials across R401

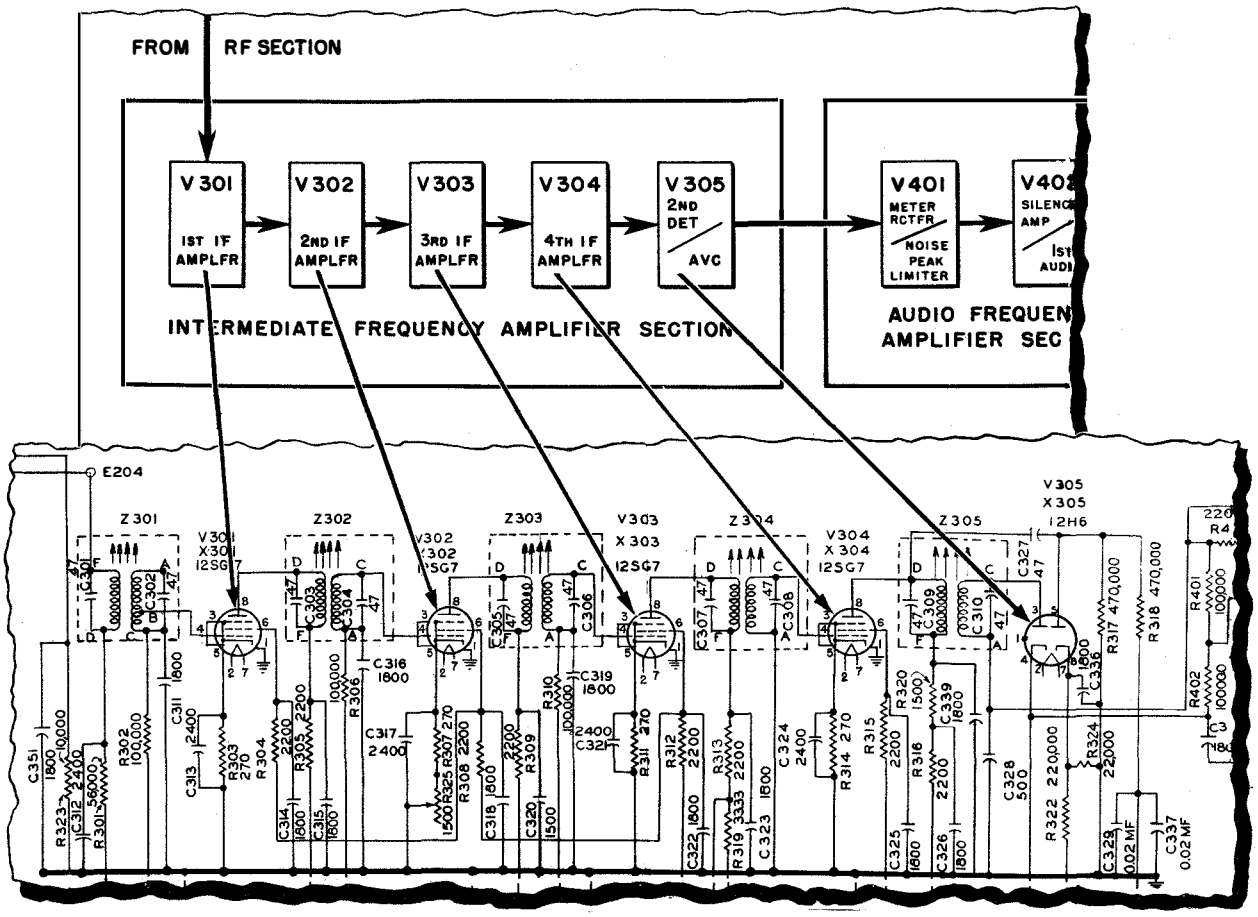


Figure 2-4. Intermediate-Frequency Amplifier Circuits

The output of the first detector is connected directly to the primary of the first intermediate transformer, Z301. The secondary is tapped for the input to the first intermediate-frequency amplifier tube, V301, to obtain good overall stability of the amplifier. The three following stages are electrically identical, particular care having been taken to stabilize the circuits by the use of resistance-capacity filters in the voltage supply circuits and the use of chokes in the heater circuits. The screen grid potentials of the first three tubes (V301, V302, V303) are drawn through resistors in series, with by-pass capacitors connected at the points of connection. This method of filtering avoids overall feedback. A variable resistor, shown at R325 in the

are fed to the noise-peak limiting tube, V401, and thence to the audio amplifiers.

The right-hand section of V305 is the automatic volume control rectifier that furnishes the bias control voltage for the intermediate- and radio-frequency amplifier stage tubes. Signal input to the AVC section is through capacitor C327 from the plate circuit of the last intermediate-frequency amplifier tube, V304.

A delay in the action of the AVC circuit is obtained by biasing the cathode of the AVC section of V305 positive by the drop across resistor R324, which is connected in series with the AVC rectifier load resistor, R317.

The positive bias is sufficient to prevent conduction through the rectifier at signal intensities up to approximately 75 per cent of the maximum capability of the amplifier. Beyond this point, termed the AVC threshold, the signal input to the AVC section overrides the positive bias, and the tube conducts current. This current flow results in a potential appearing across R317. The negative end of the load resistor, R317, is connected through R318 to the grids of the r-f amplifier tube, V201, and to the first three stages of the intermediate-frequency amplifier (V301, V302, V303).

The circuit values are so proportioned that increases in signal intensity above the threshold value result in an increasingly greater biasing voltage being applied to the grids of controlled tubes. This results in a relatively constant audio output level for wide variations of input above the threshold value. The rapidity of response of the AVC is determined by the time constant of the R-C network formed by R317, R318, C329, and C337. This time constant has been made as small as possible without introducing distortion at low modulation frequencies.

(4) AUDIO-FREQUENCY AMPLIFIER.—In addition to providing two stages of audio-frequency amplification, this section includes a noise peak limiter, a meter rectifier, and a silencer circuit. All these functions are performed by three tubes, shown in Figure 2-7. The left-hand diode of V401 is the rectifier for the panel mounted meter, M401.

(*a*) NOISE PEAK LIMITER.—The right-hand diode in V401 is used as a noise peak limiter and its functioning may be better understood from the simplified schematic given in Figure 2-5.

The audio output of the second detector, V305, is developed across the load resistors, R401 and R402. The junction of resistors R401 and R402 is positive with respect to the top of R401 and negative with respect to ground. The limiter diode of V401 is biased positive by a potential developed across R401 when signals are applied to the second detector, V305, and is thus made conducting. Under this condition the negative audio potentials at the midtap of R401 and R402 can pass through the conducting diode and capacitor C404 to appear as audio-frequency voltage changes across the volume control, R432, from which they are fed to the audio amplifier.

This condition continues as long as normal signal levels prevail, the positive bias of the plate of V401 remaining constant during normal signal potential swings of the R401/R402 junction by virtue of the time constant of the R-C combination, R403 and C402. A high-level noise impulse will result in a high negative potential at the junction of R401 and R402. This potential will drive the plate of V401 negative with respect to its cathode and thus render the diode nonconducting. This action blocks all signal pulses to the audio amplifier. On cessation of the noise impulse, the circuits return to their previous condition and normal signals may pass through the diode to the audio amplifiers.

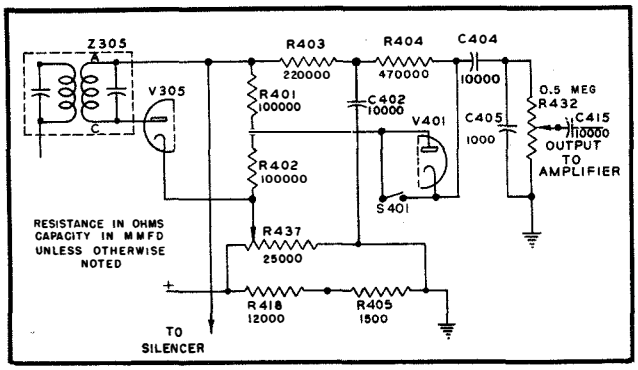


Figure 2-5. Noise Peak Limiter, Simplified Schematic

The output of the receiver is determined by the setting of the volume control, R432. The capacitor, C405, across R432 acts to by-pass the higher frequency audio components in the signals.

A switch, S401, is provided on the panel of the receiver to cut off the noise limiter circuit on receivers with Serial Nos. 501 and up. On equipments with lower serial numbers the switch is connected to control the silencer circuits.

(*b*) SILENCER CIRCUIT.—The silencer circuit reduces or eliminates background noise during non-signal periods to the extent determined by the setting of the SIL LEVEL control, R437. One section of the double triode, V402, functions as the silencer amplifier to control the bias on the audio amplifier section of the same tube.

The audio output passed by the noise limiter circuit is coupled to the grid of the audio amplifier section of V402 as shown in the simplified schematic in Figure 2-6. Resistors R413 and R414 provide the plate load for coupling the output of V402 to the audio output tube, V403.

Normal grid bias for the amplifier is obtained from R408, connected through R423 to a voltage dividing network. However, R409, in the grid to cathode circuit of the audio amplifier is also connected in the plate circuit of the silencer amplifier section of V402.

The grid of the silencer amplifier section is connected to the output of the detector and is normally biased positive by the silencer level control, R437.

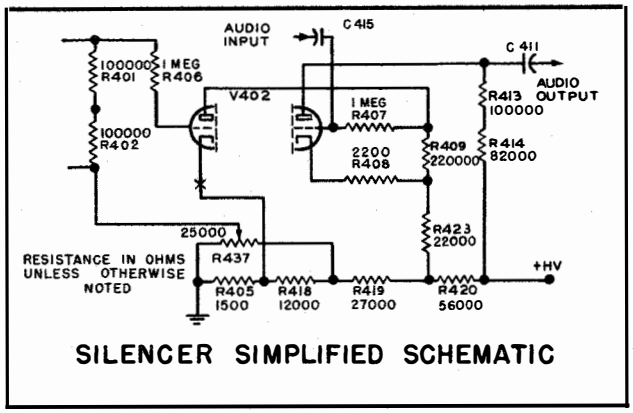


Figure 2-6. Silencer, Simplified Schematic

Under this condition, plate current flow in the silencer amplifier will develop a potential across R409 which will bias the audio amplifier section of V402 beyond cut off. Thus the amplifier is inoperative and the receiver silent.

Should a signal reach the output of the detector, V305, of sufficient intensity to override the positive bias on the silencer amplifier grid and drive it negative, plate current flow will cease. The resultant decrease in potential across R409 will reduce the bias on the grid of the audio amplifier and allow the amplifier to function. When the signals cease, the circuits will return to the original condition with the audio amplifier inoperative. The setting of the silencer level control on the panel determines the point at which signals can pass. This control should not be set higher than will permit the weakest signal to be received to override the positive bias on the silencer amplifier. On receivers with Serial Nos. 1 to 500, a switch is provided on the panel to cut off the silencer circuit; but on equipments with Serial Nos. 501 and up, the switch is connected to control the noise limiter circuit. In these equipments the silencer may be cut off by rotating the silencer level control to the maximum counterclockwise position. The silencer circuit is connected to terminal 15 on terminal board E106 (See Figure 2-8) to allow connections being made to control the silencer circuit from a remote position.

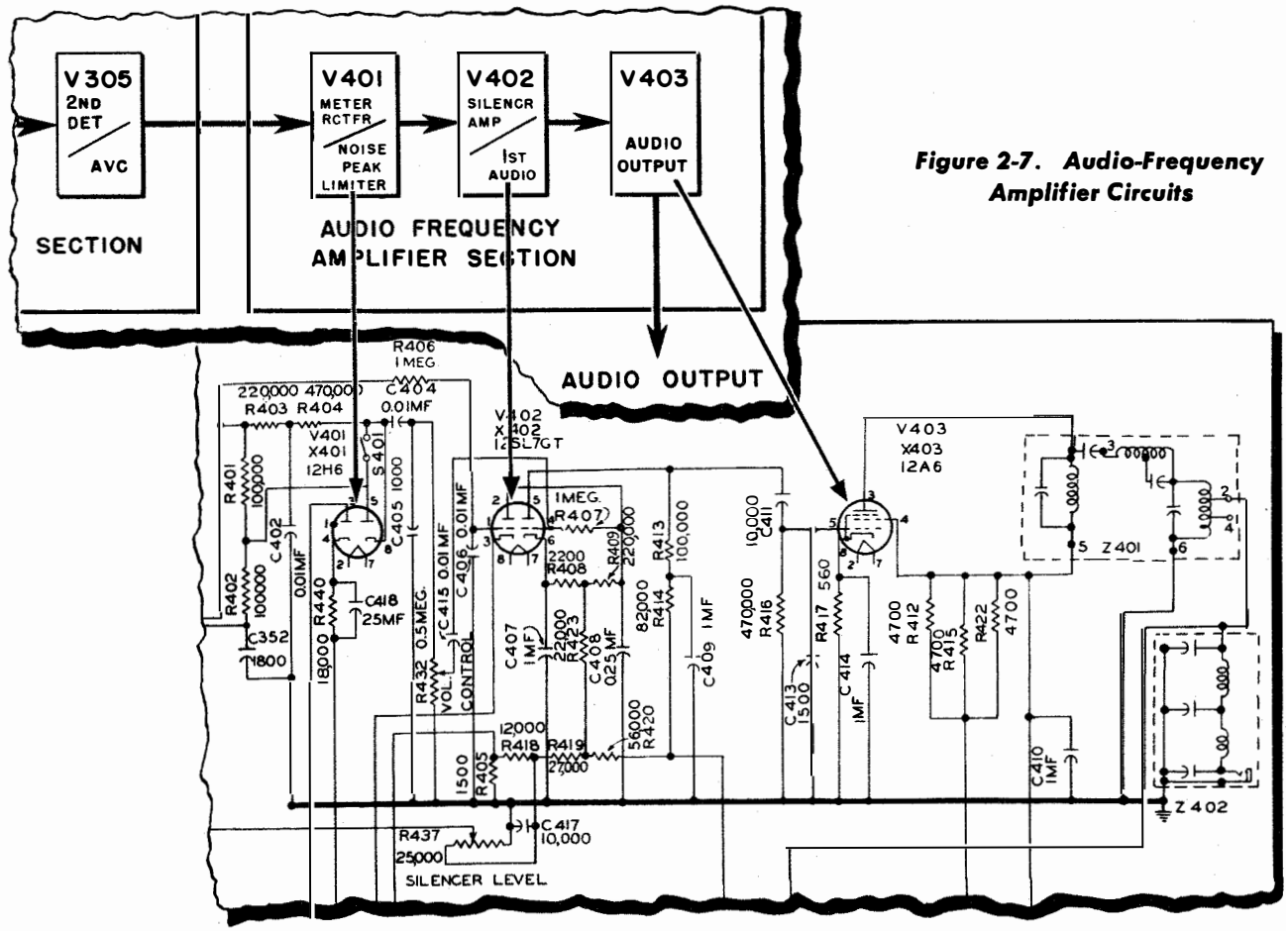


Figure 2-7. Audio-Frequency Amplifier Circuits

(*c*) AUDIO OUTPUT.—The output of the first audio amplifier is fed into the audio output tube, V403. A capacitor, C413, is connected across the input to bypass the higher-frequency components of the audio currents.

The plate load for V403 consists of an impedance included in the filter assembly, Z401. The output from this impedance is fed into a band-pass filter network in Z401, which passes frequencies between 300 and 3000 cycles. The output of the audio filter network is fed through an r-f filter, Z402, to a headset jack and is also connected to an r-f filter assembly and three-terminal receptacle, Z603, on the panel.

The r-f filter assemblies at the output jack and at connector Z603, are used to prevent radio-frequency currents picked up by the headset cord or interconnecting cables from entering the equipment at these points and causing interference in the receiver.

b. DYNAMOTOR.—The dynamotor is used to provide the high-voltage direct current for the tube plate circuits and for the operation of the selector motor. This unit is essentially a low-voltage motor and a high-voltage generator built in a common housing and utilizing the same field structure. The leads from the two separate windings on the armature are brought out to individual commutators which are located at opposite ends of the armature. The bipole field structure of the machine has its windings shunt-connected to the low-voltage input terminals.

When a 13-volt d-c supply is connected to the input connector, Z604, through the adapter cable W803, placing the power switch S802 in the DYN position will start the dynamotor, D801, and apply power to the tube heaters. A filter assembly, Z804, installed in the receiver in accordance with RDR Field Change No. 2 and shown in dotted lines in Figure 2-14, functions to prevent radio interference originating in the dynamotor from being radiated.

The output of the high-voltage end of the dynamotor is also filtered and smoothed by the filter network to suppress electrical noise and remove commutator ripple components from the dynamotor output. The input

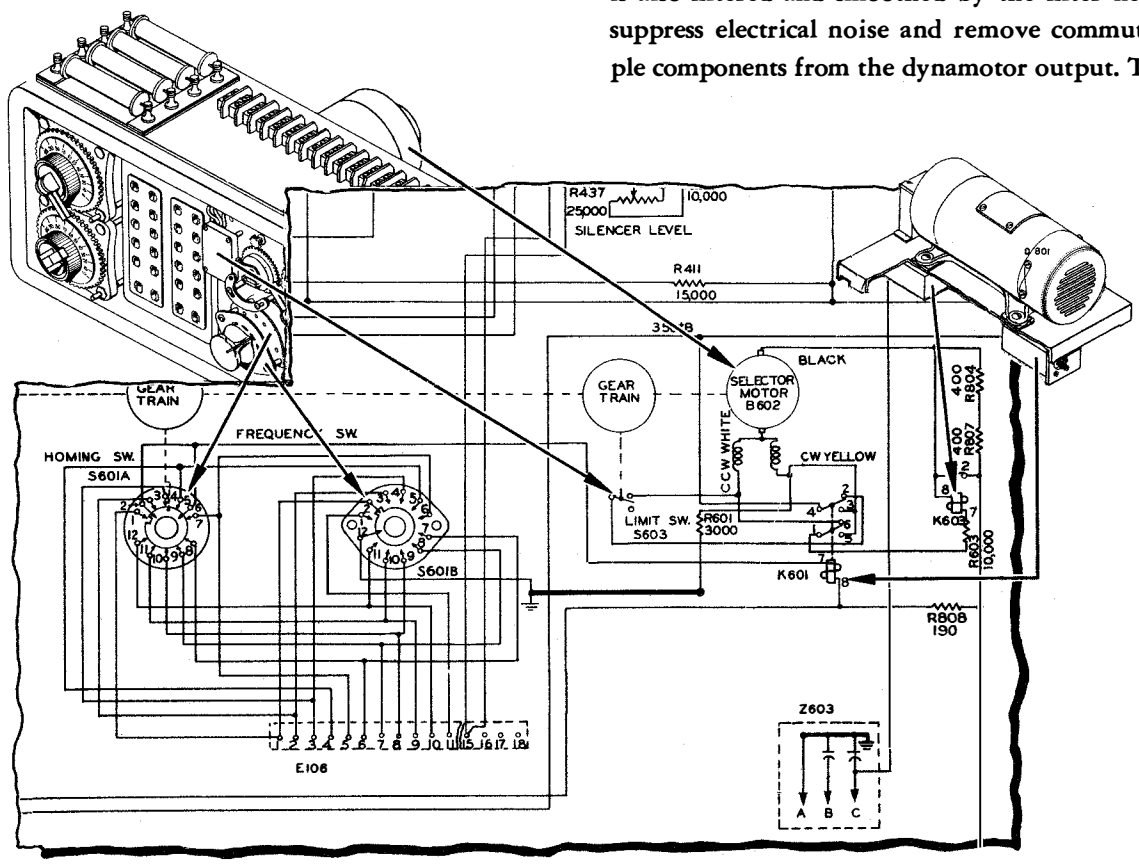


Figure 2-8. Dynamotor and Selector Circuits

end of the dynamotor is protected by the 30-ampere fuse, F803, and the output end of the machine is protected from overload or damage by the one-ampere fuse, F802.

When the receiver is operated on 13-volt d-c, the tube and crystal oven heaters are connected to the low-voltage input to the receiver. To operate both six- and twelve-volt tubes from the 13-volt supply, a split filament circuit, which must be balanced at all times, is used. Extensive filtering is used in the filament circuits to prevent interaction between the various tube circuits.

Since tube life and satisfactory operation of the receiver are dependent upon proper tube heater voltage, provision is made to balance the split filament circuit by means of an adjustable resistor, F524. This resistor is set at the point where the voltages across the two halves of the split circuit are identical.

When the receiver is operated from the CLG-20379 AC-DC (Universal) Power Supply unit, the adapter cable is not required. When the power switch, S802, is placed in the PU position to switch on the receiver, the dynamotor is not used. High-voltage direct current for the tube plates and selector motor, as well as the 13-volt AC heater supply, is obtained directly from the power supply unit. The fuses still remain in the circuit to protect the equipment.

c. CHANNEL SELECTOR.—The control circuits, in addition to the power switch, consist of those involved in the operation of the channel selector mechanism and the Remote Control Adapter when the latter is used with the receiver.

(1) CHANNEL SELECTOR MECHANISM.—The tuning of the receiver to the ten present channel frequencies is accomplished by two selector units, one to adjust the r-f section, the other the multiplier. The selectors are mounted in the selector housing and are geared to a motor which is controlled by a system of switches and relays. The electrical circuits employed with the motor and relays are shown in Figure 2-8.

(*a*) ELECTRICAL FUNCTIONING. — The channel-selecting switch, S601B, is operated by a knob on the panel and is used to select the channel frequency desired. This switch has 11 positions and when placed in the first position, marked REMOTE on the panel, transfers control of the mechanism to a remote control selector that may be connected to the terminals on the terminal board, E106. The other ten positions of the channel selector switch, S601B, are for controlling the selector mechanism.

A similar wafer switch, S601A, is mechanically connected to the gear train in the selector housing. This switch is of the closed-circuit type, the rotor contacting all but one of the fixed contacts in any given position, while the selector switch, S601B, is of the open-circuit type, the rotor contacting but one fixed contact at any time.

A limit switch, S603, is actuated by a cam driven by the gear train and is in the open position when the mechanism is at rest, that is, with the equipment tuned to a given channel frequency. When another channel is selected by moving the channel selector switch to another position, the following actions occur:

1. Relay, K601.	Closes contacts 4 and 3.	Starts motor B602.
2. Motor, B602.	Runs in clockwise direction and drives the two selectors, crystal switch (S502), homing switch (S601A), and allows limit switch (S603) to close.	
3. Homing switch, S601A.	Opens circuits to relay when it reaches a position corresponding to the setting of the selector switch, S601B.	Drums in selectors are positioned and proper crystal is selected by crystal switch, S502.
4. Relay, K601.	Drops back and closes circuit through contacts 4-2 and limit switch, S603.	
5. Motor, B602.	Runs in reverse direction, driving tuning shafts of selectors until the shafts are stopped at the proper point by the pawls dropping into notches in the disks on the shaft. Clutch in selector permits motor to continue in operation.	Tuning shafts of selectors positioned, completing selection of new channel.
6. Limit switch, S603.	Opens motor circuit when original position has been reached.	

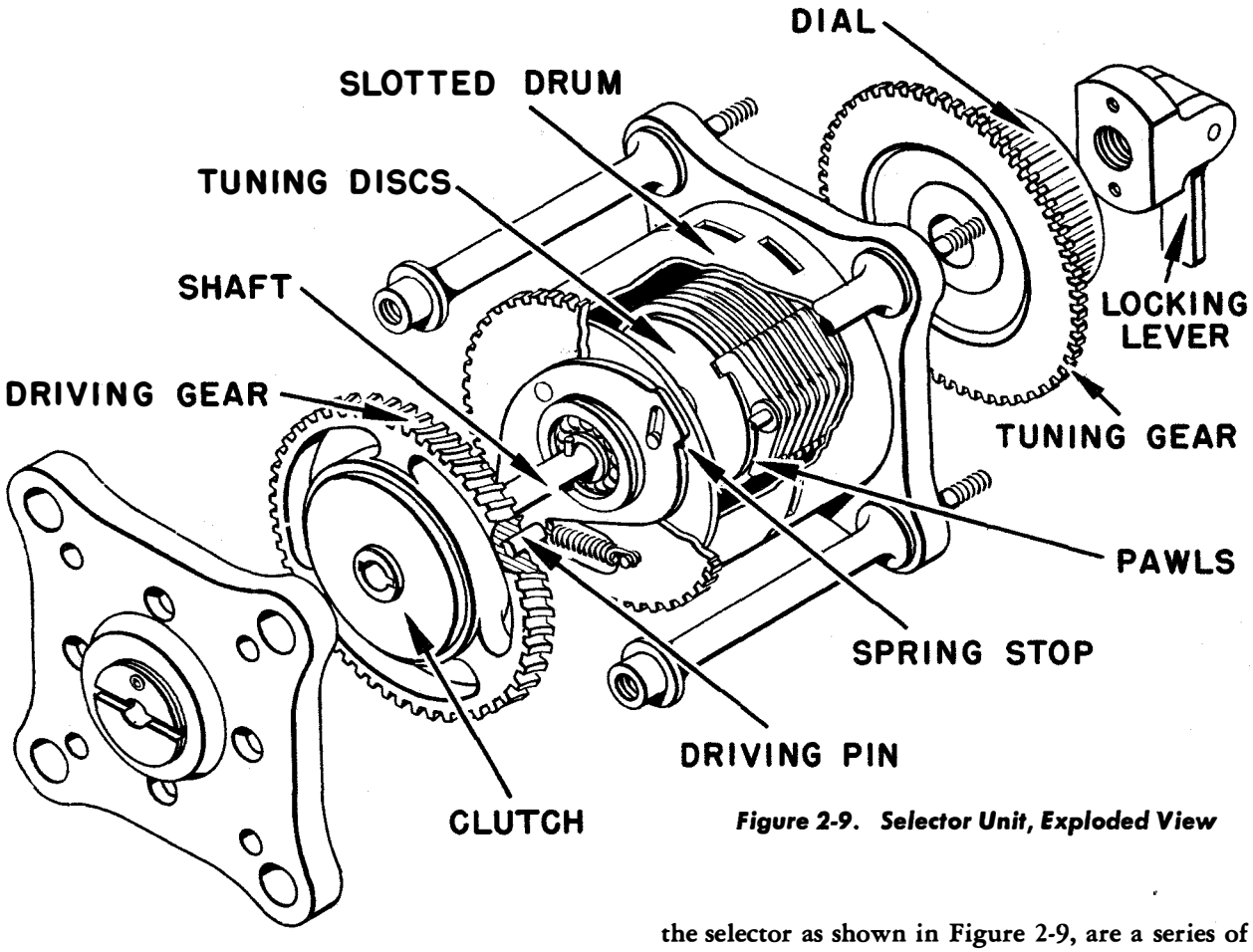


Figure 2-9. Selector Unit, Exploded View

Relay K601 carries a second set of contacts, the moving contact 1 acting to connect the coil of the voltage-regulating relay, K603, across the motor terminals when the motor is operating in either direction by means of contacts 5 and 6. The contacts of relay K603 are connected across resistors R804 and R807 in series with the motor. This combination acts as a voltage regulator on the motor, to compensate for any change in output voltage of the dynamotor in the following manner. The relay contacts are normally closed but are held open when the motor is switched on and resistors are in the circuit. Should the voltage across the motor terminals drop below 120 volts, the relay armature will drop back and short out resistors R804 and R807, thus increasing the voltage to the motor. Should the voltage exceed 160 volts, the relay armature will be pulled up and the resistors will be placed in the circuit. This control maintains the motor voltage between 120 and 160 volts and thus assures proper functioning of the selector motor.

(*b*) OPERATION OF TUNING SELECTORS. —The tuning selectors are compact mechanical devices that consist essentially of an outer drum with ten slots, spirally located around the drum. Within the drum, and pivoted on a post extending from the front plate of the selector as shown in Figure 2-9, are a series of ten spring-actuated pawls. As the drum revolves, each slot in turn passes over its respective pawl, the end of each pawl being forced into the slot by a spring, but continued rotation of the drum forces the pawl free of the slot.

In the center of the drum, and spaced on the shaft connecting to the tunable element, are ten notched disks. The disks are clamped tightly to the shaft by a cam-and-lever locking arrangement attached to the selector knob, but can be released by raising the lever on the knob, so any disk can be adjusted in relation to the shaft, independent of the others.

The shaft and disks are driven by a friction clutch mounted in the large gear at the rear end of the selector, i.e., the end opposite to the dial. The tension on this clutch is sufficient to drive the shaft in either direction unless the shaft is locked by the action of the pawls engaging the notches in the disks. The drum is driven by a pin in the large gear engaging a spring stop on the end of drum, arranged to drive the drum in one direction, that is, only when the motor is running forward in the first part of the tuning cycle.

The relative positions of the drum, pawls, disks, and gear are shown in Figure 2-10 and the sequence of operation is as follows:

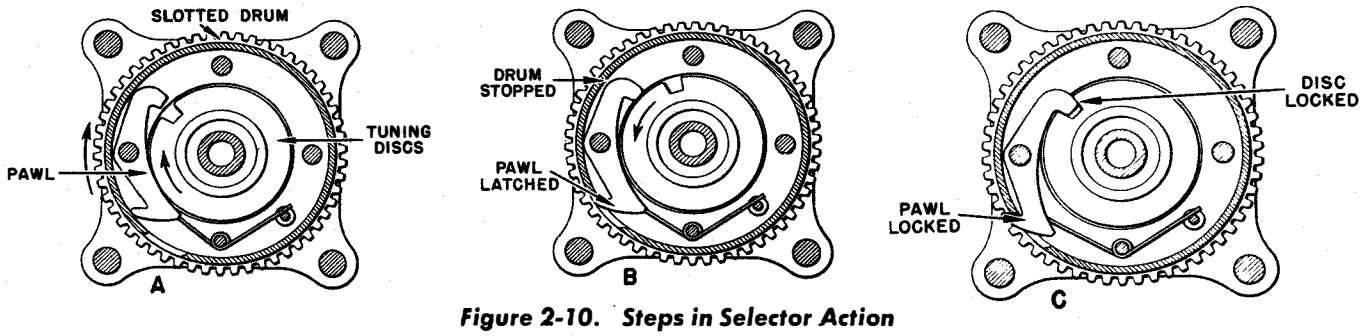


Figure 2-10. Steps in Selector Action

REFER TO FIG. 2-10	MOTOR	NOTCHED DISKS AND SHAFT	DRUM	PAWL
A	Running in forward direction (clockwise).	Driven clockwise by clutch engaging shaft.	Driven by pin on gear engaging stop on drum.	Disengaged by contact with interior of drum.
	Stopped.	Stopped.	Stopped. Slot positioned over pawl.	Free end forced into slot by spring action.
B	Running in reverse direction (counterclockwise).	Driven counterclockwise by clutch engaging shaft.	Stopped.	Inner end rides on disk until engaged in notch.
C	Continues operation until stopped by limit switch.	Rotates until pawl engages in notch.	Stopped.	Engaged in notched disk. Clutch allows motor to operate.

The motor-driven tuning cycle is repeated for each change of frequency. When the next change of frequency is made, the large gear will rotate alone until the pin on the gear engages the spring stop of the drum. The drum is then revolved and in so doing, unlocks the pawl by forcing in the free end extending through the slot in the drum, and disengaging the pawl from the notch in the disk. The tuning cycle is then completed in the usual manner.

(2) CRYSTAL CIRCUITS.—Ten crystals, mounted in the oven, are employed to control the heterodyning frequency, one for each channel. Current for the heating units in the oven is conducted through four pins on the rear of the oven assembly.

The crystals are connected, through pins on the oven assembly and jacks on the jack plate, to the contacts on the wafer switches, S502A and S502B, as shown in Figure 2-12. The switches, mounted behind the jack plate, are gear-driven in synchronism with the selector units. Thus, when the selector units are positioned for any given channel frequency, the crystal switches connect the proper crystal into the circuit of the multiplier section for the desired heterodyning frequency.

The oven temperature is controlled by two thermostats and associated heating coils. One heater is used as a booster heater and acts to bring the temperature of the oven up the minimum operating point, 75° C, quickly when the equipment is first switched on. This unit is then switched off by the thermostat.

The second heating unit continues to function, with thermostatic control, maintaining the temperature of the oven practically constant. Pertinent crystal circuit data are as follows:

(3) CRYSTAL CIRCUIT DATA.

CRYSTAL CHARACTERISTICS	
Crystal Type	Navy Type -40163 (Type CR 7E/U)
Frequency Range of Crystal Circuit	4725.926 kc to 7781.487 kc
Heterodyning Frequency in Receiver	54th Harmonic of Crystal Fundamental Frequency
Intermediate Frequency in Receiver	30.2 megacycles
Temperature Coefficient	0.007%, 50° to 90°C (122° to 194°F)
Temperature of Calibration	75°C (167°F)
Temperature of Operation (oven)	75°C (167°F) ±3%
Frequency Stability of Crystal over Operating Range	0.004%
Type of Oscillator Tube	6AG7
Frequency Stability of Crystal Oscillator	0.007%
Method of Holding Crystal	Plated Crystals, cemented to springs in sealed holder

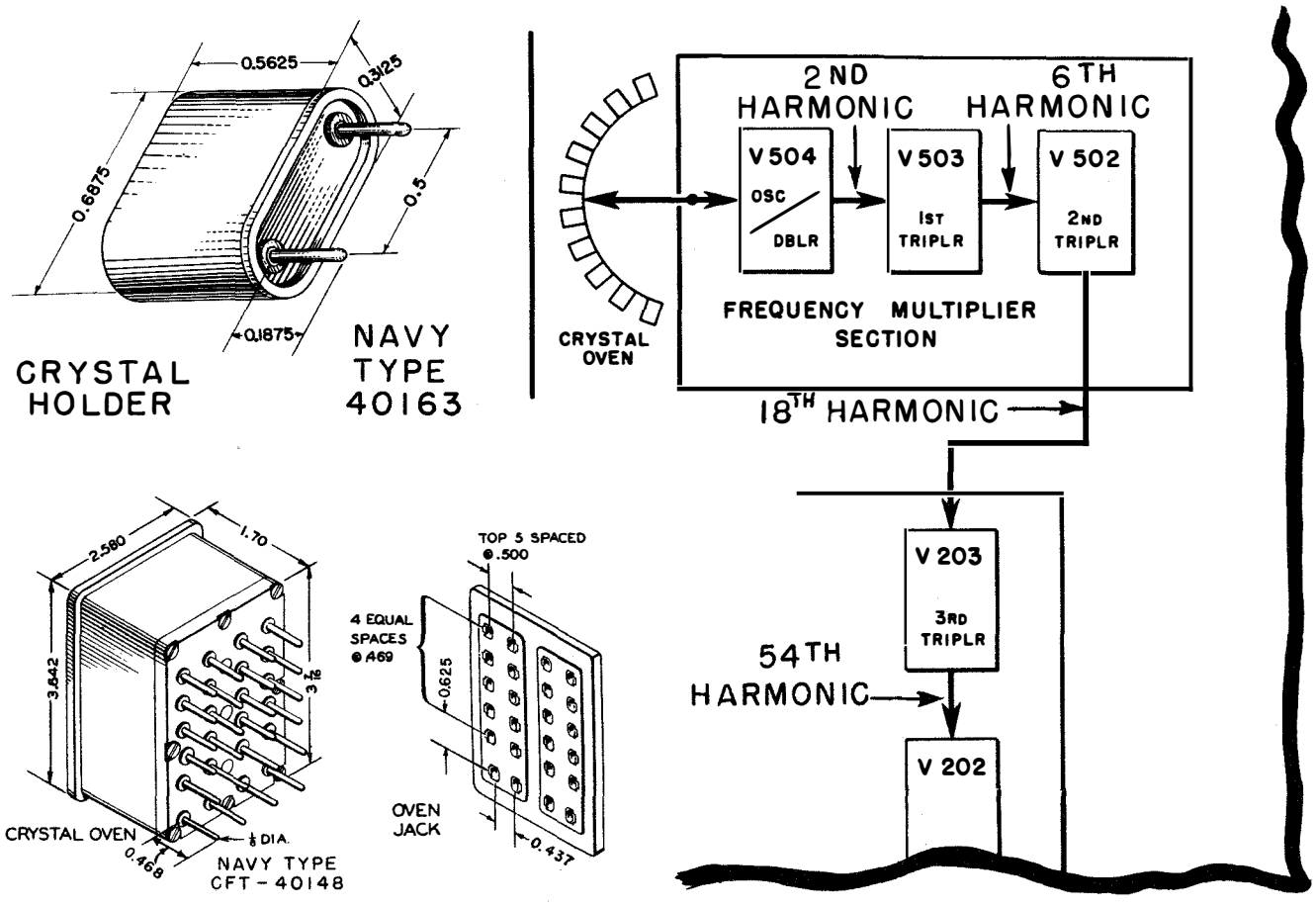


Figure 2-11. Crystal Data

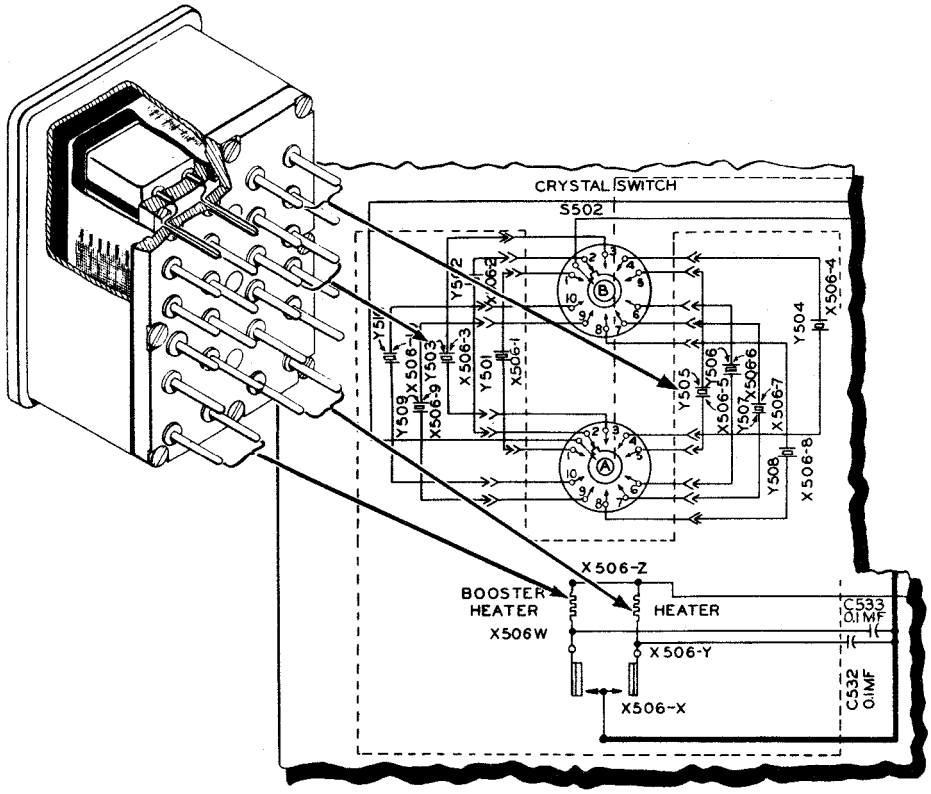


Figure 2-12. Crystal Oven CFT-40148 and Switching Circuit

3. ANTENNA.

The antenna is a half-wave, center-fed dipole, having one side grounded to the coaxial transmission line. The dipole itself has an impedance of from 100 to 200 ohms for the frequency range in use.

To match the antenna to the transmission line, the dipole impedance is changed to approximately 50 ohms by means of a series-connected matching section of coaxial line having a characteristic impedance of 115 ohms.

This matching section of line is four inches long and is located at the dipole end of the antenna supporting tube. The remainder of the supporting tube consists of a 50-ohm transmission line which terminates in the coaxial jack assembly at the end of the antenna supporting tube.

In the range of 225 to 390 megacycles the antenna matches the standard 50-ohm RG 8/U transmission line with a maximum standing wave ratio of 2.2 to 1 when the antenna is mounted in free space with no metallic objects in the immediate vicinity of the antenna.

4. GASOLINE ENGINE GENERATOR SET.

a. METHODS OF OPERATION.—The generator set is designed to provide unregulated output for constant-potential battery charging or regulated-voltage output for the operation of radio equipment. The change-over from one form of output to the other is accomplished by means of a toggle switch, S1301, mounted on the side of the control box of the generator set. The illustration, Figure 2-13, shows the schematic diagram of the equipment.

(1) UNREGULATED OPERATION.—With the switch, S1301, in the open or BATTERY position, as shown in Figure 2-13, the generator operates as a straight shunt-wound dynamo. The shunt field of the generator, E1315, is energized through the fixed resistor, R1302, and the carbon pile of the voltage regulator, VR1301, which does not function in this type of service. The unregulated generator output is adequate for constant potential charging of 12-volt storage batteries.

The reverse-current relay, K1301, functions in the usual manner, closing the circuit between generator and output connectors after the voltage has built up to the correct value and opening the circuit should current flow in the reverse direction.

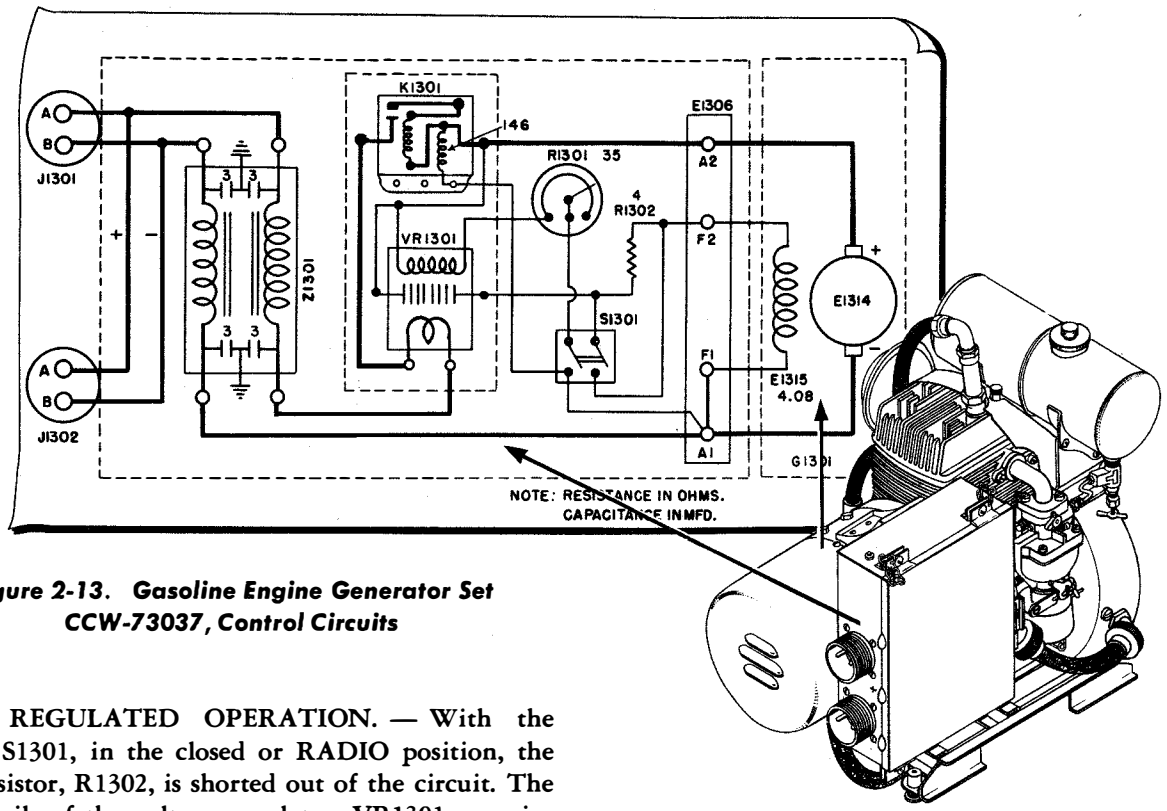


Figure 2-13. Gasoline Engine Generator Set CCW-73037, Control Circuits

(2) REGULATED OPERATION. — With the switch, S1301, in the closed or RADIO position, the fixed resistor, R1302, is shorted out of the circuit. The carbon pile of the voltage regulator, VR1301, remains in the field circuit to control the output voltage.

The resistance of the carbon pile is a function of the pressure with which the pile is compressed, the resistance decreasing as the pressure increases. Normally, the carbon pile is compressed by a cup-shaped spring to present a minimum resistance. The pressure is regulated in operation by an armature that is acted upon by two magnetic windings in the regulator assembly. One winding is connected across the output of the generator; the other winding, of two turns, is connected in series with the load. The output voltage can be adjusted over a restricted range by means of the adjustable resistor, R1301.

(3) VOLTAGE REGULATOR.—The operation of the voltage regulator is as follows: Consider the equipment as delivering the correct voltage, under which condition the pressure on the carbon pile of the voltage regulator is such as to maintain the correct field strength in the generator. This pressure is the resultant of the pressure exerted by the cup spring and the opposing pull of the shunt winding in the regulator, modified by the series winding. Should the load on the unit decrease, with a rise in output voltage, the current through the shunt winding on the regulator would increase, exerting a greater pull on the armature and reducing the pressure on the carbon pile. The resultant increase in the resistance of the carbon pile would reduce the excitation in the generator field and in turn reduce the output voltage of the generator to the desired value.

With an increase of load and a reduction in voltage, the action of the regulator is reversed. The current through the shunt winding is reduced, permitting the spring to exert additional pressure on the carbon pile.

The series winding in the regulator is connected to partially neutralize the pull of the shunt winding, with the result that the output voltage of the unit rises as the load is increased. The reverse-current relay, K1301, is in the circuit with regulated output, to permit the generator voltage to build up to the correct value before the load is applied.

A noise filter, Z1301, is built into the control box, and the busses to the output connectors are shielded to prevent electrical noise from the unit reaching the cable connecting the generator set to the radio receiver.

NOTE #1 - R433 WAS 3000 OHMS IN SOME EQUIPMENTS.
#2 - S401 WAS CONNECTED BETWEEN CATHODE 3 OF V402 AND R405 AS SILENCER SWITCH IN EQUIPMENTS SERIAL NOS. 1 TO 500
#3 - R809 NOT IN EQUIPMENTS SERIAL NOS. 1 TO 769
#4 - Z804 INSTALLED BY FIELD CHANGE #2. FILTER COMPONENTS Z801, C814, C804; L802, C805, C806; L803, C808, C810 REMOVED.

NOTE:
ALL VALUES IN MMFD & OHMS UNLESS OTHERWISE NOTED.

Figure 2-14. RDR Receiver CRV-46283, Schematic Diagram (W-308628)

SECTION 3
INSTALLATION AND INITIAL ADJUSTMENTS

1. UNPACKING.

a. GENERAL.—As shipped from the factory the various components of the RDR equipment are packed in wooden cases. Four such cases are included for a shipboard installation; six for a field installation. The cases and their contents for a shipboard installation are listed in Table 3-1; those for a field installation are listed in Table 3-2.

Each case should be examined for visible damage incurred in shipment, and the shipment checked for completeness before being unpacked.

b. REMOVING EQUIPMENT FROM WOODEN CASES.—The unpacking procedure described in the following paragraphs is applicable to all wooden cases.

CAUTION

It is recommended that the Equipment Spare Parts box remain unopened until the supply of parts included with the Equipment Accessories has been exhausted.

Place the case with the top up and cut the banding straps adjacent to the lower edge of the cover, using metal snips or a hacksaw. Peel the banding from the top of the case, using a flat-bladed chisel or small pinch bar for pulling the fastening nails.

With the strapping removed from the cover, withdraw cover nails with nail puller or drive a flat chisel between cover and case and pry the cover boards off. Always remove the cover completely with as little damage as possible, retaining it for use in repacking the unit or as a container for parts if all parts are not utilized immediately.

Fold back vapor-barrier packaging or moisture-proofing and remove such corrugated paper pads or wood blocks as may have been used to hold the contents in position. The equipment can then be lifted from the case.

To free some items, it may be necessary to loosen one side of the case by driving a flat wedge between the side and end of the case. Do not insert a pry bar between the case and its contents to loosen any part of the case.

2. INSTALLATION.

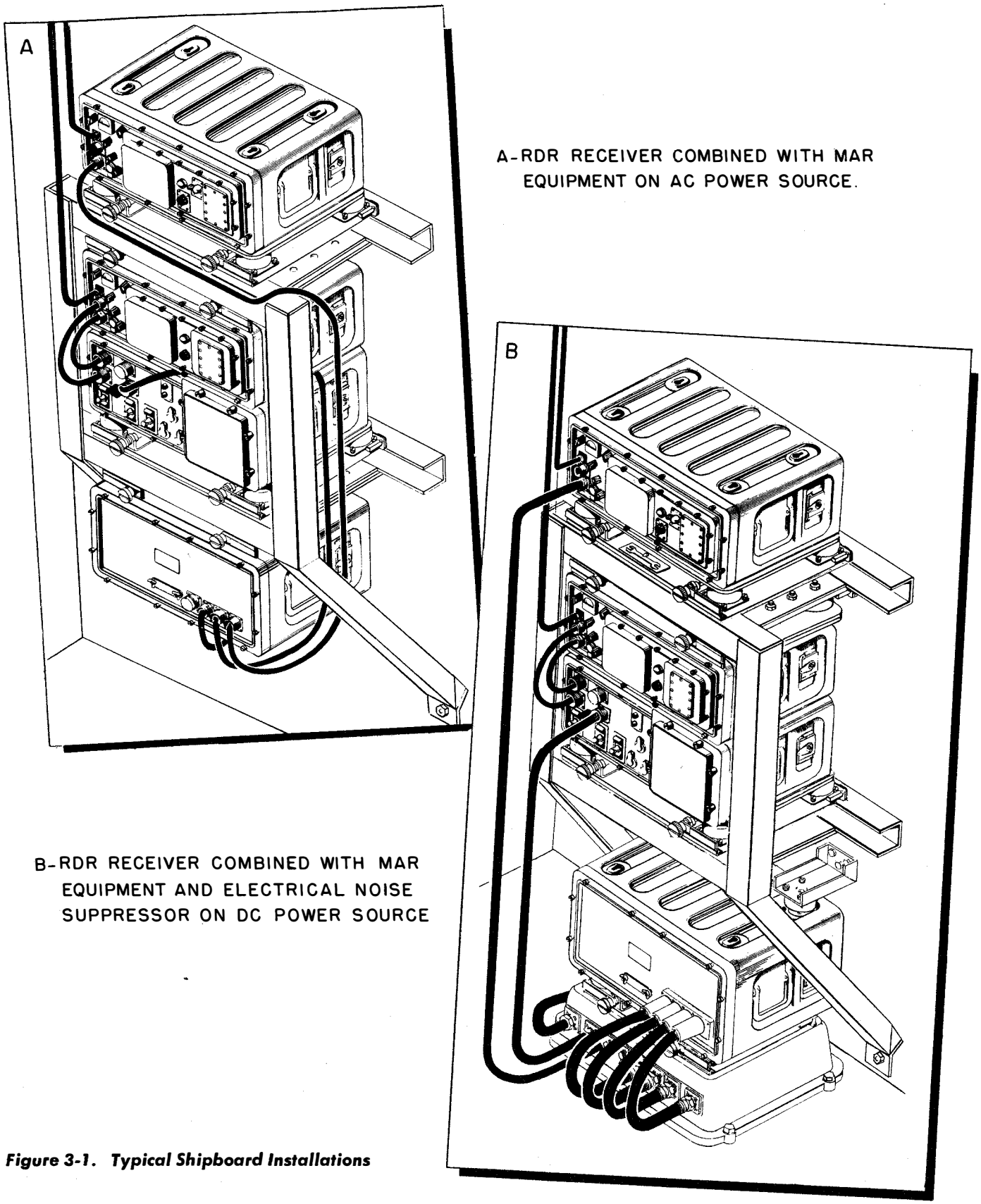
a. SHIPBOARD EQUIPMENT.—The items listed in Table 3-1 are required for a shipboard installation of the RDR equipment.

TABLE 3-1—SHIPBOARD EQUIPMENT
MATERIAL SUPPLIED

QUANTITY	DESCRIPTION
1	CRV-46283 Radio Receiver
1	CRV-66147 Antenna Assembly (See Table 1-3 for list of components).
1 set	Equipment Accessories (See Table 1-2 for list of components).
1 set	Equipment Spare Parts (See Table 8-2, pages 8-2 to 8-55 inclusive, for list of components).

MATERIAL REQUIRED BUT NOT SUPPLIED

DESCRIPTION	OBTAIN FROM
Required length of RG 8/U or RG 10/U coaxial cable for antenna transmission line.....	Naval Stores
One CRV-10629 Shock Mount Assembly.....	MAR Shipboard Installation Kit



A-RDR RECEIVER COMBINED WITH MAR EQUIPMENT ON AC POWER SOURCE.

B-RDR RECEIVER COMBINED WITH MAR EQUIPMENT AND ELECTRICAL NOISE SUPPRESSOR ON DC POWER SOURCE

Figure 3-1. Typical Shipboard Installations

(1) ATTACHING SHOCK MOUNT.—To attach the shock mount to the CRV-46283 Radio Receiver proceed as follows:

Step 1. Loosen the clamping screws on the front of the shock mount and slide the top frame off the base member.

Step 2. Untie the small canvas bag which is attached to the assembly, then dismantle the frame section by removing the short carriage bolts from the sides of the frame and the long carriage bolts from the rear shock mount units and slides. This leaves the frame and slides held together by the hex-head bolts which extend through the front shock mount units.

Step 3. Prepare the receiver case for attaching the shock mount by installing the four carriage bolts removed from the shock mount assembly in the keyhole slots on the bottom of the case. Lay the case on its side, insert the head of a short carriage bolt in the keyhole slot nearest the cover of the equipment, and slide the bolt to the end of the slot. Drop one of the saddles, flanges down, over the bolt shank as shown in Figure 3-2 and screw a large nut, with the counterbored side down, on the bolt threads. Tighten the nut with the end wrench which is attached to the shock mount base. Attach the remaining carriage bolts in a similar manner, the short bolts toward the front of the case, the long bolts toward the rear.

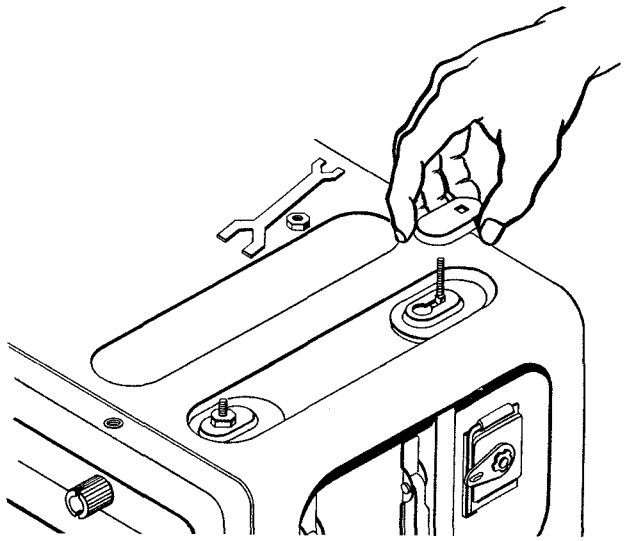


Figure 3-2. Installing Mounting Bolts

Step 4. Insert the two hex-head bolts with washers and lockwashers, from hardware in small canvas bag, into the two holes in the front edge of the frame.

Step 5. Grip the frame and slides as shown in Figure 3-3, hold the holes in the shock mounts in line with the holes in the frame, and place the assembly

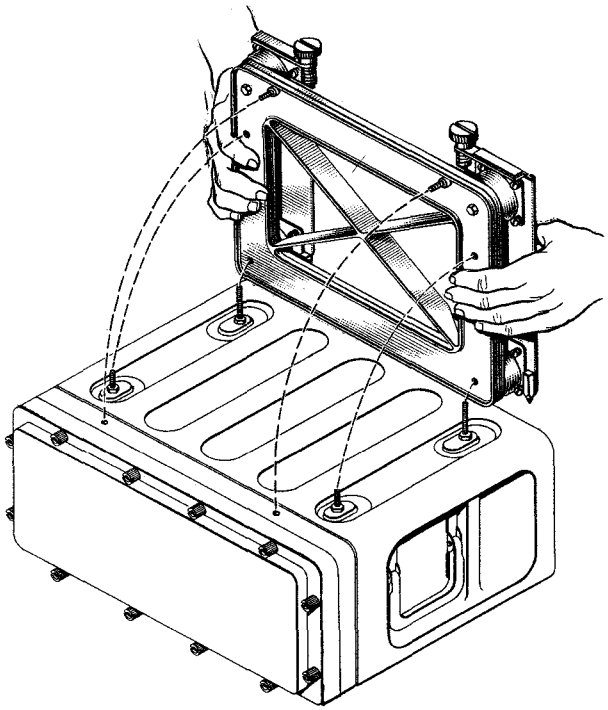


Figure 3-3. Attaching Shock Mount

on top of the bolts in the case, entering the bolts in the holes indicated.

Step 6. Place lockwashers on the four carriage bolts and start nuts on the threads.

Step 7. Start the capscrews at the front edge of the frame into the matching tapped hole in the front edge of the receiver case. Tighten the nuts on the carriage bolts and capscrews. This completes attachment of the shock mount assembly to the receiver case.

(2) MOUNTING THE RECEIVER, NAVY TYPE CRV-46283.—After the shock mount frame has been attached to the RDR receiver, the receiver should be mounted in position.

As shown in Figure 3-1, a frame for mounting the RDR receiver above the MAR equipment may be constructed for the combined shipboard installation.

When arranged as shown in the illustration, the lower frame supports the modulator-dynamotor and the power supply unit of the MAR equipment. The upper frame has the MAR transmitter-receiver suspended beneath it. The RDR receiver shock mounting is bolted to the top of the framework.

When the RDR receiver is to be used alone in a permanent installation, a suitable supporting frame must be constructed. This frame must not have any resonant or vibrating members and must be of rigid construction.

A frame which will fulfill the requirement for rigidity may be constructed by welding channel iron of

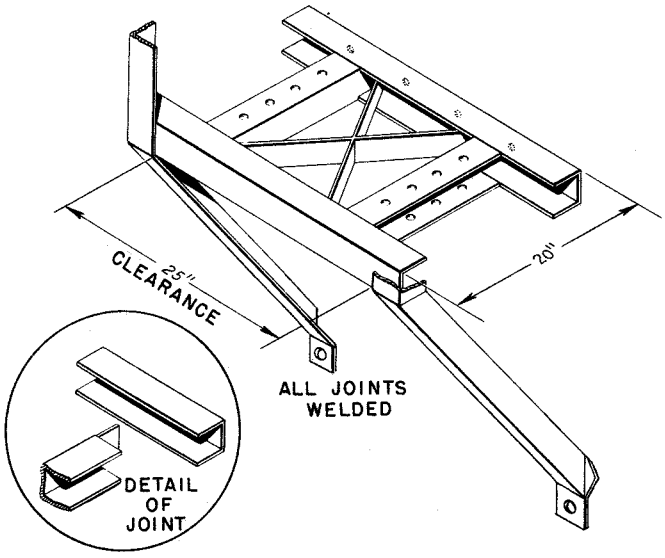


Figure 3-4. Support for Receiver

suitable dimensions to the bulkhead as shown in Figure 3-4.

Bolt the base section of the shock mount assembly to the support frame either with eight through bolts, or with capscrews if the holes in the frame are tapped. Use lockwashers under nuts on the bolts or heads of the capscrews. Use the base as a template for locating the holes.

Slide the receiver into place on the base, engaging the slides on the unit with the slide members attached to the base. Conical pins at the rear end of the slides will engage holes in the angle plates at the rear of the base. Engage the thumbscrews at the front end of the slides in the tapped holes in the posts at the front of the base and tighten securely. Replace wrench in clip on base of shock mount.

(3) ANTENNA ASSEMBLY, NAVY TYPE CRV-66147, AND INSTALLATION.—To assemble the antenna proceed as follows:

Step 1. Remove antenna body, radiating rods, and wrench from shipping case.

Step 2. Select the rod with the coarse thread and start the threaded end into the tapped hole in the casting at the end of the antenna body. Insert the small end of the wrench in the hole in the rod and screw the rod in until it bottoms in the hole. Use open end of wrench to tighten the nut on the rod against the antenna body.

Step 3. Mount the remaining rod in the stud at the center of the insulator on the antenna in a manner similar to that described in step 2. Do not apply excessive force in tightening, or the insulator may be damaged. Stow wrench carefully for future use.

To install the antenna proceed as follows:

Step 1. Remove the mounting bracket from the antenna by loosening the four capscrews in the cap over the tubular body section.

Step 2. Mount the base of the bracket in the position selected for the antenna. Such position should be in a high, clear space and at least one and one-half feet away from any conducting surface. If the RDR receiver is to be used in combination with the MAR equipment, there should be a space of at least ten feet between the two antennas. The antenna body should be horizontal and the bracket located at the end away from the radiating rods. Use the base of the bracket as a template for locating the mounting holes. The support selected should be as rigid as possible to minimize vibration.

Step 3. Use through bolts, capscrews, or lagbolts as necessary to attach the bracket firmly to the supporting member.

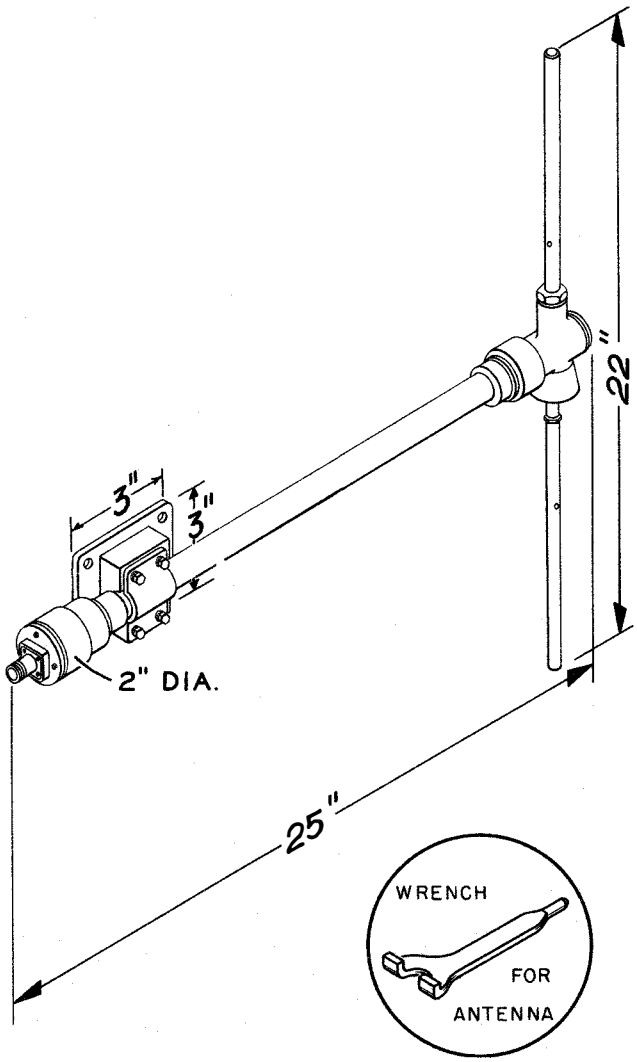


Figure 3-5. Shipboard Antenna CRV-66147

Step 4. Insert the antenna body in the rounded recess in the base of the bracket and replace the cap and four capscrews. Slide and rotate the antenna in its mounting until the connector end is adjacent the clamp and the insulated radiating rod is pointing down, as shown in Figure 3-5, then tighten the cap into place.

(4) INTERCONNECTIONS.

(*a*) ANTENNA TRANSMISSION LINE.—The coaxial transmission line between the CRV-66147 Antenna Assembly and the RDR receiver is not supplied. The necessary length of RG8/U or RG10/U coaxial cable should be obtained from Naval Stores. Two UG-21/U connectors are furnished with the antenna assembly for completing the transmission line assembly. One connector should be attached to each end of the transmission line as shown in the step-by-step illustration, Figure 3-6.

After completing the assembly of the transmission line, the line should be installed in place. Connect one end to the antenna and the other end to the ANT connector on the front panel of the RDR receiver. Support the transmission line in position by means of clips or straps attached to available supports.

(*b*) POWER SUPPLY.—There are several possible combinations of equipment which will affect the RDR power supply connections. These combinations are as follows:

1. SEPARATE INSTALLATION, A-C POWER SOURCE.—When the RDR receiver is used as a separate installation, with its power obtained from an a-c source through the CLG-20379 AC-DC Power Supply, proceed as follows:

Remove the eight-foot Type -62225 cable from the Equipment Accessories box and connect this cable between the PWR receptacle on the receiver and the MAR POWER receptacle on the power supply as

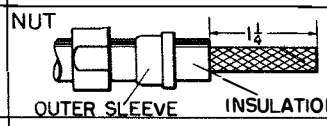
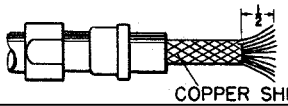
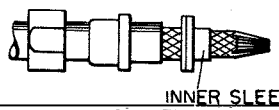
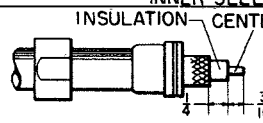
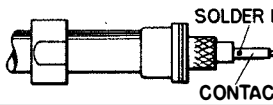
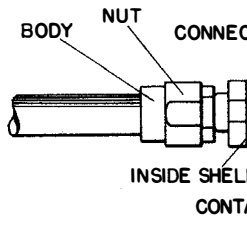
SEQUENCE	OPERATION	ILLUSTRATION
1	SLIDE OUTER SLEEVE ASSEMBLY OVER CABLE. CUT BACK INSULATION 1 1/4".	
2	FLARE OUT COPPER SHIELD AND CUT OFF CENTER WIRE AND INSULATION 1/2" FROM END.	
3	FORM COPPER SHIELD INTO CONE, AND SLIP INNER SLEEVE ONTO CABLE, OVER COPPER SHIELD.	
4	FOLD BACK SHIELD ON INNER SLEEVE. TRIM SHIELD. CUT OFF CENTER WIRE AND INSULATION AS SHOWN. TIN WIRE.	
5	SOLDER CONTACT PIN IN PLACE, FILLING HOLES WITH SOLDER. OUTSIDE OF PIN SHOULD BE SOLDER-FREE.	
6	SLIDE CABLE INTO CONNECTOR AND SCREW NUT TIGHTLY IN PLACE WITH A WRENCH. **CAUTION:** DO NOT TURN BODY WHILE TIGHTENING NUT AS THIS TWISTS THE RUBBER WASHER, BREAKING THE WATERPROOF SEAL, AND MAY SHEAR OFF THE COPPER SHIELD. INSPECT ASSEMBLY TO INSURE THAT CONTACT PIN IS FLUSH, WITHIN 1/64", WITH END OF INSIDE SHELL.	

Figure 3-6. Procedure for Attaching Connector to Transmission Line

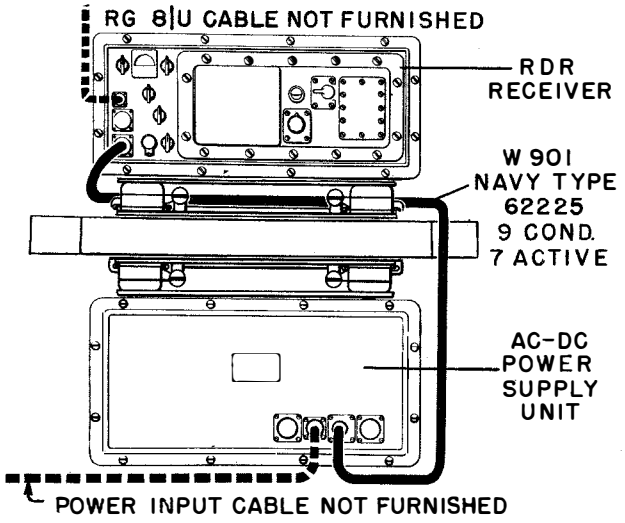


Figure 3-7. Cabling of RDR Receiver CRV-46283 and AC-DC Power Supply Unit CLG-20379 on A-C Power Source

shown in Figure 3-7. When connected in this manner, the power supply will be turned on or off when the DYN-OFF-PU switch on the receiver is operated to the PU or OFF positions respectively.

2. SEPARATE INSTALLATION, D-C POWER SOURCE.—When the RDR receiver is used as a separate installation, with its power obtained from a d-c source through the CLG-20379 AC-DC Power Supply and the CTD-53518 Electrical Noise Suppressor, proceed as follows:

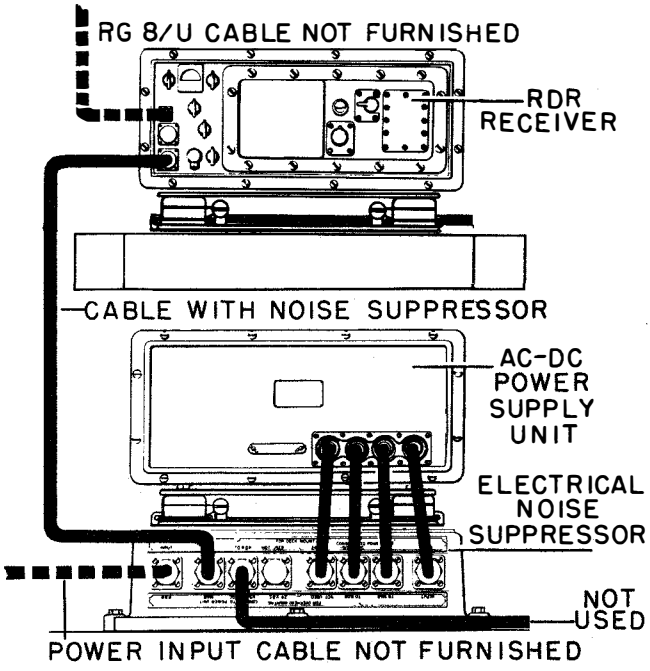


Figure 3-8. Cabling of RDR Receiver CRV-46283, AC-DC Power Supply Unit CLG-20379 and Noise Suppressor on D-C Power Source

Connect the eight-foot cable marked TO MAR at the suppressor to the PWR receptacle on the receiver as shown in Figure 3-8. Operation is the same as that described in the preceding paragraph.

3. COMBINED INSTALLATION, A-C POWER SOURCE.—When the RDR receiver is used in combination with MAR equipment, and power for the combination is obtained from an a-c source through the CLG-20379 AC-DC Power Supply, proceed as follows:

Remove the eight-foot Type -62225 cable from the Equipment Accessories box and connect this cable between the PWR receptacle on the receiver and the RDR POWER receptacle on the power supply as shown in Figure 3-9. When connected in this manner,

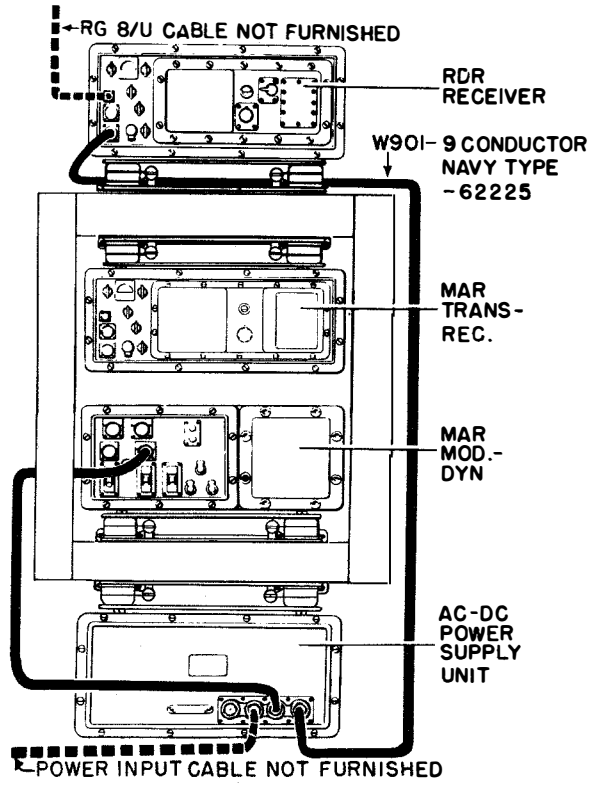


Figure 3-9. Cabling of RDR Receiver CRV-46283 with MAR Equipment on A-C Power Source

the power supply will be turned on or off when the DYN-OFF-PU switch on the MAR Modulator Dynamotor unit is operated to the PU or OFF positions respectively. The receiver only may be turned on or off by operating the DYN-OFF-PU switch on the RDR to the PU or OFF position.

4. COMBINED INSTALLATION, D-C POWER SOURCE.—When the RDR receiver is used in combination with MAR equipment and power for the combination is obtained from a d-c source through the CLG-20379 AC-DC Power Supply and the CTD-53518 Electrical Noise Suppressor, proceed as follows:

Connect the eight-foot cable marked TO RDR at the suppressor to the PWR receptacle on the receiver as shown in Figure 3-10. Operation is the same as that described in paragraph *3.*

b. MOBILE INSTALLATION.—When the RDR equipment is installed in mobile equipment, the installation details, in general, should follow those for the shipboard kit since a mounting bracket is also required. The power source, however, will probably be the vehicle's battery, requiring use of cable W801 as listed on Table 3-8. In all mobile installations the red clip on the power cable must be connected to the positive side of the battery and the black clip to ground. Do not operate the RDR equipment in vehicles having the positive side of the battery grounded.

Jeep installation of the MAR and RDR equipment is facilitated by use of the MX-802/MRC Installation Kit (Government-furnished). This kit provides all accessory material for installing both units in one Navy Type CVD-10182-D jeep. When MAR and RDR units are contained in the same installation, the combination is known as Model AN/MRC-12 Radio Set. Installation of the MAR alone in the jeep is termed Model AN/MRC-13 Radio Set. Material included in these two arrangements is listed in Table 3-2.

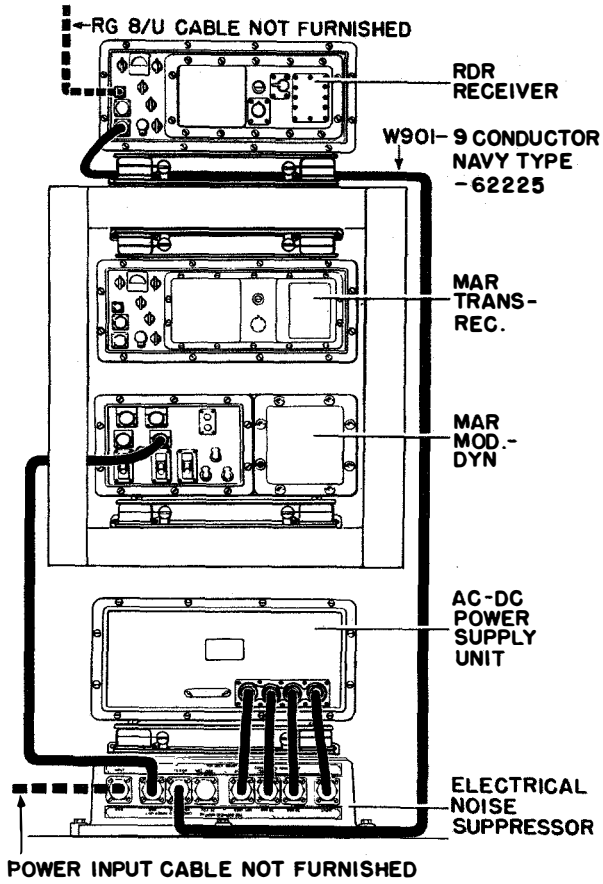


Figure 3-10. Cabling of RDR Receiver CRV-46283 with MAR Equipment and Noise Suppressor on D-C Power Source

TABLE 3-2
MAJOR MOBILE INSTALLATION COMPONENTS

QUANTITY	DESCRIPTION
	MODEL AN/MRC-12 RADIO SET
1	CVD-10182-D ¼ Ton 4 x 4 Truck (Govt.-furnished)
1	MX-802/MRC Installation Kit (Govt.-furnished)
1	MAR Radio Transmitting and Receiving Equipment (Basic equipment less AC-DC Power Supply Unit)
1	RDR Radio Receiving Equipment (Basic equipment less AC-DC Power Supply Unit)
	MODEL AN/MRC-13 RADIO SET
1	CVD-10182-D ¼ Ton 4 x 4 Truck (Govt.-furnished)
1	MX-802/MRC Installation Kit (Govt.-furnished)
1	MAR Radio Transmitting and Receiving Equipment (Basic equipment less AC-DC Power Supply Unit)

Tables 3-3 and 3-4 are detailed lists of the material comprising the truck and installation kits mentioned in Table 3-2. No other material is required.

TABLE 3-3
COMPONENTS OF MODEL CVD-10182-D
1/4 Ton 4 x 4 Truck (Government furnished)

QUANTITY	DESCRIPTION
1	Model MB 1/4 Ton 4 x 4 Truck (Basic Jeep)
1	MX-735/MR Vehicle Modification Kit
1	MX-736/MR Power Supply Kit
2	Batteries (Army Ordnance 6 volt 2H, or equivalent)

TABLE 3-4
COMPONENTS OF TYPE MX-802/MRC INSTALLATION KIT
(Government furnished)

QUANTITY	DESCRIPTION
1	Radio Equipment Mounting Frame Assembly, consisting of: 1—Radio Equipment Mounting Frame 2—Frame Attachment Angles 1—CRV-10507 Shock Mount Assembly, for MAR Modulator-Dynamotor 2—CRV-10508 Shock Mount Assemblies, for MAR Transmitter-Receiver and RDR Receiver 1—CRV-10508 Shock Mount Base, for Remote Amplifier Assembly
1	Remote Amplifier Assembly, complete with 1—CRV-10508 Shock Mount Assembly, less base
1	Spare Parts Box and Cover (watertight), complete with necessary hardware for installation
1	Side Antenna Mount Assembly, complete with brackets, fittings, and antenna base flange
1	Rear Antenna Mount Assembly, complete with brackets, fittings, and antenna base flange
1	Storage Bracket, complete with 2—Antenna Mast Adapters 4—Antenna Mast Sections
9	Cable Assemblies
4	UG-27/AU Connectors
2	UG-29/U Unions
1	Conduit Nipple
1	Conduit Locknut
1	Nameplate for AN/MRC-12 Radio Set
1	Nameplate for AN/MRC-13 Radio Set
1	Installation Instruction Booklet

Figure 3-11 illustrates the arrangement of the MAR and RDR units in the mounting bracket supplied with the MX-802/MRC Installation Kit. The installation details which follow are extracted from the Installation Kit instruction book and are based on installing both MAR and RDR equipment. If only the MAR is installed, the details will differ in that the RDR shock mount base must be removed and the base for the Remote Amplifier Unit centered on the upper support. In both arrangements, 12-volt d-c is supplied from a power supply operating at a take-off in the jeep.

First installation step is to drill the jeep body, if this has not already been done, so that the frame attachment angles may be bolted in place. Location of these angles is shown on Figure 3-12.

Next, mount the angles and the spare parts box in place, using the hardware specified on Figure 3-12. This hardware and all other kit hardware are packed in the spare parts box.

Install the equipment mounting frame in place, using Figure 3-13 as a guide. Dimensions are not shown on this drawing because of variations in vehicle widths.

Drill holes for the rear antenna mount assembly. Hold the assembly in position, as shown on Figure 3-14, and use it as a template.

Similarly, as shown on Figure 3-15, drill holes for and install the side antenna mount assembly.

Drill the terminal box, as shown on Figure 3-16, and install the conduit nipple and locknut. Place the locknut on the outside, finished surface out.

Insert the lug ends of the three main power cables through the terminal box conduit nipple.

Connect the power cables to the terminal strip in the box, using one pair of studs for the MAR and RDR power cables, and the remaining studs for the remote amplifier. The white conductors should be connected to the terminal marked "radio" and the black conductors connected to the terminal marked "—ground."

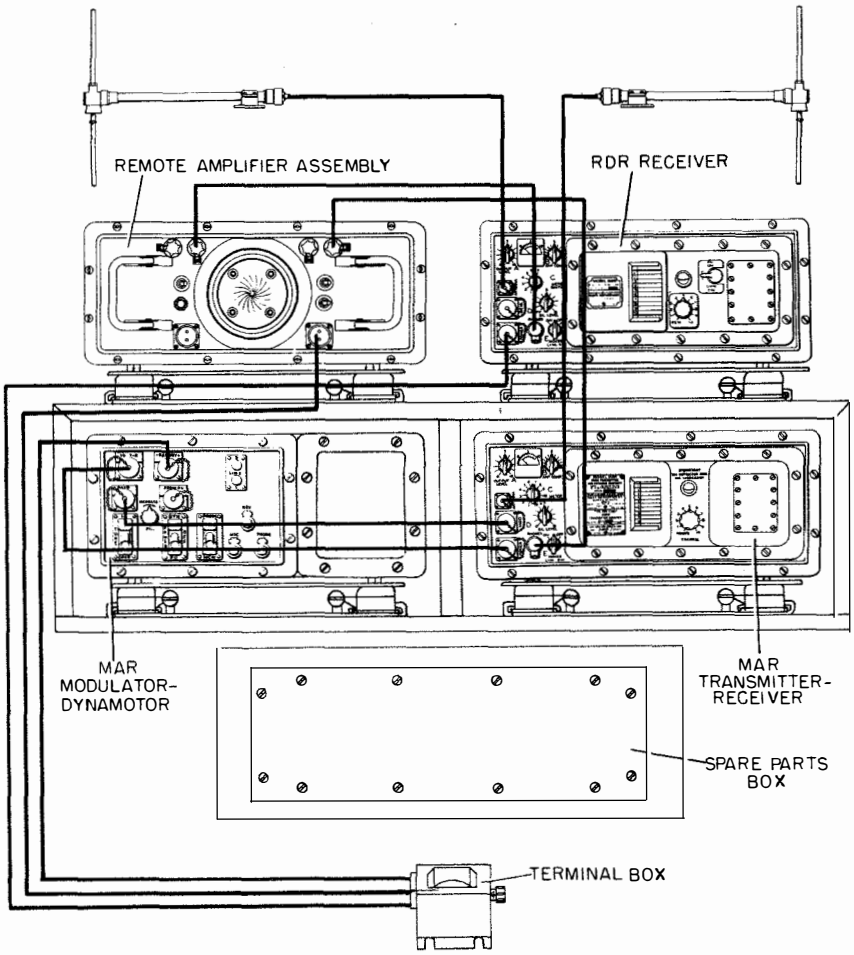


Figure 3-11. Mobile Installation with Type MX-802/MRC Installation Kit

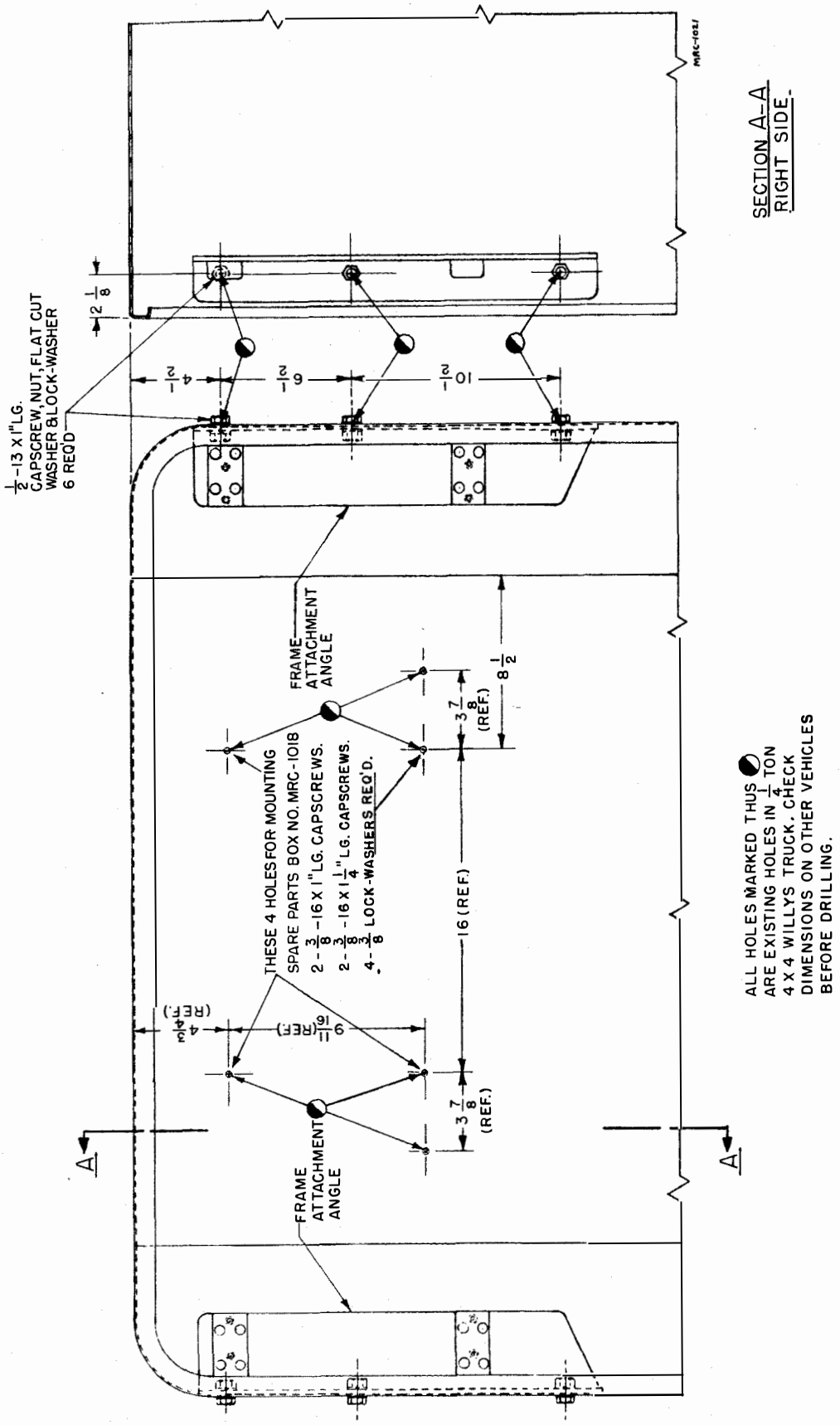


Figure 3-12. Frame Attachment Angles

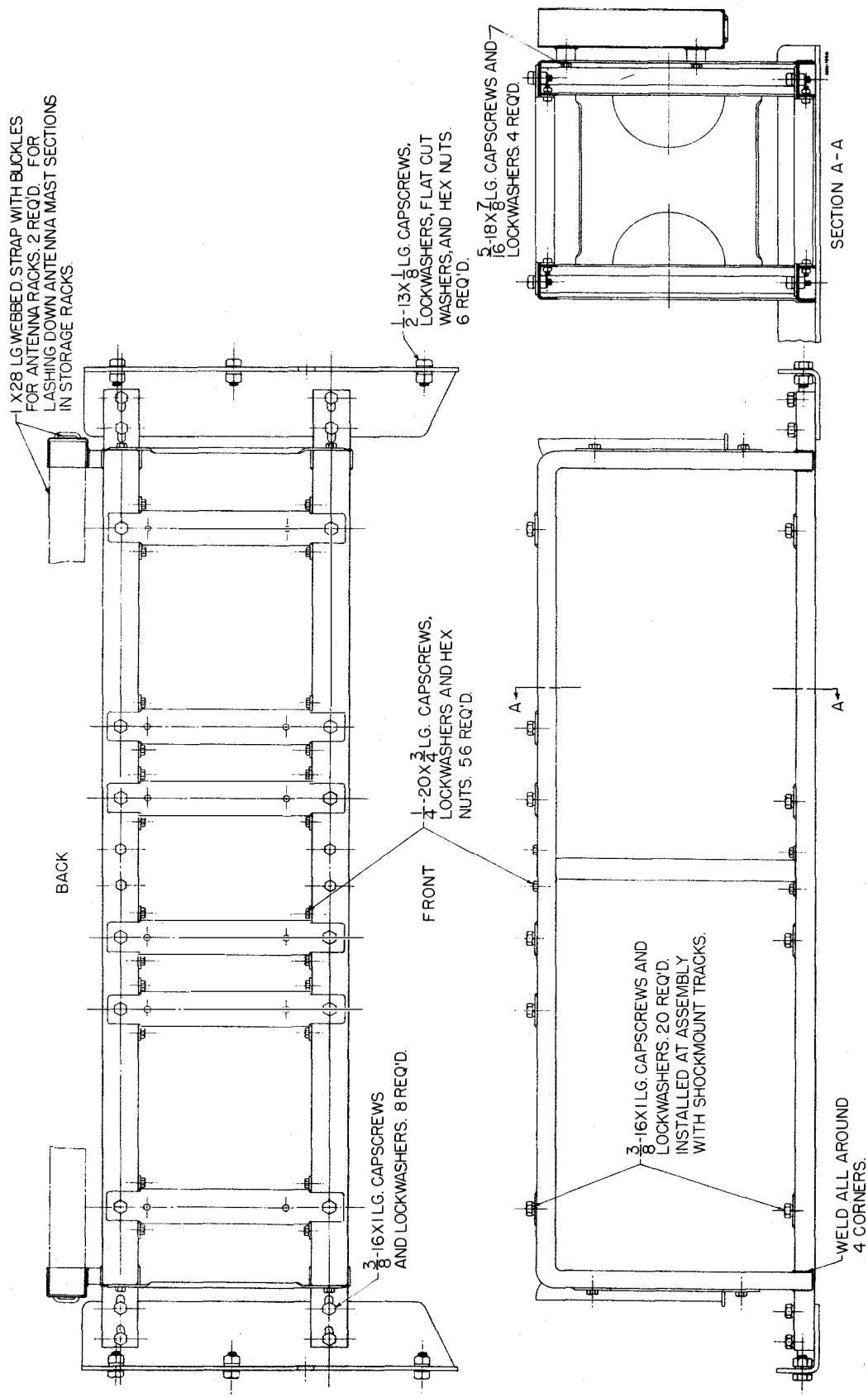


Figure 3-13. Equipment Mounting Frame

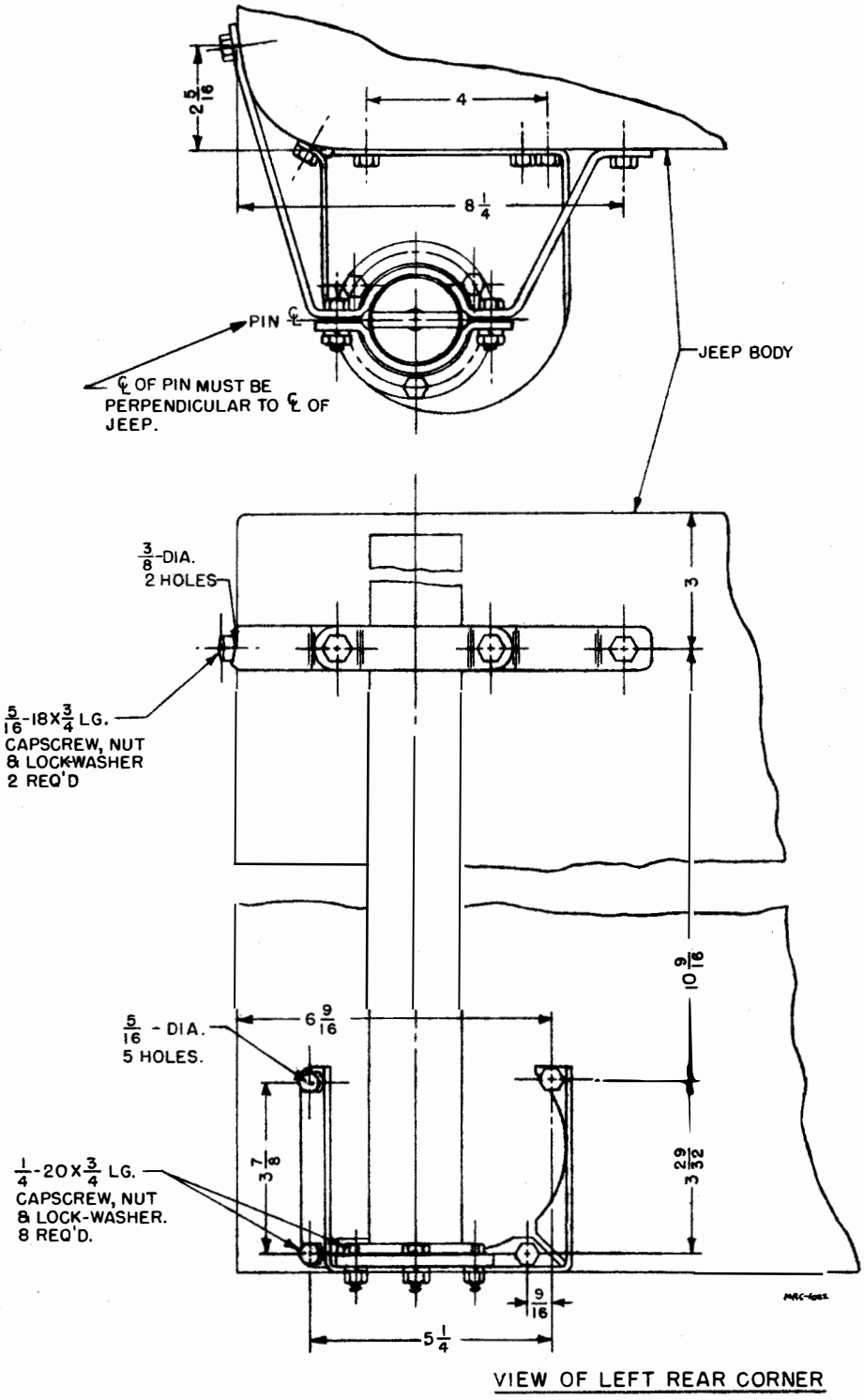
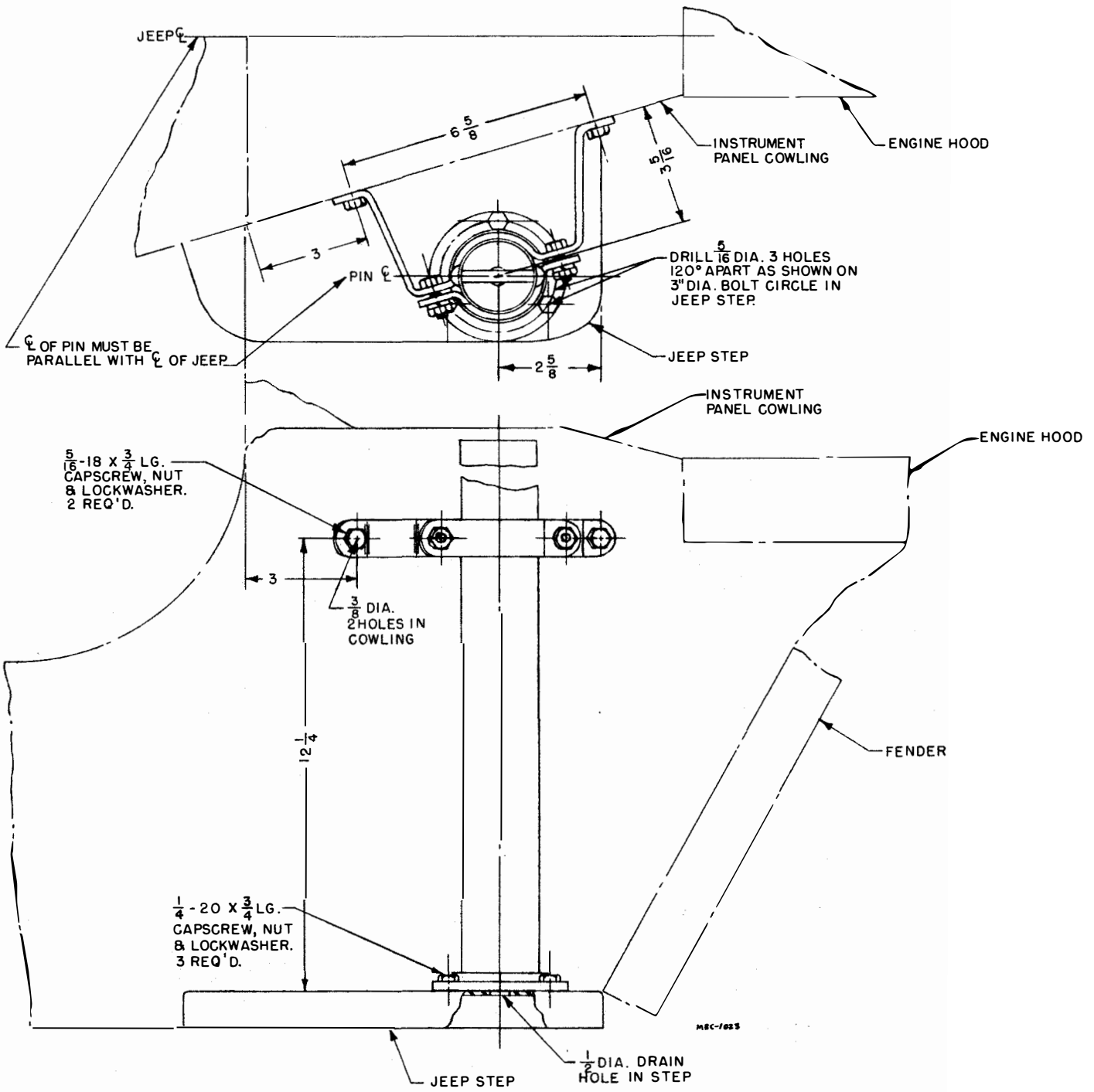


Figure 3-14. Rear Antenna Mount Assembly



VIEW OF RIGHT FRONT SIDE

Figure 3-15. Side Antenna Mount Assembly

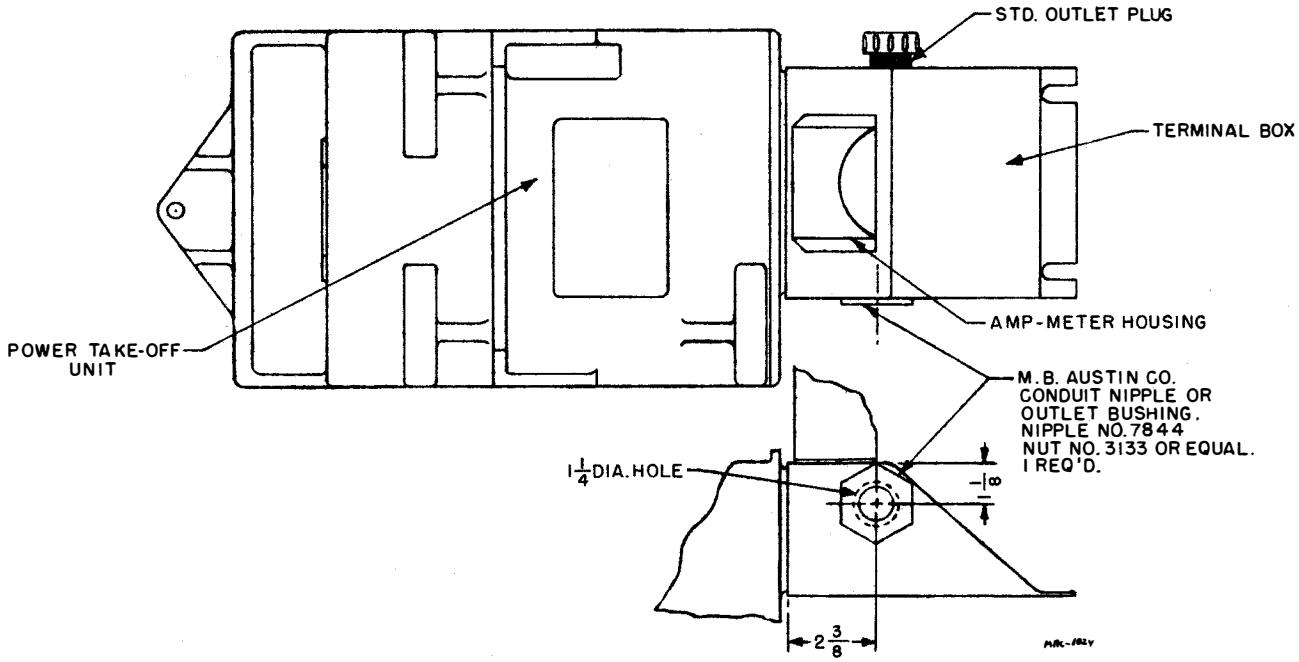


Figure 3-16. Installation of Bushing in Terminal Box

Mount the MAR/RDR radio units on their shock mounts in accordance with the instructions in paragraph 2a(1) in this section, and slide each unit in place on the shock mount base assemblies supplied with the equipment frame. The remote Amplifier Assembly need only be placed on its shock mount base assembly, since it is supplied with its mount in place.

Connect the main power cables, the amplifier patch cords, and the interconnecting cables as shown on Figure 3-11. All cables, except the RDR Navy type -62307 adapter cable, are supplied with the MX-802/MRC Installation Kit. The Navy type -62307 cable adapts the main power cable to the nine-pin receptacle on the RDR panel.

Fasten each antenna clamp (MAR and RDR) to one of the two antenna mast base flanges. Make sure that the insulated dipole rod will point down when installed and that the dipole end of the antenna is as far as possible from the antenna clamp.

The four mast sections supplied are clamped in the storage rack and should be lashed to the rear of the mounting frame assembly when not in use. Straps supplied for this purpose are indicated on Figure 3-13. When the mast sections are stored, each antenna and mounting flange assembly is screwed into one antenna mount on the jeep.

For operating purposes, the mast sections may be assembled in the following combinations:

MOBILE OPERATION—One mast section and antenna in each mount.

SEMI-FIXED STATION OPERATION—Two mast sections and antenna in each mount. This arrangement is shown in Figure 3-17.

EXTREME OPERATION—Four mast sections and antenna in one mount. This provides a single mast approximately 25 feet high. The other antenna is not used and is placed or "stored" in the remaining antenna mount.

Having determined the manner of operation, select the appropriate antenna cable from the two 10-foot, one 14-foot, and one 18-foot lengths supplied and install the antenna cable as follows.

Screw one angle connector, UG-27/AU, into the panel receptacle on the radio equipment, and one onto the antenna. In each case, position the connector so that cable strains or sharp bends will be avoided.

Screw the antenna cable onto the antenna angle connector.

Mount the antenna and mast combination desired. If the EXTREME OPERATION arrangement is to be used, connect one of the UG-29/U unions between two cable sections.

Couple the antenna cable to the UG-27/AU connector at the panel.

Cover the "CVD-10182-D" nameplate on the jeep with the "AN/MRC-12" nameplate if the MAR/RDR combination is supplied, or use the "AN/MRC-13" nameplate if the MAR only is furnished. In either case, use the original screws.

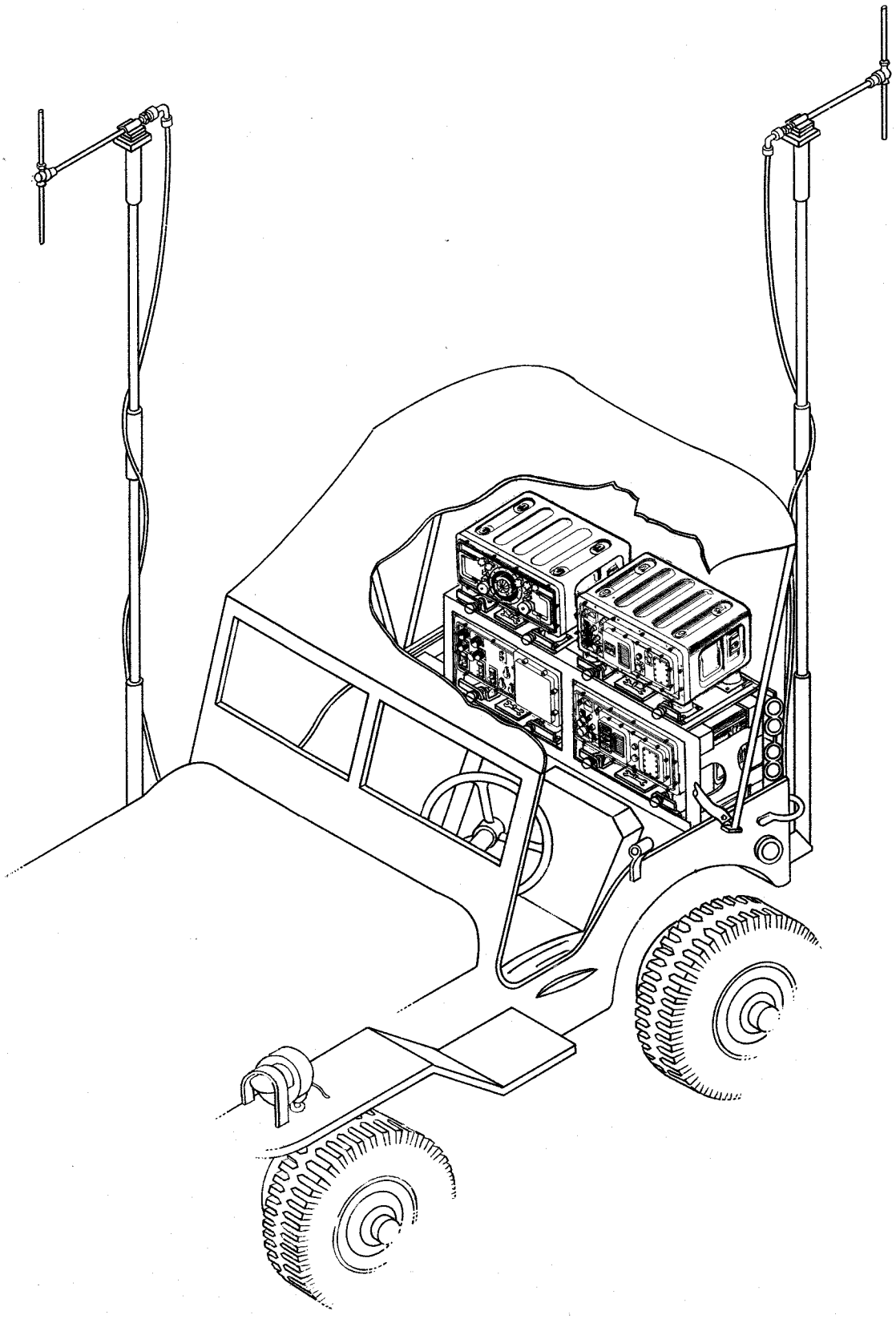


Figure 3-17. Mobile Installation—Semi-Fixed Station Operation

Tag all unused MAR or RDR components not needed for jeep installation and return them to the Depot Spare Parts Stock.

This completes the mobile installation.

Operation of the radio units will be the same as for battery or gasoline engine generator operation in the field, with the addition that the Remote Amplifier Assembly switches must be operated. Refer to paragraph 1 in Section IV for operating instructions. A panel switch turns on the power to the dial light and to the interphone amplifier in the remote amplifier. Two other remote amplifier panel toggle switches permit selection of the RDR or MAR audio output for operation of the remote amplifier speaker.

c. FIELD EQUIPMENT.—The items listed in Table 3-5 are required for a field installation of the RDR equipment.

TABLE 3-5—FIELD EQUIPMENT

MATERIAL SUPPLIED

QUANTITY	DESCRIPTION
1	CRV-46283 Radio Receiver
1	CRV-66147 Antenna Assembly (See Table 1-3 for list of components)
1	CAAQ-10525 Shipping Chest (See Table 1-4 for list of components)
1	CANR-10621 Shipping Chest (See Table 1-4 for list of components)
1 set	Equipment Accessories (See Table 1-2 for list of components)
1 set	Equipment Spare Parts (See Table 8-2, pages 8-2 to 8-55 inclusive, for list of components)
1 set	Equipment Spare parts, Gasoline Engine Generator Set (See Table 8-2, pages 8-68 to 8-81 inclusive, for list of components)

MATERIAL REQUIRED BUT NOT FURNISHED

DESCRIPTION	NAVY TYPE	OBTAIN FROM
Gasoline, 1 gallon	High Test	Naval Stores
Lubricating Oil, 1 quart	See Text	Naval Stores

To make certain that all required components are available and in operating condition, the complete RDR equipment (except the Equipment Spare Parts) should be set up, operated, and repacked before being taken into the field. The procedure which follows applies specifically to setting the equipment up for the first time. Subsequent installations will be similar in nature. The paragraphs headed "Repacking for Field Use" will indicate all differences.

(1) MOUNTING THE RECEIVER.

(*a*) SEPARATE INSTALLATION.—When the receiver is used as a separate installation in the field, it may be placed on any convenient level surface.

(*b*) COMBINED INSTALLATION. — When used in the field in combination with MAR equipment, the receiver may be rigidly attached to the top of the MAR Equipment Accessories box by means of two CRV-10505 Cabinet Fasteners. Four of these fasteners are packed in the CAAQ-10522 Shipping Chest which is part of the MAR Field Application Kit. To make such an installation proceed as follows:

Step 1. Slide the knob at the end of the fastener out to the extreme length of its sliding stem. Rotate the knob to the left until the button members fit freely into the holes in the keyhole slots in the equipment cases.

Step 2. Place two fasteners on top of the accessory case with the button members in the holes of the keyhole slots.

Step 3. Place the RDR receiver on top of the fasteners with the holes in the keyhole slots over the buttons on the fasteners. See Figure 3-18.

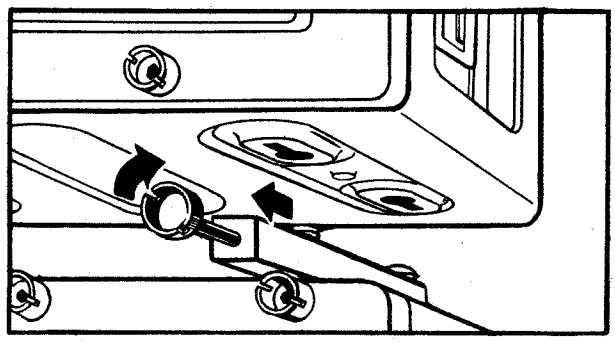


Figure 3-18. Attaching Cabinet Fasteners

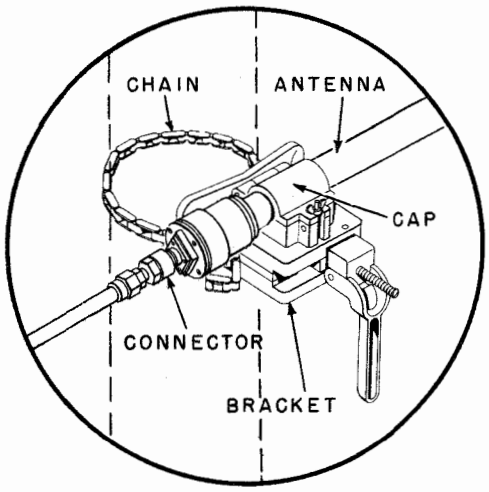


Figure 3-19. Antenna Vise for Field Applications

Step 4. Turn knob to right to clamp cases together. Then slide the knob extension so that it does not protrude beyond the panel.

(2) ANTENNA ASSEMBLY, NAVY TYPE CRV-66147, AND INSTALLATION.—To assemble the antenna for field use proceed as follows:

Step 1. Remove antenna body, radiating rods, and wrench from CRV-66147 Antenna Assembly.

Step 2. Remove the shipboard mounting bracket from the antenna body.

Step 3. Select the rod with the coarse thread and start the threaded end into the tapped hole in the casing at the end of the antenna body. Insert the small end of the wrench in the hole in the rod and screw the rod in until it is bottomed in the hole. Use open end of wrench to tighten the nut on the rod against the antenna body.

Step 4. Mount the remaining rod in the stud at the center of the insulator on the antenna in a manner similar to that described in Step 2. Do not apply excessive force in tightening or the insulator may be damaged.

To install the antenna in the field, proceed as follows:

Step 1. Remove the antenna vise assembly from the antenna carrying case which is packed in the CAAQ-10525 Shipping Chest.

Step 2. Firmly attach the vise to a tree or other convenient support by means of the chain clamp. The assembly should be located in a clear space and should be as high as possible. See Figure 3-19. If the RDR receiver is to be used in combination with the MAR equipment, there should be a space of at least ten feet between the two antennas.

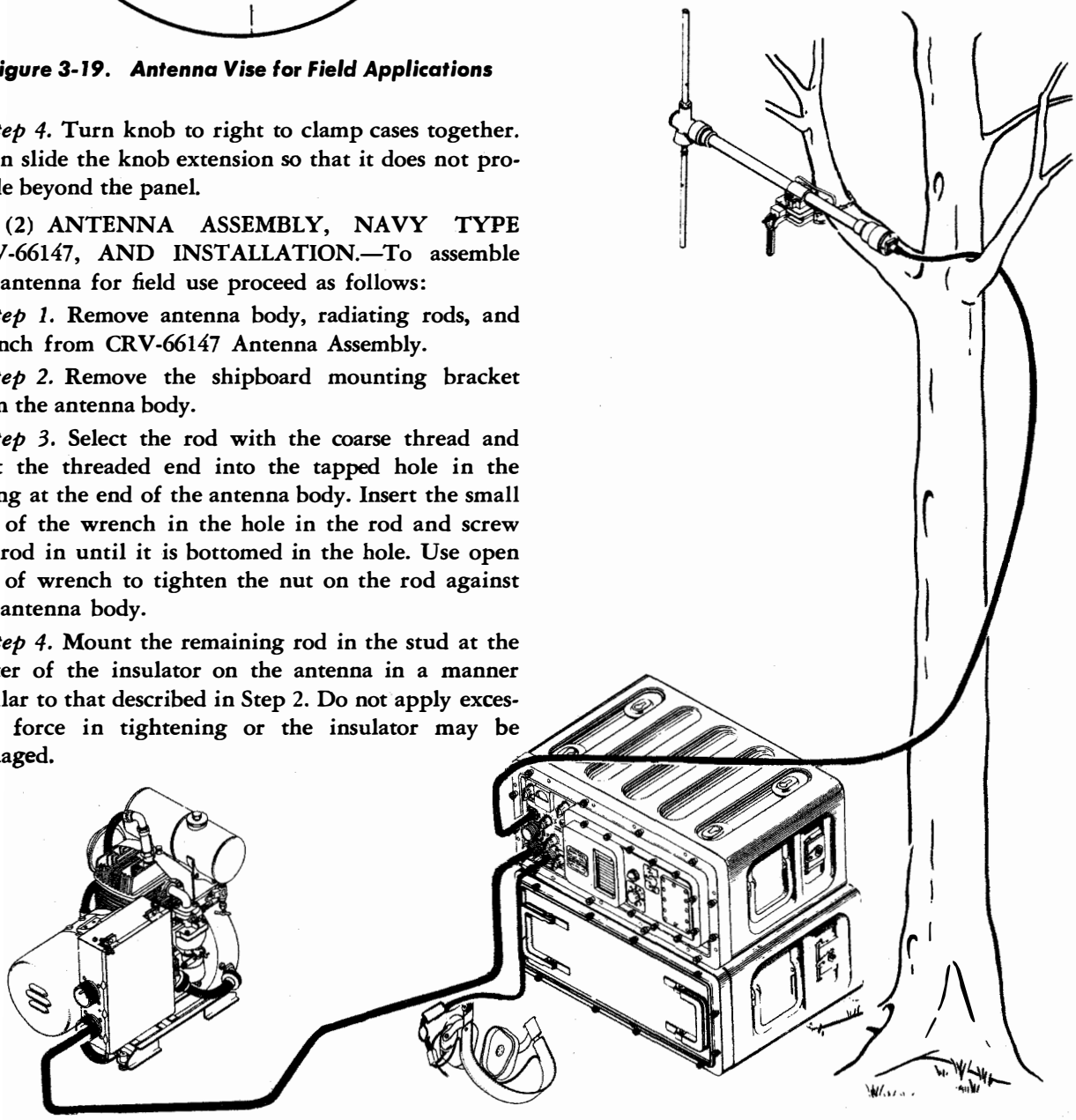


Figure 3-20. Typical Field Installation

Step 3. Loosen wing nut on vise, raise the hinged cap, and insert the tubular body of the antenna; then lower the hinged cap, insert pivoted bolt in the cap, and tighten the wing nut. The connector end of the antenna body should be as close to the vise as possible and the antenna rods should be vertical, with the insulated radiating rod pointing down. Figure 3-20 illustrates a typical installation.

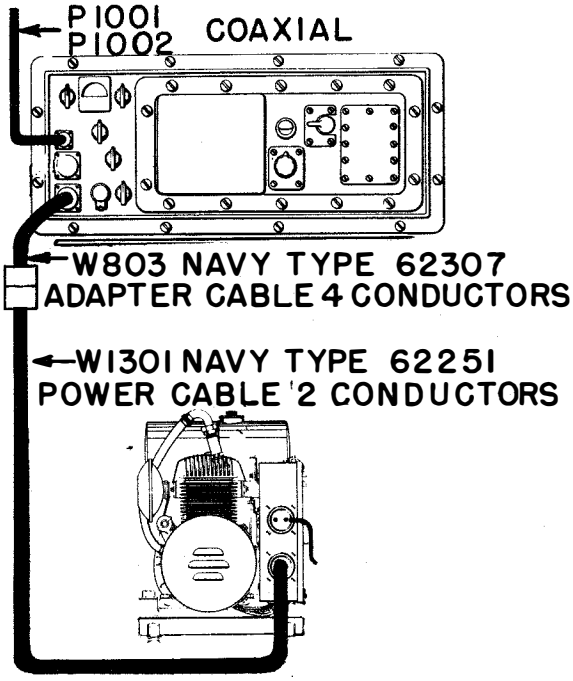


Figure 3-21. Cabling of RDR Receiver CRV-46283 and Gasoline Engine Generator Set CCW-73037

(3) GASOLINE ENGINE GENERATOR SET, NAVY TYPE CCW-73037.—Installation of this unit involves only the removal of the CBDV-10620 Carrying Case from the CANR-10621 Shipping Chest, the removal of the generator set from the carrying case, and the placing of the generator set on a convenient level space within 25 feet of the receiver site.

(4) INTERCONNECTIONS.

(*a*) ANTENNA TRANSMISSION LINE.—The antenna transmission line should be connected between the ANT connector on the receiver and a similar connector on the body of the antenna.

When the distance between the antenna and the receiver is not more than ten feet, use the ten-foot RG 8/U cable which is packed in the Antenna Carrying Case. The Antenna Carrying Case is packed in the CAAQ-10525 Shipping Chest.

When the distance is more than ten feet but not more than 50 feet, use the 50-foot RG8/U cable which is packed in the CAAQ-10525 Shipping Chest.

When the distance is more than 50 feet but not more than 60 feet, use both cables previously mentioned. Join the cables together by means of the UG-29/U coupling which is packed with the CRV-66147 Antenna Assembly.

(*b*) POWER SUPPLY.

1. GASOLINE ENGINE GENERATOR SET.—Remove the ten-inch Type -62307 cable from the Equipment Accessories box and the 25-foot Type -62251 cable from the CANR-10621 Shipping Chest and connect these cables together. Connect the Type -62307 cable to the POWER receptacle on the receiver and the Type -62251 cable to either one of the two connectors which are located on the Gasoline Engine Generator Set control box, as shown in Figure 3-21.

2. STORAGE BATTERY.—Although storage batteries are not included with the RDR equipment, provision has been made in that equipment for operation from a 13-volt storage battery. When the equipment is to be operated from such a source, proceed as follows:

Remove the ten-inch Type -62307 cable and the five-foot Type -62223 cable from the Equipment Accessories box and connect these cables together. Connect the Type -62307 cable to the POWER receptacle on the receiver and the Type -62223 cable to the battery as shown in Figure 3-22. A grounded battery can only be used when the negative terminal is grounded. Connect

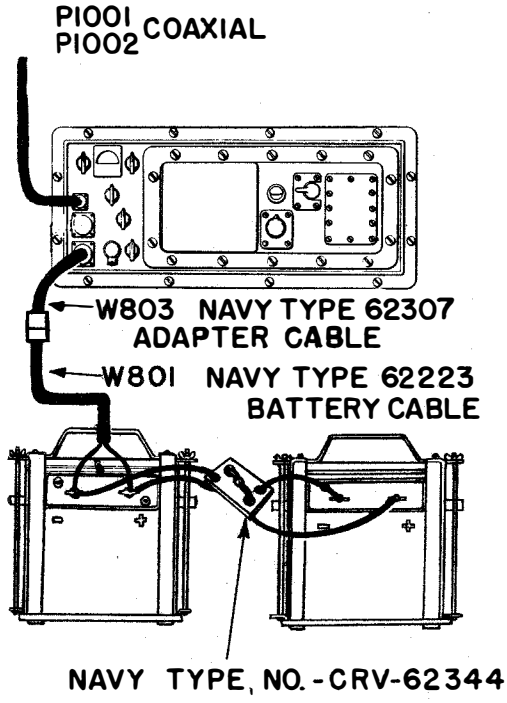


Figure 3-22. Cabling of RDR Receiver CRV-46283 and Storage Battery

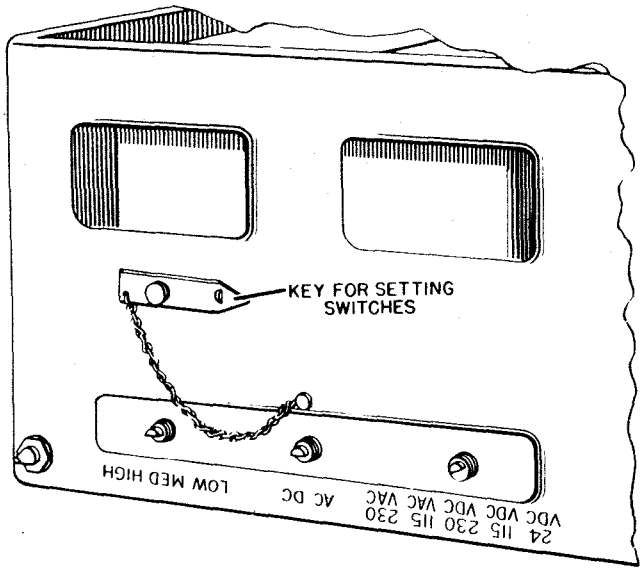


Figure 3-23. Switches on Rear of Chassis of AC-DC Power Supply Unit CLG-20379

the red clip to the positive terminal and the black clip to the negative terminal.

3. INITIAL ADJUSTMENTS.

a. POWER SUPPLY.

(1) AC-DC POWER SUPPLY, NAVY TYPE CLG-20379.—Although this unit is not included as part of the RDR equipment, it is included with the MAR equipment and may be used to provide operating power for the RDR equipment.

When first installed, it is always necessary to know whether the supply is A-C or D-C and to measure the supply-line voltage. It is also necessary to position the input switches which are located on the rear of the chassis; to check the fuses which are located on the bottom of the chassis; and to connect the unit to the power source.

(*a*) SWITCHES.—Remove the power supply chassis from its case and stand it on one end. Using the switch key which is attached to the rear of the chassis, as shown in Figure 3-23, rotate the AC/DC switch to the appropriate position, the input voltage switch to the position which corresponds to the power supply line characteristic, and the LOW-MED-HIGH switch to the position indicated in the following tabulations:

SWITCH SETTING	INPUT VOLTAGE		
	26V D.C.	115V A.C. or D.C.	230V. A.C. or D.C.
HIGH	Above 27.3	Above 116	Above 232
MED	24.7—27.3	109—116	218—232
LOW	Below 24.7	Below 109	Below 218

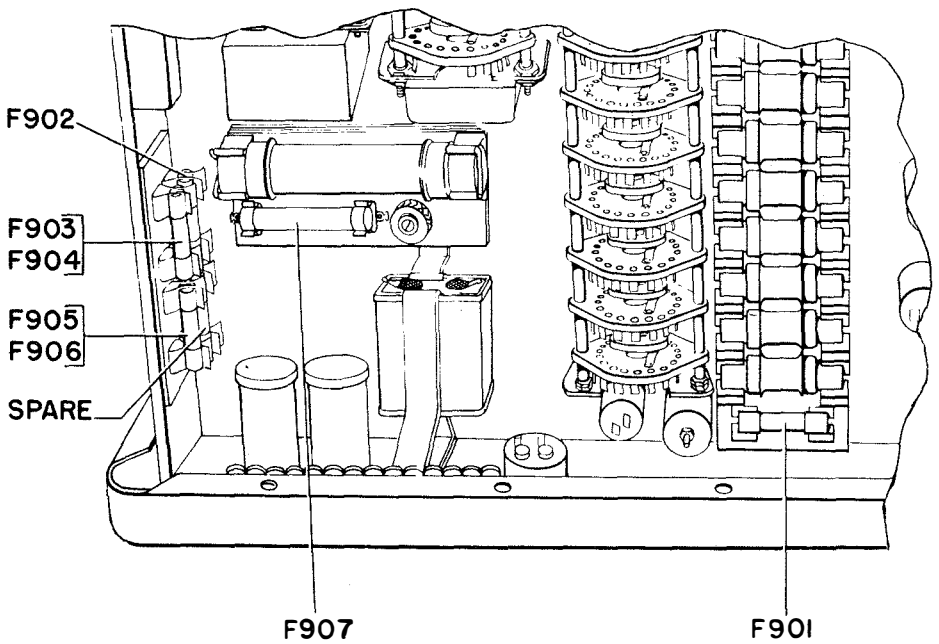


Figure 3-24. Fuses in AC-DC Power Supply Unit CLG-20379

Having completed the preceding adjustments, replace the switch key in its position on the rear of the chassis and change the input voltage indicating plate on the front panel to agree with the supply line characteristics.

(*b*) FUSES.—When first installing the AC/DC Power Supply, make certain that the fuses indicated in the following tabulation are installed. The location of each fuse is shown in Figure 3-24.

FUSE		POWER SOURCE				
		VOLTS A.C.		VOLTS D.C.		
SYMBOL	RATING	115	230	26	115	230
F901	25 A.			X		
F902	10 A.	X	X		X	X
F903	10 A.	X				
F904	5 A.		X			
F905	10 A.				X	
F906	5 A.					X

It should be noted that there are always at least two unused positions in the four-position fuse block. These positions may be used to hold spare fuses.

(*c*) CONNECTION TO POWER SOURCE.—When connecting the unit to 115- or 230-volt a-c power supply lines, remove the AN-3106-20-4S four-conductor connector (P902) from the MAR Equipment Accessories box and attach this connector to a number 10 or 12 two-conductor cable (not supplied) of sufficient length to reach between the 115/230V. AC/DC INPUT receptacle on the power supply unit and the power supply lines, as shown in Figure 3-1. The cable should be attached to terminals B and D in the connector.

The CTD-53518 Electrical Noise Suppressor should always be used when the AC/DC Power Supply unit is to operate from d-c power supply lines. Complete instructions for such an installation are given in the Electrical Noise Suppressor instruction book, NAVSHIPS 900,998.

(2) GASOLINE ENGINE GENERATOR SET, NAVY TYPE CCW-73037.

(*a*) AIR CLEANER.—Make certain that the air cleaner is in place in the carburetor intake and that it is free of all waterproof wrapping.

(*b*) CHOKE.—Make certain that the carburetor choke is not obstructed.

(*c*) SPARK PLUG.—Remove the desiccant plug from the spark plug hole and install the spark plug. Connect the shielded lead to the plug.

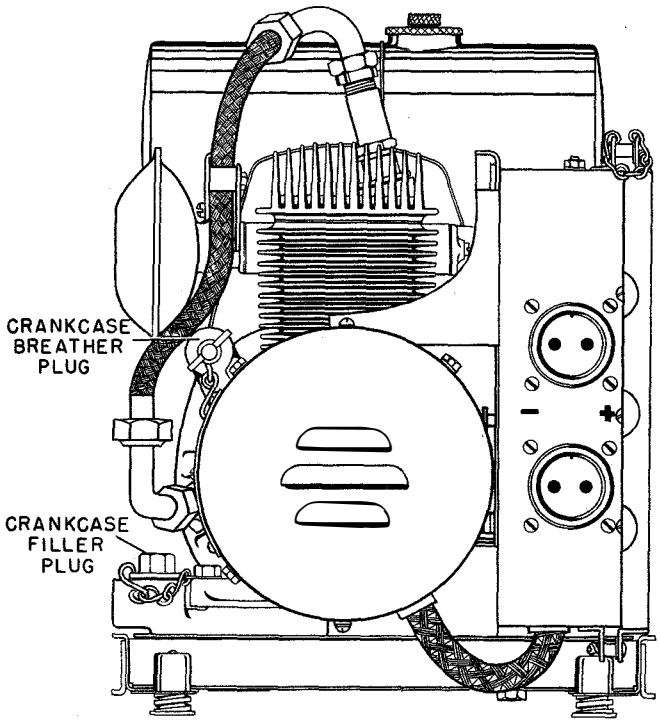


Figure 3-25. Lubrication Points on Gasoline Engine CCW-73037

(*d*) LUBRICATION. — Remove the captive filler and breather plugs from the crankcase. See Figure 3-25 for location of these plugs. Using oil of the type indicated in the Lubrication Chart, Table 3-6, fill the crankcase up to the bottom of the filler plug opening.

TABLE 3-6
LUBRICATION CHART

NAVY CODE	STOCK NO.	COMMERCIAL DESIGNATION	TEMPERATURE
No. 9250	14-0-2187, 5 gal.	SAE-20	0°C (+32°F) and up
No. 9110	14-0-2162, 5 gal.	SAE-10	Below 0°C (+32°F)

When the engine is to be operated in sub-zero temperatures, the crankcase lubricant should be diluted. Use gasoline or wax-free kerosene and SAE-10 oil in the proportions shown for the temperatures listed.

TEMPERATURE	PROPORTION
−23°C (−10°F)	9 parts oil, 1 part kerosene
−29°C (−20°F)	8 parts oil, 2 parts kerosene
−34°C (−30°F)	7 parts oil, 3 parts kerosene

After the crankcase has been filled with lubricating oil, replace the oil filler and breather plugs. Make certain that the CAD-18003 oil can is filled with lubricating oil of the same type as that used in the engine crankcase and that it is then replaced in the CANR-10621 Shipping Chest.

(*e*) GASOLINE.—Remove the filler cap from the fuel tank, then fill the tank with clean high-test gasoline. The engine will operate satisfactorily from gasolines having an octane rating which is between 68 and 100. Either leaded or unleaded gasoline can be used; however, because of reduced carbon deposit, unleaded gasoline should be used if it is available. After the fuel tank has been filled, replace the fuel tank cap; then make certain that the CAD-18002 gasoline can is filled with gasoline of the same type as that used in the fuel tank. Replace the CAD-18002 gasoline can in the CANR-10621 Shipping Chest.

(*f*) OPERATING PRECAUTIONS.—The engine should not be operated on an incline with the pulley end on the low side. If it is necessary to place the unit on sloping ground, it must be so arranged that either the generator end or one side is low. When the engine is running, the hinged float actuates the needle valve to maintain the fuel in the carburetor at the proper level. When the engine is stopped, the fuel level rises until the float is lifted sufficiently to close the valve. However, since the float is hinged, and if the machine is tilted sufficiently in a direction such that the hinge is on the low side, the fuel level cannot rise high enough to close the valve before the fuel starts to overflow through the air intake. Fuel leakage will occur from this cause if the engine is inclined with the pulley end low, even if the machine is not running. This can be prevented only by shutting off the fuel, by closing the valve in the fuel line directly under the fuel tank and then allowing the engine to run until the fuel in the carburetor is exhausted.

Proper operation of this unit in rain can be obtained by protecting the carburetor air intake from the direct entrance of water. If rain is allowed to beat directly against the carburetor side of the engine, enough water may enter the air intake either directly or as a result of splashing to stop the engine. This is aggravated by the suction created by the air flowing into the intake. In heavy rain, therefore, the carrying case or its cover, or any other convenient material, should be used to improvise a shelter for the carburetor.

b. RADIO RECEIVER, NAVY TYPE CRV-46283.

(1) CRYSTAL OVEN, NAVY TYPE CFT-40148, AND CRYSTALS.—The CFT-40148 Crystal Oven and all crystals used in it are Government-furnished equipment. Original and/or replacement supplies may be obtained through the usual Naval Supply channels. To make certain that the required crystals are in place proceed as follows:

Step 1. Remove the selector panel cover, then remove the CFT-40148 Crystal Oven from the jack plate which is located on the front panel of the receiver (Figure 3-26).

Step 2. Remove the eight screws which hold the crystal oven cover in place. Remove the cover and the sealing gasket.

Step 3. Loosen the four screws which fasten the oven heating unit to the crystal mounting plate. Using a screwdriver at each side of the terminal end, carefully

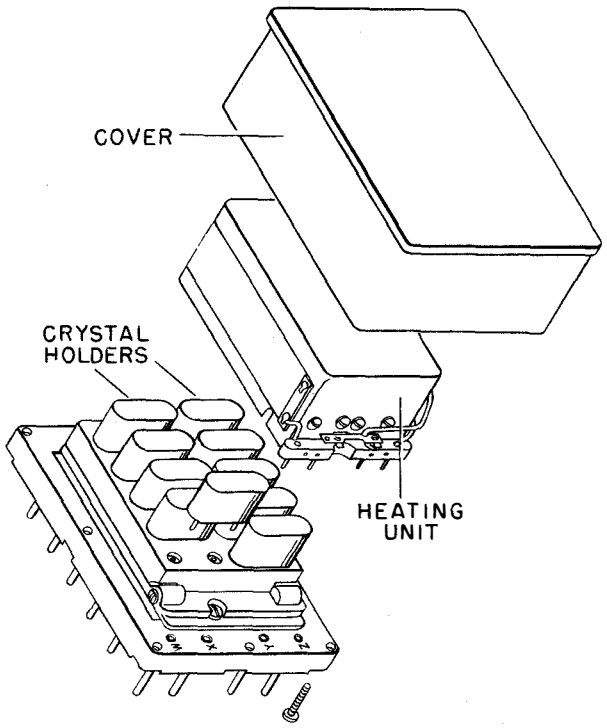


Figure 3-26. Dismantling Crystal Oven CFT-40148

pry the heating unit from the crystal mounting plate.

Step 4. Check for presence of crystals. Although a crystal for any frequency between the limits of 4725.93 and 7781.48 kilocycles can be used in any position, it is suggested that the lowest-frequency crystal be placed in position one and that crystals for progressively higher frequencies be placed in progressively higher-numbered positions.

Step 5. Reassemble the crystal oven, replace it in the jack plate, and replace the selector panel cover.

(2) HEADSET, NAVY TYPE CW-49507.—Remove the CW-49507 Headset and the CW-49534 Headset Extension Cord from the Equipment Accessories box, then connect the extension cord between the headset and the PHONES jack on the front panel of the receiver.

4. INITIAL APPLICATION OF POWER.

a. GASOLINE ENGINE GENERATOR SET, NAVY TYPE CCW-73037.—To start the gasoline engine proceed as follows:

Step 1. Make certain that the POWER switch on the radio receiver is in the OFF position and that the BATTERY CHARGE ONLY—RADIO switch on the generator set control box is in the RADIO position (Figure 3-27).

Step 2. Remove the crankcase breather plug.

Step 3. Open the fuel line valve. This valve is located at the bottom of the fuel tank.

Step 4. Unscrew fuel tank cap vent two turns.

Step 5. Close the carburetor choke.

Step 6. Engage the knotted end of the engine starting rope in the grooved pulley slot, then wrap the rope in the slot around the pulley. The rope should be wrapped in a clockwise direction and the entire length of rope should be used.

Step 7. Grasp the rope handle with one hand while steadying the engine with the other, then spin the engine shaft by exerting a quick pull on the starter rope.

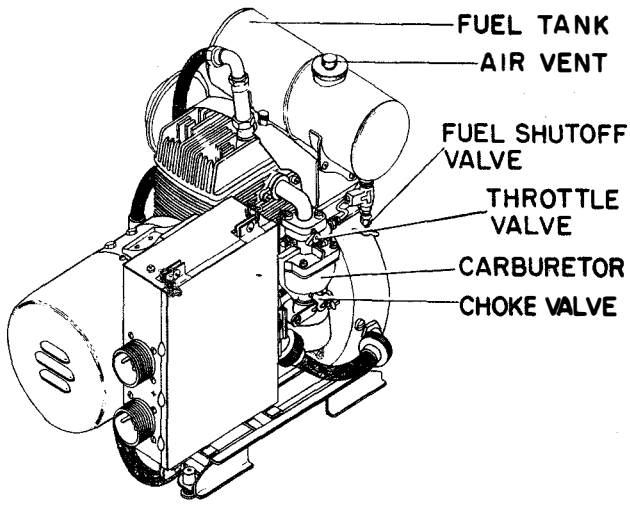


Figure 3-27. Gasoline Engine Controls

If the engine starts, open the carburetor choke slowly to full opening. If the engine fails to start, open the carburetor choke and repeat steps 6 and 7. Should the engine fail to start after several attempts with the choke open, repeat the procedure, closing the choke for one pull of the rope and then opening it for several pulls.

After the engine has started, allow it to warm up for approximately five minutes before placing a load on the generator. In severely cold weather, the choke may be left partially closed and the cooling air intake covered until the engine warms up.

b. RADIO RECEIVER, NAVY TYPE CRV-46283.

(1) STARTING.—To start the receiver proceed as follows:

Step 1. Set the controls on the front panel of the receiver (See Figure 3-28) to the positions indicated in the following tabulation:

CONTROLS

NOMENCLATURE	SETTING
OUTPUT LEVEL	0
*SIL SW	OFF
**NOISE LIM SW	OFF
SIL LEVEL	OFF
CHANNEL	1
METER SWITCH	4

*Equipment Serial Numbers 1—500
**Equipment Serial Number 501—2598

Step 2. When the receiver is obtaining its operating power from the CLG-20379 AC-DC Power Supply unit, operate the DYN-POWER-PU switch, S802, to the PU ON position.

When the receiver is obtaining its operating power from the CCW-73037 Gasoline Engine Generator Set or other 13-volt d-c power source, operate the DYN-POWER-PU switch, S802, to the DYN ON position.

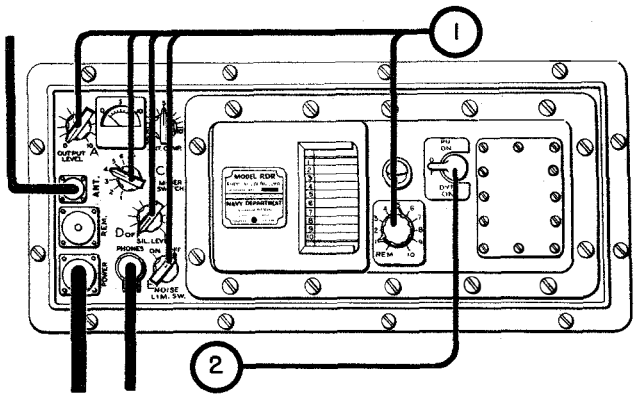


Figure 3-28. RDR Receiver Panel Controls

(2) VOLTAGE AND CURRENT CHECK.—After the receiver has been started, allow the tubes to heat up for approximately five minutes; then check the operating voltages and currents. Refer to the calibration card which is attached to the selector cover for data on a particular receiver. Limiting values are given in the following tabulation:

TABLE 3-7
METER INDICATION LIMITS

METER SWITCH POSITION	METER INDICATION LIMITS		CIRCUIT
	LOW	HIGH	
1	6.0	8.5	Combined Plate Current: Oscillator-doubler, first tripler, and second tripler
2	2.5	—	Grid Current: Third tripler
3	4.5	8.5	Plate Current: Third i-f
4	6.5	8.5	Plate Volts
5	7.5	8.5	A-C Filament Volts
6	8.0	9.0	D-C Filament Volts: Negative grounded
7	8.0	9.0	D-C Filament Volts: Positive grounded

(3) TUNING.—With the receiver voltages and currents within the limits listed in the preceding tabulation, set the channel selectors for the frequencies to be used as follows:

Step 1. Set the controls on the front panel of the receiver to the positions indicated in the following tabulation (Figure 3-29):

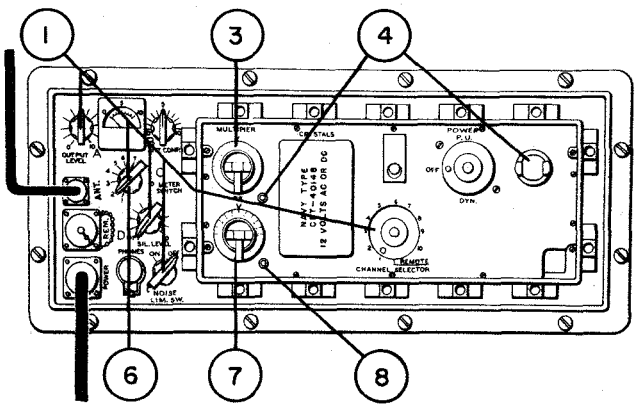


Figure 3-29. RDR Receiver Tuning Controls

CONTROLS

NOMENCLATURE	SETTING
OUTPUT LEVEL	5-6
*SIL SW	OFF
**NOISE LIM SW	OFF
SIL LEVEL	OFF
CHANNEL	1
METER SWITCH	2

*Equipment Serial Numbers 1—500
**Equipment Serial Numbers 501—2598

Step 2. Remove the selector cover.

Step 3. Unlock the MULTIPLIER dial by raising lever in center of dial.

Step 4. Remove the vernier adjuster from the clip which is located near the upper right-hand corner of the selector panel, and insert into the hole adjacent to the MULTIPLIER dial.

Step 5. Using the vernier adjuster, rotate the multiplier dial to the position at which maximum indication is obtained on the panel meter. Lock the dial and remove the vernier adjuster. Correct dial setting will be approximately proportional to the frequency: 225 mc near the lower end of the dial, 390 mc near the upper end.

Step 6. Rotate the METER SWITCH to position 3.

Step 7. Unlock the R-F dial.

Step 8. Insert the shaft of the vernier adjuster into the hole adjacent to the R-F dial; then, using the vernier adjuster, rotate that dial (and antenna compensator C201) to the position at which maximum background noise is heard in the headset. If an incoming signal is heard, the dial should be rotated to the position at which a dip in the panel meter indication is obtained. Lock the dial and remove the vernier adjuster. Correct dial setting will be approximately proportional to the frequency: 225 mc near the lower end of the dial, 390 mc near the upper end.

Having completed the preceding adjustments, the receiver is correctly tuned for the reception of signals on channel one. The remaining nine channels should be tuned in a similar manner, repeating steps 3 to 8 inclusive for each position of the CHANNEL switch.

After all channels have been tuned, replace the vernier adjuster in its clips on the selector panel, then replace the selector cover. Make certain that the selector and power switch knob couplings engage before replacing the cover retaining screws.

(4) STOPPING.—To stop the receiver, operate the SIL SW or NOISE LIM SW to the OFF position, then operate the DYN-POWER-PU switch to the OFF position.

If the receiver is obtaining its power from the Gasoline Engine Generator Set, stop the gasoline engine by closing the throttle.

5. PERFORMANCE CHECK.

After the receiver has been tuned as described in the preceding paragraph, the overall performance of the equipment should be checked. Observe the effect on noise and/or incoming signals as each control is operated. Correct operation is indicated when the results referenced in the following procedure are obtained.

Step 1. Start the receiver, then operate the CHANNEL selector switch to the position at which signals on the highest frequency in use are heard.

Step 2. Rotate the OUTPUT LEVEL control to the position at which the received signal produces comfortable amplitude in the headset. Signal amplitude and background noise should increase as the control is rotated in a clockwise direction.

Step 3. Rotate the ANT COMP control to the position at which best response to the received signal is obtained. When set for best reception of the highest frequency to be used, this setting should be recorded and should not be changed when the receiver is operated on lower frequencies.

Step 4. On equipments bearing serial numbers from 1 to 500 inclusive, operate the SIL SW to the ON position; then rotate the SIL LEVEL control in a clockwise direction. As the control is rotated, a point will be reached where background noise will not be heard. Leave the control in this position, provided it is not beyond the point where the weakest signal to be received can be heard.

On equipments bearing serial numbers from 501 to 2598 inclusive, rotate the SIL LEVEL control in a clockwise direction. As the control is rotated, a point will be reached where background noise will not be heard. Leave the control in this position, provided it is not beyond the point where the weakest signal to be received can be heard.

Step 5. On equipments bearing serial numbers from 501 up, operate the NOISE LIM SW to the ON position. Noise peaks will be cut off. (On equipments bearing serial numbers from 1 to 500 inclusive, the noise limiter is normally operative.)

Step 6. Operate the CHANNEL selector switch successively to each of its ten positions, listening for signals on each preset frequency and repeating steps 2 and 4 at each position.

6. REPACKING FOR FIELD USE.

To repack the RDR Equipment for field use, proceed as follows:

Step 1. Stop the receiver and the gasoline engine.

Step 2. Disconnect the antenna transmission line and the power supply cables from the receptacles on the front panel of the receiver.

Step 3. Screw the captive receptacle covers in place over the receptacles, then replace the cover on the receiver. Tighten all screws.

Step 4. Detach the receiver from the cabinet fasteners or shock mount, then place the receiver in the padded space provided for it in the CAAQ-10525 Shipping Chest.

Step 5. Disconnect the antenna transmission line from the antenna, then dismount the antenna and the antenna mounting vise.

Step 6. Dismount the antenna rods from the antenna body.

Step 7. Remove the antenna carrying case from the CAAQ-10525 Shipping Chest, then remove the two rubber plugs and the cap with chain attached from the carrying case.

Step 8. Insert the rubber plugs in the tapped holes from which the antenna rods were removed, and screw the cap on the transmission line receptacle. Fasten the end of the chain under one of the screws which hold the antenna receptacle to the antenna body.

Step 9. Stow the ten-foot transmission line, antenna mounting vise, antenna body, antenna wrench, and radiating rods in the antenna carrying case; then replace the carrying case in the CAAQ-10525 Shipping Chest. If the 50-foot length of antenna transmission line was used, stow it in the space provided for it in the Shipping Chest.

Step 10. Close and lock the CAAQ-10525 Shipping Chest.

Step 11. Disconnect the 25-foot power supply cable from the gasoline engine generator set and stow it in the space provided in the CANR-10621 Shipping Chest.

Step 12. Close the gasoline engine fuel valve and drain the carburetor.

Step 13. Replace and tighten the crankcase breather plug.

Step 14. Tighten the fuel tank breather cap.

Step 15. After the engine has cooled, replace it in the metal carrying case; then replace the carrying case cover and stow the case in the space provided in the CANR-10621 Shipping Chest.

Step 16. Make certain that the gasoline and oil cans are full of gasoline and oil respectively, then stow them in the space provided in the CANR-10621 Shipping Chest. Close and lock the chest.

Step 17. Police the area for tools and loose parts.

Step 18. Assemble the CAAQ-10525 and CANR-10621 Shipping Chests, the Equipment Spare Parts box, and the Gasoline Engine Generator Spare Parts box in a group ready for transportation.

Note

UPON COMPLETION OF ANY INSTALLATION OF MODEL RDR EQUIPMENT, ALL TAGS BEARING DATES OF MOISTURE AND FUNGUS PROOFING MUST BE REMOVED FROM THE UNITS AND DESTROYED.

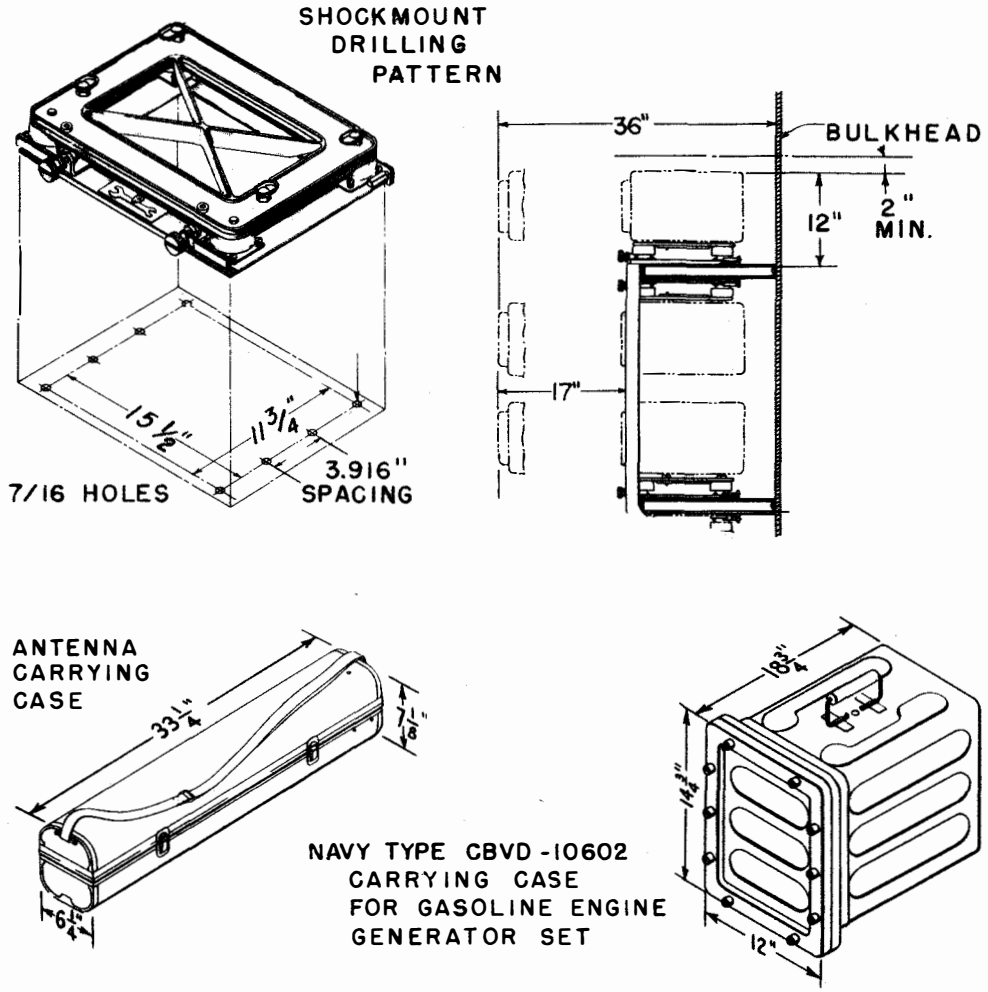


Figure 3-30. Installation Reference Data

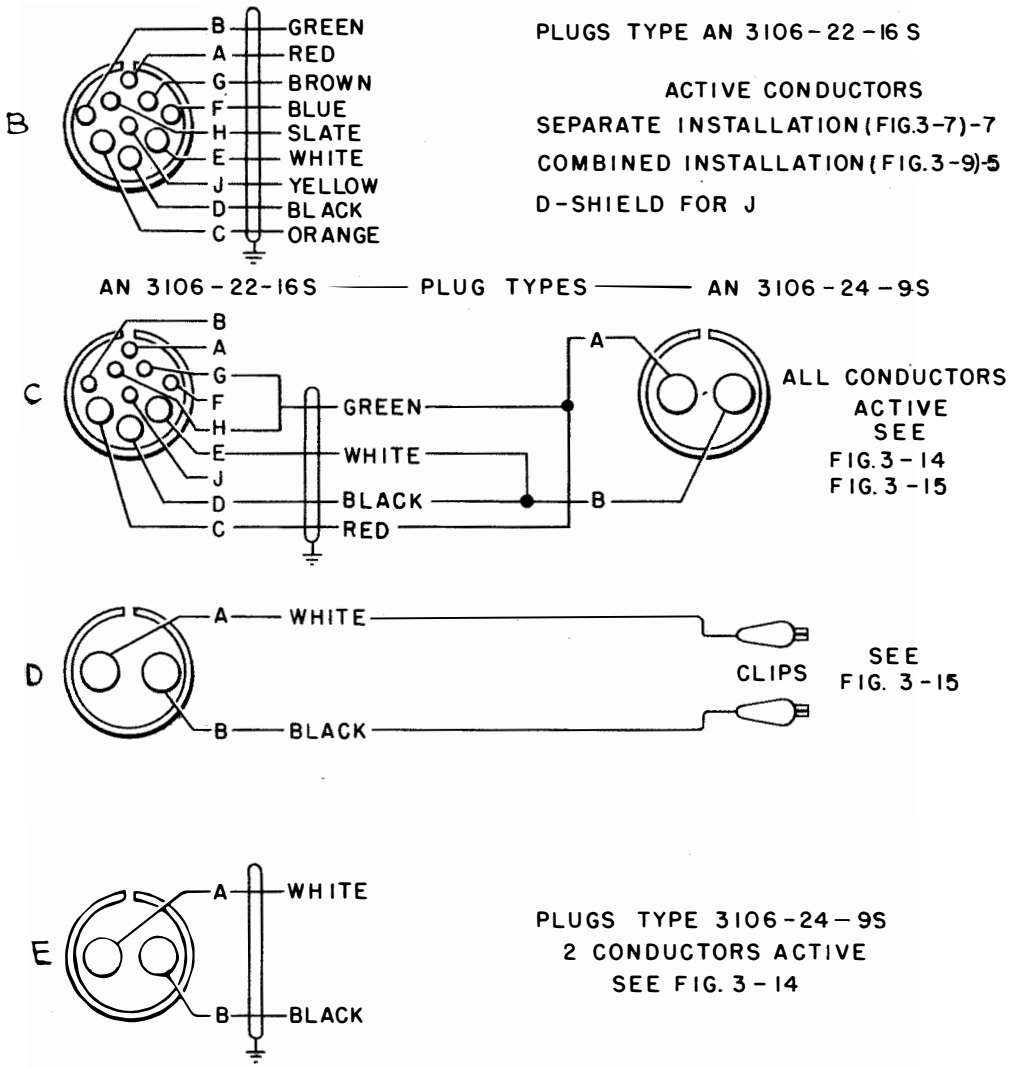


Figure 3-31. Cable Data

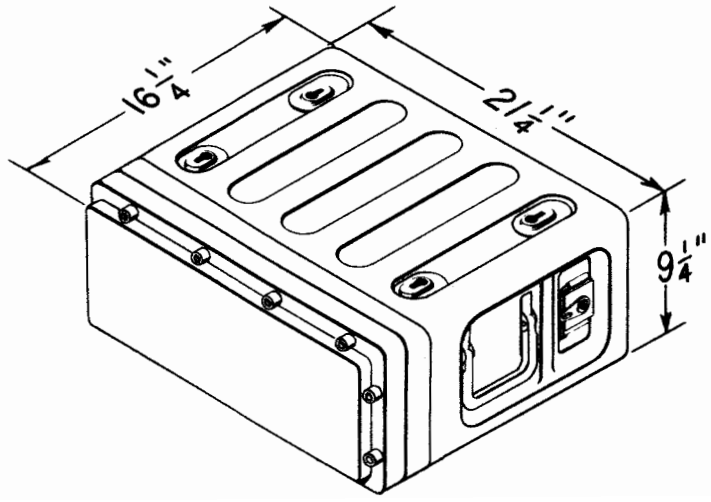


Figure 3-32. RDR Receiver CRV-46283 with Cover

TABLE 3-8
CABLE DATA
FURNISHED WITH EQUIPMENT ACCESSORIES

SYMBOL	NAVY TYPE	FUNCTION	CONNECTS		COND.	LENGTH INCHES
			FROM	TO		
W901	62225	Power	AC/DC Power Supply	Receiver (Z604)	9	96
W803	62307	Adapter	Cables W801 or W1301	Receiver (Z604)	4 2 Parallel Pairs	10
W801	62223	Battery	Battery	Adapter cable W803	2	60
W401	49534	Headset extension	Headset	Receiver (Z402)	2	65
FITTINGS—Plug PL55, Jack JK26						

PLUGS

SYMBOL	NAVY TYPE	USED FOR	CONNECTS
P601	AN 3106-20-6S	Receiver audio output	Receiver (Z603) to remote output
E1007	UG 29/U	Transmission Line	Two Trans. Lines
P1001	UG 21/U	Transmission Line	Antenna to Receiver (J301)
P1002			

CABLES FURNISHED WITH FIELD ACCESSORIES

SYMBOL	NAVY TYPE	FUNCTION	CONNECTS		COND.	LENGTH FEET	PLUG TYPE
			FROM	TO			
W1001	RG 8/U	Trans. Line	Antenna	Receiver (J301)	2	50	UG 8/U
W1002	RG 8/U	Trans. Line	Antenna	Receiver (J301)	2	10	UG 8/U
W1301	62251	Power	Gas. Eng. Gen. Set (J1301)	Adapter Cable W803	2	25	AN 3106 24-9S

SECTION 4
OPERATION

1. GENERAL.

Since the RDR receiver is tuned to ten preset channel frequencies, the operation of the receiver resolves itself into a procedure of selecting an operating channel, by means of the channel selector switch, and adjusting the output and silencer level controls to meet operating conditions. In field operation, it will be necessary to start the gasoline engine generating set to provide power for the receiver; otherwise, operating procedure is identical in the various types of installations.

2. RDR RADIO RECEIVER, NAVY TYPE CRV-46283.

a. RECEIVER CONTROLS.—The controls involved in the operation of the receiver are indicated and their functions summarized in Figure 4-1.

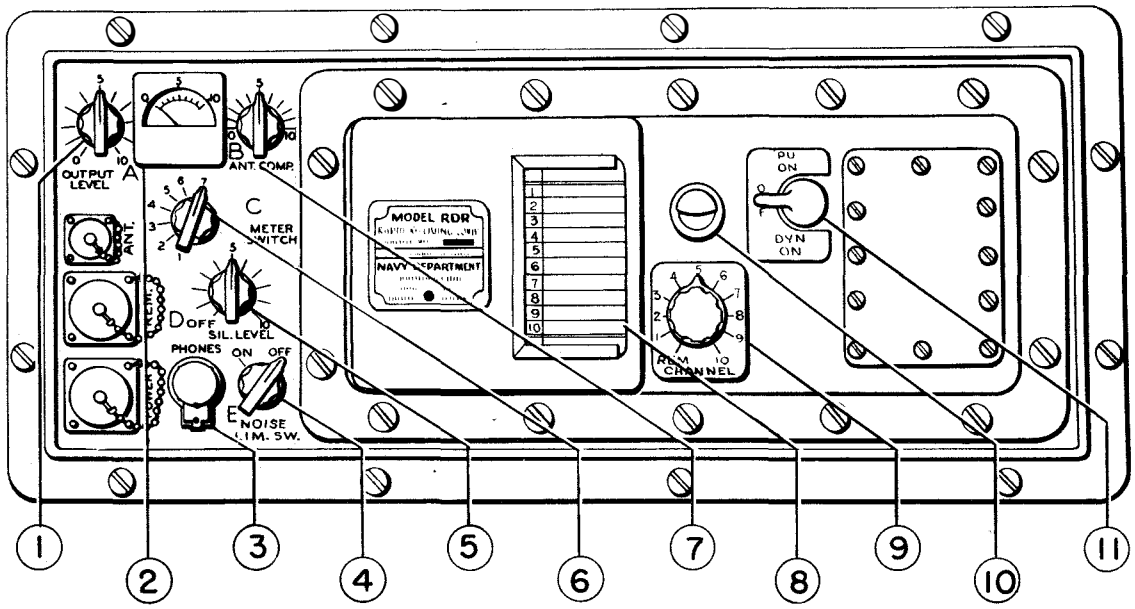


Figure 4-1. Receiver Panel Controls

(1) RECEIVER PANEL FITTINGS.

1. OUTPUT LEVEL control to adjust audio output of receiver.
2. METER to indicate voltages and currents in receiver circuits.
3. PHONE JACK to connect headset into receiver output circuit.
4. SILENCER switch, on equipments with Serial Numbers 1 to 500 inclusive, to cut off silencer circuit.

   NOISE LIMITER switch, on equipments with Serial Numbers 501 and up, to cut off noise limiter circuit.
5. SILENCER LEVEL to adjust level at which silencer circuit functions.
6. METER SWITCH to connect the meter into the receiver circuits.
7. ANTENNA COMPENSATOR to compensate for variations in antenna characteristics.
8. CARD clipped to panel which lists channel frequencies available to the equipment and correct meter indications for various settings of the meter switch.
9. CHANNEL SELECTOR switch to select the desired operating channel from the ten preset frequency channels.
10. PANEL LIGHT fitted with movable cap to control intensity of light.
11. POWER SWITCH to switch power on the equipment.

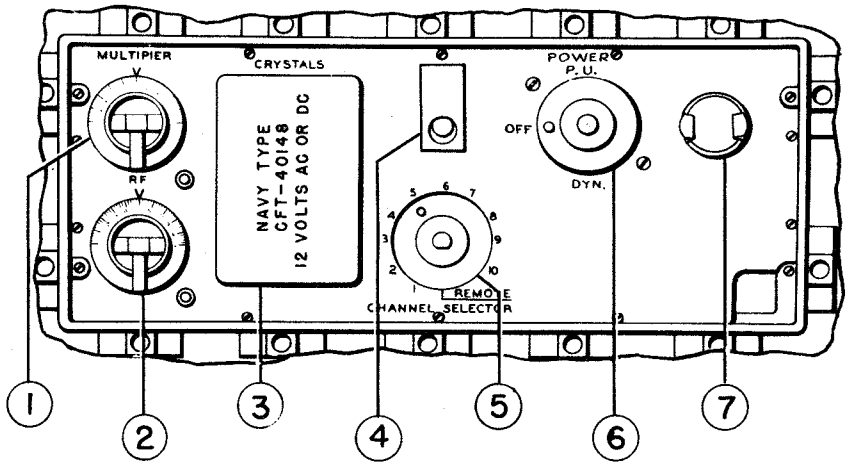


Figure 4-2. Selector Panel Controls

(2) SELECTOR PANEL FITTINGS.—Normally not accessible, as the selector panel (Figure 4-2) is protected by a splashproof cover while the equipment is in use.

1. MULTIPLIER DIAL to preset tuning circuits of the multiplier section.
2. R-F DIAL to preset tuning circuits of the radio frequency section.
3. CRYSTAL OVEN which maintains the ten crystals for the preset channel frequencies at a practically constant temperature.
4. PANEL LIGHT bulb.
5. CHANNEL SELECTOR switch, normally operated by means of a knob on the selector panel cover.
6. POWER SWITCH, normally operated by means of a knob on the selector panel cover.
7. VERNIER knob in a retaining clip, used to adjust Multiplier and r-f dials when pre-tuning the equipment.

b. OPERATING PROCEDURE. — The following detailed procedure for the operation of RDR equipment includes a meter check of the receiver circuits. Deviations from the meter indications recorded on the card with the equipment should be investigated and corrected. It is important that filament voltages be maintained within specified values to obtain maximum tube life.

The sequence of operations is shown in the inserted illustrations designated collectively as Figure 4-3. These illustrations are keyed to the associated text.

Note

Equipment with Serial Numbers 1 to 500 inclusive incorporate a silencer switch; equipments with Serial Numbers 501 and up are fitted with a noise limiter switch. Where both switches are mentioned in the following text, ignore the reference to a switch not on a particular receiver.

(1) PRELIMINARY SETTING OF CONTROLS.

Position the receiver controls as follows:

Output level at 5 or 6

Silencer level at 0 or OFF

Silencer switch at OFF

Noise limiter switch at OFF

Channel selector switch at 1

Meter switch at 4

(2) APPLICATION OF POWER TO RECEIVER.

(*a*) SHIPBOARD INSTALLATIONS.—On receivers installed with MAR equipment and powered by the AC/DC Power Supply, move the power switch on the MAR modulator-dynamotor panel to PU position to switch the power supply on if the MAR equipment is not in operation. Place the RDR power switch in the PU position to switch on receiver.

(*b*) FIELD INSTALLATIONS.—With the receiver connected to a 13-V d-c supply from storage battery or other electrical system, move the power switch on the receiver to the DYN position to start dynamotor and place receiver in operation.

When the gasoline engine generator set is used as the source of power, start the engine as described in Section 3. After the engine has warmed up, move the power switch on the receiver to the DYN position.

(3) VOLTAGE CHECK.—Observe if the panel light is on and check the heater and plate voltages by means of the meter and meter switch. Compare the meter indications obtained at each switch position with the readings recorded on the card on the channel selector cover. In the absence of the card, refer to Figure 4-4 which shows switch positions and minimum and maximum permissible indications for each switch setting.

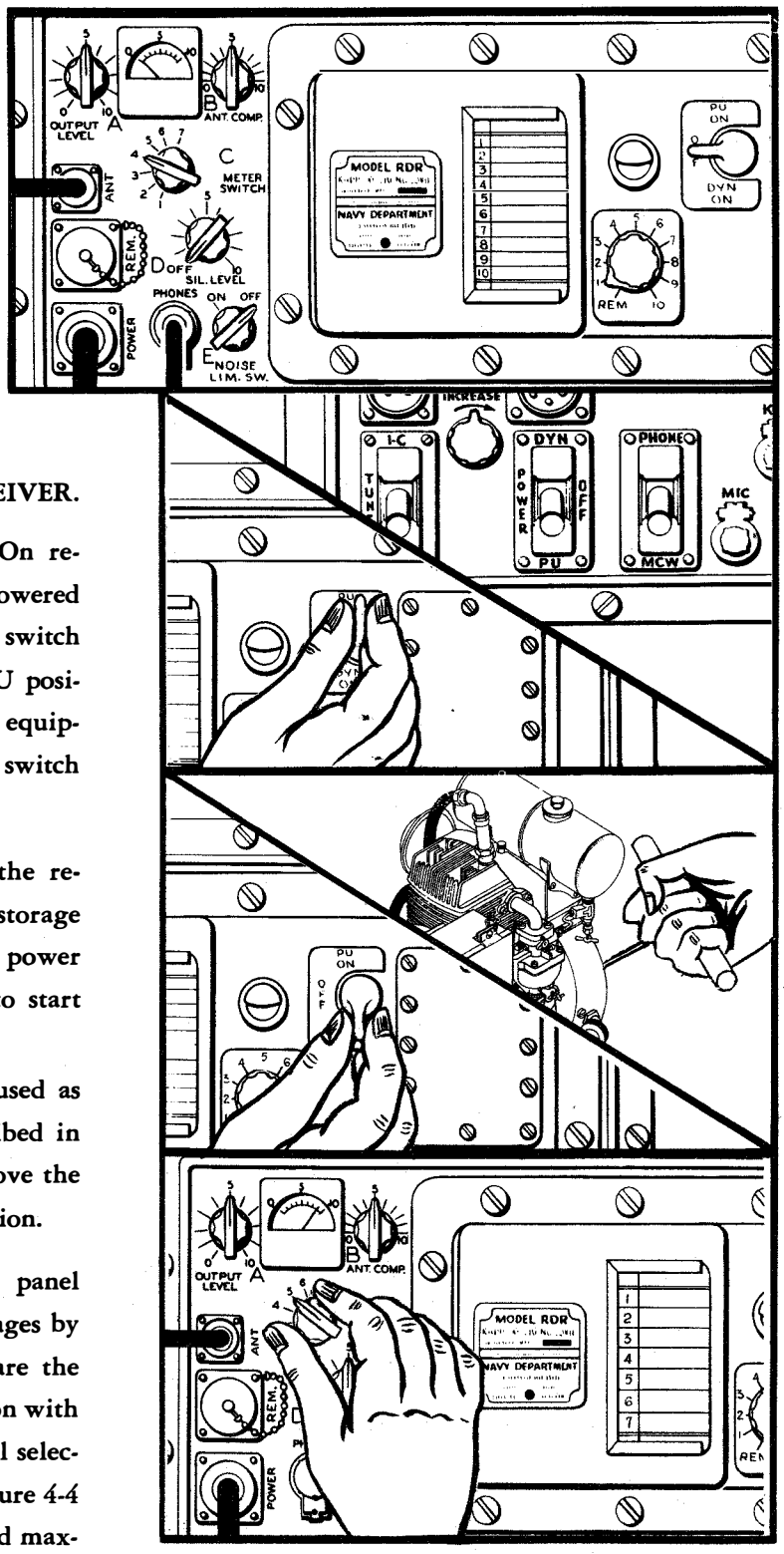


Figure 4-3. Operating Procedure

(4) OUTPUT LEVEL ADJUSTMENT.—As the tubes warm up, adjust the output level control to obtain a high noise level in an effort to pick up signals.

(5) CHANNEL SELECTION.—When transmitters are known to be operating in the area, check each channel frequency as follows. Move the channel selector switch to each channel position in turn, allow selector mechanism to come to rest, and listen for signals on each channel.

In net operation, or when the channel frequency in use in a given locale is known, the proper channel can be selected at once by referring to the card on the selector cover which lists the frequencies available and the respective channel numbers.

(6) SILENCER LEVEL SETTING.—When the signals are received, move the silencer switch to the ON position and rotate the silencer level control knob to the point where signals are clearly heard with the noise level at a minimum during no signal periods.

On equipments fitted with a noise limiter switch, place the switch in the position giving the most satisfactory signal response.

Note

Do not set silencer level control high enough to prevent the reception of the weakest signal to be received.

In a given installation, readjustment of the antenna compensator control is rarely necessary. In an emergency, when a makeshift antenna is employed in an effort to maintain communication, this control will be found of value in obtaining maximum signal input to the receiver.

(7) TO STOP OPERATION.—Move RDR power switch to OFF position.

With field installations, shut down the gasoline engine generator set by closing the throttle on the engine. When shutting down for an extended period, or for transport of the equipment, close the valve on the bottom of the fuel tank.

Place silencer switch on OFF and silencer level control at 0 or OFF.

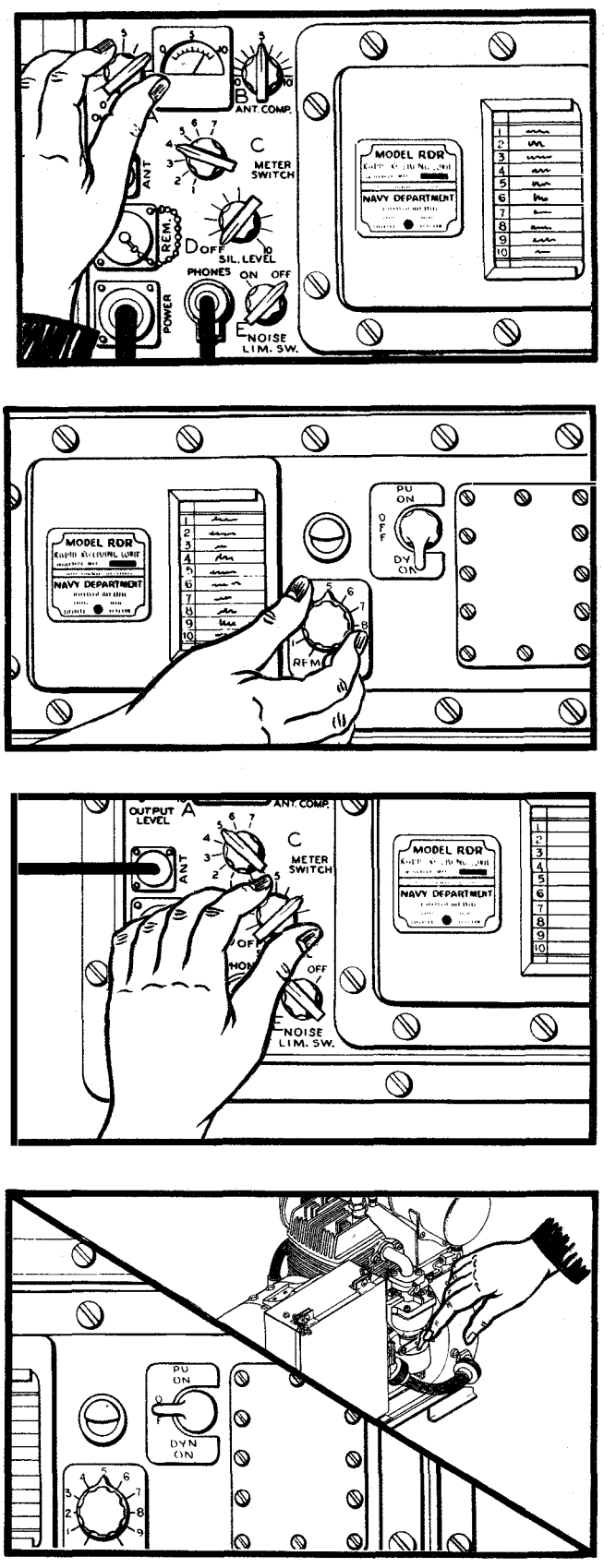
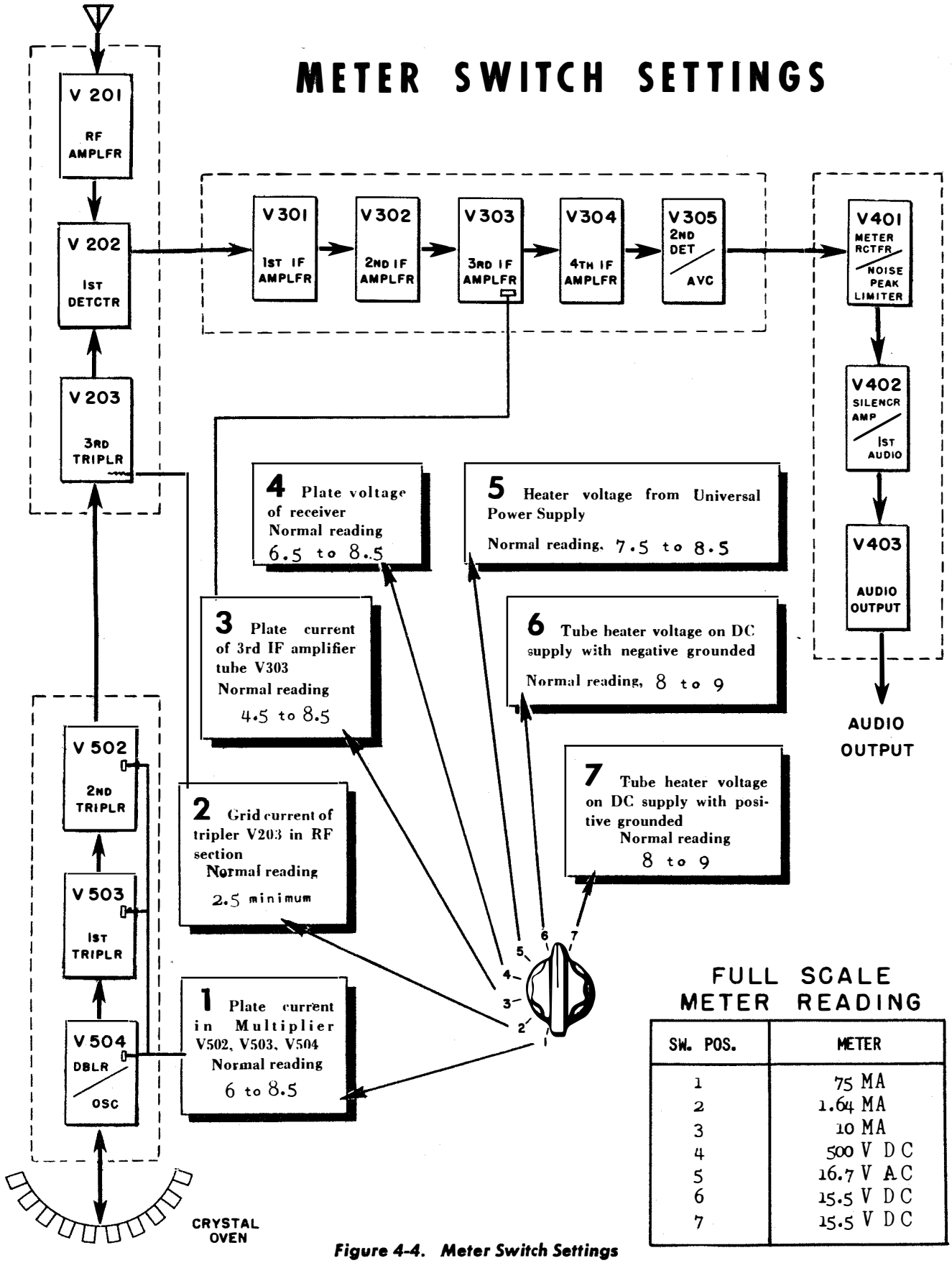


Figure 4-3a. Operating Procedure (Cont'd)



FULL SCALE METER READING

SW. POS.	METER
1	75 MA
2	1.64 MA
3	10 MA
4	500 V DC
5	16.7 V AC
6	15.5 V DC
7	15.5 V DC

Figure 4-4. Meter Switch Settings

c. COLD WEATHER PRECAUTIONS.—In sub-zero weather, the following special precautions must be taken to assure proper operation of the gasoline engine generator set.

Use winter-type high-vapor-pressure gasoline for fuel.

Warm the engine, with a blow torch if possible, before starting, to assure proper lubrication.

Protect engine from direct air blast by blocking the air intake of the blower housing while warming up or operating under a light load.

Use crankcase lubricant of the type and degree of dilution indicated on lubrication chart, Table 5-5, for prevailing conditions of operation.

TABLE 4-1
SUMMARY OF OPERATING PROCEDURE

STEPS	1	2		3	4	5	6
CONTROLS INVOLVED	PRELIM. SETTINGS	POWER ON WITH MAR	POWER ON FIELD	VOLTAGE CHECK	OUTPUT LEVEL	CHANNEL SELECTION	OPERATING CONDITION
MAR POWER SWITCH	—	ON PU					
RDR POWER SWITCH	OFF	ON PU	ON DYN				
GASOLINE ENGINE GENERATOR SET	OFF		START				
METER SWITCH	4			WITH METER			
OUTPUT LEVEL CONTROL	5-6				ADJUST		
CHANNEL SELECTOR SWITCH	1					ALL CHANNELS	
SILENCER SWITCH	OFF						ON
SILENCER LEVEL CONTROL	0						ADJUST
NOISE LIMITER SWITCH	OFF						ON

OPERATOR'S DON'TS

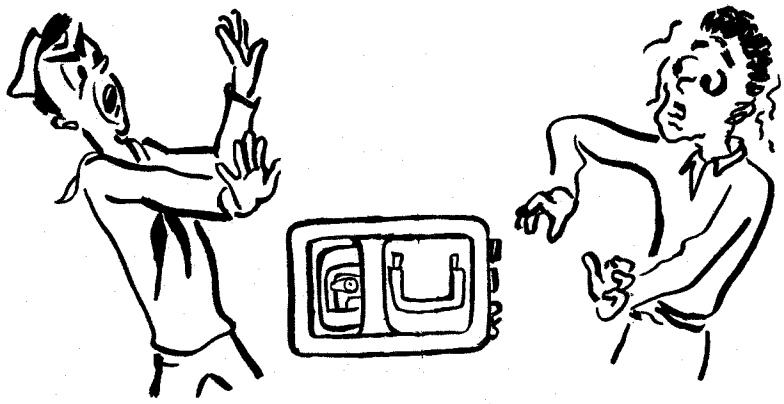
DON'T leave silencer level control at other than 0 when the receiver is switched off, because a higher setting may cause the loss of a weak signal when operation is resumed.

DON'T operate the receiver with the panel light out for longer than necessary. This lamp is in a branch of the filament heater circuits and will unbalance the tube voltages if burnt out.

DON'T operate the equipment with heater voltages above normal. Overvoltage will shorten tube life.

DON'T neglect gasoline engine lubrication. Rapid wearing of parts and early failure of the unit are certain to result if lubrication procedure is not followed in detail as shown on the lubrication chart, Section 5.

DON'T switch power on the receiver without the crystal oven in place. Tubes in the multiplier may be damaged if put into operation when the oscillator is not functioning.



SECTION 5
OPERATOR'S MAINTENANCE

1. OPERATOR'S MAINTENANCE.

a. GENERAL.—The RDR radio equipment is subject to normal tube deterioration and minor derangements that can be corrected by the operator. The early recognition of minor defects in operation by the operator, and immediate action to correct the condition, will increase the life and efficiency of the equipment.

Most defects are detected in the routine operation of the equipment. In the following paragraphs, remedial procedures will be described that can be carried out by the operator. Physical defects, such as frayed or kinked cables, loose or broken knobs and plugs, are usually obvious and the required corrective measures need no discussion. Electrical defects can usually be located by the routine test outlined in Table 5-1 which utilizes the panel meter and meter selector switch.

TABLE 5-1
RDR RECEIVER CHECK
USE VALUES ON CARD ATTACHED TO EQUIPMENT
FOR METER INDICATION COLUMN. VALUES GIVEN ARE TOLERANCE LIMITS

WHAT TO CHECK	METER SWITCH POSITION	METER INDICATION	PROBABLE CAUSE OF AND REMEDY FOR INCORRECT METER INDICATIONS	REFER TO
Heater Voltage on 13 volt D.C.	6 or 7	8-9	Incorrect input voltage. Adjust at control box in field applications.	4b(2)
On power supply unit	5	7.5-8.5	Defective power supply. Advise technician.	
Plate voltage on 13 volt D.C.	4	6.5-8.5	Dynamotor at fault. If input voltage is correct, advise technician.	
On power supply unit	4	6.5-8.5	Defective power supply. Advise technician.	
Tube circuits	1	6-8.5	Multiplier tubes. Check or replace tubes.	2a(1)
	2	2.5 min.	Multiplier tubes. Check or replace.	2a(1)
	3	4.5-8.5	I-F amplifier. Check tubes or reset tuning.	Sec. 3

b. DRYER UNITS.—When the receiver chassis is removed from the case for any reason, examine the silica-gel dryer units held in clips in the bottom of the case. Slip the dryer unit from the clip, as shown in Figure 5-1, and inspect the contents through the mica window in the top of the cartridges. If the granules are light blue or grayish, the dryers are still effective and should be replaced in the clips. A faint pink color indicates a saturated condition, and new units from spare stock must be installed.

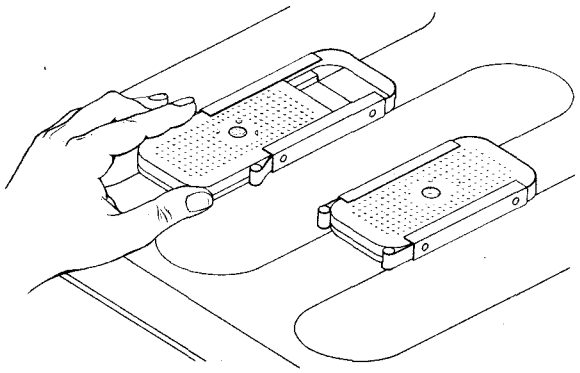


Figure 5-1. Dryer Units

Remove the spare dryer cartridges from the containers by removing the sealing strip around the edge of can. Insert the fresh cartridges in the clips in the receiver case. Save the used cartridges and containers.

To reclaim the cartridge, heat it in an oven at a temperature of 149° C (300° F) for three hours to drive off all moisture. Place the cartridge in the container and reseal with the tape.

2. RDR RADIO RECEIVER, NAVY TYPE CRV-46283.

a. TUBE FAILURE.

(1) REPLACING TUBES.—When the checking procedure given in Table 5-1 or gradual loss of signal strength indicate failing tubes, they should be replaced at once. The location and type of all tubes used in the receiver are shown in Figure 5-2.

Spare tubes furnished with the accessories consist of one tube of each type used. When more than one tube of a given type is suspected as the cause of trouble, replace them one at a time until the defective tube is located. Turn off power while changing tubes to prevent heater circuit unbalance.

Note

ALL TUBES OF A GIVEN TYPE SUPPLIED WITH THE EQUIPMENT SHALL BE CONSUMED PRIOR TO EMPLOYMENT OF TUBES FROM GENERAL STOCK.

(2) TUBE CLAMPS.—Several methods of clamping the tubes in place are employed in the receiver. The smaller tubes in the r-f and multiplier sections are held in place by a spring in the tube shield. The shield is fitted with a bayonet joint and may be removed by pushing down and rotating the shield to the left until it can be detached from the base. After inserting the tube, replace the shield before testing the equipment.

Each metal-enclosed tube is held in place by an L-shaped clip and a machine screw. To release the clamp, loosen the screw until the clip can be swung clear of the tube base. Replace the clip, after changing a tube, before testing the equipment.

The third type of clamp is released by inserting a screwdriver blade in a slot in the hinged member of the clip and rotating the screwdriver to swing the hinged position of the clip out to release the clamping strap. The clamp is tightened by the reverse procedure.

b. DYNAMOTOR.

(1) CHECKING OPERATION.—With the dynamotor operating, when the receiver is powered from a 13-volt direct-current source, listen for any unusual noise or vibration by placing the ear against the selector cover.

Place the meter switch on position 4 and compare the meter indication with the record card. The indication should be between 6.5 and 8.5. A low reading, with correct input voltage, is due to worn brushes, dirty commutator, or lack of oil, and the condition should be corrected at the first opportunity.

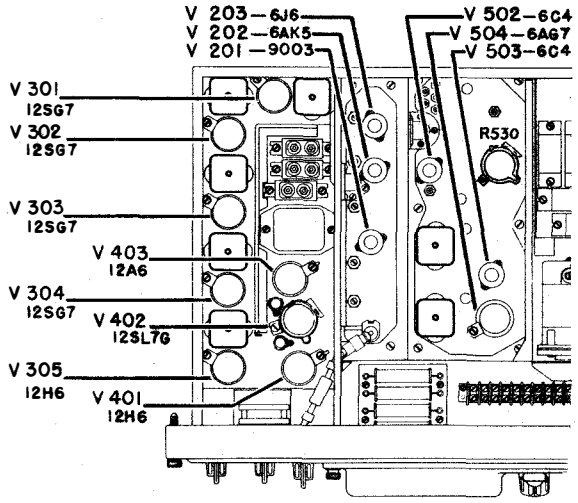


Figure 5-2. Tube Location

(2) FUSE FAILURE.—See Figure 5-3.

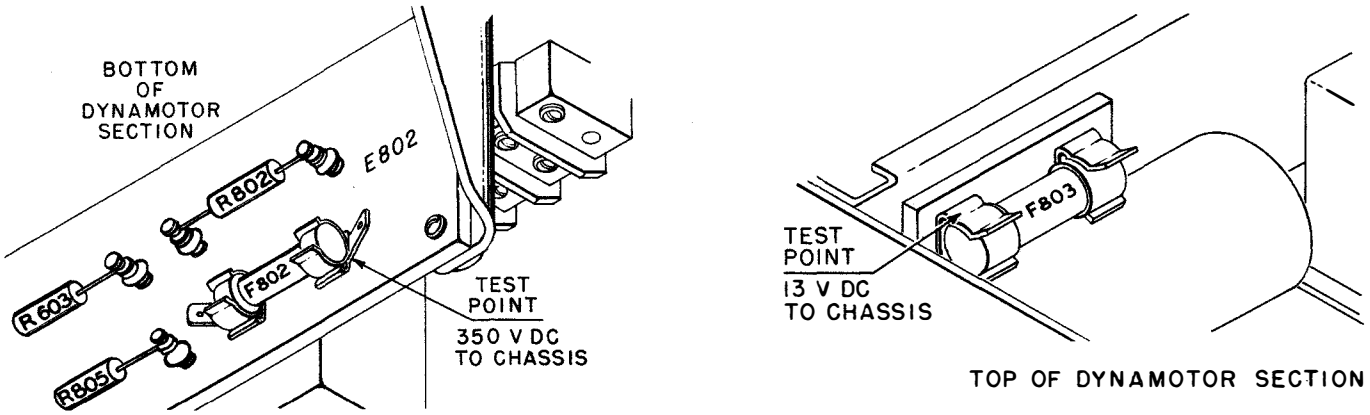


Figure 5-3. Fuse Failure Check Points

TABLE 5-2. SYMPTOMS OF FUSE FAILURE

PANEL LIGHT	*DYNA-MOTOR	PLATE VOLTAGE	HEATER VOLTAGE	FUSE BLOWN	VALUE (AMPS)	LOCATION
On	Yes	No	Yes	F802	1	Terminal board bottom of dynamotor
Off	No	No	No	F803	30	Dynamotor section, top

*On 13V. d-c supply only.

CAUTION

Do not install fuses with higher rating than listed in Table 5-2 unless continued operation of the equipment is more important than its probable damage. If a fuse burns out immediately after replacement, do not replace it until after the cause of failure has been determined and the fault corrected.

3. ANTENNA, NAVY TYPE CRV-66147.

To maintain optimum performance of the receiver, the antenna should be visually inspected daily for readily detectable damage. In humid climates, or where rapid changes in temperature occur resulting in precipitation of moisture, wipe the antenna insulator with a cloth, dry or soaked with carbon tetrachloride.

4. GASOLINE ENGINE GENERATOR SET, NAVY TYPE CCW-73037.

The gasoline engine generator set should be checked daily and after each period of operation to make certain it is always ready for service. The engine checking chart in Table 5-3 is divided into two parts, one a daily check, the other after each period or periods of operation exceeding eight hours.

TABLE 5-3. ENGINE CHECK CHART

DAILY

WHAT TO CHECK	ACTION TO BE TAKEN	REFER TO
Fuel tank.	Refill as necessary.	
Crankcase oil level.	Refill or drain and refill as necessary.	Table 5-5
Starter rope.	Replace if missing.	
AFTER EIGHT HOURS OPERATION		
Engine for loose parts or fittings.	Tighten bolts as necessary.	
Air Filter.	Remove and clean.	4a(3)
Generator—If used in dusty atmosphere.	Remove end bell and wipe or blow dust from armature and brushes.	Sec. 7 Para. 2b(2)
Make certain switch is in Radio position.		

a. GASOLINE ENGINE MAINTENANCE.

(1) TROUBLE CHART.

TABLE 5-4
GASOLINE ENGINE TROUBLE CHART
DIFFICULTY IN STARTING

PROBABLE CAUSE	REMEDY
No fuel at carburetor.	If tank is full, remove and clean fuel line.
Water in fuel.	Drain and refill.
Spark plug fouled.	Clean plug and readjust points.
Spark plug porcelain cracked.	Replace spark plug.
Wiring defective.	Check for broken or loose connection.
FAILS TO START	
Engine overchoked.	Allow engine to stand a few minutes.
Choke level sticking or in partially-closed position.	Remove obstruction.
Carburetor air filter clogged.	Clean.
Ignition defective.	Test for spark at plug.
STALLS UNDER LOAD	
Insufficient fuel.	Clean fuel line and strainer.
Governor sticking.	Oil or adjust linkage. Remove obstruction.
Improper fuel mixture.	Adjust carburetor.
Muffler partly clogged.	Clean.
OVERHEATING	
Excessive load.	Check for cause.
Choke partially closed.	Open.
Insufficient oil.	Add oil.
Air flow obstructed.	Clear inlet to flywheel housing. Clean cooling fins on cylinder and head. Provide clear space around engine.
UNEVEN OPERATION OR STOPS AFTER SHORT RUN	
Governor sticking.	Oil or adjust linkage. Remove obstruction.
Vent on tank closed.	Open.
Obstruction in fuel supply.	Clean fuel line. Drain carburetor bowl. Check for gas lock in fuel line.
Throttle sticking.	Oil or adjust.
RADIO INTERFERENCE	
Suppressor resistor in spark plug defective.	Replace spark plug.
Ignition wire shield loose.	Tighten.
Filter loose in control box.	Tighten bolts on case and shield.

(2) LUBRICATION.

Drain the crankcase of the engine after every 25 hours of operation as follows:

Step 1. Close valve under fuel tank and air vent on cap.

Step 2. Remove oil filler plug from exhaust side of engine base.

Step 3. Lift and tilt engine in the direction of the filler neck to allow oil to flow out filler plug hole. Allow crankcase to drain thoroughly.

Step 4. Place engine upright and refill crankcase up to just below the level of the filler plug hole with oil of the proper viscosity for prevailing temperature conditions as given in Table 5-5.

Step 5. Replace filler plug and tighten with wrench.

Step 6. Open fuel valve and air vent in tank cap.

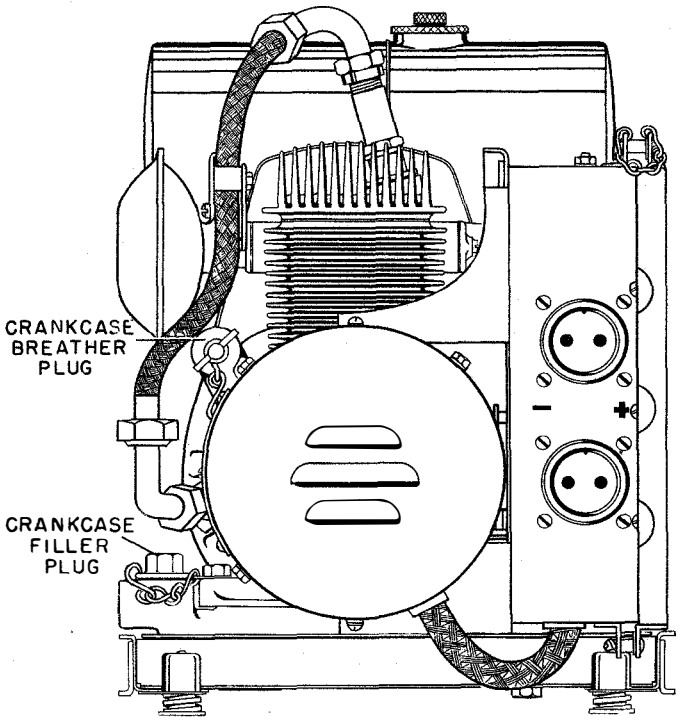


Figure 5-4. Engine Lubrication

TABLE 5-5. CRANKCASE LUBRICANT
ND Spec 14-0-13

NAVY CODE	STOCK NO.	COMM. DESIG.	TEMPERATURE
No. 9250	14-0-2187 5 gal.	SAE 30	0°C and up
No. 9110	14-0-2162 5 gal.	SAE 10	Below −17°C (0°F)

Note

Drain the engine while warm. Do not mix oil with the gasoline in the fuel tank.

When operating the engine in sub-zero temperatures, the crankcase lubricant should be diluted. Use gasoline or wax free kerosene and SAE 10 oil in the proportions shown for the temperatures listed.

TEMPERATURE	PROPORTION
−23°C (−10°F)	9 parts oil, 1 part kerosene
−29°C (−20°F)	8 parts oil, 2 parts kerosene
−34°C (−30°F)	7 parts oil, 3 parts kerosene

(3) CLEANING AIR FILTER.—When operating in dusty atmosphere, the air filter will require frequent cleaning. Proceed as follows:

Step 1. Disconnect knurled nuts holding air duct connected to control box and remove the tube from the unit.

Step 2. Push downward and pull the air filter clamp at the bottom of the carburetor air intake outward to permit removal of the air filter element.

Step 3. Clean the filter element by dipping it in clean gasoline. Use care in handling to preclude damage to the insert.

Step 4. Swing clamp outward to permit insertion of the filter element.

Step 5. Replace air duct and tighten nuts.

b. GENERATOR MAINTENANCE.

(1) GENERATOR TROUBLE CHART.—The following chart lists the more common generator troubles with which the operator must contend.

GENERATOR TROUBLE CHART

PROBABLE CAUSE	REMEDY
EXCESSIVE ARCING AT BRUSHES	
Dirty or rough commutator.	Clean with 000 sandpaper while turning by hand with brushes removed.
Brushes not making good contact.	Make sure brush springs are not broken and brushes are not stuck in holders.
Brushes worn.	Replace brushes. See Sec. 7, 4a(2)(a).
FAILS TO BUILD UP VOLTAGES	
Loose connection.	Tighten.
Worn brushes.	Replace brushes. See Sec. 7, 4a(2)(a).
Brushes stuck in holders.	Wipe clean. Sandpaper lightly if necessary.
Engine not up to speed.	Adjust governor.
RADIO INTERFERENCE	
Shielding loose.	Tighten all shields.
Loose ground strap.	Tighten.
Poor commutation.	Same as for excessive arcing.
Poor ground on filter in control box.	Tighten holding bolts.

(2) ADJUSTING GENERATOR VOLTAGE.—Should voltage output of generator fall low enough to interfere with the operation of the receiver, it may be increased to a limited extent by adjusting the rheostat on the control box in the following manner:

Step 1. Remove the captive cap nut on the side of control box.

Step 2. With generator set running, switch on receiver and place meter switch on position 6 to indicate heater voltage.

Step 3. Adjust slotted shaft of rheostat with a screwdriver to obtain desired indication on the meter.

Step 4. Replace cap nut.

SECTION 6
PREVENTIVE MAINTENANCE

1. GENERAL.

Equipment breakdown may be minimized or eliminated by periodic inspection and servicing. Slight operating irregularities usually give warning of trouble which preventive maintenance, systematically employed, will discover and correct. Increased equipment life and greater overall efficiency will result if the preventive maintenance charts in this section are conscientiously followed.

Preventive maintenance, as applied to tubes, involves only periodic checking of tube condition. The gradual loss of output that precedes tube failure should be heeded, and replacements made before such failure occurs.

The cabling used with the RDR will probably receive the most abuse and will be subject to more breakdown possibilities. While all cables and connectors have been designed to function under severe operating conditions, the prompt remedial treatment of slight physical damage will minimize wiring failure. The maintenance steps outlined will aid in discovering and eliminating potential trouble spots.

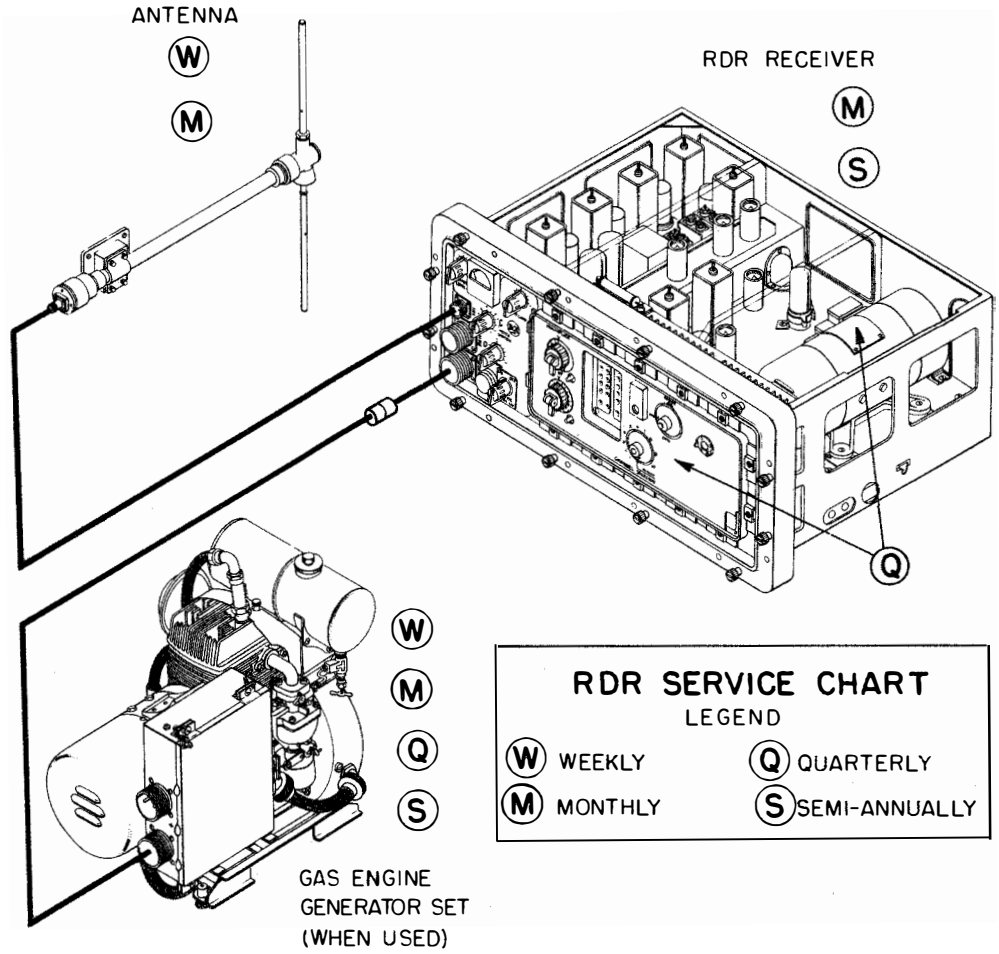


Figure 6-1. RDR Service Chart

2. RDR RADIO RECEIVER, NAVY TYPE CRV-46283.

The receiver is usually in continual operation and under daily observation. For that reason most irregularities in that unit that might give rise to more serious trouble will be noticed early and can be taken care of immediately. The following chart gives routine procedures that will detect and correct conditions that may not be obvious under normal operating conditions.

THE ATTENTION OF MAINTENANCE PERSONNEL IS INVITED TO THE REQUIREMENTS OF CHAPTER 67 OF THE "BUREAU OF SHIPS MANUAL," OF THE LATEST ISSUE.

a. MONTHLY CHECK.

WHAT TO CHECK	HOW TO CHECK	PROCEDURE
CABLES	Inspect cables at points of attachment to connectors for evidence of cracks or breakage of rubber seal.	If cracks are present, repair by replacing rubber seal.
CHASSIS	Remove chassis from case and inspect for loose parts and leads.	Tighten all terminal strip mounting bolts and all connections to strips. Tighten all selector bolts and bolts holding selectors to chassis. Tighten bolts holding dynamotor in place.
SEALS	Examine rubber sheaths on phone jack and rubber gaskets behind panel and selector cover.	Replace jack sheath if loose or cracked. Replace gaskets if deeply grooved.
TUBES	Remove one tube at a time for checking, and replace in the same socket. Tighten tube clamps securely. Turn off power while changing tubes.	Check tubes in a trans-conductance type tester if possible. Tube V201 (9003) must be checked in this manner. Other tubes may be checked in an emission type tester. Replace any tube registering less than 70 per cent of normal emission.
COMPONENTS	Examine all resistors and capacitors for signs of discoloration, charring, or bulging that might indicate partial breakdown.	Check all components showing distress for deviation from design value and, when necessary, replace. Circuits involved should also be checked.
FUSES	Examine fuse holders for looseness and signs of overheating. Discolored clips indicate the latter.	If discolored, clean fuse ferrules and interior of clips with fine crocus cloth and bend jaws on fuse holder closer to increase the grip on the fuse.
DRYER UNITS	Inspect silica gel units clipped in bottom of case.	Replace if drying material, viewed through mica window, shows pink color.
SELECTOR MECHANISM	Connect power cable temporarily. Switch on receiver and operate selector mechanism by means of Channel Selector switch. Bearing trouble in selector mechanism is usually indicated by grinding noises, knocking, or repeated thumps.	Refer to Section 7, paragraph c, for details of servicing methods, if necessary.
MOTOR BRUSHES	Remove one at a time and inspect for length and pitting or scoring. When a new brush is not required, make certain that the brush is returned to the brush holder in the same position as it was before its removal. See paragraph 2c(1) of Section 7.	Replace brushes worn down to 3/8-inch in length. Pitting indicates worn or blackened commutator. Remove motor for repair and replace with unit from spares. See paragraph 2c(1) of Section 7.

b. QUARTERLY CHECK.

WHAT TO CHECK	HOW TO CHECK	PROCEDURE
SELECTOR MECHANISM	Test for backlash by moving geared parts manually to detect excessive play. Inspect gears visually for signs of wear.	Replace parts showing excessive wear. Section 7, paragraph c gives details for dismounting selector.

LUBRICATE SELECTOR MECHANISM AS DETAILED IN PARAGRAPH 5a IN THIS SECTION

c. SEMI-ANNUAL CHECK.

WHAT TO CHECK	HOW TO CHECK	PROCEDURE
SENSITIVITY and SELECTIVITY	Use Type LAF signal generator and output meter.	Refer to alignment procedures in paragraphs 2a(1)(d) and (3)c of Section 7 for details.
SELECTOR MOTOR	Remove from chassis and overhaul.	Refer to paragraphs 2b(1) and 2c(1) of Section 7.
DYNAMOTOR	When receiver is operated on 13-volt d.c., switch on equipment and inspect dynamotor for signs of mechanical trouble, usually indicated by excessive noise, overheating, or low speed.	Refer to Section 7, paragraph 2b for maintenance details.
GENERAL	Check spare parts boxes and order components required to bring stock up to prescribed quantity.	

d. BALANCING HEATER CIRCUIT.—When a number of tubes are changed or the panel light is replaced, it is advisable to check the voltage on the two branches of the heater circuit in the following manner.

Loosen the panel holding screws and slide the chassis out of the case to the limit of the stops. Apply power to the equipment and allow the tubes to warm up for several minutes. Touch the prods of a voltmeter to terminal 3, on terminal board E132 on top of the chassis, and to ground. The indication obtained, approximately 13 volts, is the total voltage across the heater circuit.

Touch the voltmeter prods in turn to terminals 3 and 19, and to terminals 19 and 1. The voltage in both cases should be exactly half of the total voltage. Should the readings differ, adjust the potentiometer R524, located in the multiplier section, until the voltages are equal. When the receiver is powered from an AC/DC Power Supply, the voltages will be a. c.

3. ANTENNA, NAVY TYPE CRV-66147.

a. WEEKLY CHECK.

WHAT TO CHECK	HOW TO CHECK	PROCEDURE
MOUNTING	Examine for play in bolts or clamp.	Tighten.
RODS	Examine for visible damage and loose lock nuts.	Tighten.

b. MONTHLY CHECK.

WHAT TO CHECK	HOW TO CHECK	PROCEDURE
INSULATOR	Examine for breaks or cracks.	Wipe insulator with clean cloth. Replace if broken. See paragraph 3, Section 7.
TRANSMISSION LINE	Inspect connectors for tightness and cable for cracking at connectors.	Reconnect plug as detailed in paragraph 2a(4)(a), Section 3.

4. GASOLINE ENGINE GENERATOR SET, NAVY TYPE CCW-73037.

Preventive maintenance routines on the gasoline engine generator set should be carried out on the basis of the operating time of the unit as well as periodically. The daily operation check and eight-hour operation check included in Table 5-3, Section 5, will enable the operator to keep the unit in good operating condition from day to day. The following procedures should be performed at whichever period elapses first.

a. MONTHLY OR 25-HOUR CHECK.

WHAT TO CHECK	HOW TO CHECK	PROCEDURE
LUBRICATION	Drain crankcase and refill with one pint of oil suited to climatic conditions. See paragraph 4a(2), Section 5.	Drain oil while engine is warm to assure complete drainage and effective removal of sediment and sludge.
CARBURETOR	Clean carburetor bowl.	Shut off fuel valve and remove drain plug on carburetor bowl. Flush bowl by opening fuel valve for several seconds.
CARRYING CASE	Inspect door gasket for excessive grooving or cracking.	Replace if necessary.
SPARK PLUG	Remove shielded lead and spark plug. Examine porcelain insulator.	Install new plug if insulator is cracked. If plug is dirty, remove carbon, reset points to 0.020 inches.

b. QUARTERLY OR 50-HOUR CHECK.

WHAT TO CHECK	HOW TO CHECK	PROCEDURE
CYLINDER	Remove head and inspect for carbon. See paragraph 4a(1), Section 7.	Follow procedure in paragraph 4a(1), Section 7.
GENERATOR BRUSHES AND COMMUTATOR	Remove end cover and inspect brushes and commutator under load.	Refer to paragraph 4a(2)(a), Section 7.

c. SEMI-ANNUAL OR 100-HOUR CHECK.

WHAT TO CHECK	HOW TO CHECK	PROCEDURE
VALVES	Remove blower housing and flywheel as described in paragraph 4a(1)(b), Section 7.	Follow procedure in paragraph 4a(1)(b), Section 7.
MAGNETO SETTING	May be done when checking valves.	Follow procedure in paragraph 4a(1)(e), Section 7.
GENERAL	After 300 hours of operation, the unit should be dismantled and overhauled as described in paragraphs 4a and 4b, Section 7.	

5. LUBRICATION.

a. SELECTOR MECHANISM.—The selector mechanism should be lubricated every three months in accordance with the following:

Step 1. Disconnect cables, remove chassis from case, and place on a bench, panel up.

Step 2. Remove cover of selector mechanism.

Step 3. Remove vernier knob from clip on panel and withdraw the crystal oven from the jack plate.

Step 4. Carefully drive out the taper pin holding the switch knob coupling to the shaft of the channel selector switch, and remove the coupling. Support the shaft while driving the pin to avoid bending the shaft.

Step 5. Remove the nut and lockwasher on the sleeve of the switch.

Step 6. Remove the screws holding the panel on the selector housing and the two screws at the power switch. Lift the panel from the mechanism.

A majority of the gears in the selector housing will be accessible through the front of the mechanism. Lubricants to be used are as follows:

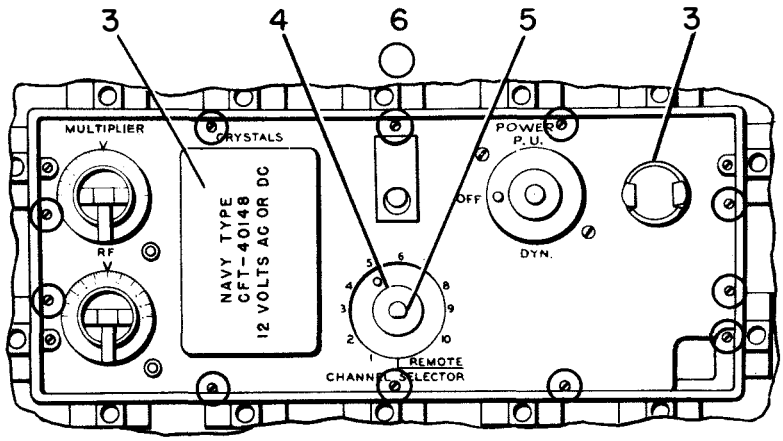


Figure 6-2. Removing Selector Panel

TABLE 6-1
SELECTOR MECHANISM LUBRICANTS

LOCATION	LUBRICANT	NAVY TYPE NO.	NAVY STOCK NO.	COMMERCIAL DESIGNATION
Worms and Gears	Grease	OS-1350	14-G715	SOCONY VACUUM PD-535-A
Needle and Ball Bearings	Oil	N.S. 2190T or 9250	14-0-2879	SAE-20

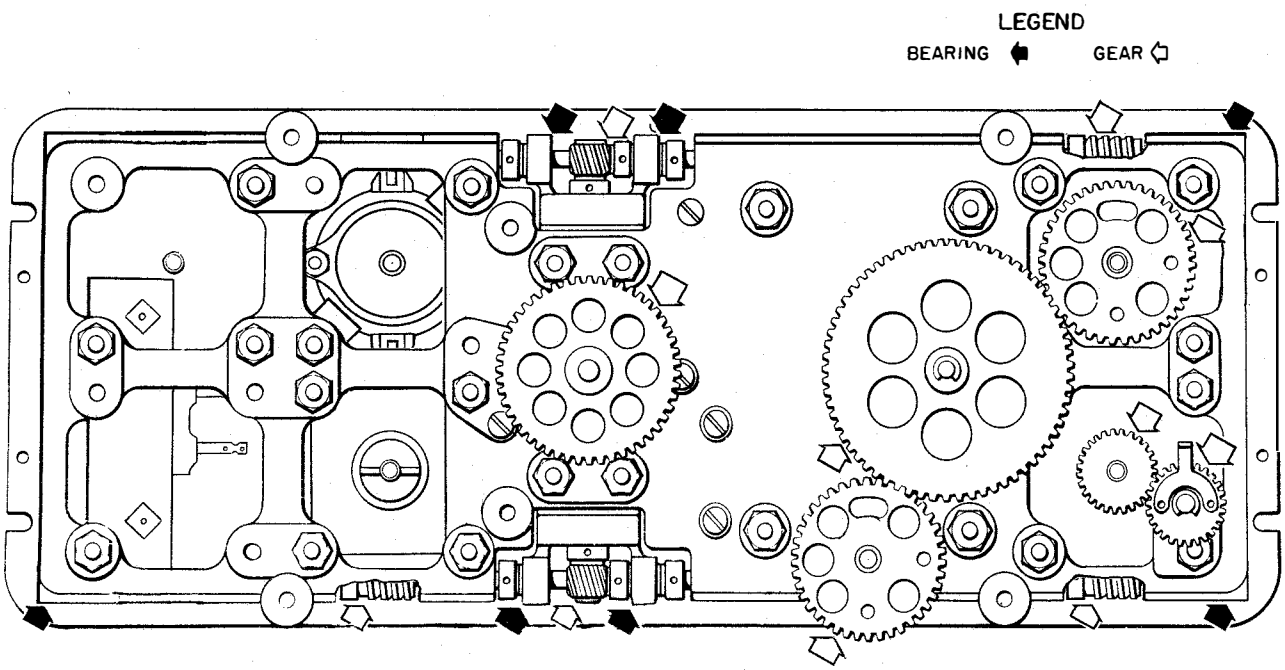


Figure 6-3. Lubrication Points on Selector Mechanism, Rear

Carefully apply grease to gears and worms, as indicated in Figure 6-3, with a clean wood applicator. Stand the receiver on end, dynamotor end up, to reach the gearing on the rear of the selector housing. Apply grease to miter gears on antenna compensator shaft assembly.

With the chassis on one end, by means of a small oil can, apply a few drops of oil to such bearings as the oil will flow into by gravity. Turn the chassis on the other end to lubricate the remaining bearings.

Do not attempt to oil the interior of the drums of the selector units and avoid dripping oil or grease on non-friction surfaces. Wipe off any excess.

Replace the panel, attach switch knob coupling, and replace selector cover in the reverse order to the dismantling procedure given in 5*a*, steps 1 to 6.

b. GASOLINE ENGINE GENERATOR SET.—Complete instructions for crankcase lubrication are given in paragraph 4*a*(2), Section 5.

SECTION 7
CORRECTIVE MAINTENANCE

1. GENERAL.

Complete and sudden failure of the equipment is rare and is usually due to an obvious cause, such as a power failure, broken or loose cables, blown fuses, or mechanical damage. Partial failure or improper operation, barring the normal loss of tube efficiency and improper tuning, are more difficult to detect and correct. In general, the procedure to be followed in cases of equipment failure is to check the following:

a. Cables, antenna, and operating accessories.

b. Power supply and fuses.

c. Tubes.

d. Power supply to individual components of receiver.

e. Circuit defects in the section of the receiver at fault.

2. RDR RADIO RECEIVER, NAVY TYPE CRV-46283.

After checking the cables and accessories on failure of the receiver, power supply voltages and fuse failure can be checked by means of the meter on the receiver panel as described in Section 5. The trouble shooting chart in Table 7-1 gives a systematic routine for locating receiver troubles which utilizes the panel meter and meter switch for testing purposes. Reference is to be made to the card on the receiver panel for correct meter indications at each switch setting.

FAILURE REPORTS

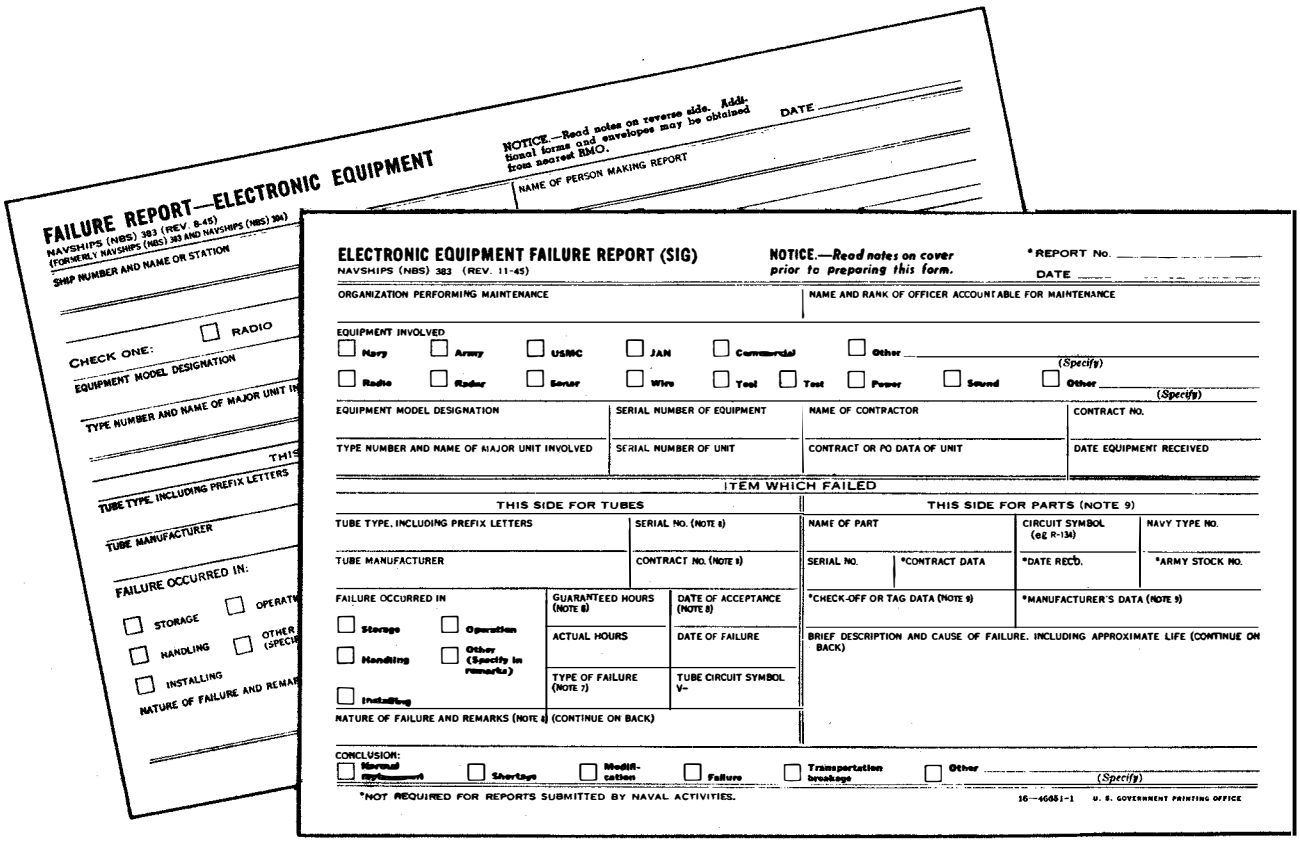
A FAILURE REPORT must be filled out for the failure of any part of the equipment whether caused by defective or worn parts, improper operation, or external influences. It should be made on Failure Report, form NBS-383, which has been designed to simplify this requirement. The card must be filled out and forwarded to BUSHIPS in the franked envelope which is provided. Full instructions are to be found on each card.

Use great care in filling the card out to make certain it carries adequate information. For example, under "Circuit Symbol" use the proper circuit identification taken from the schematic drawings, such as T-803, in the case of a transformer, or R-207, for a resistor. Do not substitute brevity for clarity. Use the back of the card to completely describe the cause of failure and attach an extra piece of paper if necessary.

The purpose of this report is to inform BUSHIPS of the cause and rate of failures. The information is used by the Bureau in the design of future equipment and in the maintenance of adequate supplies to keep the present equipment going. The cards you send in, together with those from hundreds of other ships, furnish a store of information permitting the Bureau to keep in touch with the performance of the equipment of your ship and all other ships of the Navy.

This report is not a requisition. You must request the replacement of parts through your Officer-in-Charge in the usual manner.

Make certain you have a supply of Failure Report cards and envelopes on board. They may be obtained from any Electronics Officer.



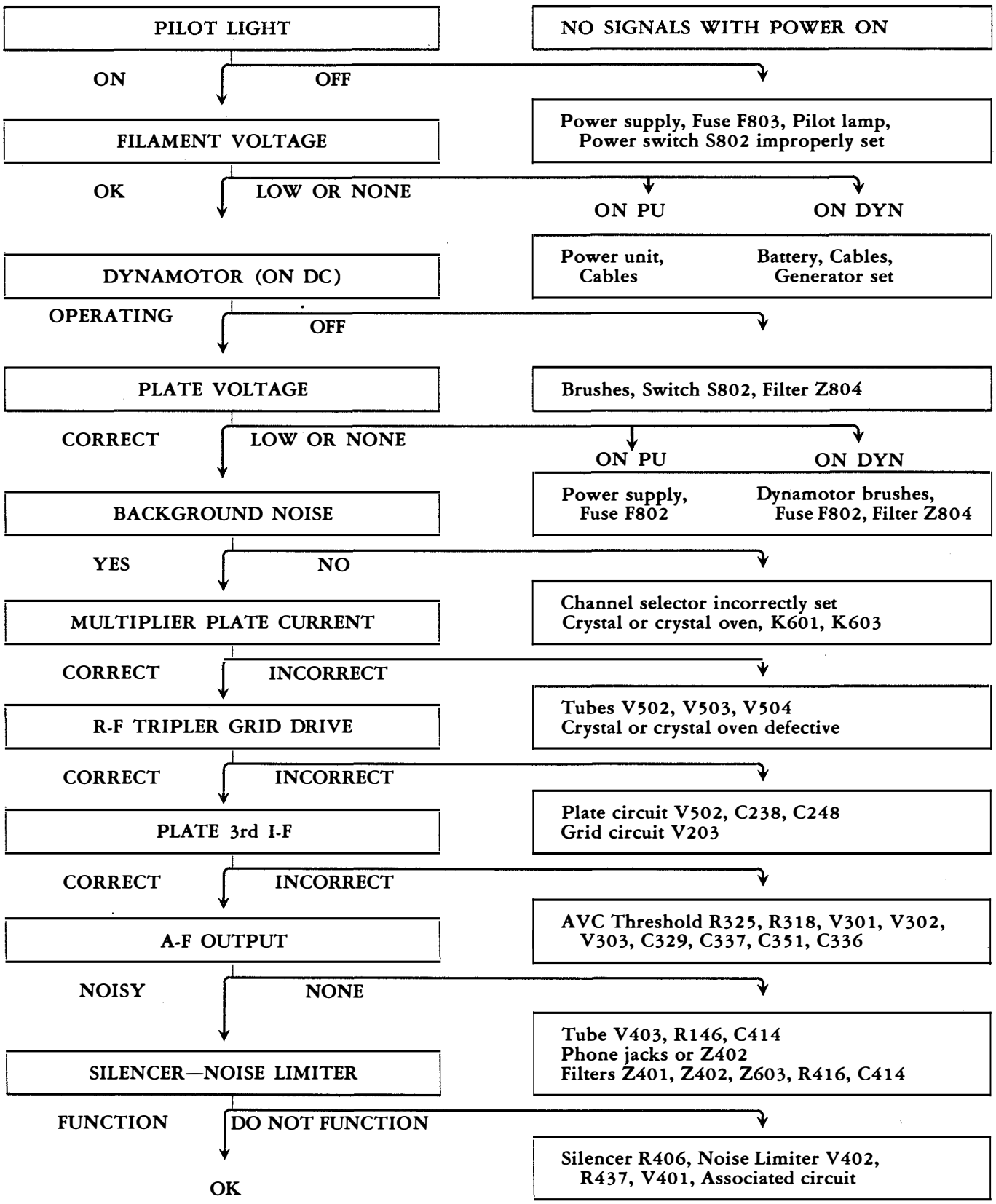
FAILURE REPORT—ELECTRONIC EQUIPMENT
NAVSHIPS (NBS) 383 (REV. 8-45)
(FORMERLY NAVSHIPS (NBS) 383 AND NAVSHIPS (NBS) 384)
SHIP NUMBER AND NAME OR STATION
CHECK ONE: RADIO
EQUIPMENT MODEL DESIGNATION
TYPE NUMBER AND NAME OF MAJOR UNIT IN
TUBE TYPE INCLUDING PREFIX LETTERS
TUBE MANUFACTURER
FAILURE OCCURRED IN:
STORAGE
HANDLING
INSTALLING
NATURE OF FAILURE AND REMAR
NOTICE.—Read notes on reverse side. Additional forms and envelopes may be obtained from nearest BMO.
DATE
NAME OF PERSON MAKING REPORT

ELECTRONIC EQUIPMENT FAILURE REPORT (SIG)
NAVSHIPS (NBS) 383 (REV. 11-45)
NOTICE.—*Read notes on cover prior to preparing this form.*
*REPORT No.
DATE
ORGANIZATION PERFORMING MAINTENANCE
NAME AND RANK OF OFFICER ACCOUNTABLE FOR MAINTENANCE
EQUIPMENT INVOLVED
Navy Army USMC JAN Commercial Other (Specify)
Radio Radar Sonar Wire Tool Test Power Sound Other (Specify)
EQUIPMENT MODEL DESIGNATION
SERIAL NUMBER OF EQUIPMENT
NAME OF CONTRACTOR
CONTRACT NO.
TYPE NUMBER AND NAME OF MAJOR UNIT INVOLVED
SERIAL NUMBER OF UNIT
CONTRACT OR PO DATA OF UNIT
DATE EQUIPMENT RECEIVED
ITEM WHICH FAILED
THIS SIDE FOR TUBES
TUBE TYPE, INCLUDING PREFIX LETTERS
SERIAL NO. (NOTE 8)
TUBE MANUFACTURER
CONTRACT NO. (NOTE 8)
FAILURE OCCURRED IN
Storage Operation
Handling Other (Specify in remarks)
Installing
GUARANTEED HOURS (NOTE 8)
DATE OF ACCEPTANCE (NOTE 8)
ACTUAL HOURS
DATE OF FAILURE
TYPE OF FAILURE (NOTE 7)
TUBE CIRCUIT SYMBOL V-
NATURE OF FAILURE AND REMARKS (NOTE 6) (CONTINUE ON BACK)
THIS SIDE FOR PARTS (NOTE 9)
NAME OF PART
CIRCUIT SYMBOL (eg R-134)
NAVY TYPE NO.
SERIAL NO.
*CONTRACT DATA
*DATE RECD.
*ARMY STOCK NO.
*CHECK-OFF OR TAG DATA (NOTE 9)
*MANUFACTURER'S DATA (NOTE 9)
BRIEF DESCRIPTION AND CAUSE OF FAILURE, INCLUDING APPROXIMATE LIFE (CONTINUE ON BACK)
CONCLUSION:
Normal replacement Shortage Modification Failure Transportation breakage Other (Specify)
*NOT REQUIRED FOR REPORTS SUBMITTED BY NAVAL ACTIVITIES.
16—46851-1 U. S. GOVERNMENT PRINTING OFFICE

Failure Report

TABLE 7-1

RDR RECEIVER TROUBLE SHOOTING CHART



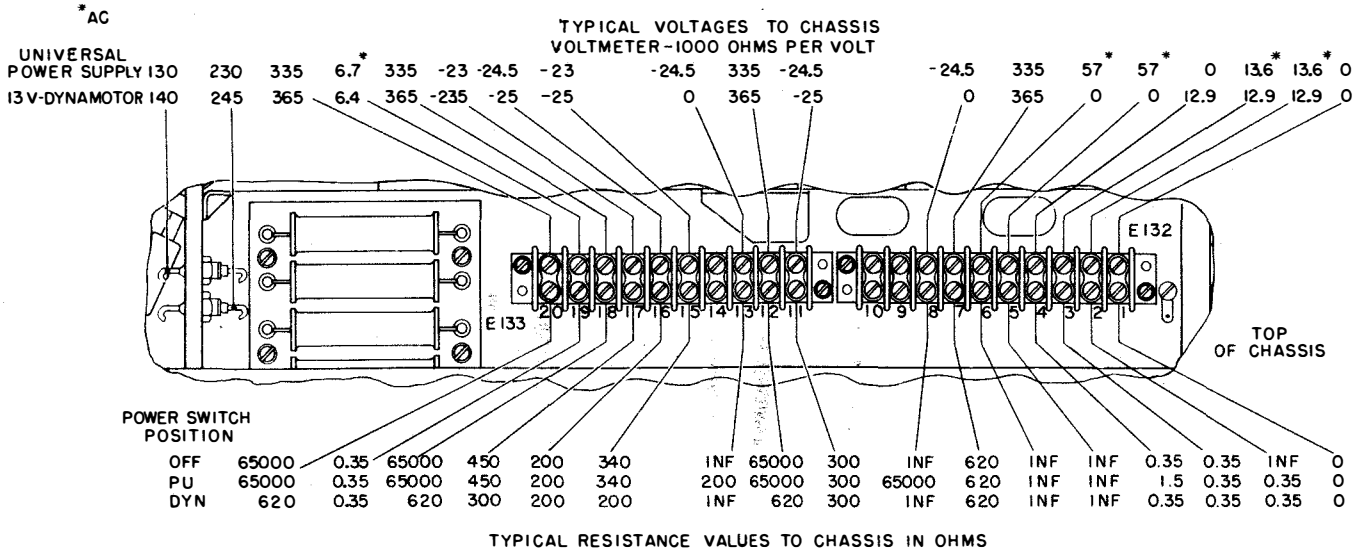


Figure 7-1. Typical Voltage and Resistance Values at Terminal Boards E132 and E133

Two general methods may be employed to locate defective components in the equipment, neither of which is entirely conclusive, but in conjunction will detect the unit at fault. A voltage and resistance check will indicate open or shorted circuits, while a continuity test will indicate deviations in circuit component values.

Tables 7-2, 7-3, and 7-4 show typical measurements made between the referenced terminals and the equipment chassis (ground). Terminals are not accessible until the chassis is removed from the case; therefore to measure these voltages, disconnect the cables, withdraw the chassis from the case, set the chassis on end, and reconnect the cables.

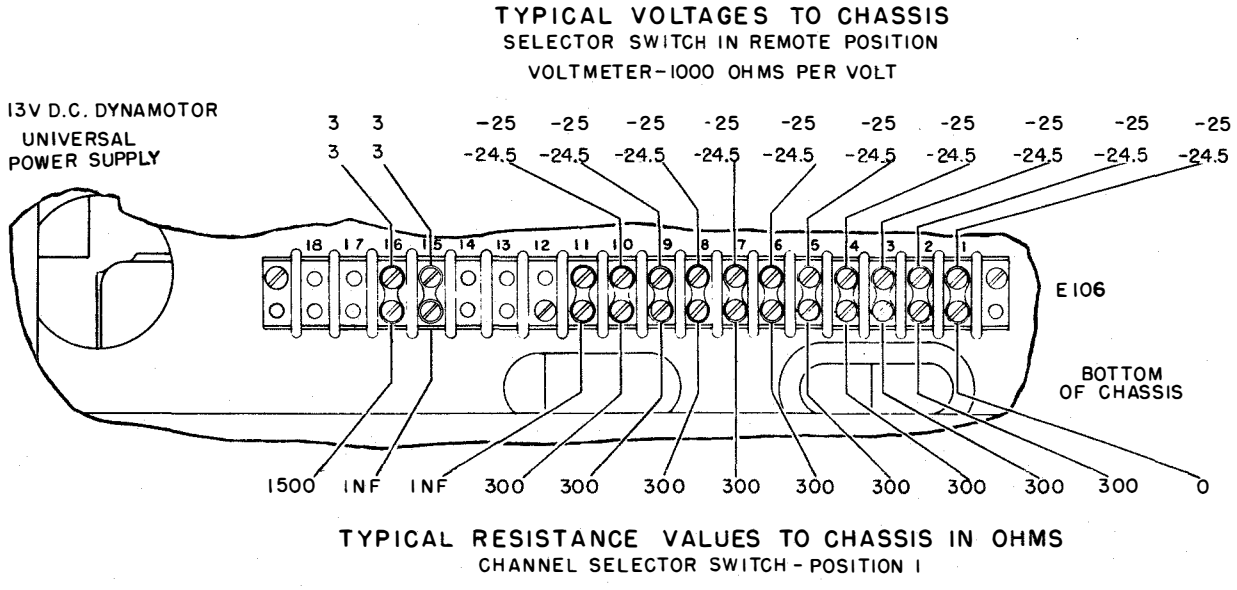


Figure 7-2. Typical Voltage and Resistance Values at Terminal Board E106

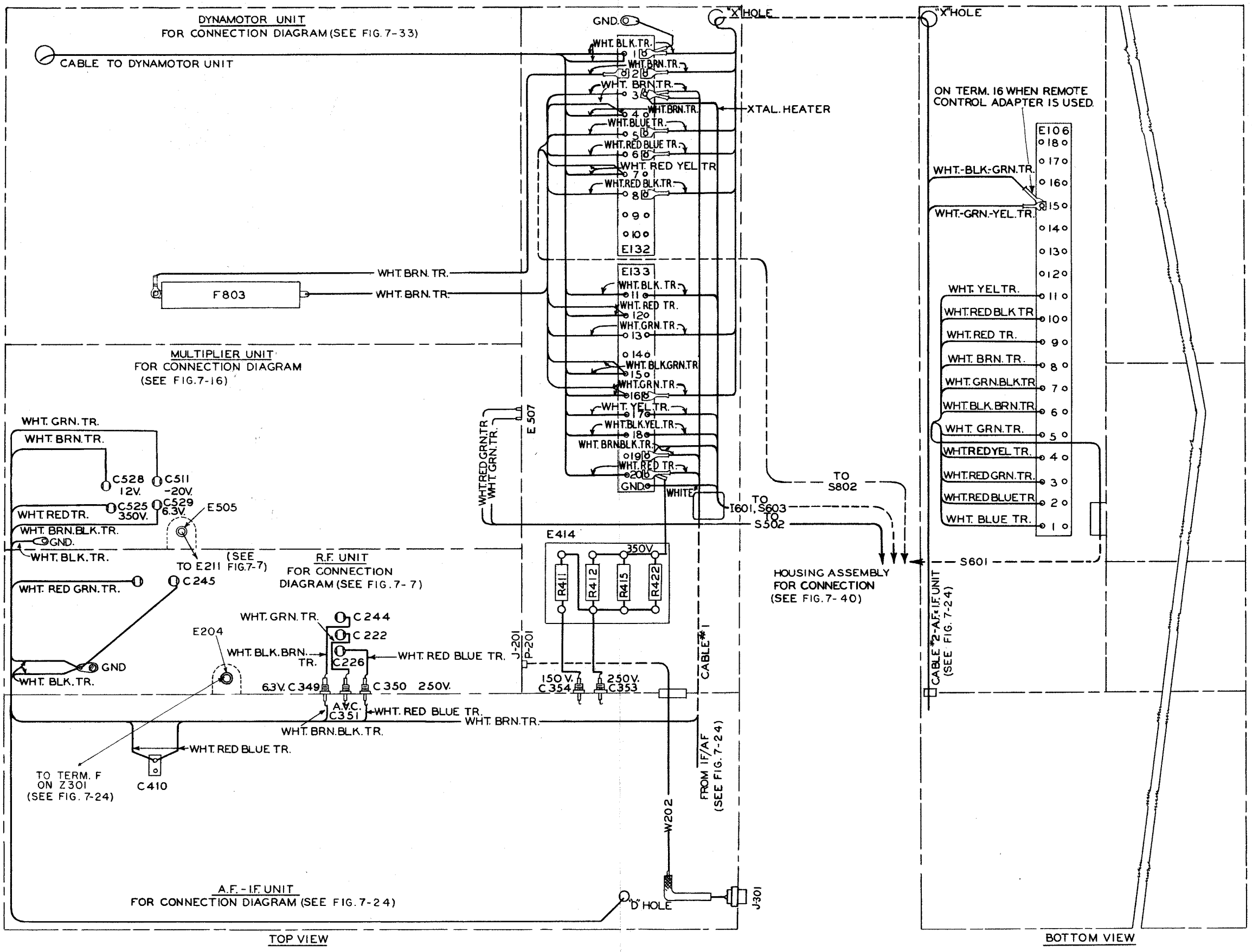


Figure 7-3. Interconnection Diagram of Receiver Sections (T-618861)

Typical voltage values are shown for the equipment with the two types of power input: 13-volt d-c, and the AC/DC Power Supply unit. With the AC/DC Power Supply unit, alternating current is present in the heater circuits; therefore an a-c meter must be used to take these readings.

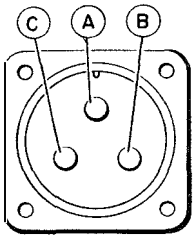
The charts in Figures 7-1 and 7-2 give typical resistance values, measured from the terminals located on top and bottom of the chassis, to ground. A deviation of 15 per cent from the values given is not always an indication of defective components in the circuit, but greater variations in resistance should be investigated by checking the individual circuit components. Measurements must be made with all cables disconnected from the unit.

Typical resistance values to ground from the pins in the receptacles on the panel of the unit are given in Figure 7-4.

Cause for variations in excess of 15 per cent, in any of the resistance values given, can be located by checking the circuit back to the section of the equipment involved, by means of the interconnection diagram shown in Figure 7-3. The section at fault can then be checked by means of the information given under the heading of the section involved.

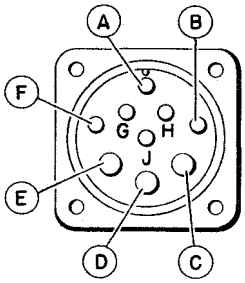
RESISTANCE AND CONTINUITY CHART

RECEPTACLES ON RECEIVER PANEL



Z603
REM

A — 0
B — INF
C — -60



Z604
POWER

	POSITION OF POWER SWITCH, S802		
	OFF	PU	DYN
A	INF	65000	INF
B	INF	200	INF
C	INF	0.35	0.35
D	0	0	0
E	0	0	0
F	INF	INF	INF
G	INF	0.35	0.35
H	INF	0.35	0.35
J	INF	INF	INF

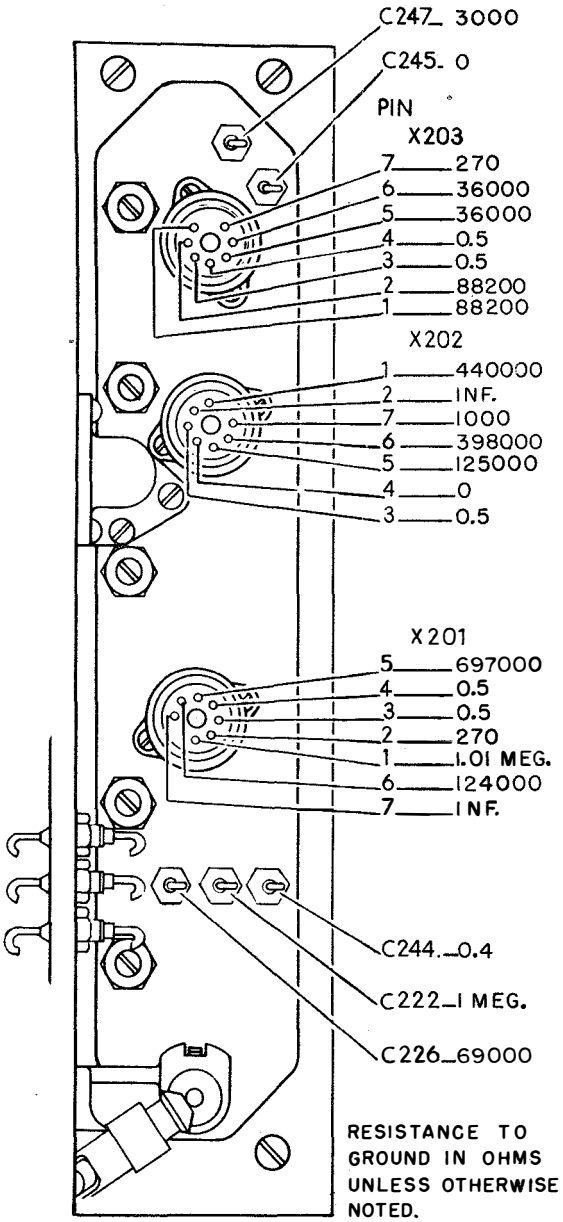
RESISTANCE IN OHMS TO GROUND
NO CABLES CONNECTED.

Figure 7-4. Typical Resistance Values at Input Connectors

a. RADIO CIRCUITS.

(1) RADIO-FREQUENCY SECTION, CRV-46269.

(*a*) RESISTANCE CHECK.—Since the socket pins of the radio-frequency section are inaccessible with the tubes in place, it is impossible to make a voltage check of this unit without employing a tube tester fitted with adapters to make connections to the sockets. Where such equipment is available, the voltage values for the three tubes in this section can be determined



TUBES OUT OF SOCKETS.
ALL EXTERNAL CABLES DISCONNECTED

Figure 7-5. Radio-Frequency Section, CRV-46269, Typical Resistance Values

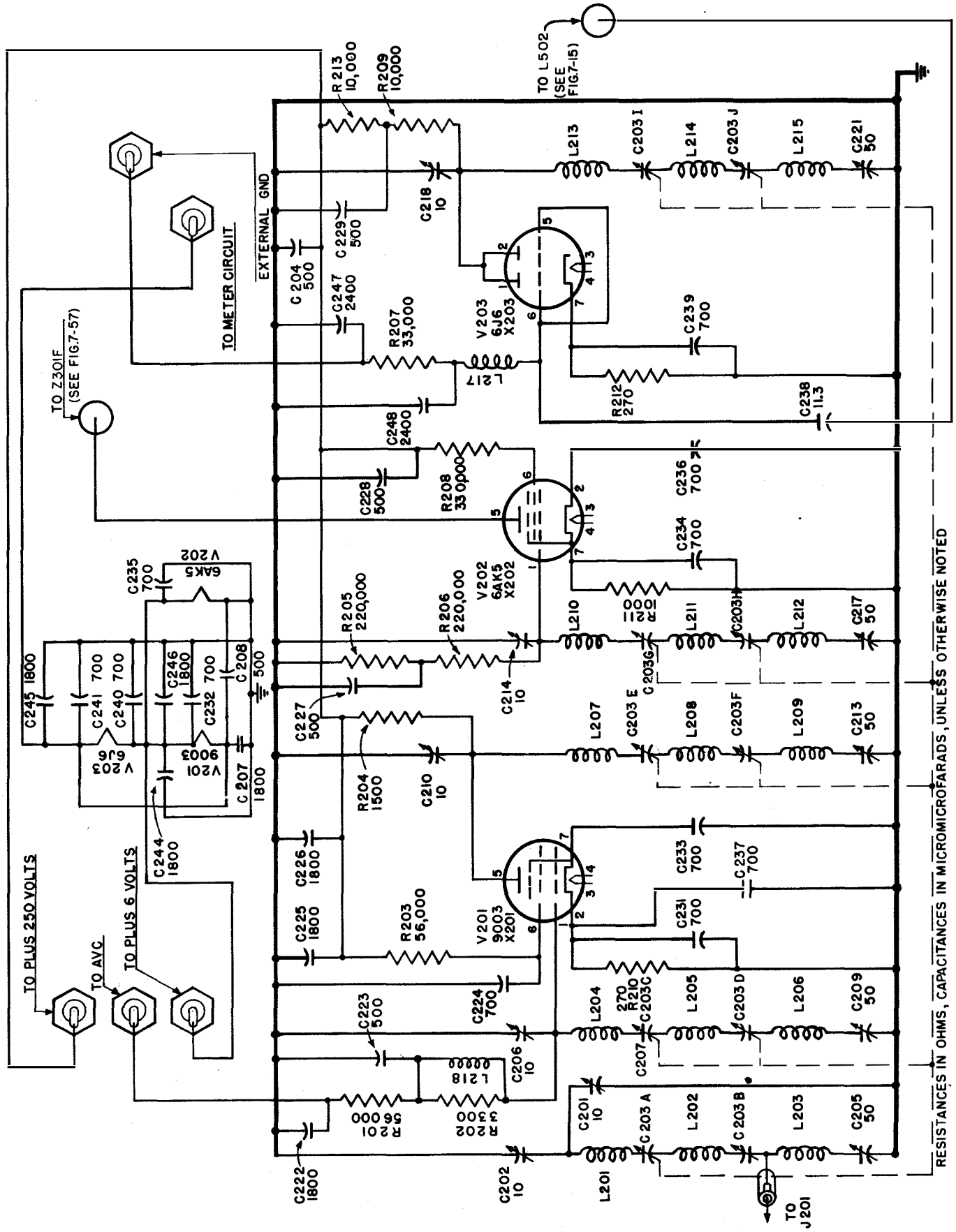


Figure 7-6. Radio-Frequency Section, CRV-46269, Schematic Diagram (P-728940)

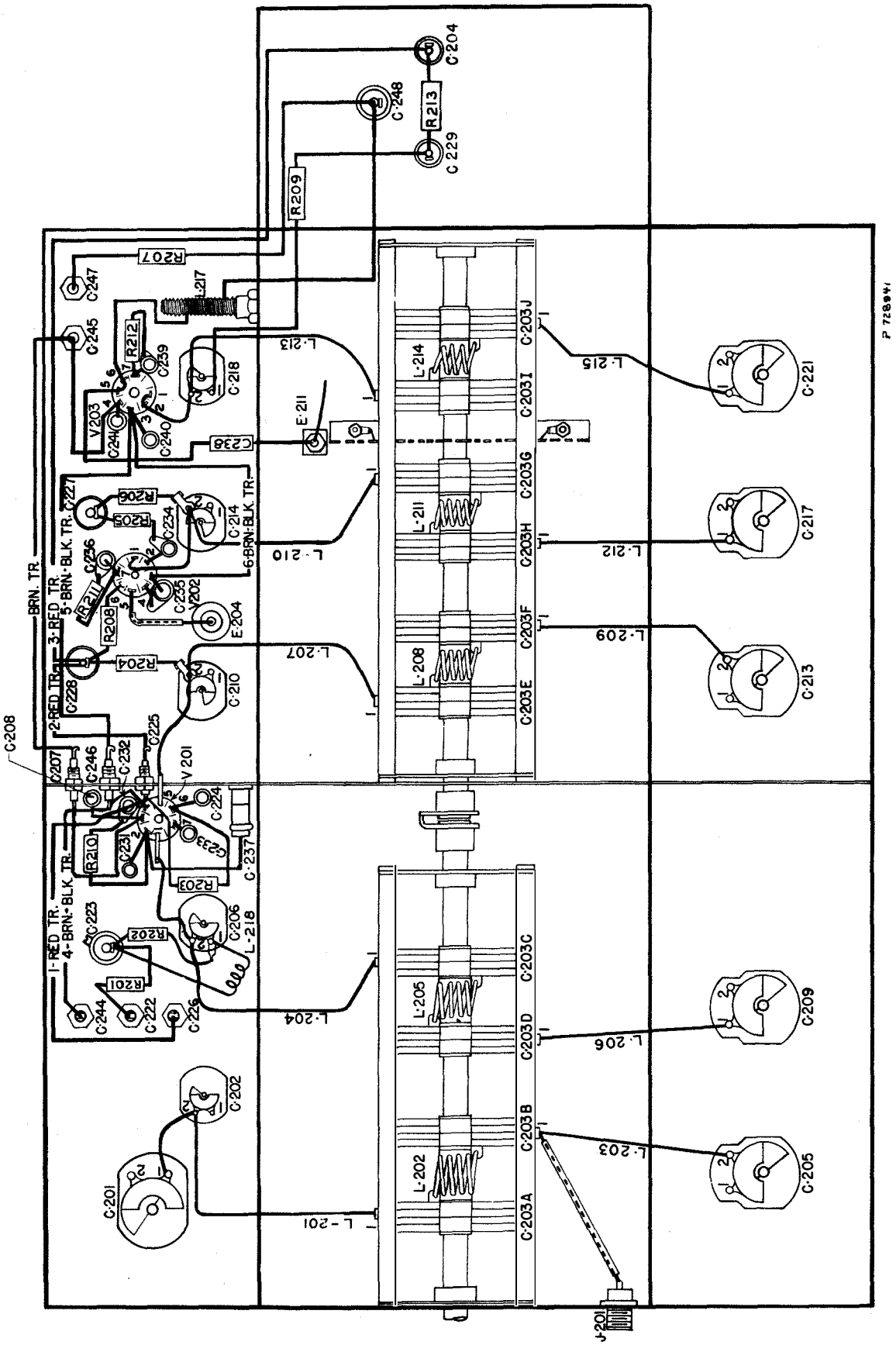


Figure 7-7. Radio-Frequency Section, CRV-46269, Connection Diagram (P-728941)

from Table 7-2 showing the operating characteristics of the tubes.

The resistance values between the tube pins and ground are shown in Figure 7-5. Failure to obtain resistance readings within 15 per cent of the values given indicates a defective component. The components involved in any portion of the circuit may be determined by means of the schematic diagram, Figure 7-6, and their position in the equipment located with the aid of the connection diagram Figure 7-7, and Figure 7-8 showing the physical location of the components.

Note

1. Proper operation of this equipment depends directly on accurate alignment, so the alignment procedure should not be undertaken unless there exists a definite indication of its necessity.

2. Lead dress is very critical in this unit. When making repairs, extreme care must be exercised not to alter the position of leads not associated with a component that may have to be replaced.

(*b*) REMOVING THE R-F SECTION.—Repairs to the r-f section, unless involving only correction of slight misalignment, as described in paragraph 2*a*(1)(*d*) in this section, require the removal of the unit from the chassis. Since a complete r-f unit is furnished with the equipment spares, it is usually advisable to install the spare unit when the r-f section is found defective. The defective unit can then be repaired and placed in spare stock.

To remove the r-f section from the chassis, proceed as follows. The numbers on the various steps reference the parts, shown in Figure 7-9, involved in the dismantling procedure.

Step 1. Remove selector cover and crystal oven, then place the chassis top up, on a work bench.

Step 2. Unsolder the two leads to C245 and C247. Note cable coding and capacitor symbols for aid in replacement.

Step 3. Remove the elbow shield over the terminal and lead from the multiplier section.

Step 4. Loosen the screw on the terminal post of the multiplier and remove the wire. Pry loose the oval collar fitting into the side of the r-f unit where lead from the multiplier enters the unit.

Step 5. Remove the elbow shield over the lead to the i-f section and unsolder the wire from the terminal on the r-f unit.

Step 6. Unsolder the three leads to the lead-through capacitors, C222, C226, C224, on the audio-frequency section shield. Note coding of wires and capacitor symbols.

Step 7. Disconnect the antenna compensator coupling by gripping the end of the spring with needle

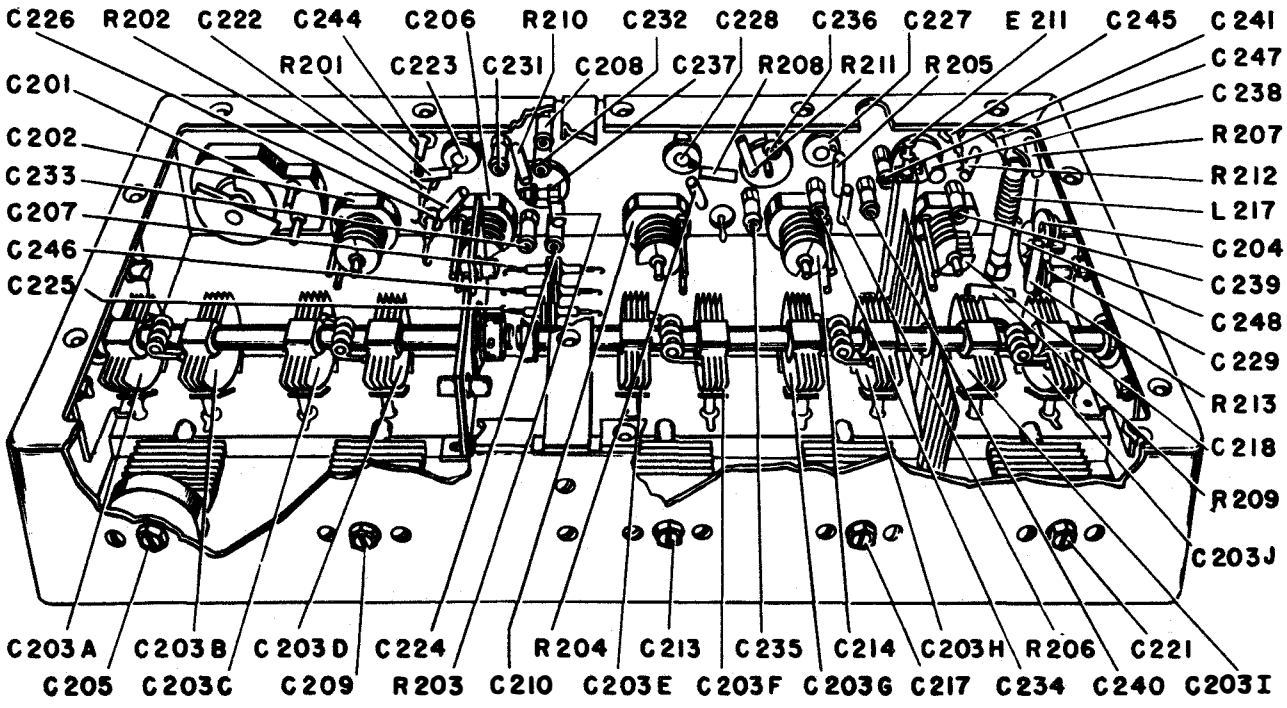
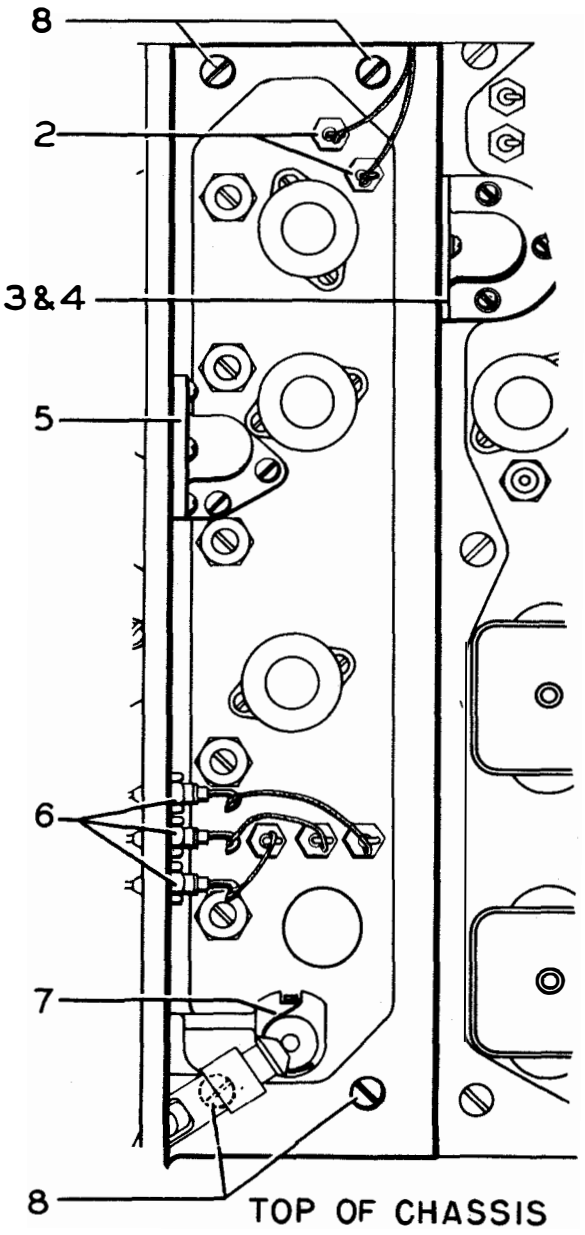


Figure 7-8. Radio-Frequency Section, CRV-46269, Component Identification



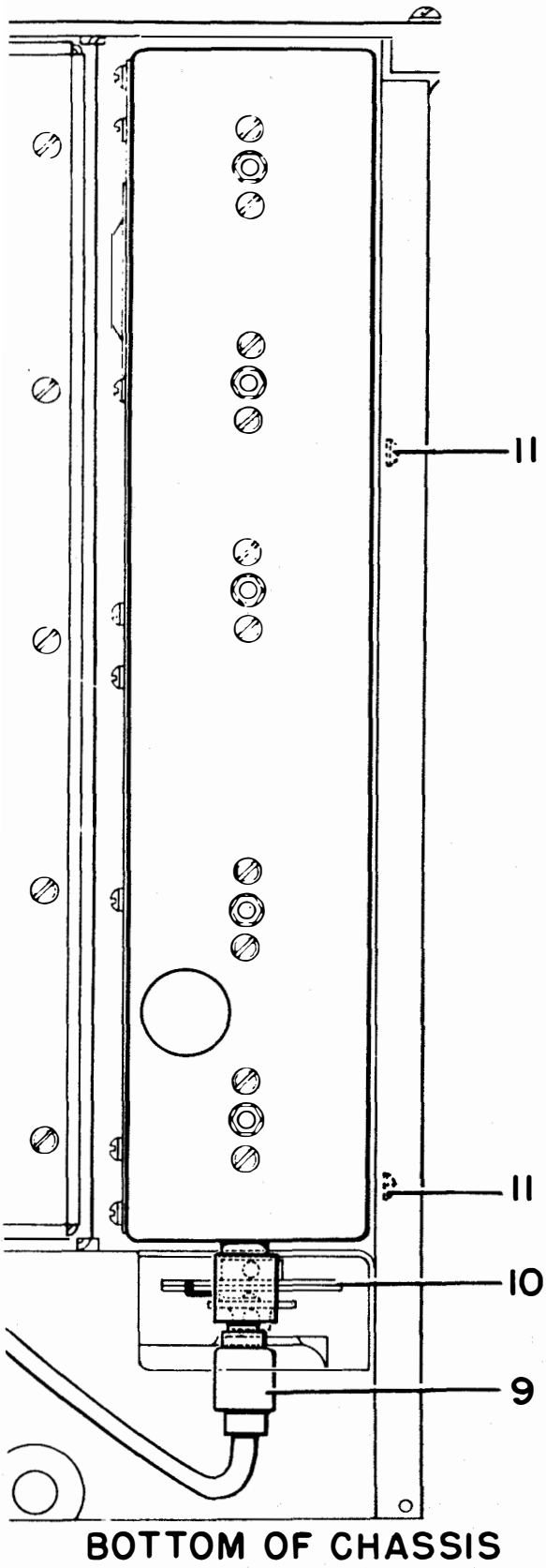


Figure 7-9. Steps in Removal of Radio Frequency Section, CRV-46269

point pliers and lifting the spring clear of the notch in the flat member attached to the lower half of the coupling. The other end of the spring can then be pulled free of the hole in the top of the coupling.

Step 8. Remove the four binder screws in the corners of the r-f unit.

Step 9. Stand the chassis on end, dynamotor section down, and disconnect the coaxial cable from the bottom of the r-f unit by unscrewing the connector, J201.

Step 10. Unlock the r-f dial and rotate the coupling on the tuning shaft of the unit until the L-shaped coupling member on the selector shaft is toward the top of the chassis.

Step 11. Remove the shield from the bottom of the i-f section and then the two binder head screws holding the unit to the shield of the audio section.

Step 12. Withdraw the r-f section from the bottom of the chassis; the coupling between the unit and selector will pull apart in the process. The antenna compensator coupling at C201 will part without difficulty.

(*c*) REPLACING THE R-F SECTION.—Procedure for reassembly is the reverse of the dismantling routine. To engage the coupling when replacing the unit, proceed as follows:

Rotate the r-f dial until the L-shaped coupling member on the selector mechanism shaft is approximately 30° removed from a line perpendicular to the bottom of the chassis. This position presents the narrow edge of the member to the bottom of the chassis. Slide the r-f unit into place, with the coupling disks on the tuning shaft of the unit so positioned that the narrow slot formed by the slotted disks will slip over the edge of the coupling member. As the unit slides into place, the coupling halves will turn and establish the proper relationship. The remainder of the assembly may then follow, in the reverse order, the steps described for dismantling.

When it has been necessary to remove the coupling from the r-f unit in the course of making repairs, it should be replaced in approximately the same position with relation to the capacitor rotor plates it controls. Reset the selector dial to zero position in the following manner.

Stand the chassis on end, dynamotor down, and remove the round cap in the bottom of the r-f unit. Unlock the r-f dial, set the capacitors in the unit to minimum capacity while viewing them through the hole in the bottom of the case, and relock the dial. Loosen the screw on the face of the dial, slide the dial plate until the 100 mark lines up with the reference mark on the panel, and retighten the screw.

Viewing the antenna compensating capacitor through the same hole, place it at maximum capacity by rotating the knob marked ANT COMP on panel. When the capacitor is set, the knob pointer should be at zero on the scale. Correct, if necessary, by loosening the two setscrews in the knob, moving the pointer to zero without disturbing the setting of the capacitor, and retightening the setscrews.

(*d*) R-F SECTION ALIGNMENT SIMPLIFIED.—The alignment of the tuning circuits of the radio-frequency section of the RDR receiver should be undertaken only as a last resort when the unit fails to function and when the necessary test equipment is available. Every probable cause for failure should be carefully checked and eliminated before deciding on realigning the unit. The above applies, of course, when the unit has not been damaged mechanically.

Because of the limited scope of the adjustments that may be made to the r-f section while in place in the chassis, the alignment notes may best be divided into two categories:

1. Correcting slight misalignment, or checking alignment for maximum efficiency with unit in place in the chassis.
2. Complete realignment requires the removal of the r-f section from the chassis.

Note

The multiplier section must be in alignment and tuned for maximum output on each channel before attempting any adjustments on the r-f section.

Under both procedures it will be necessary to align the r-f section at both the low- and high-frequency limits of the section. Since crystals for these frequencies may not be on hand, use the nearest channel frequency available. However, when attempting complete realignment, the recommended frequencies should be approximated as closely as possible in order to secure proper tracking over the complete band.

To check the alignment of the r-f section, the following test equipment will be required.

One output meter: A rectifier-type a-c voltmeter may be used for the purpose. Set the meter for 0-15V scale reading. Plug a 600-ohm headset into the phone jack on the receiver panel as an output load.

One signal generator: Type LAF or equivalent. This signal generator must be capable of producing an amplitude-modulated output in the frequency range of 225 to 390 mc. The generator connecting cable must have a 50-ohm impedance. The RG 8/U coaxial cable supplied in the antenna carrying case may be used for the purpose.

Alignment of the r-f section is accomplished in the following manner:

Step 1. Disconnect all cables and remove the chassis from its case.

Step 2. Place the chassis on its side, so that adjustments may be made on both top and bottom of the r-f section, and reconnect power cable.

Step 3. Connect the signal generator to the antenna receptacle, using 50-ohm coaxial cable for proper impedance match.

Step 4. Connect the output meter to pins A and C of the output connector Z603.

Step 5. Turn the power on and permit the RDR equipment to warm up at least five minutes before making adjustments. For stability, the signal generator should also be permitted to warm up.

Step 6. Set the RDR OUTPUT LEVEL control to approximately 8 and leave at this setting until alignment is completed.

Step 7. Select the channel nearest 390 megacycles and operate the channel selector mechanism to this point.

Step 8. Rotate the meter switch to position 2, and unlock the MULTIPLIER selector dial. Adjust this dial for maximum meter reading.

Step 9. Now set the signal generator to the frequency of the channel selected and modulate it with a 400-cycle note. It will probably be necessary to vary the generator frequency setting slightly in order to obtain the proper frequency.

Maximum reading on the output meter is an indication that the generator frequency is correct. Set the generator output to register approximately 5 volts on the output meter and turn back the generator output whenever the meter reading exceeds this value. Do not use the RDR OUTPUT LEVEL knob to maintain this figure.

Step 10. Unlock the r-f selector dial and adjust for maximum output.

Step 11. Tune the ANT COMP, C201, for maximum output. Do not change the setting of C201 at any frequency other than 390 mc.

Step 12. Lock all selectors.

Step 13. Select the channel nearest 350 mc. and operate the channel selector to this point.

Step 14. Repeat steps 8, 9, and 10.

Step 15. Using an insulated alignment tool, adjust C205, C209, C213, C217, and C221 for maximum output, in the order given. These trimmers are adjustable from the bottom of the r-f unit, and are shown on Figures 7-9 and 7-11.

Step 16. Lock all selectors.

Step 17. Now select the channel frequency nearest 225 mc. and turn the channel selector to this setting.

Step 18. Repeat steps 8, 9, and 10.

Step 19. From the top of the chassis, adjust, in sequence, C202, C206, C210, C214, and C218 for maximum output.

Step 20. Lock all selectors.

Step 21. Repeat steps 7 to 20.

This completes adjustment of the r-f section for any slight misalignment of the various trimmers. If trouble is experienced with increased image response, the rejection ratio may be restored if a signal generator with 0.1 volt output at approximately 450 mc. is available. The adjustments are as follows:

Step 22. Select a channel as close as possible to 390 mc. and turn the channel selector to this point.

Step 23. Retune the signal generator to the same channel frequency and adjust the generator output for approximately 5 volts on the output meter.

Step 24. Unlock the MULTIPLIER selector dial and tune for maximum output on the panel meter.

Step 25. Unlock the r-f selector dial and tune for maximum output on the output meter.

Step 26. Adjust the antenna compensator for maximum output and without touching any other adjustments, set the signal generator for 0.1 volt output at a frequency equal to the sum of the channel frequency being used and twice the i-f frequency, which is 30.2 megacycles.

Step 27. Using an insulated alignment tool, adjust the loop of L201 for minimum output by pushing it slightly toward or away from the panel, as necessary. This adjustment may be made through the hole to the right of C201. Loop L201 is shown on Figure 7-11.

Step 28. Retune the signal generator to the channel frequency and readjust the antenna compensator for maximum output.

Step 29. Repeat steps 24 and 25.

Step 30. Lock all selector dials.

After completing the adjustments described, the image ratio should be correct and the section properly aligned.

(*e*) R-F SECTION ALIGNMENT COMPLETE. —Equipment required under this heading is as follows:

One oscilloscope: Any standard oscilloscope with a horizontal sweep will be satisfactory.

One ultra-high-frequency sweep generator: This sweep generator must be of the frequency-modulated type with an output range of 225 to 390 megacycles and a minimum sweep of 6 per cent.

One signal generator: Type LAF, or equivalent. This signal generator must be capable of an amplitude-modulated output range of 225 to 450 mc. For proper impedance match at the antenna post, the generator connecting cable must have a 50-ohm impedance.

One output meter: A rectifier-type a-c voltmeter may be used for this purpose, set for a scale reading of

0-15V. A 600-ohm headset should be plugged into the phone jack as the output load.

One tuning wand: This tuning "wand" is an insulated alignment tool with a powdered iron core at one end and a copper core at the other end. The wand is used to check circuit resonance by bringing one end or the other in proximity to the circuit being tested. The copper core reduces the inductance of the circuit and the iron core increases it. Hence, if the amplitude of the resonant curve increases when the copper core is used, the circuit inductance should be reduced. Conversely, if the amplitude increases with use of the iron core, the inductance should be increased. If the amplitude decreases with the application of each core, the circuit is in resonance and no adjustment is necessary.

One variable capacitor: approximately 1.5-7 mmf.

The following steps for complete realignment cover the electrical operations only. The mechanical steps required for removal of the section from the main chassis, prior to complete alignment, are given earlier in this section, paragraph 2*a*(1)(*b*).

Step 1. After removing the r-f section, take off the side shield cover by removing the screws which hold it in place.

Step 2. For shielding purposes during realignment, and to permit access to the inductive loops, the side shield must be replaced with five metal strips approximately one inch wide by four and one-half inches long. Drill screw clearance holes through the strips and then fasten them in place with the screws previously removed. The section with the temporary shielding strips is shown on Figure 7-10.

Step 3. Obtain a dial which will fit the 11/32-inch shaft of the r-f section variable capacitors. To facilitate adjustment, this dial should be graduated 0-100 clockwise throughout 180 degrees. Place a reference mark on the chassis, fully mesh the capacitor plates, then attach the dial to the capacitor shaft so that the 100 graduation mark coincides with the reference mark. Then procure a knob for a ¼-inch shaft and fasten it to antenna compensator, C201.

Step 4. Unsolder resistor R208 (330,000 ohms) from the screen terminal, pin 6, of X202.

Step 5. Now solder short, direct leads from the RDR chassis to the r-f section, to replace all leads removed, except the lead to the i-f section from E204 and the lead from E211 to the multiplier, both of which need not be reconnected. See Figure 7-9 for location of components mentioned. Also, connect a short lead from C222 to ground and provide a ground from the r-f section to the main chassis.

Step 6. Preset the following trimmer capacitors to the percentage of maximum capacitance indicated:

C201—30 per cent
C202—25 per cent
C206—25 per cent
C210—25 per cent
C214—25 per cent
C218—25 per cent
C205—95 per cent
C209—50 per cent
C213—50 per cent
C217—50 per cent
C221— 0 per cent

The location of these capacitors and the various inductive loops is shown on Figure 7-11.

Step 7. Connect the oscilloscope to the junction of R205 and R206 at capacitor C227, and ground the oscilloscope return lead to the r-f chassis, keeping both leads direct and short.

Step 8. Connect the 50-ohm output cable of the sweep generator to the antenna receptacle, J201, of the r-f section.

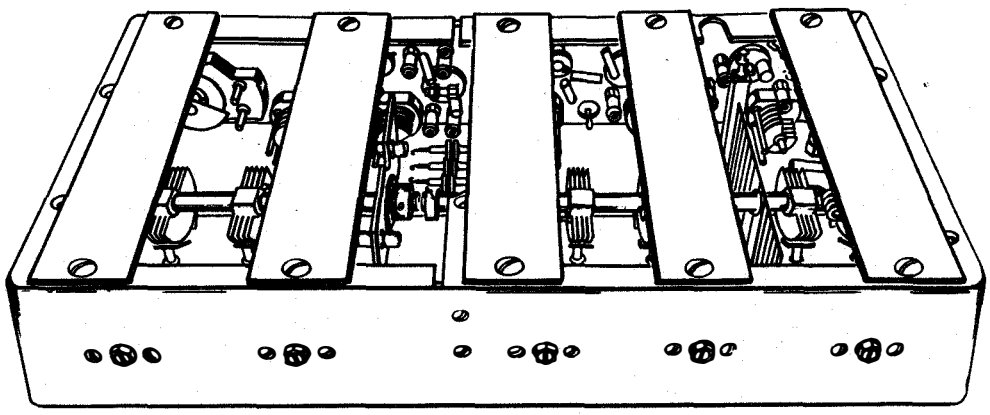


Figure 7-10. Shielding for Alignment of Radio Frequency Section

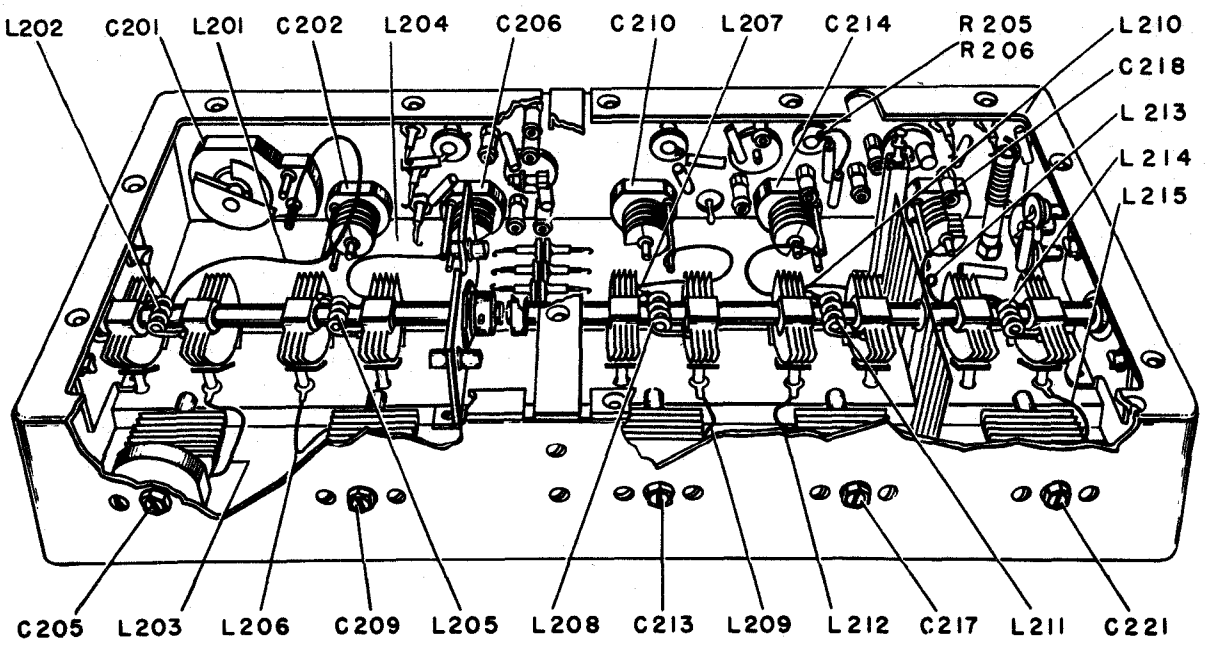


Figure 7-11. Adjustable Components of Radio-Frequency Section

Step 9. Turn the power on and allow the equipment to warm up for at least five minutes before making adjustments.

Step 10. Set the r-f knob at 5.

Step 11. Now set the sweep generator for a minimum of 6 per cent sweep at 390 mc.

Step 12. Tune antenna compensator C201 for maximum symmetrical pattern on the oscilloscope.

Step 13. With the tuning wand, check the alignment of loops L201, L204, L207, and L210, in the order given, for maximum amplitude and the approximate wave pattern of Figure 7-12A. The location of these wire inductive loops is shown in Figure 7-11.

The sweep generator and the oscilloscope must be calibrated at each test frequency. This can be done by using another RDR unit and using the crystal-calibrated transmitted signal to obtain a marker on the test pattern. If the calibrated test frequencies are not available, use must be made of the closest calibrated frequencies available and the dial settings corrected for the difference.

If the tuning wand indicates that alignment is necessary, circuit resonance can be accomplished by using an insulated alignment tool with a slot at one end and by lengthening or shortening the inductive loops so that the pattern is symmetrical about the test frequency and amplitude is maximum. Minor adjustments can be made by adjusting the loops so that they will be

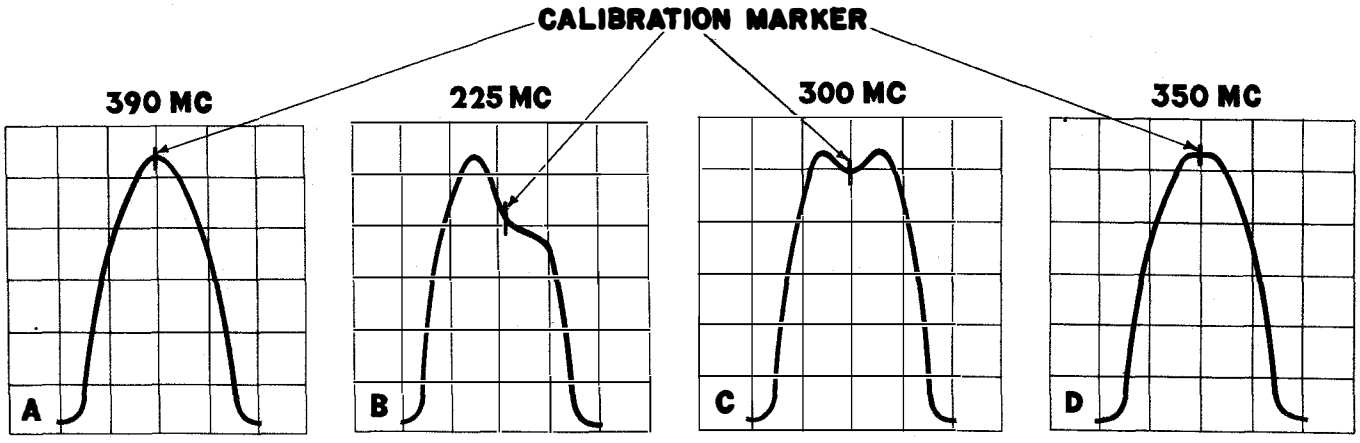


Figure 7-12. Waveshapes in Radio-Frequency Section

closer to or further away from the bottom of the chassis.

It will be noted that the main adjustments on loops L201, L204, L207, and L210 are made on the portions terminating at C203A, C203C, C203E, and C203G. One of the loops of L201 should be approximately vertical and the other approximately horizontal for proper image rejection.

Step 14. Set the r-f knob at 90.

Step 15. Adjust the sweep generator for 225 mc. output.

Step 16. Adjust C202, C206, C210, and C214 for maximum amplitude and the approximate oscilloscope pattern centered about the calibrated test frequency as shown on Figure 7-12B. If C210 or C214 line up at more than 50 per cent of maximum capacity, adjust C213 and C217 so that C210 and C214 line up within the 50 per cent limit. These limitations are necessary for proper image rejection.

Step 17. Adjust the sweep generator for 300 mc. output.

Step 18. Rotate the r-f knob to the position at which the pattern is centered on the screen and, using the tuning wand, check the alignment of L202, L205, L208, and L211, in sequence, for maximum amplitude and the approximate oscilloscope pattern illustrated on Figure 7-12C. If the tuning wand test indicates that adjustment of L202, L205, L208, and L211 is necessary, these coils should be adjusted by compressing with the fingers or expanding the turns, using an insulated screwdriver, until the desired pattern is obtained.

Step 19. Adjust the sweep generator for 350 mc. output.

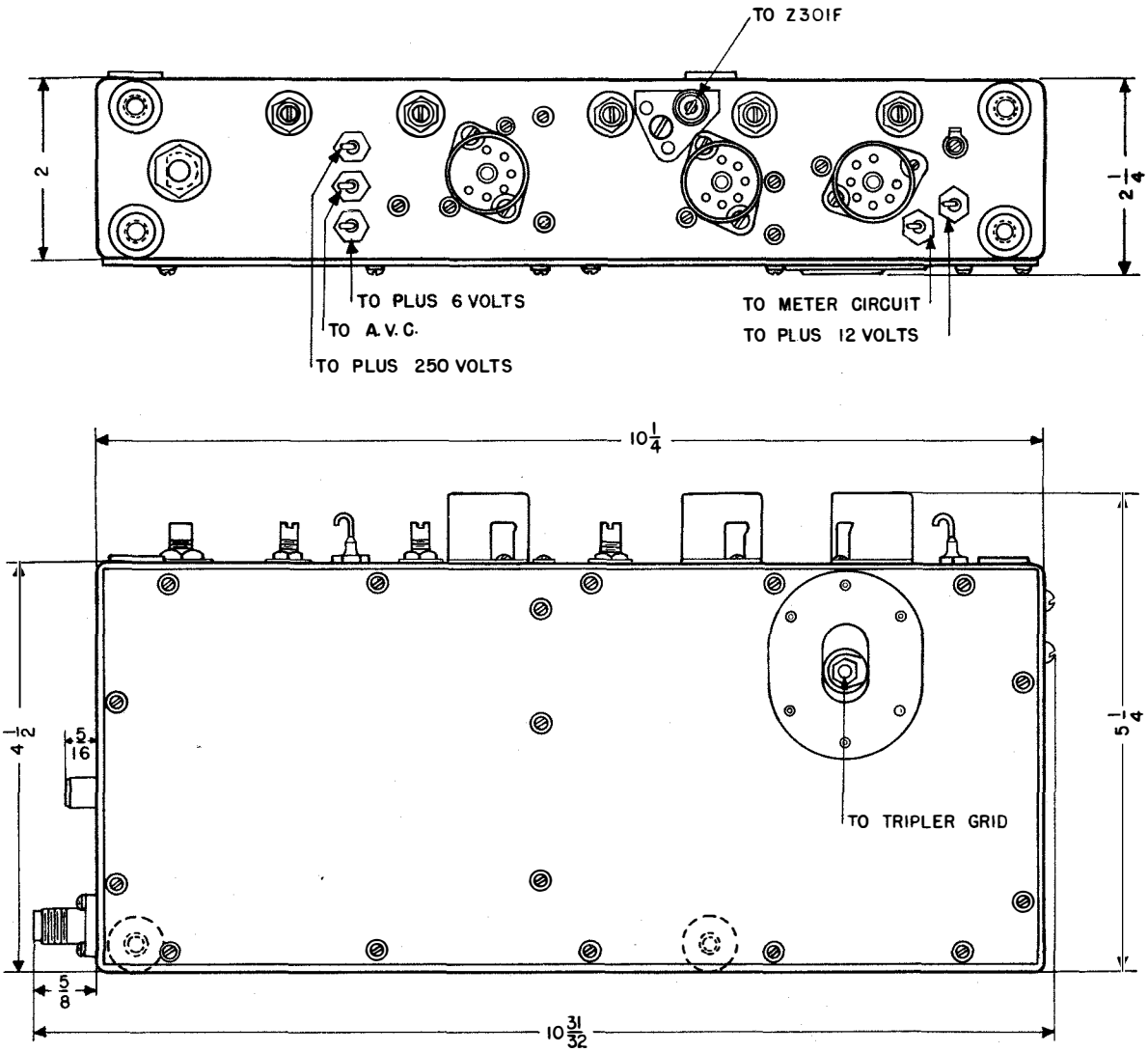


Figure 7-13. R-F Section Outline Drawing (P-728942)

Step 20. Rotate the r-f knob to the position at which the pattern is centered on the screen, and align C205, C209, C213, and C217 for maximum amplitude and approximate pattern as shown on Figure 7-12D.

If C205 lines up at less than 90 per cent of maximum capacity, or if C209, C213, or C217 line up at less than 40 per cent or at more than 60 per cent of maximum, readjust L201, L204, L207, and L210 until C205, C209, C213, and C217 line up within the limits specified.

Step 21. Repeat steps 11 to 20.

Step 22. Repeat steps 15 and 16.

Step 23. Disconnect the oscilloscope and sweep generator leads, and resolder R208 to pin No. 6 of X202.

Step 24. Solder a short, direct lead from the i-f lead protruding from hole "E" (Figure 7-24) on the i-f section, to E204 on the r-f section. Connect a lead 12 inches long from E211 to one terminal of the 1.5-7 mmf. capacitor mentioned previously as being required for alignment. Connect the other end of this capacitor to E505 (Figure 7-3) in the multiplier section. Remove the lead from C222 to ground.

Step 25. Connect the signal generator to the antenna receptacle, J201, using 50-ohm coaxial cable.

Step 26. Connect the output meter to pins A and C of the output connector Z603, and plug a 600-ohm headset into the phone jack.

Step 27. Set the OUTPUT LEVEL control to approximately 8 and leave at this setting.

Step 28. Preset the following capacitors to the per cent of maximum capacity specified:

C214—25 per cent
C217—50 per cent
C218—50 per cent
C221—30 per cent

Elements C214, C217, L210, and L211 require readjustment because of reflected load from V203 and because the application of voltage to V202 changes the operating conditions.

Step 29. Operate the channel selector mechanism to the channel nearest 390 mc.

Step 30. Adjust the MULTIPLIER selector dial for maximum reading on the panel meter. The meter switch should be in position 2. If the meter indicates less than 3, adjust the external 1.5-7 mmf. capacitor that is part of the alignment equipment, until the meter reads 3 or more.

Step 31. Turn the r-f knob to approximately 5 on the dial.

Step 32. Now set the signal generator to the channel frequency selected and modulate it with a 1000-cycle note. Then adjust the r-f knob for maximum output. It will probably be necessary to vary the generator frequency setting slightly in order to obtain the proper frequency. Maximum reading on the voltmeter in the output is an indication that the generator frequency is correct. Set the generator output to read approximately 5 volts on the output meter and reduce the generator level whenever the meter reading exceeds this value. Do not use the RDR OUTPUT LEVEL knob to maintain this figure.

Step 33. Adjust the ANT COMP control for maximum output. With the tuning wand, check the alignment of L210 and L213 for maximum output. If alignment is necessary, this can be accomplished by lengthening or shortening these two loops. Minor adjustments may be made by moving the loops closer to or further away from the bottom of the chassis.

Step 34. Operate the channel selector mechanism to the channel frequency nearest 225 mc. and repeat step 30.

Step 35. Turn the r-f knob to approximately 90 on the dial and repeat step 32.

Step 36. Adjust C214 and C218 for maximum output. If C214 lines up at more than 50 per cent of maximum capacity, adjust C217 so that C214 will line up within this limit. This limitation is necessary for proper image rejection.

Step 37. Operate the channel selector mechanism to the channel frequency nearest 300 mc. and repeat step 30.

Step 38. Turn the r-f knob to approximately 35 on the dial and repeat step 32.

Step 39. Using the tuning wand, check the alignment of L211 and L214 for maximum output. If alignment is necessary, this can be done by compressing or expanding the turns of these two inductances until maximum output is obtained.

Step 40. Operate the channel selector mechanism to the channel frequency nearest 350 mc. and repeat step 30.

Step 41. Adjust the r-f knob to approximately 30 and repeat step 32.

Step 42. Adjust C217 and C221 for maximum output. If C217 lines up at less than 40 per cent or at more than 60 per cent of maximum capacity, readjust L210 until C217 lines up within the required limits. Also, if C221 lines up at less than 20 per cent or at more than 40 per cent of maximum, readjust L213 until C221 lines up as specified.

Step 43. Repeat steps 29 through 33 at 390 mc.

Step 44. Repeat steps 34, 35, and 36 at 225 mc.

Step 45. Repeat steps 37, 38, and 39 at 300 mc.

TABLE 7-2. TUBE OPERATING CHARACTERISTICS
R-F SECTION

TUBE	HEATER VOLTS	HEATER MA	PLATE VOLTS	SCREEN VOLTS	GRID VOLTS	CATHODE VOLTS	PLATE MA	SCREEN MA	GRID MA
DYNAMOTOR OPERATION 13V D.C.									
V201	6.3	150	235	90		2.6	6.8	2.7	
V202	6.3	175	145	82		2.3	1.7	0.5	
V203	6.3	450	87		−16	2.5	4		0.45

Step 46. Repeat steps 40, 41, and 42 at 350 mc.

Step 47. Repeat steps 34, 35, and 36 at 225 mc.

Step 48. Repeat steps 43 through 47 until all circuits track properly.

Step 49. To adjust for the best image rejection ratio, repeat the procedure specified under 2*a*(1)(*d*) "R-F Section Alignment, Simplified," in this section, steps 22 through 30. However, in step 23 the r-f knob should be adjusted for maximum output instead of the r-f selector dial as called for.

This completes alignment of the r-f section.

(2) FREQUENCY-MULTIPLIER SECTION, CRV-35116.

(*a*) VOLTAGE CHECK.—The components of the multiplier section are accessible from the bottom of the chassis upon removal of the cover plate on the bottom of the unit. Both voltage and resistance tests can be made with the unit in place. To make a voltage check of the multiplier, disconnect cables from the receiver and withdraw the chassis from the case. Lay the chassis, top down, on a bench and reconnect the power cable. Remove the plate on the bottom of the unit and switch on the power.

The multiplier voltage to ground from tube sockets and terminals is shown in Figure 7-14. Use a Volt-Ohmyst or Type 60046 Volt-ohm-milliammeter for checking the unit. Variations from the values given in excess of 20 per cent indicate defective components in the circuit.

Note

When the receiver is powered by the AC/DC Power Supply unit, heater supply is a-c and a suitable meter must be employed to take readings at heater terminals.

(*b*) RESISTANCE CHECK.—Resistance values may be taken with the multiplier in the chassis, the resistance to ground from socket pins and terminals being given in Figure 7-14, with tubes in place and external cables disconnected. Location and values of

TABLE 7-3. TUBE OPERATING CHARACTERISTICS
FREQUENCY MULTIPLIER SECTION

TUBE	HEATER VOLTS*	HEATER MA	PLATE VOLTS	SCREEN VOLTS	GRID VOLTS	CATHODE VOLTS	PLATE MA	SCREEN MA	GRID MA
PU OPERATION 115V A.C.									
V502	6.7	150	156		− 60		16		2
V503	6.7	150	173		−115		20		2.1
V504	6.5	650	273	165	−10.3	2.5	13	4	0.35
DYNAMOTOR OPERATION 13V D.C.									
V502	6.7	150	165		− 65		17		2
V503	6.7	150	190		−125		21		2.1
V504	6.3	650	308	165	−11.2	2.7	13	4	0.35

*A.C. on PU operation.

the components may be determined from the schematic and connection diagrams shown in Figures 7-15 and 7-16 respectively.

Variations in excess of 20 per cent from the values shown may be due to defective components, particularly if borne out by incorrect voltage findings.

The location of the capacitors and resistors in the multiplier section is shown in Figure 7-17. In checking a component for deviation from its correct value, as given in the parts list and the schematic diagram, Figure 7-15, disconnect one lead of the resistor or capacitor from the circuit.

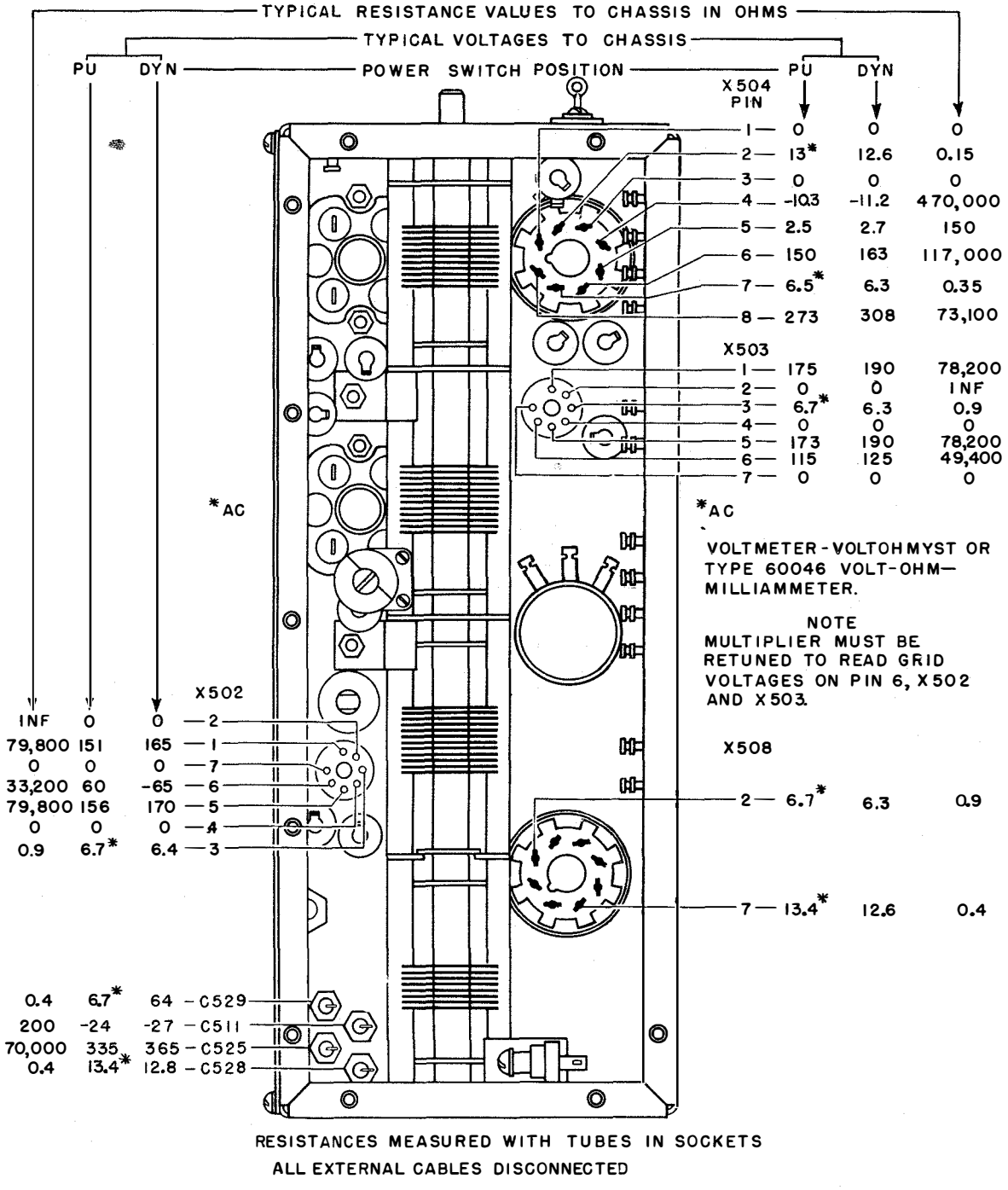


Figure 7-14. Frequency Multiplier, CRV-35116, Typical Voltage and Resistance Values

The construction of the multiplier is such that little difficulty should be experienced in replacing a defective component. Location and dress of leads are important, and every precaution must be taken not to disturb leads other than those to the component being replaced.

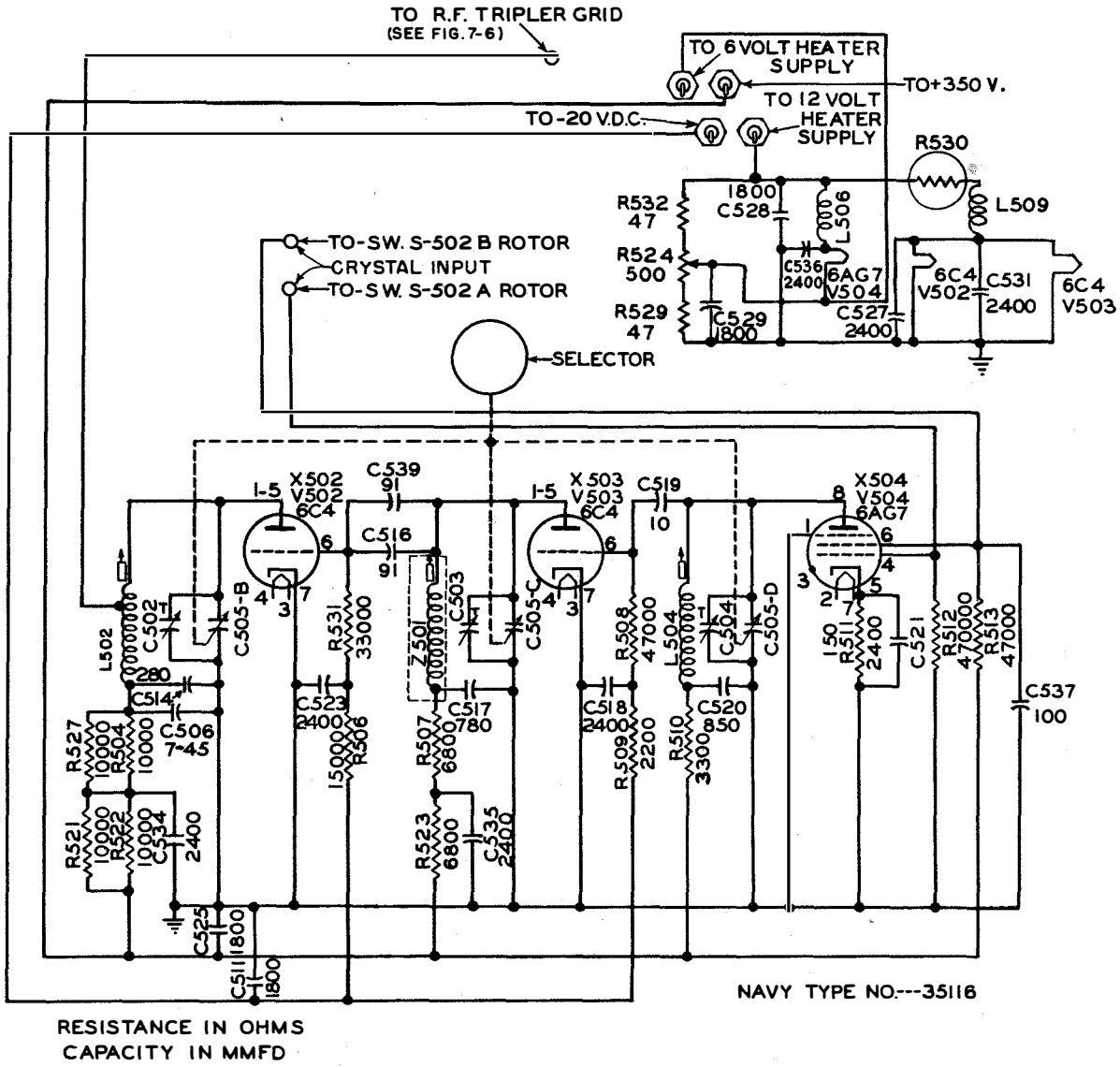


Figure 7-15. Frequency Multiplier, CRV-35116, Schematic Diagram (P-728970)

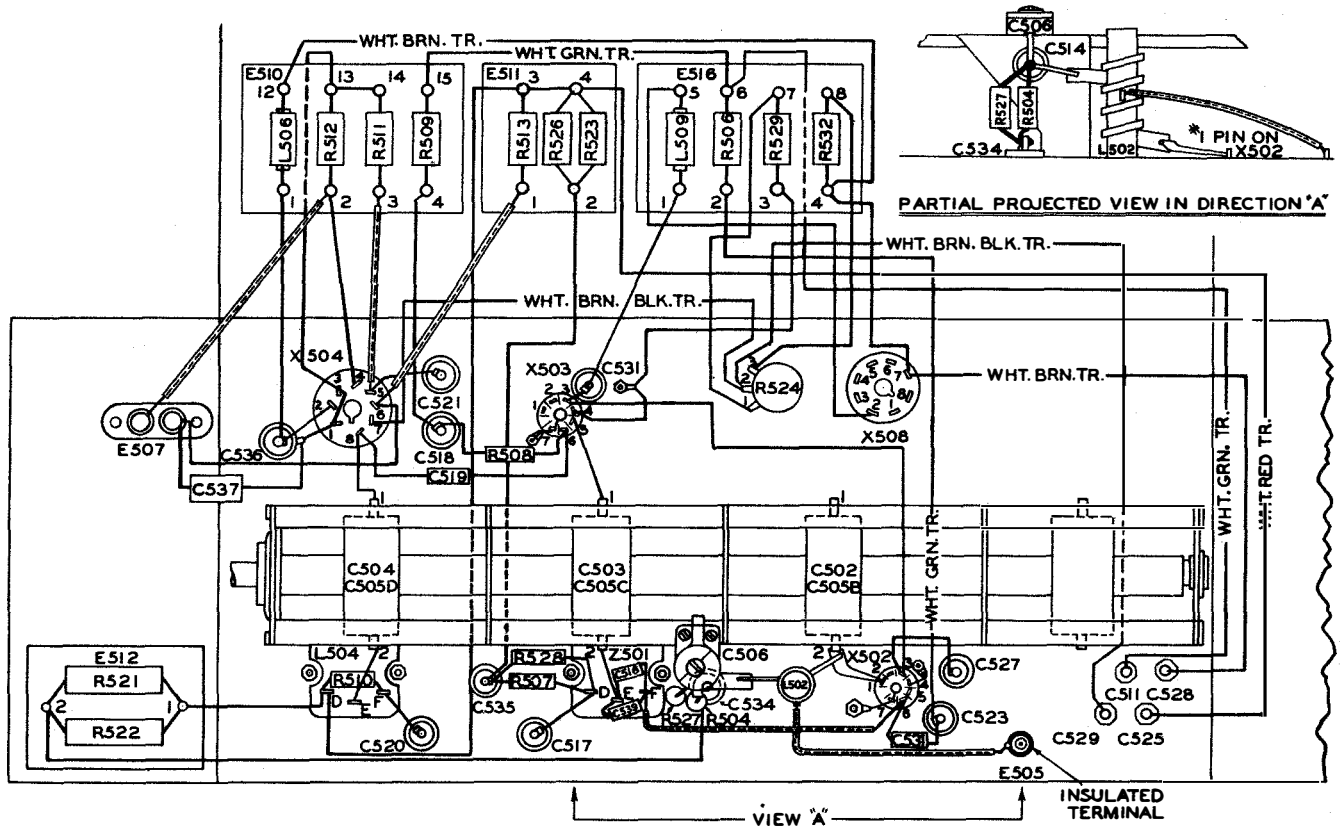


Figure 7-16. Frequency Multiplier, CRV-35116, Connection Diagram (P-728943)

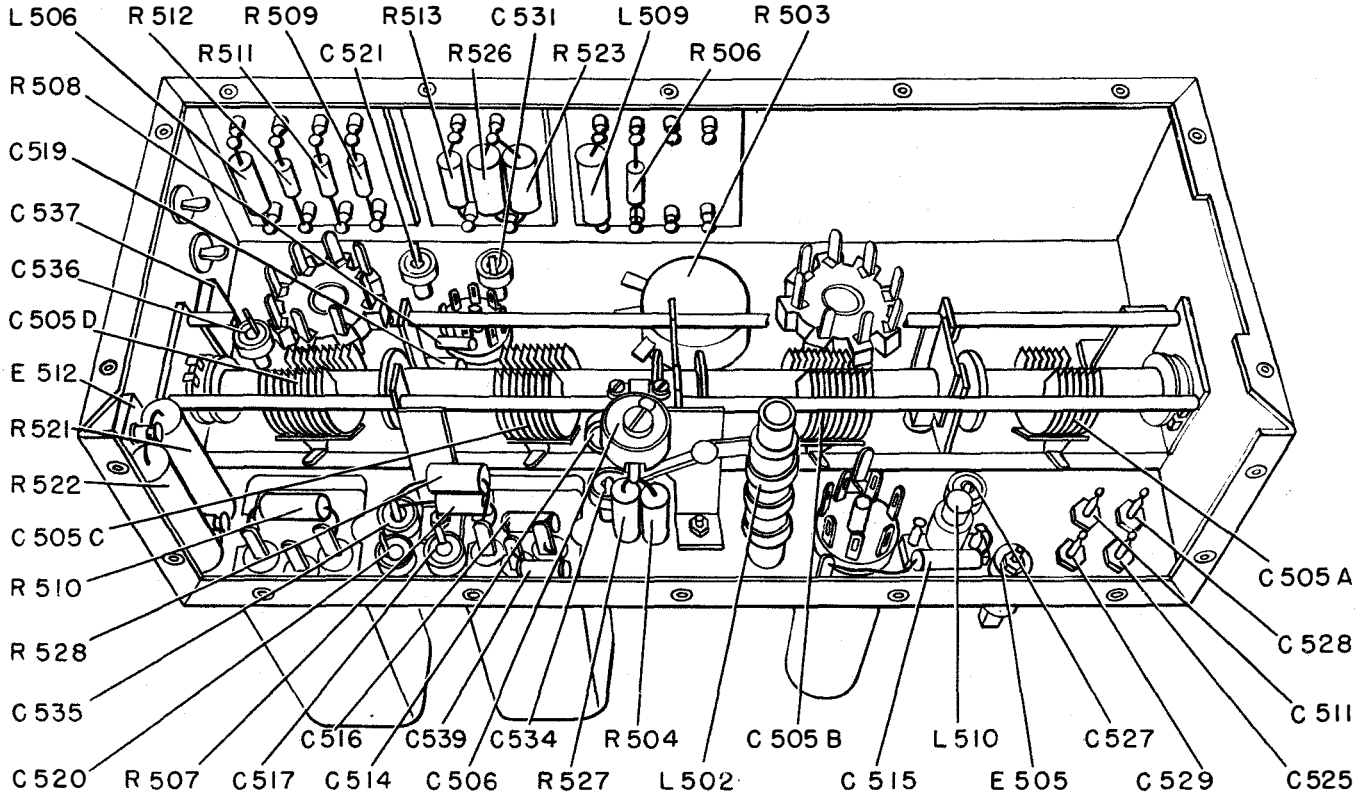


Figure 7-17. Frequency Multiplier, CRV-35116, Component Identification

(*c*) REMOVING THE MULTIPLIER SECTION.—Repairs to the multiplier can usually be made with the unit in the chassis, since removal of the bottom plate of this unit gives access to all the components. To remove the unit from the chassis, proceed as directed in the 11 steps which follow. Steps are keyed to Figure 7-18.

Step 1. Disconnect cables and withdraw the receiver from the case.

Step 2. Place the chassis top down on a work table.

Step 3. Remove the cover from the selector dials and withdraw the crystal oven from the jack plate.

Step 4. Unsolder the leads connected to the posts extending from the end of the multiplier case, adjacent to the selector mechanism.

Step 5. Unlock the multiplier dial. Rotate the coupling at the front end of the multiplier until the pin in the gear is towards the top of the chassis then lock the dial.

Step 6. Turn the chassis over and unsolder the four leads connected to the terminals on top of the multiplier case. Make note of the wire coding and capacitor symbols to facilitate reconnection.

Step 7. Remove the four screws holding the elbow shield over the lead to the r-f section.

Step 8. Disconnect the lead to the r-f section by loosening the screw at the top of the terminal post exposed by the removal of the shield.

Step 9. Remove the six screws holding the unit in the chassis.

Step 10. Withdraw the multiplier unit from the bottom of the chassis; the coupling will disengage as the unit is removed.

(*d*) REPLACING THE MULTIPLIER SECTION.—The multiplier may be replaced in the chassis by reversing the removal procedure. The recoupling of the multiplier to the selector may be accomplished in the following manner.

With the chassis in an inverted position, unlock the multiplier dial and rotate the gear on the back of the selector mechanism until the pin in the gear is toward the bottom of the chassis. Leave the dial unlocked. Insert the nose of a pair of needle-point pliers in the holes in the coupling half on the tuning shaft of the multiplier. Force the nose of the pliers into the holes in the disks to open the slot in the coupling. Place the slot over the pin in the gear of the selector mechanism and withdraw the pliers. Press the multiplier into place in the chassis and rotate the multiplier dial simultaneously. The reassembly may then follow in reverse order the steps given for dismantling.

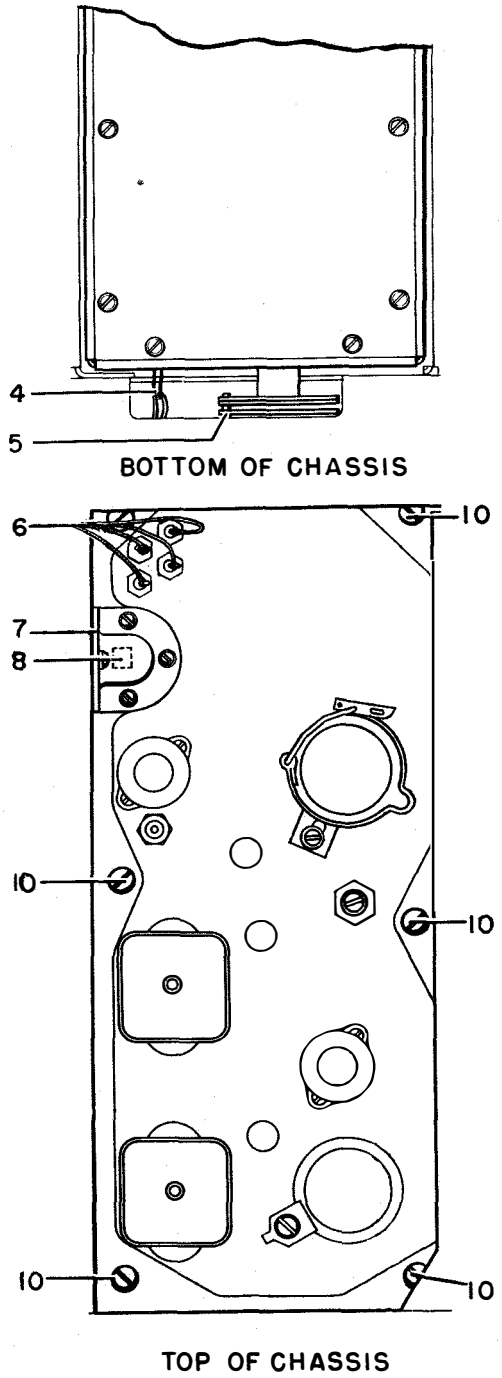


Figure 7-18. Steps in Removal of Frequency Multiplier

Difficulty in starting screws when reassembling may be avoided if screws in step 10 are not tightened until screws in step 7 are started. Fit the collar into the side of the r-f unit before reconnecting the leads (step 8).

After replacing the multiplier unit, the dial setting may be checked in the following manner. With the cover off the bottom of the multiplier unit, unlock the multiplier dial, rotate the ganged capacitors in the unit until they are at minimum capacity, and relock

the dial. The dial should be set at 100. Correct the setting, if necessary, by loosening the screw on the face of the dial and sliding the dial plate to line up the 100 mark with the pointer on the panel. Tighten the dial plate locking screw.

After the receiver has been replaced in the case, the crystal oven replaced, and the cables reconnected, retune the multiplier. Details of the tuning procedure will be found in section 3.

(*e*) MULTIPLIER SECTION ALIGNMENT.—The multiplier may be aligned without the use of auxiliary test equipment by utilizing the panel meter, M101, to indicate resonance points. Ordinarily the crystals employed in channels 1 (4888.888KC) and 10 (7733.333KC) of the equipment can be used.

When complete misalignment exists due to accident or repairs, make the following approximate settings of the padder capacitors to the percentage of maximum capacity tabulated below.

C502—70%	C504—70%
C503—15%	C506—50%

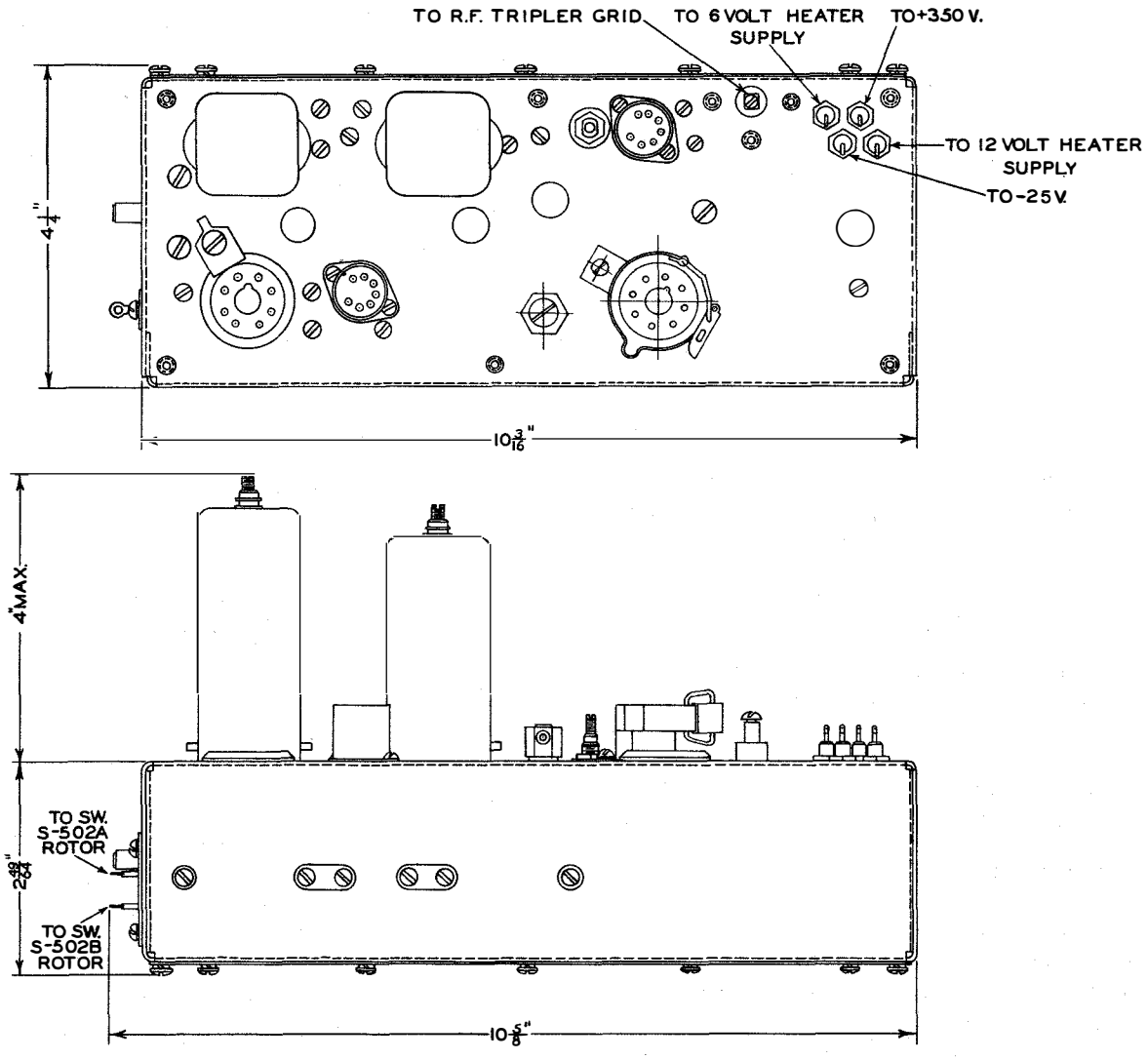


Figure 7-19. Frequency Multiplier, Outline Drawing (P-728969)

In Figure 7-20, the capacitors are shown with maximum capacity indicated by dotted lines, the approximate settings by arrows. Turn the adjustment slot until the end with the soldered connection is adjacent to the position indicated by the arrow. Capacitor C506 is located inside the unit and is accessible when the bottom cover is removed. Adjust as shown in the insert in the illustration. Further adjustment of C506 is not necessary therefore the bottom cover should be replaced.

For checking alignment or correcting slight misalignment of the multiplier, proceed as follows:

Step 1. Remove the receiver chassis from the case and place it on a work bench in its normal operating position.

Step 2. Connect the power cable and remove the outer cover over the selectors.

Step 3. Make certain the clamp on V504 is tight and that all tube shields are in place. Switch power on the equipment and check heater and plate voltage.

Step 4. Set channel selector switch to position 10.

Step 5. Turn meter switch to position 2.

Step 6. Unlock the multiplier dial and, using the vernier knob, adjust dial for maximum output on the meter, then relock the dial.

Step 7. Adjust trimmer capacitors, C502, C503, and C504, shown in Figure 7-20, for peak meter indication by means of an insulated screwdriver blade alignment tool.

Step 8. Set channel selector switch to position 1.

Step 9. Unlock the multiplier dial and adjust for maximum reading with the vernier knob. Relock the dial.

Step 10. Adjust the cores of L504, Z501, and L502 for peak meter indication.

Step 11. Repeat steps 4 to 10.

Tune the multiplier to the channels 2 to 9 in the following manner. Move the selector switch to the channel desired, unlock the multiplier selector dial, adjust the dial until maximum indication is obtained on the meter, and relock the dial. Repeat the above procedure for all positions of the selector switch. Recheck the tuning by placing the selector switch on position 10 and moving the switch to each channel position in sequence, allowing the tuning mechanism to come to rest at each position. The dial indication

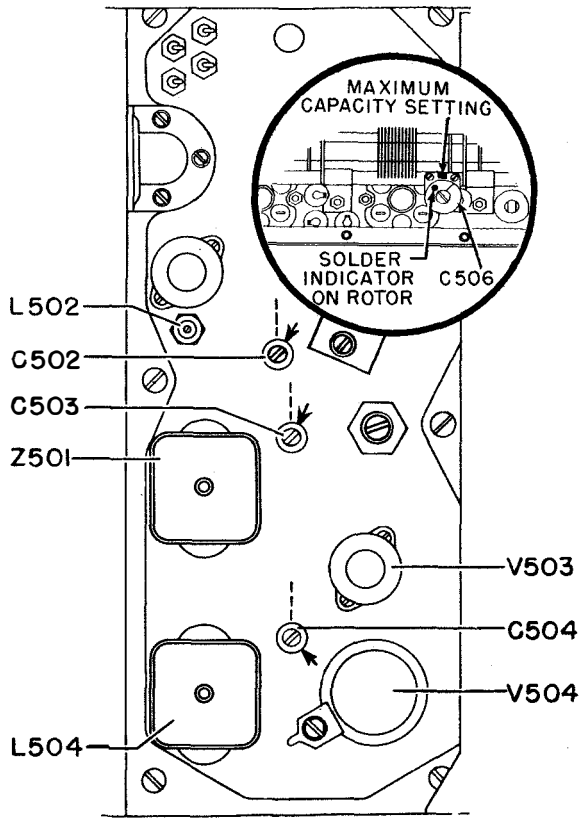


Figure 7-20. Preliminary Settings for Alignment of Multiplier

should decrease with the reduction in frequency at each setting.

When alignment has been completed, the permissible minimum meter indication with the meter switch in position 2 is 2.5. A lower reading indicates defective tubes or circuit components. Refer to paragraph 2*a*(4)(*a*) and (*b*) for checking procedures.

(3) INTERMEDIATE- AND AUDIO-FREQUENCY AMPLIFIERS.

(*a*) VOLTAGE CHECK.—The intermediate- and audio-frequency amplifier circuit components are readily accessible from the bottom of the chassis upon removal of the bottom plate. A complete voltage check can be made by placing the receiver chassis in an

TABLE 7-4. TUBE OPERATING CHARACTERISTICS

INTERMEDIATE-FREQUENCY AMPLIFIER

TUBE SYMBOL	HEATER VOLTAGE	HEATER MA	PLATE VOLTS	SCREEN VOLTS	CATHODE VOLTS	PLATE MA	SCREEN MA
PU OPERATION 115V A.C.							
V301	13	150	213	112	2.0	7.2	3.6
V302	13	150	219	115	3.8	5.5	0.3
V303	13	150	219	120	2.4	7.2	3.6
V304	13	150	225	124	2.3	7.0	4.5
V305	13	150					
Detector Diode Section			0		22.5		
Silencer Diode Section			0		0-24*		
DYNAMOTOR OPERATION 13V D.C.							
V301	12.3	150	232	120	2.2	7.5	3.8
V302	12.3	150	238	125	4.1	6.1	0.4
V303	12.3	150	238	130	2.6	9.0	4.0
V304	12.3	150	245	135	2.5	8.0	4.5
V305	12.3	150					
Detector Diode Section			0		24.5		
Silencer Diode Section			0		0-26*		

AUDIO-FREQUENCY AMPLIFIER

PU OPERATION 115V A.C.							
V401	13	150					
Noise Limiter Diode Section			0-18		0-24		
Meter Rect. Diode Section			6.4 a.c.				
V402	13	150					
Silencer Triode Section			21.6-92		+3	0-0.3	
1st Audio Triode Section			163-214		75-80	0.3-0.5	
V403	13	150	201	222	12	20	1
DYNAMOTOR OPERATION 13V D.C.							
V401	12.6	150					
Noise Limiter Diode Section			0-20		0-25		
Meter Rect. Diode Section			6.3				
V402	12.6	150					
Silencer Triode Section			23.5-100		+3	0-0.3	
1st Audio Triode Section			177-233		85-115	0.3-0.5	
V403	12.3	150	218	242	13.5	23	1

*NOTE: Output level at maximum, Silencer level varied from min. to max.

inverted position on the work bench and connecting the power cable. The values given in Figure 7-21 are typical with tubes in the sockets. Variation in excess of 15 per cent from the values given should be investigated.

(*b*) RESISTANCE CHECK.—In Figure 7-22 the resistance from socket pins to chassis ground is given for the intermediate- and audio-frequency amplifiers. Switches and controls should be set as indicated in the illustration before measurements are made.

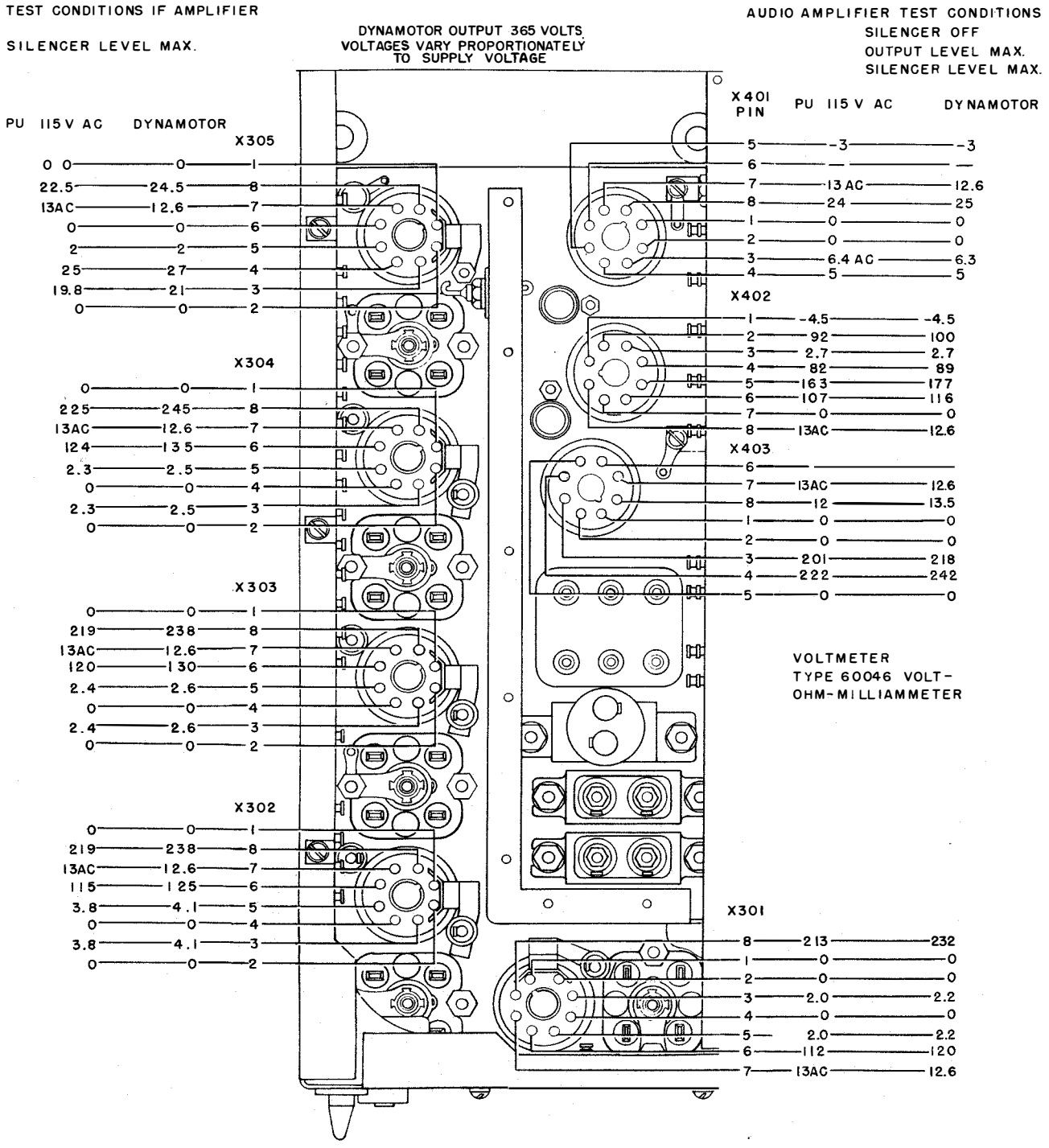
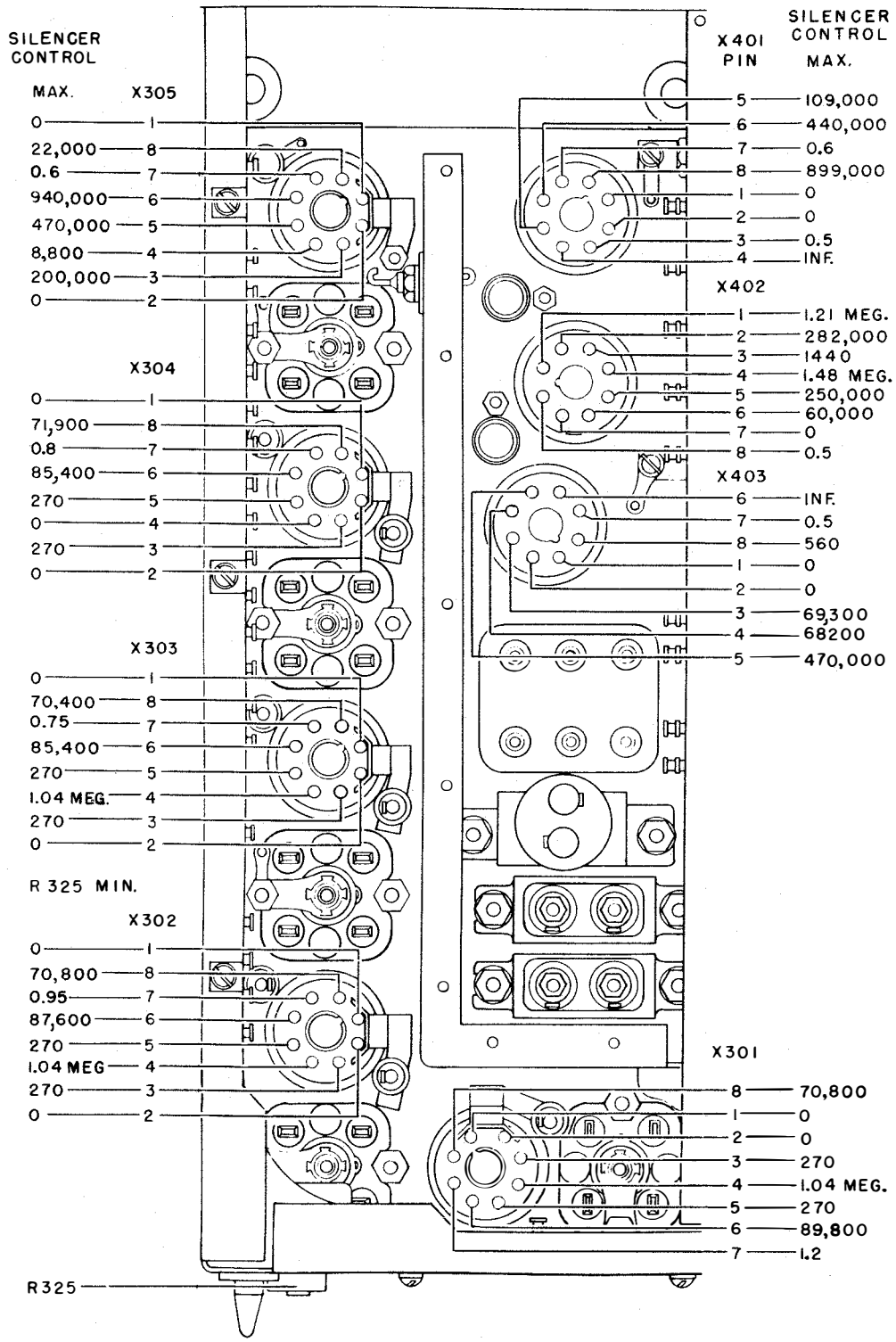


Figure 7-21. Intermediate- and Audio-Frequency Amplifiers, Typical Voltage Values



RESISTANCE IN OHMS TO GROUND UNLESS OTHERWISE NOTED.
NO EXTERNAL CABLES TO UNIT. TUBES IN SOCKETS.

Figure 7-22. Intermediate- and Audio-Frequency Amplifiers, Typical Resistance Values

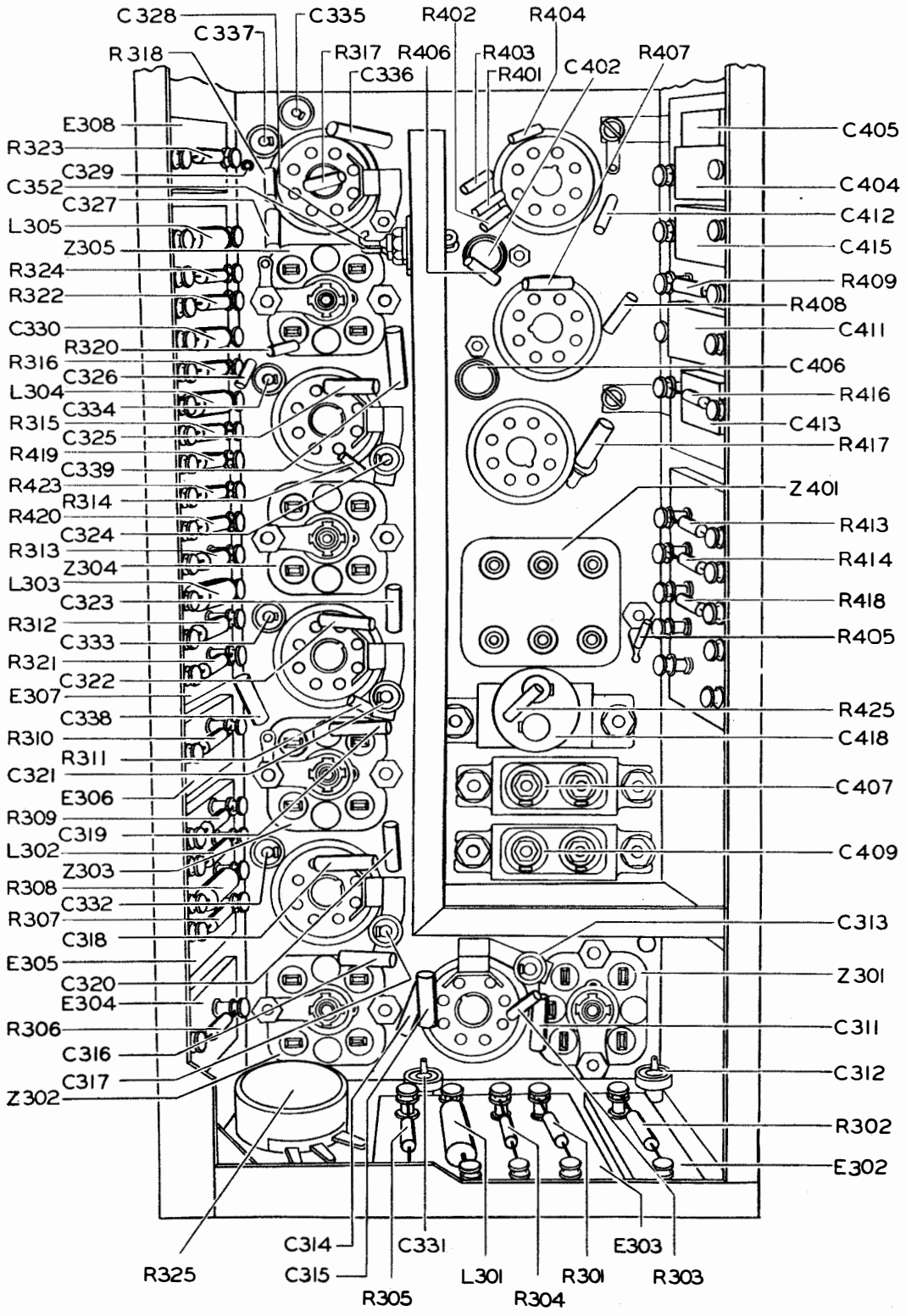


Figure 7-23. Intermediate- and Audio-Frequency Amplifier Component Identification

NOTE I- IN EQUIPMENTS SERIAL NOS. I TO 1501 - S401 WAS CONNECTED TO X402-3 AND E412-3 AS SILENCER SWITCH.

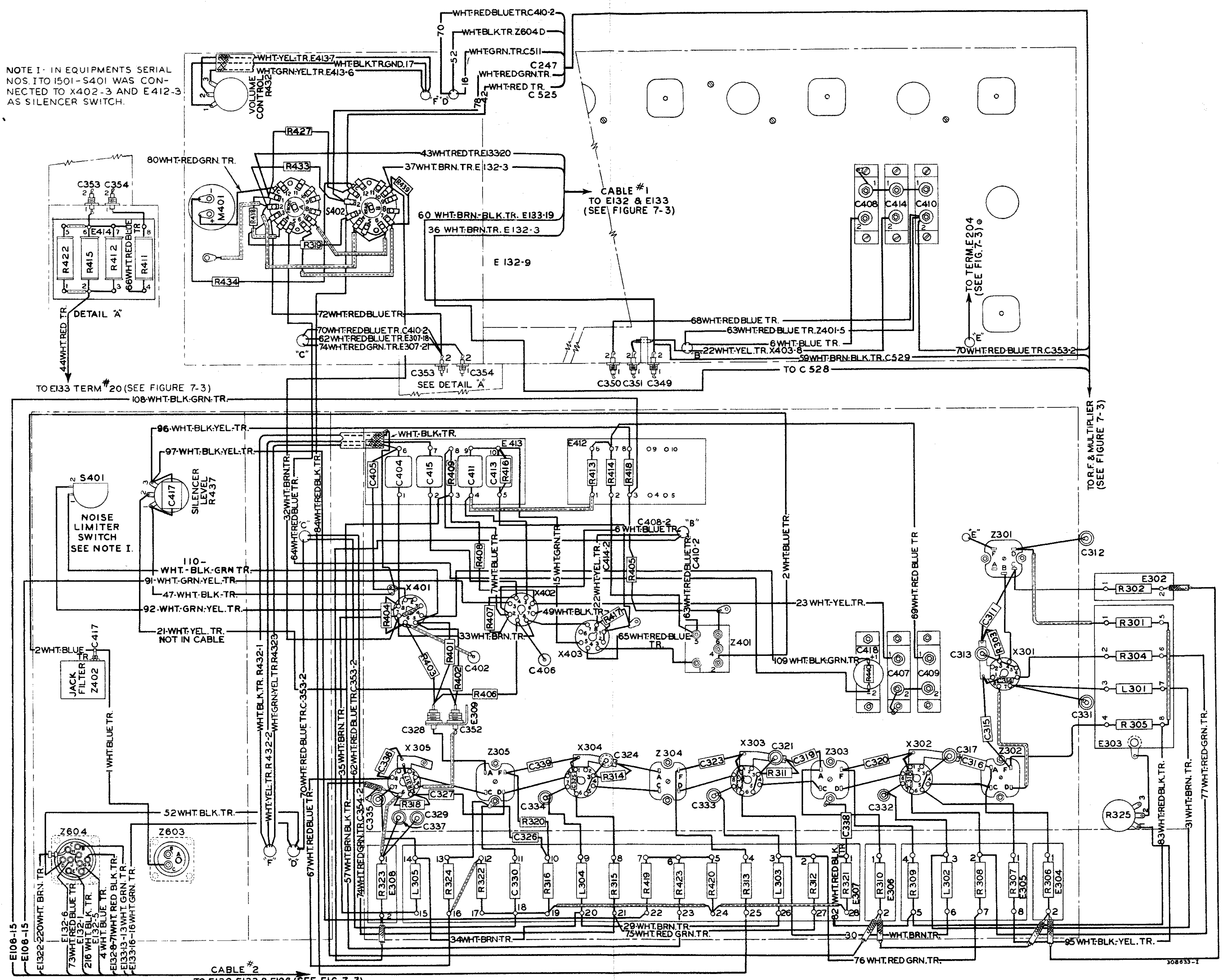


Figure 7-24. Intermediate- and Audio-Frequency Amplifier, Connection Diagram (W-308633)

(*c*) INTERMEDIATE-FREQUENCY AMPLIFIER ALIGNMENT.—The RDR intermediate-frequency amplifier is best aligned by using a sweep generator for the signal and an oscilloscope to view the output wave shape. The oscilloscope input is connected across the diode load resistor and the sweep generator, operating at 30.2 mc., is first connected to the last i-f tube control grid. The pattern on the oscilloscope is adjusted for maximum amplitude and proper shape by adjusting primary and secondary cores of the last i-f transformer. When completed, the sweep generator output is changed to the control grid of the next to last i-f stage, and the next to last i-f transformer only adjusted. This procedure is continued until all the i-f stages are aligned.

The "double-trace" method of alignment will be used for the i-f section since this method possesses definite advantages over the single-curve procedure. In the double-trace method the sweep frequency of the oscilloscope is adjusted so that two peaks or traces of the signal generator frequency appear on the oscilloscope screen. These traces actually represent two frequencies, one above and one below the generator frequency, each at the same number of kilocycles from the generator frequency. During i-f transformer alignment, each trace is adjusted for maximum amplitude and the traces are superimposed so that they appear as one curve when alignment is complete. With this method it is unnecessary to mark a vertical reference line on the oscilloscope screen for use in alignment, such as is necessary when the single trace is used.

Other advantages are that the superposition of the two traces facilitates symmetrical adjustment and makes for greater accuracy. In addition, the probability of frequency error is reduced to less than half since, for a given frequency deviation, the separation between the two traces is twice the displacement of one trace. Small deviations are, thus, more easily detected.

Distortion in the audio amplifier or detector will not cause alignment error, even if the traces are not true response curves, because the actual response will still be symmetrical when the two traces are made to coincide.

Any necessary calibration of the signal generator is also facilitated by the double-trace procedure, inasmuch as the generator may be zero-beated with a standard oscillator without regard to any audio distortion present.

Test equipment required is as follows:

One oscilloscope: Any standard oscilloscope with a horizontal sweep is suitable. Adjustment of the oscilloscope for a double-trace is desirable, since better alignment is possible.

One high-frequency sweep generator: This sweep generator must be of the frequency-modulated type capable of producing the required 30.2 megacycle i-f signal. A minimum sweep of one megacycle is necessary.

One 8.2 mmf ceramic coupling capacitor.

One 68-ohm resistor (sweep generator terminating impedance).

To align the i-f section, proceed as follows:

Step 1. Disconnect all cables to the receiver.

Step 2. Remove the chassis from the case and place on a convenient bench with dynamotor end down to allow access to core adjusting screws on top and bottom of intermediate-frequency transformers.

Step 3. Reconnect the power cable.

Step 4. Turn the power switch to the ON position and allow the receiver and test equipment to warm up for at least five minutes before making the following adjustments.

Step 5. Remove tube V401 and crimp a short lead to pin No. 5. Replace tube in its socket and connect the oscilloscope input to the lead connected to pin No. 5.

Step 6. Connect the oscilloscope ground lead to the chassis.

Step 7. Remove tube V304 and crimp a short lead (approximately two inches) around pin No. 4, then replace the tube in its socket.

Step 8. Connect the sweep generator output to the lead connected to pin No. 4.

Step 9. Ground the generator return to the tube clamp of tube V304, keeping the ground lead as short as possible.

Step 10. Set the center frequency of the generator at exactly 30.2 megacycles. Use a crystal calibrator to check frequency. Adjust the generator and oscilloscope level controls until a pattern appears on the screen, then adjust the oscilloscope sweep to obtain a double trace.

Step 11. With a screwdriver blade alignment tool, adjust both cores of Z305 for maximum output. Reduce the output of the generator, if necessary, to keep the trace on the screen. The resultant pattern should

be as shown in Figure 7-25A. If necessary, the position of C327 (at pin 5 of X305) should be varied slightly with respect to the chassis to obtain the above-mentioned pattern.

Step 12. Transfer the sweep generator output lead to pin No. 4 (grid) of V303, connecting it as in step 7. The generator return lead should be grounded to the tube clamp of V303, keeping the lead as short as possible. Reduce the generator output to keep the trace on the screen.

Step 13. Adjust the cores of Z304 for maximum output. The pattern obtained should be flat-topped as shown in Figure 7-25B.

Step 14. Transfer the sweep generator output lead to pin No. 4 (grid) of V302, connecting it as in step 7. The generator return lead should be grounded to the tube clamp of V302. Reduce the generator output to keep the trace on the screen.

Step 15. Adjust the cores of Z303 for maximum output. The oscillogram produced should indicate overcoupling as shown in Figure 7-25C.

Step 16. Transfer the sweep generator output lead to pin No. 4 (grid) of V301, connecting as described in step 7. The generator return lead should be grounded to the tube clamp of V301. Reduce the generator output to keep the trace on the screen.

Step 17. Adjust the cores of Z302 for maximum output. The oscillogram produced should indicate overcoupling as illustrated in Figure 7-25D.

Step 18. Remove tube V202 and crimp a short lead around pin No. 1. Replace tube V202 and run the wire through the tube shield, then replace the tube shield. Attach the wire to the 8.2 mmf ceramic capacitor listed with the required test equipment.

Step 19. Connect the other end of the 8.2 mmf capacitor to the sweep generator output lead.

Step 20. Ground the generator return lead directly to the tube shield of V202.

Step 21. Adjust the cores of Z301 for maximum output.

Step 22. Readjust the cores of Z302, if necessary, to produce the slightly overcoupled symmetrical curve shown at E.

Check center frequency to be 30.2 mc. $\pm$10 kc after alignment, using a crystal calibrator.

Check the sensitivity and the 6 db and 40 db band with points using a standard signal generator and output meter to insure that the response curve is within specification limits (see Figure 7-25).

(*d*) EMERGENCY INTERMEDIATE-FREQUENCY ALIGNMENT (as recommended by N. R. L.).—This method of i-f alignment is recommended by the Naval Research Laboratory for use during emergencies when an oscilloscope and sweep signal generator are not available.

Equipment required is as follows:

One signal generator: Any signal generator capable of producing precisely 30.11 and 30.30 mc., modulated 30 per cent at 1000 cycles may be used. Two volts output are necessary for initial alignment.

One vacuum-tube voltmeter, with 600-ohm load.

One 600 mmf coupling capacitor.

To align the i-f section proceed as follows:

Step 1. Disconnect all cables to the Transmitter-Receiver unit and remove the chassis from its case.

Step 2. Place the chassis on end for access to the i-f transformer core adjusting screws, above and below the chassis.

Step 3. Reconnect all cables, excepting the antenna cable.

Step 4. Connect the 600-mmf capacitor in series with the signal generator lead. Remove tube V202 and crimp a short lead, approximately 2 inches, to pin number 7 (cathode) of V202. Replace V202 and ground the other side of the generator directly to the tube shield of V202, using a short, direct lead.

Step 5. Remove tube V203 from its socket.

Step 6. Connect the vacuum-tube voltmeter to the headphone jack.

Step 7. Turn the power on, using a 115-volt a-c source, and permit the RDR equipment to warm up for one-half hour before alignment. Similarly, stabilize the alignment instruments by an equal warming period.

Step 8. With a screwdriver, adjust potentiometer R325 to its minimum-gain, extreme counterclockwise, position. The slotted shaft of R325 extends through the rear of the chassis.

Step 9. Set the signal generator for a frequency of exactly 30.11 mc.

Step 10. Set the OUTPUT LEVEL control at 3 or 4 and adjust the signal generator so that the output is approximately six milliwatts (1.9 volts).

Step 11. Adjust the secondary cores of i-f transformers Z301 through Z305, below the chassis, for maximum output.

Step 12. Set the signal generator for a frequency of exactly 30.30 mc.

Step 13. Adjust the primary cores of i-f transformers Z301 through Z305, above the chassis, for maximum

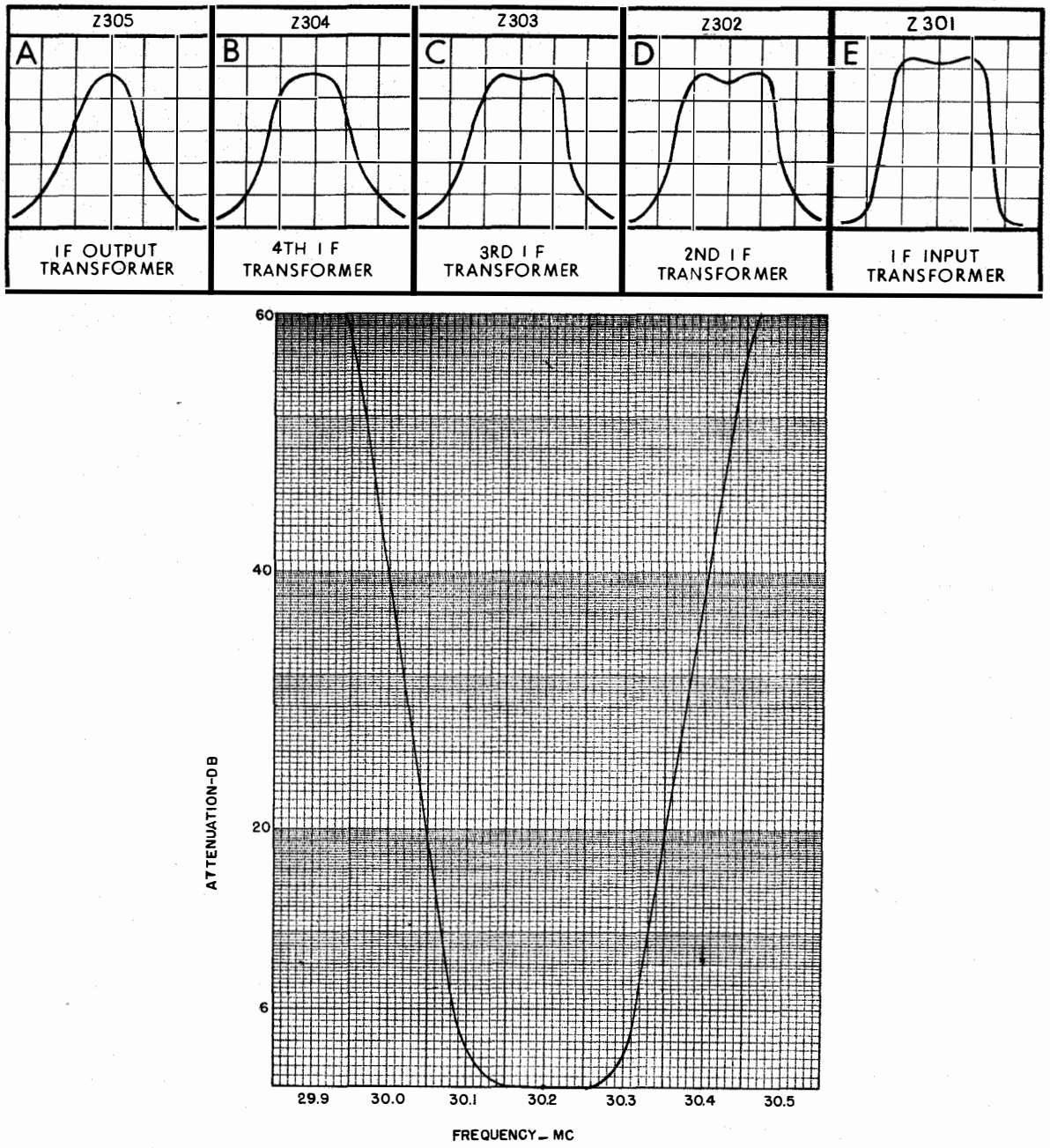


Figure 7-25. Intermediate-Frequency Amplifier Waveshapes and Selectivity Curve (S-853819)

output. Reduce the generator output whenever it exceeds six milliwatts on the voltmeter.

Step 14. Repeat steps 10 through 14 to complete alignment.

Step 15. Adjust the AVC level as described in the following paragraph.

Step 16. Check the bandwidth at 6 db and 40 db against the curve limits on Figure 7-25.

(*e*) I-F SENSITIVITY MEASUREMENT. — Connect an output meter to the headphone jack and adjust the meter impedance to 600 ohms.

Connect the output of a signal generator, such as the Type LAF, to a 8.2-mmf ceramic capacitor.

Remove tube V202 and, running the other lead from the 8.2-mmf capacitor through the tube shield, crimp the lead around pin No. 1 of V202. Replace the tube and shield.

Ground the generator return lead directly to the tube shield of V202, using a short, direct lead.

With all cables except the antenna cable connected, throw the power switch to ON and allow the equipment to warm up for five minutes. Similarly, apply power to the signal generator.

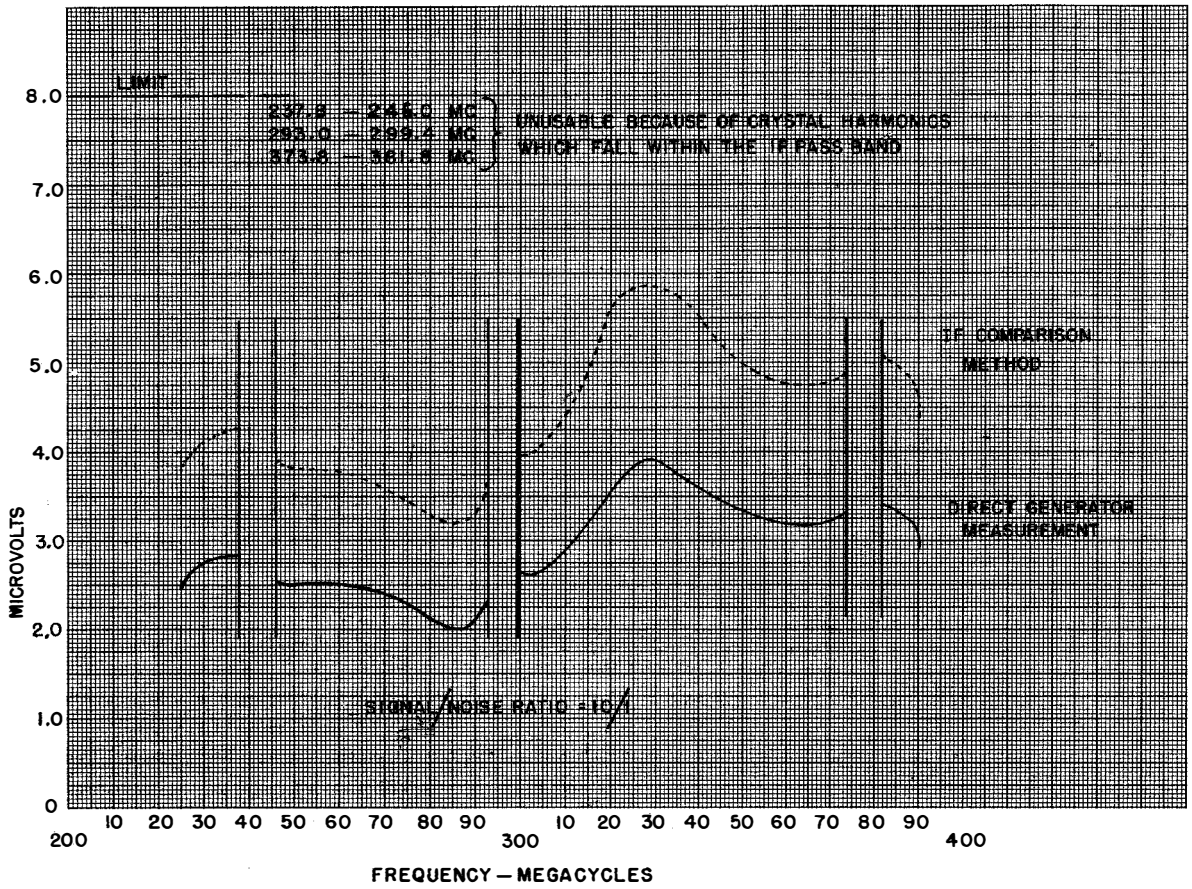


Figure 7-26. Receiver Sensitivity Curve (S-853817)

Adjust the signal generator for 30 per cent modulation at 1000 cycles at a center frequency of exactly 30.2 mc.

Adjust the signal generator output for 50 milliwatts (17.4 volts) indication on the output meter.

Remove the modulation and adjust the OUTPUT LEVEL control for an indication of 5 milliwatts (1.74 volts) of noise on the output meter. Then repeat the steps in the two preceding paragraphs.

Normal sensitivity is approximately 20 microvolts.

(*f*) I-F SELECTIVITY MEASUREMENT.—Connect a signal generator and output meter as specified in the preceding paragraph, and permit both radio and test equipments to warm up for five minutes after applying power.

Adjust the signal generator for 30 per cent modulation at 1000 cycles at a center frequency of 30.2 mc. Increase the output of the generator to twice the normal sensitivity.

Retune the signal generator to an increasingly higher frequency until the output meter reads 50 milliwatts (17.4 volts). Record this frequency.

Again retune the signal generator to a frequency lower than 30.2 mc. until the output meter reads 50 milliwatts (17.4 volts). Record this frequency.

Subtraction of the lower from the higher frequency should give a minimum bandwidth of 220 kc. This is the sensitivity at 6 db bandwidth.

To measure the bandwidth at 40 db, increase the signal generator output to 100 times the normal sensitivity at 30.2 mc.

Repeat the generator retuning procedure used for the 6 db test to obtain the frequency above and below center frequency as specified above.

Subtraction of the lower from the higher frequency should give a bandwidth of 550 kc or less. This is the sensitivity at 40 db bandwidth.

(*g*) AVC THRESHOLD ADJUSTMENT.—The AVC circuit in the RDR receiver permits full amplification up to approximately 75% of the capability of the amplifier. Beyond this point at which the AVC begins to function, termed the AVC threshold, the amplification is reduced and the output remains essentially constant for wide variations in input above the threshold value as shown in Figure 7-27.

The AVC threshold input in this equipment is the input at which the load voltage of the second detector, V305, increases 1 db, approximately 11 per cent, when the AVC connection to the r-f section is grounded. This setting is made by adjusting R325, the slotted control shaft of which extends through the rear of the chassis housing. When R325 is replaced or is completely out of adjustment, it should be set at approximately 200 ohms before making the following adjustment.

To make the adjustment of the AVC threshold proceed as follows:

Step 1. Disconnect cables, withdraw chassis from case, and place it on a work bench.

Step 2. Reconnect power cable.

Step 3. Remove tube V401 from its socket and crimp the bared end of a 10-inch length of insulated wire around pin 5 of the tube. Then replace the tube in its socket.

Step 4. Connect a VoltOhmyst or Type 60046 Volt-ohm-milliammeter to the lead attached to tube V401 and to the chassis. Set the meter scale for 0-50 volts.

Step 5. Connect the output of an unmodulated r-f signal generator to the antenna receptacle.

Step 6. Rotate the silencer level control to 0.

Step 7. Switch power to the radio equipment on and allow the tubes to heat for five minutes.

Step 8. Connect a short wire to the chassis at a convenient point where it can be used to ground C351, the center lead-through capacitor of the three capacitors mounted on the shield between the i-f and r-f sections of the receiver.

Step 9. Set the channel selector switch on position 10 and adjust the signal generator to the channel frequency. The output of the generator should be below 10 microvolts.

Step 10. Gradually increase the generator output, periodically grounding C351 with the wire until a point is reached where the voltmeter reading increases 1 db or 11 per cent when the capacitor is grounded. The signal generator output should be between 10 and 25 microvolts. If not within these limits, adjust R325 by loosening the setscrew and turning the shaft with a screwdriver, until a setting is obtained where with a signal input of between 10 and 25 microvolts

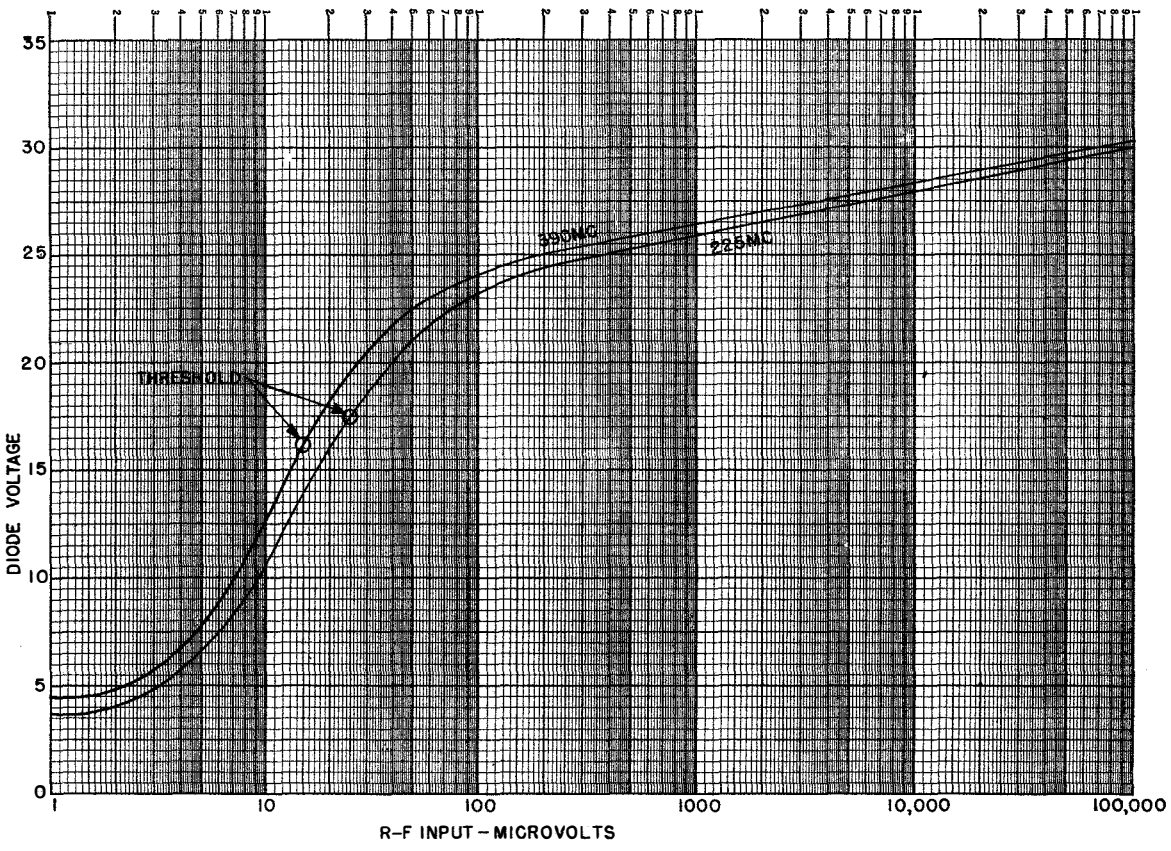


Figure 7-27. AVC Characteristic Curve (S-853820)

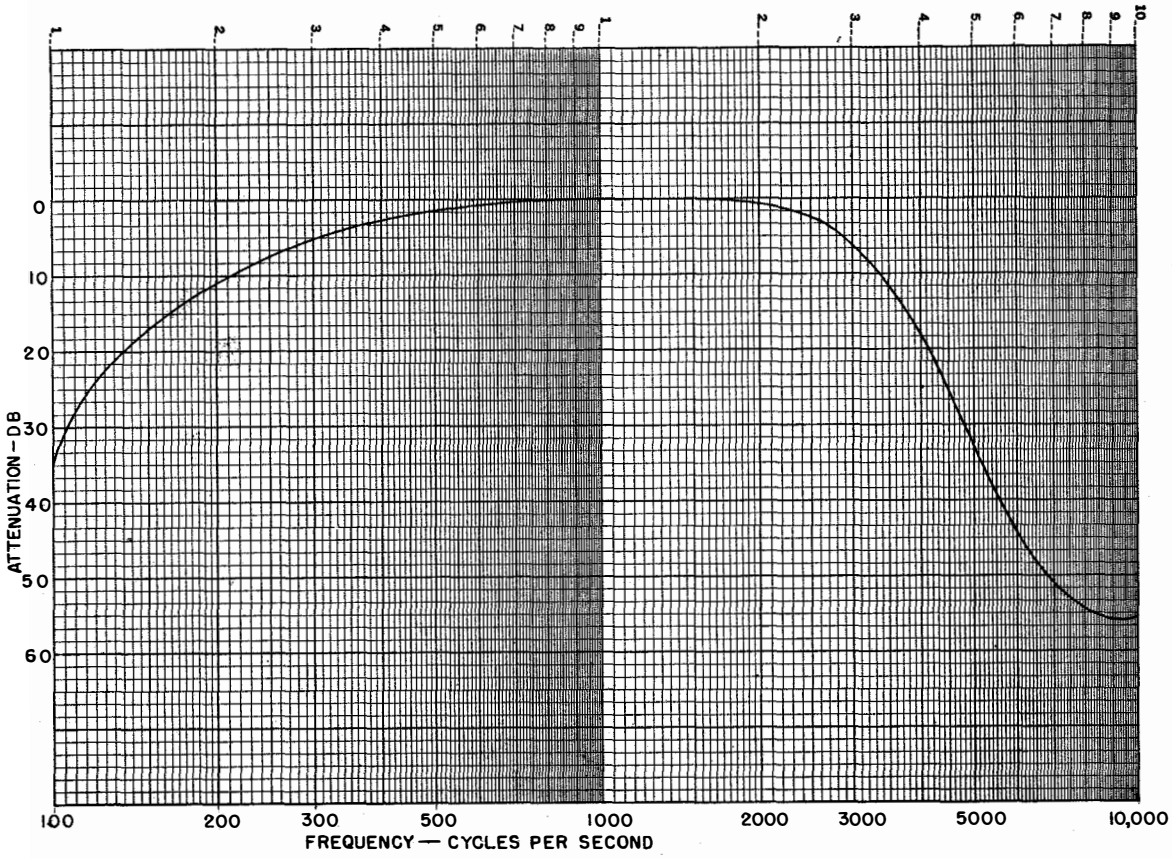


Figure 7-28. Receiver Fidelity Curve (S-853818)

the meter reading increases the desired amount when C351 is grounded.

Step 11. Move the channel selector switch to position 1 and repeat step 10. Should it be necessary to make an appreciable change in the position of R325, repeat steps 9 and 10. Continue until the desired voltage change is obtained when C351 is grounded, on both channels 1 and 10, with the generator input between 10 and 25 microvolts. Tighten set screw on shaft of R325.

Should the adjustment of either step 10 or step 11 require a large variation from the original setting of R325, the i-f sensitivity will be affected and it will be necessary to repeat steps 12 to 22 of the i-f alignment procedure described under 2*a*(3)(*c*).

After adjustment has been made, disconnect meter, signal generator, lead from tube V401, and temporary grounding wire, and replace receiver in case.

b. DYNAMOTOR.

(1) DISMOUNTING. — The dynamotor section of the receiver may be removed from the chassis as a unit to make repairs or replacements. When the dynamotor is at fault or requires servicing, it is possible to remove this unit individually. However, the complete dismantling procedure is given in the following, Field Change No. 2 having been completed:

Step 1. Remove chassis from case and place on end with dynamotor down.

Step 2. Unsolder and disconnect the leads to the filter (2), Figure 7-29, Z804, mounted in the bottom of the dynamotor section.

Step 3. Remove the three screws (3) that hold Z804 in place from the top of the section and remove the filter assembly.

Step 4. Disconnect the wires (7) indicated in Figure 7-29 from terminal boards E132 and E133 on top of the selector mechanism.

Step 5. Unsolder selector motor leads (4) yellow, black and white. Tag these leads.

Step 6. Unsolder leads (6) to R801 (5), mounted on the shield adjacent to the unit. Tag these leads.

Step 7. Loosen screws (8) holding C801 but do not remove.

Step 8. Remove four screws (9) holding dynamotor unit to receiver chassis.

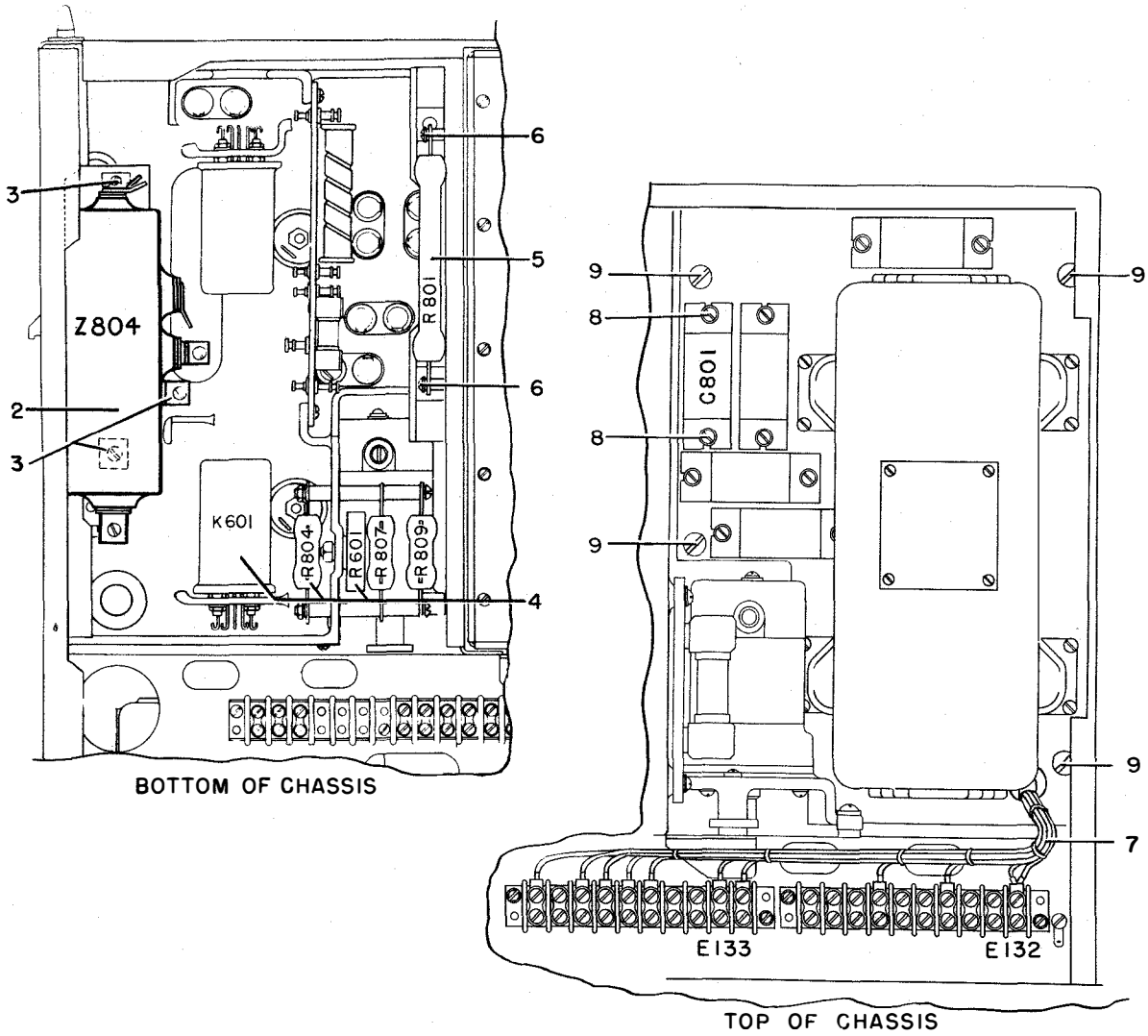


Figure 7-29. Steps in Dismounting Dynamotor Section

Step 9. Withdraw dynamotor unit from chassis by tilting around selector motor.

Step 10. Remove bolts through shock mount units and dynamotor cradle by removing the hex nuts and then using a screwdriver to turn the bolt from the top of the chassis while holding the slotted washer on the bottom with a second screwdriver.

Replace the unit by reversing the dismounting procedure.

(2) SERVICING.

(*a*) LOW-VOLTAGE BRUSHES AND COMMUTATOR.—Remove the two screws in the end of the dynamotor and pull off end cover. Figure 7-30 gives an exploded view of the dynamotor.

Examine the brushes by unscrewing the plastic caps and withdrawing the brushes. Observe the relative position of each brush as it is removed. When restoring brushes, they should be replaced in their original position. When brushes are worn down to ⅜ inch in length, install new brushes of proper polarity as marked on brush holder frame. Wrap a piece of fine sandpaper around the commutator with the abrasive side toward the brush and then rock the armature back and forth to insure perfect seating of brush.

Inspect the commutator before new brushes are installed. A chocolate-brown or bronze color indicate normal operation. If the surface is spotty, rough or blackened, remove the brushes and apply 000 sandpaper lightly to the commutator and rotate several times by hand.

Clean the commutator grooves with a sharpened piece of soft wood. Use a brush or cloth to remove any loose dirt. Remove grease or oil with carbon tetrachloride.

Should a commutator be badly pitted or its bars

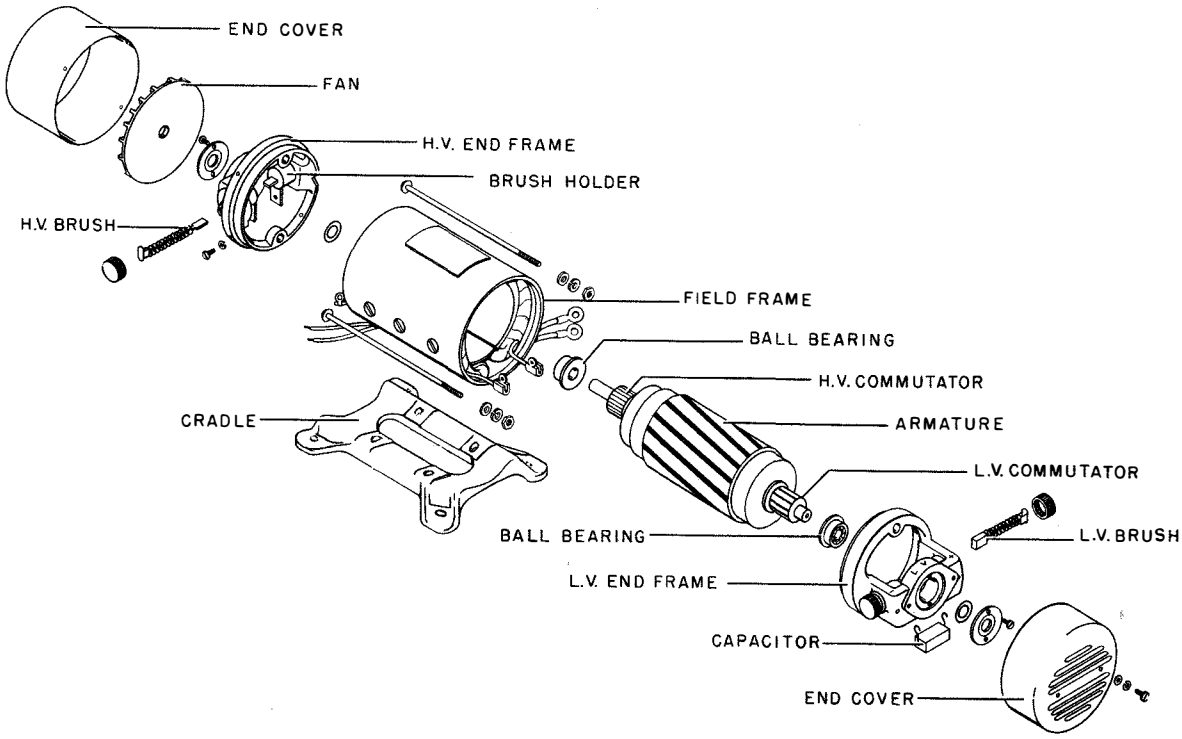


Figure 7-30. Dynamotor, Exploded View

burnt or grooved, it will be necessary to turn it down in a lathe. See (*d*) for details of armature removal. Brushes must be sanded in to fit the reduced diameter of the commutator when it is replaced and brushes installed.

(*b*) HIGH-VOLTAGE BRUSHES AND COMMUTATOR.—The high-voltage end of the dynamotor may be inspected and serviced in the same manner as the low-voltage end by breaking the wire seals, removing four screws, and sliding the end cover off the machine.

(*c*) BEARINGS.—To lubricate the bearings at the low-voltage end of the dynamotor remove the two screws in the bearing cover plate. Remove plate and spring spacer. Add only enough Navy Type 14-L-3 grade 11 (AN-14-L-90-15) grease to cover the bearings, do not pack solid, then replace spacer and cover plate.

At the high-voltage end of the machine, mark the fan and shaft to establish their relative position so the fan can be replaced in the same position to retain the dynamic balance of the unit. Loosen the set screw in the fan hub by means of the Allen wrench which is clipped to the receiver chassis, and remove the fan. Remove cover plate on bearing bracket and apply grease. Make certain that the spring spacer is replaced under the bearing cover plate and that the fan is properly positioned.

Replacement of bearings involves the removal of the armature. Refer to the following paragraphs.

(*d*) ARMATURE.—To remove the armature, proceed as follows. Remove end covers, brushes, and fan, taking precautions mentioned in (*c*). Disconnect leads to the brush holders on both ends of the machine. Remove the two long bolts holding end frames to field structure. Place identifying marks on the end frames and field structure, and then pull end frames free from field shell and armature. In this process the armature will come free with one end frame and can be slipped out of the field yoke.

Detach armature from end frame. Do not lose spring spacers located in bearing recesses of end frames. Bearings will remain on the armature shaft and may be left in place. Protect the bearings from dust and moisture whenever the armature is removed.

When bearings are to be replaced, insert a screwdriver between the bearing and the adjacent washer and gradually pry the bearing off the shaft. Once a bearing has been removed, regardless of reason, do not reuse.

New bearings should be kept in the oiled wrapping until ready to install on the shaft. Start bearings evenly on the shaft and tap them gently into place with a rawhide hammer or soft block of wood. Do not apply pressure to the outer race. Protect bearings until ready to assemble the dynamotor, and grease them just before assembly.

The molded construction of the armature prevents repair to the windings, but an armature that has thrown solder due to overheating may be repaired by resoldering the leads into the risers on the commutator bars.

(*e*) FIELD WINDINGS.—To replace defective field coils, proceed as follows: After the dynamotor has been dismantled and the armature removed, remove the three flat head screws in each field piece.

Slide the pole pieces and coils out of the field frame. Replace or repair coils as necessary. In replacing pole piece screws. tighten carefully and stake with a center punch.

(*f*) RELAYS.—The two relays in the dynamotor section are of the hermetically sealed, gas-filled type, enclosed in metal cases. Normally no adjustments or repairs are possible and a defective relay must be replaced by a complete assembly.

In case of extreme emergency, with no spares available and when tests show the relay contacts to be definitely at fault, it is possible to remove the case by carefully sawing around the case with a hack saw or grinding off the bead around the edge of the base. Repairs may then be made to the contacts but the relay should be replaced by a new assembly at the first opportunity.

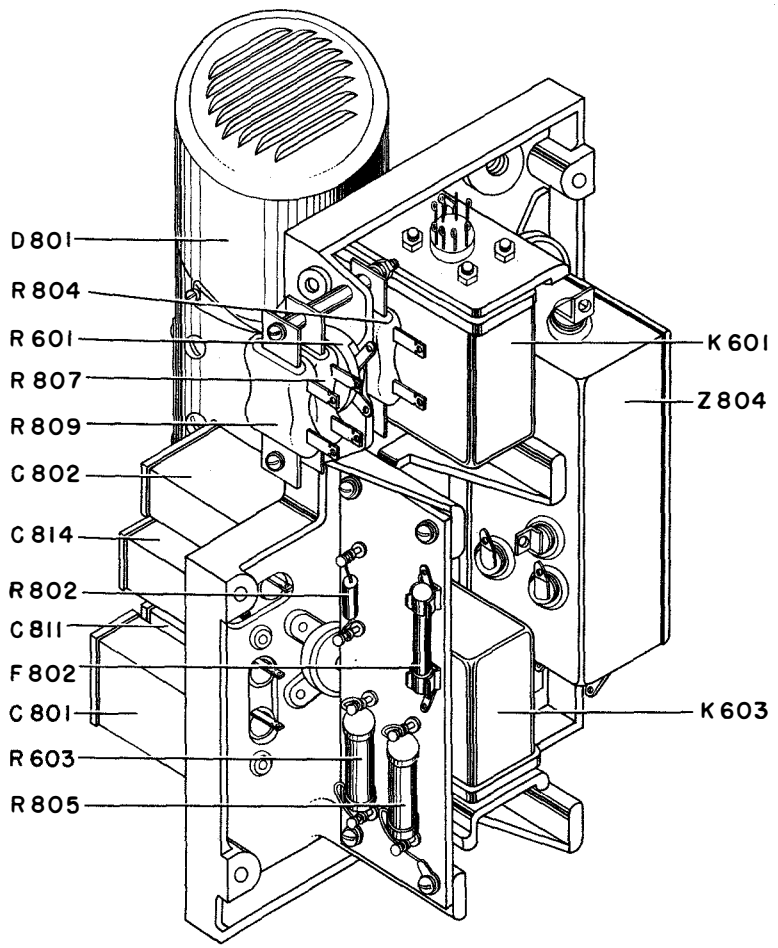


Figure 7-31. Dynamotor Section with Filter in Place, Component Identification

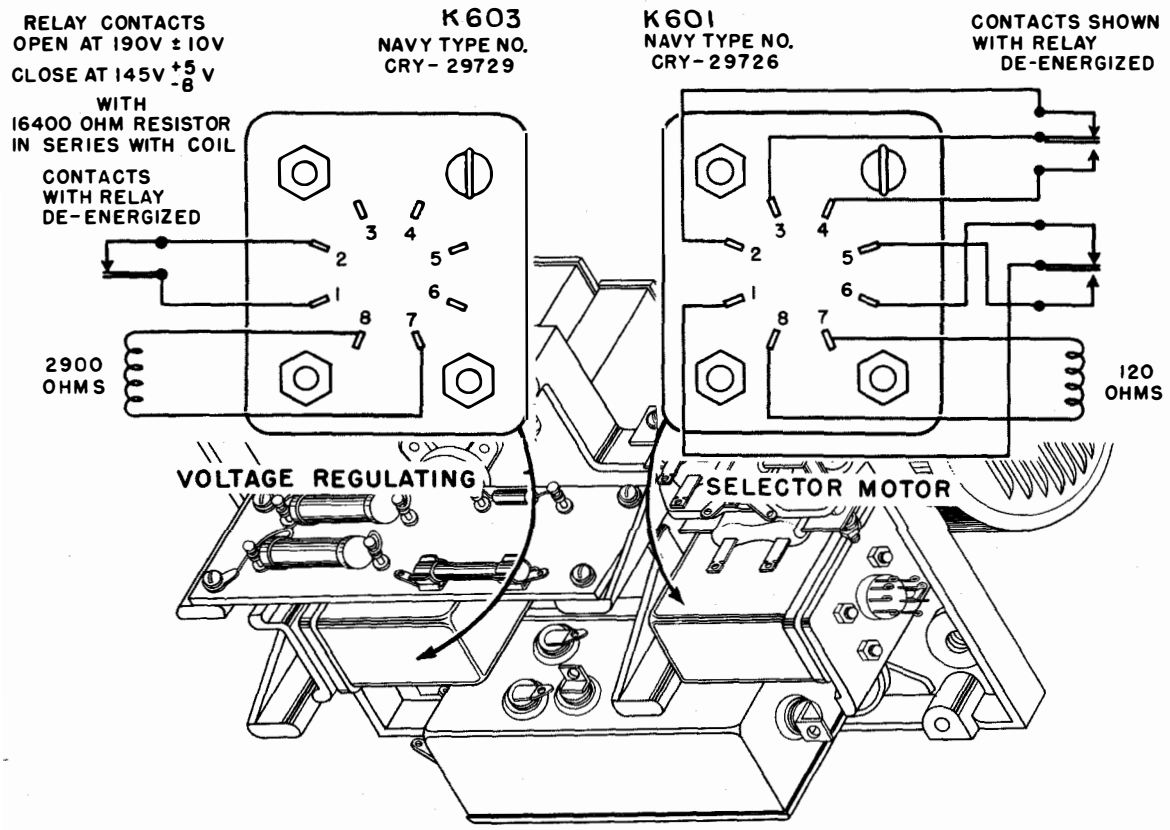


Figure 7-32. Relays, Internal Connections

The internal connections and data necessary to check the condition of the relays are given in Figure 7-32. Resistance measurements made across coil terminals and across contacts that should be closed under given conditions are a direct indication of coil winding continuity and contact functioning.

The relays can be checked in place by inverting the chassis. The locations of the selector motor relay, K601, and voltage regulating relay, K603, are shown in Figure 7-32, as well as the internal connections of both units.

NUMBERS IN WIRES REFER TO THIS WIRE TABLE		
WIRE NO.	DESCRIPTION	
1	WHITE-BLACK	TRACER
4-9	WHITE-BLACK	"
13	WHITE-BROWN	"
17	WHITE-BROWN	TRACER
21,22	WHT.-BLK.&BRN.	"
24	WHT-BLK.&YEL.	"
27, 29 31, 34	WHITE-GREEN	TRACER
36-37	WHT.-GRN.&YEL.	"
40-43	WHITE-RED	"
45-49	WHT.-RED&YEL.	TRACER
52	WHT.-RED & BLK.	"
56,57	WHT.-BLK. & GRN.	"
58	WHITE-YELLOW	TRACER
60	WHITE-BLUE TRACER	

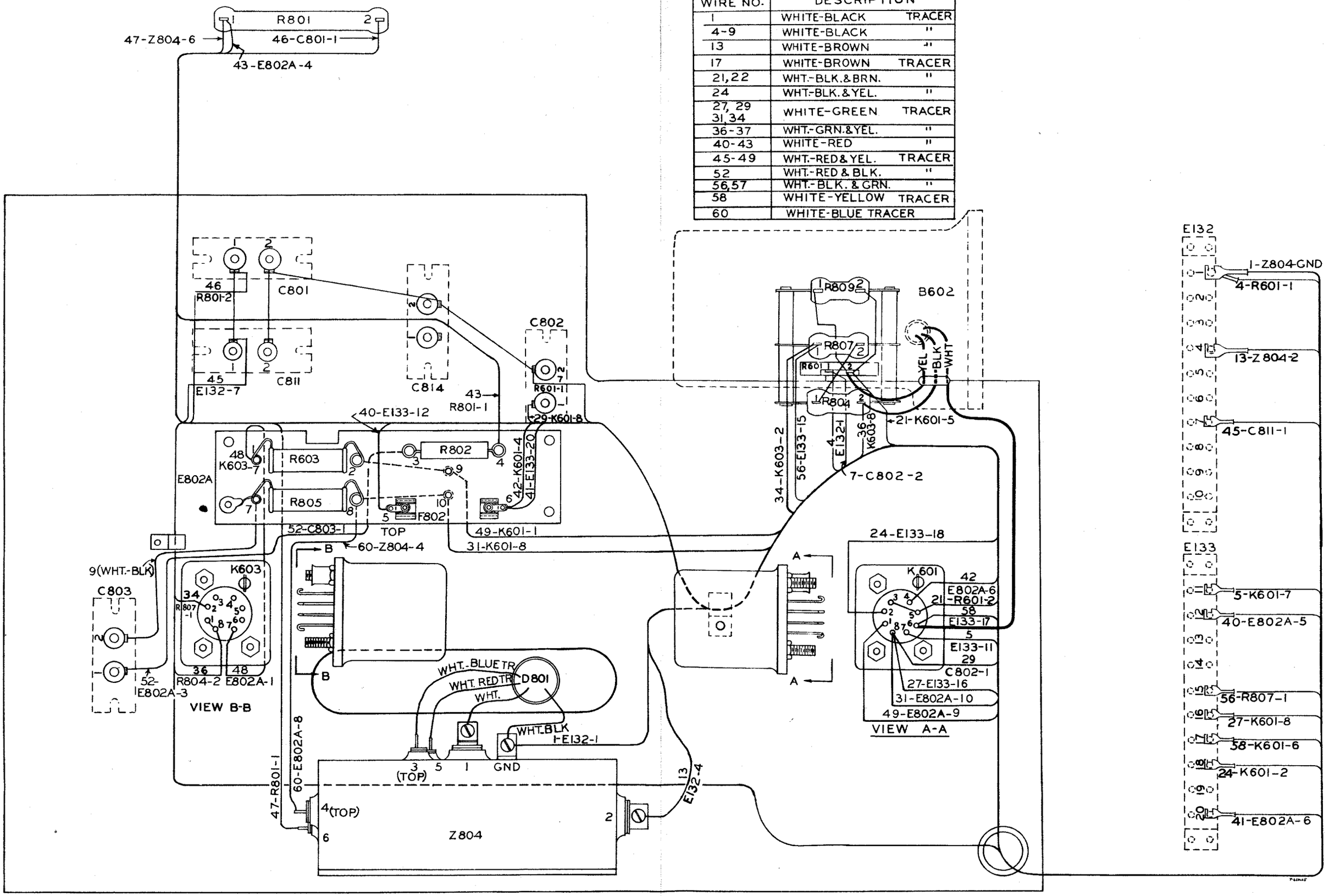


Figure 7-33. Dynamotor Section, Connection Diagram, with Filter (T-621425)

c. CHANNEL SELECTOR MECHANISM.—Repairs and adjustments to the selector mechanism usually require the removal of the assembly from the chassis. This process is simplified by first dismounting the selector motor. The details of the selector motor are shown in Figure 7-35.

(1) SELECTOR MOTOR.

(*a*) BRUSHES. — The brushes of the selector motor may be removed for inspection or replacement without dismounting the motor. The brush holder caps are accessible from the top and bottom of the chassis respectively. Polarity marks on the brushes should be observed in making replacements. To dismount the motor proceed as follows:

Step 1. Unsolder white, black, and yellow leads to selector motor at point of connection beneath dynamotor chassis.

Step 2. Remove the three screws in the casting holding the motor and gear assembly to the selector mechanism. Two of the screws (Figure 7-34, 2) are accessible from the top of the chassis, the other from the bottom.

Step 3. Free the motor and gearing from the selector mechanism and carefully withdraw the assembly from the chassis. Remove mounting screws from holder of fuse, F803, and swing holder aside to permit removal of the motor.

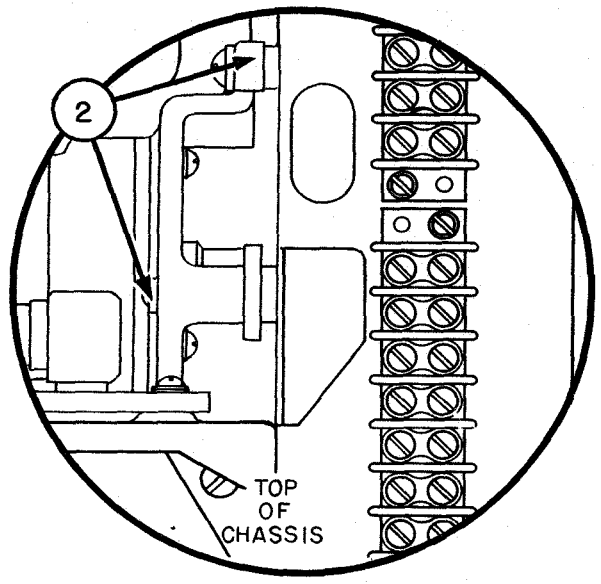


Figure 7-34. Steps in Dismounting Selector Motor

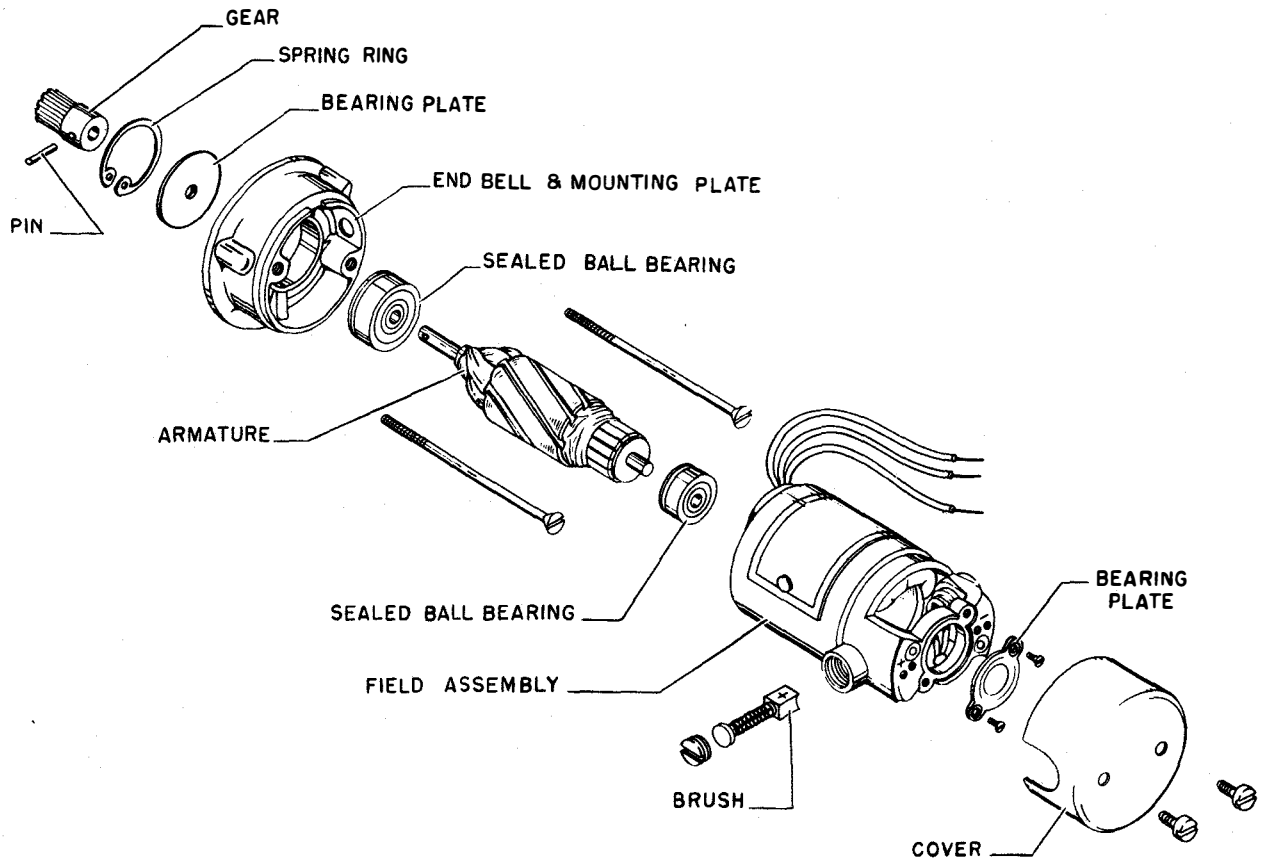


Figure 7-35. Selector Motor, Exploded View

(*b*) COMMUTATOR.—To inspect the commutator, remove two screws (Figure 7-35) from the end cover and slide the cover off the end bracket. Refer to paragraph 2*b*(2)(*a*) in this section for instructions on commutator and brush servicing. If the commutator is uneven, rough, or pitted badly, install a new motor from spares while repairs are being made.

(*c*) BEARINGS.—The bearings are of the sealed, factory-lubricated type and require no greasing throughout the life of the motor. To replace the commutator and bearing, remove the two long screws that hold the field assembly to the mounting plate. Tap the end plate gently to loosen it, then pull the end plate and armature from the field assembly. Do not lose the spring washer located in the bearing recess. Pry the bearing off the end of the armature shaft, taking care not to damage the armature, and install new bearing. Use precautions mentioned in paragraph 2*b*(2)(*c*).

To replace the rear bearing or free the armature for repair or replacement, dismount the gear assembly from the mounting plate. Drive out the taper pin holding pinion on motor shaft and remove pinion. Pull the armature, with bearing attached, from the mounting plate. The rear bearing may be replaced, or the armature serviced, without removing the front bearing.

When a new armature is installed, always install new bearings. Do not reuse bearings that have been removed from the shaft, except in case of emergency.

Assemble the motor by reversing the procedures used in dismantling. Before replacing the commutator and cover plate, test the motor for operation by temporarily connecting it to the original points and turning channel selector to another position. Use the black and white leads to check for one direction of rotation, the black and yellow leads for reverse operation.

(2) SELECTOR UNITS.—Replacement of defective selector units will necessitate the removal of the entire selector assembly from the chassis. The mechanism must be protected from dust and moisture at all times and handled with care to prevent damage.

(*a*) REMOVING THE SELECTOR MECHANISM.—Prepare the selector mechanism as for lubrication, by removing selector cover and selector panel as described in Section 6, paragraph 5, steps one through six. Switch power on the equipment and insert a screwdriver blade just below the cam which holds the limit switch open. Move the channel selector switch to position 10, and, as the mechanism begins to function, hold the limit switch open by pressing the switch button with the screwdriver blade.

When the selector mechanism comes to rest, move the power switch to the OFF position. The selector drums will have advanced to position 10 but the motor will not reverse because the limit switch has been held open. Disconnect the cables, and remove the receiver chassis from the case.

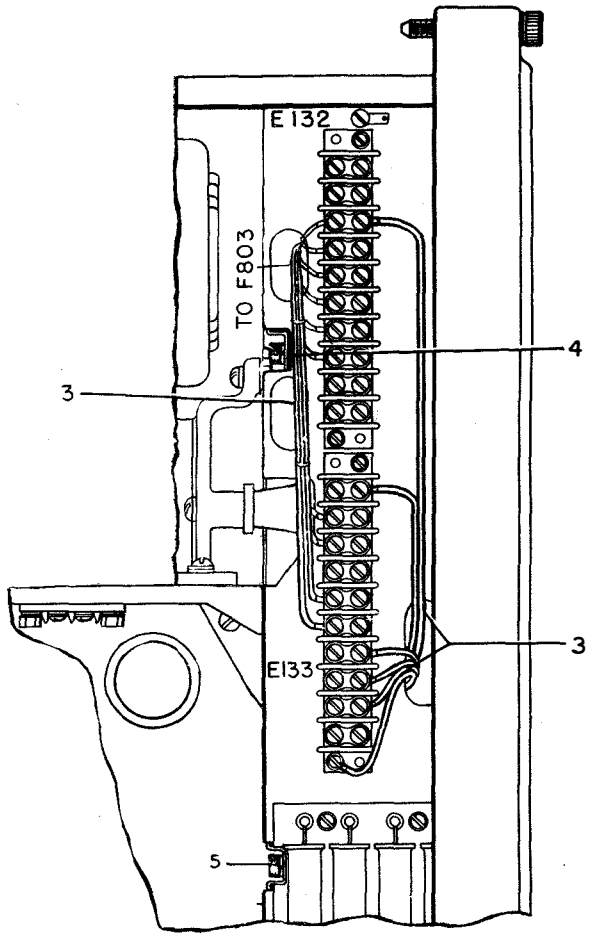


Figure 7-36. Steps in Removal of Selector Mechanism, Top View

Numbers in the various steps of the following procedure for removing the selector mechanism also refer to the numbers in Figures 7-36 and 7-37.

Step 1. Stand the chassis on one end of a work bench, with the dynamotor at the top.

Step 2. Disconnect the leads (3) to terminal strips E132 and E133 on top of the shield over the selector mechanism. Tape the individual cables for ease of removal and reassembly.

Step 3. Remove the knurled-head screw (4) in the dynamotor section, using one of the Allen wrenches in the clip in the multiplier section.

Step 4. Remove the knurled-head screw (5) accessible through a hole in the selector mechanism shield in the multiplier section.

Step 5. Disconnect all leads (6) to terminal strip

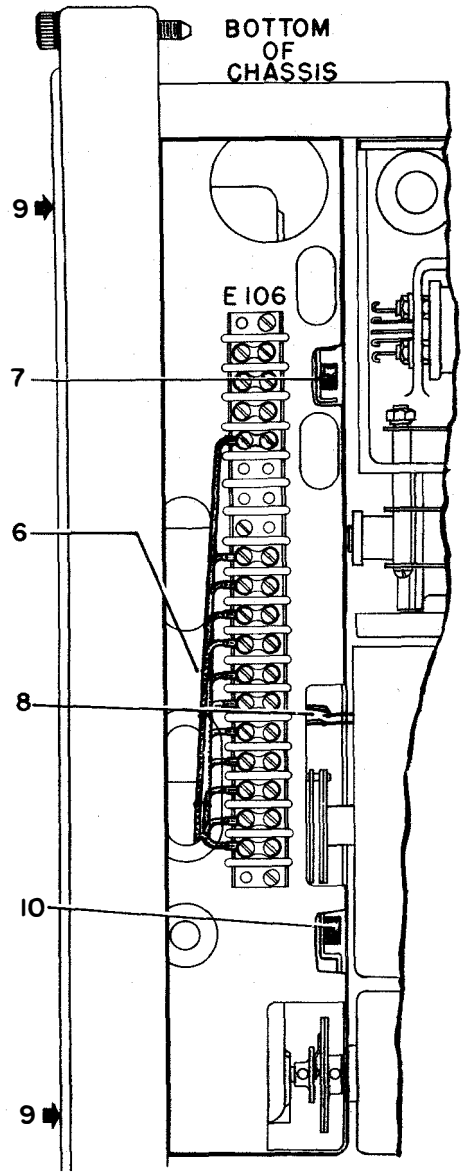


Figure 7-37. Steps in Removal of Selector Mechanism, Bottom View

E106 located on the bottom of chassis (Figure 7-37) Straighten the leads and temporarily tape them into a single cable.

Step 6. Remove the knurled-head screw (7) adjacent to relay K601. Use care not to damage leads or terminals on the relay in this operation.

Step 7. Unsolder the two leads (8) to the terminals on the end of the multiplier unit adjacent to the selector mechanism.

Step 8. Remove the four screws (9) from the flange of the selector housing.

Step 9. The selector mechanism is now held by a single screw (10) located on the bottom of the chassis near the multiplier. Use narrow nose pliers to loosen this screw and gradually withdraw the selector mechanism. Removing the multiplier unit will allow easy removal of this screw if difficulty is experienced. Withdraw the assembly completely, feeding the cables out through the grommets in the shield. Do not attempt to move the main gearing in the mechanism, or the settings will be disturbed.

To remove either of the selectors, mark the large gear on the rear of the housing to indicate the points at which the gears mesh as shown in Figure 7-38. Remove the C-washer and slip the gear off the stud. To free the r-f selector, mark the small gears at the point of mesh, slip the C-washer off the stud, and remove the gear carrying the bent driving arm.

To dismount either selector, make certain the dial is locked. Remove the four nuts at the rear of the housing and withdraw the selector as shown in Figure 7-39.

(*b*) SETTING A SELECTOR FOR INSTALLATION.—To set a new selector for installation proceed as follows:

Step 1. Unlock the dial and, holding the frame firmly, rotate the drum clockwise as viewed from the front, until a pawl emerges in the slot nearest the dial. Set the drum so the projecting tip of the pawl is one-sixteenth of an inch from the end of the slot.

Step 2. Without disturbing the drum setting, rotate the bronze gear clockwise until the pin on the gear engages the stop on the drum.

Step 3. Hold the gear in position and rotate the dial until it is at approximately the same setting as the dial on the defective selector previously removed. Lock the dial and hold the bronze gear in position against the stop with a small wedge between the gear and the frame.

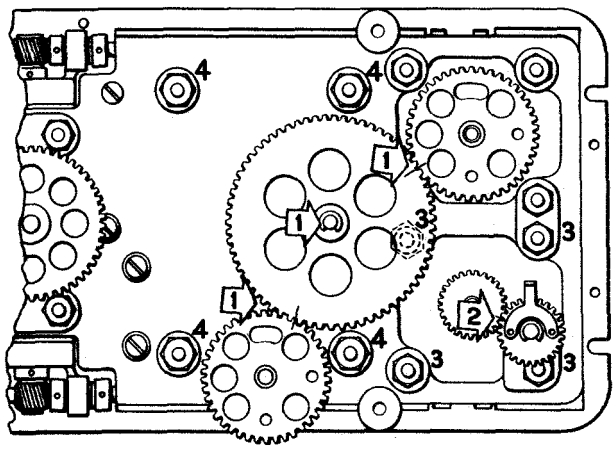


Figure 7-38. Method of Marking Gears for Removal of Selector Units

Step 4. Remove the gear from the defective selector and place it in the same relative position on the new selector. Fasten as original gear was fastened.

Step 5. Place the new selector in the housing. Note position of the vernier pin then slide the selector into place with the bronze gear engaging the worm gear. Replace the four nuts and washers on the rear of the housing then remove the wedge from the bronze gear.

Step 6. Replace gears on their respective studs, making sure they mesh according to the marks.

(*c*) REPLACING HOMING SWITCH DRIVE.

Step 1. Remove the homing switch drive by unscrewing the four nuts holding it to the selector frame and carefully working it out of the frame.

Step 2. Set the new homing switch drive by holding the frame firmly and rotating the drum clockwise, as viewed from the front, until a pawl emerges in the slot nearest the front. Set the drum so the projecting tip of the pawl is one-sixteenth of an inch from the end of the slot.

Step 3. Without disturbing the drum setting, rotate the bronze gear clockwise until the pin on the gear engages the stop on the drum.

Step 4. Replace drive in frame, being careful not to move any gears except for a minimum amount necessary for meshing of gear teeth. Replace the four nuts that hold it in place.

(*d*) REPLACING POWER SWITCH.—With the selector mechanism removed from the receiver proceed as follows:

Step 1. Remove the three screws holding the power switch mounting plate, being careful to keep all the hardware.

Step 2. Pull the switch forward carefully, unsolder and tag the leads.

Step 3. Check switch positions with an ohmmeter for correct position. Remove the old switch from the mounting plate and put on the new.

Step 4. Solder the leads on switch and fasten bracket in place. Remove knob from old switch and install on new switch.

(*e*) REPLACING THE SELECTOR MECHANISM.—The selector mechanism can be replaced in the chassis by reversing the order of removal, with the exception that the couplings to the control shafts must be properly engaged. The preferred method for connecting the couplings is as follows:

Step 1. Stand the chassis on the work bench with the panel at the top.

Step 2. Feed the cables attached to the selector mechanism through the grommets from which they were withdrawn, and lower the unit into place.

Step 3. When the couplings start to engage, unlock the dials and rotate them to bring both pins towards the bottom of the chassis. Rotate the lower half of the couplings consisting of two disks, till the narrow slot formed by the disks is under the pins. Spread the slots in the disks with a screwdriver blade to allow the pins to slip into the widened slots.

Step 4. At some point in the replacement process, the selector housing will reach the knurled screw in place in the chassis. Start this screw into the threaded hole in the casting of the selector housing by means of thin jaw pliers. Do not tighten this screw all the way until all the other knurled head screws have been started into place.

Continue to assemble in the reverse order from step 11 of the dismantling instructions. When replacing the selector panel, take care to maintain clearance between the panel openings and the edges of the dial plates. Before tightening the panel screws, check the clearance around the dials by passing a scriber point around the edges of the dials. Then tighten screws, replace lockwasher and nut on channel switch collars and screws in the power switch.

Dial settings that have been disturbed may be corrected by following instructions given in this section under the assembly procedure of the section of the equipment involved. It will be necessary to retune the equipment as described in Section 3.

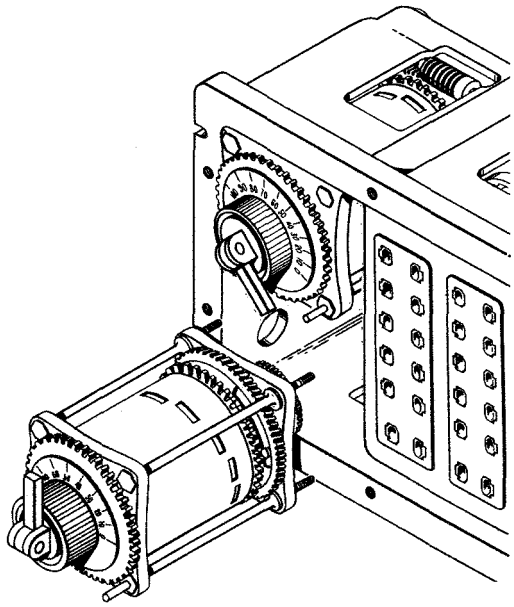
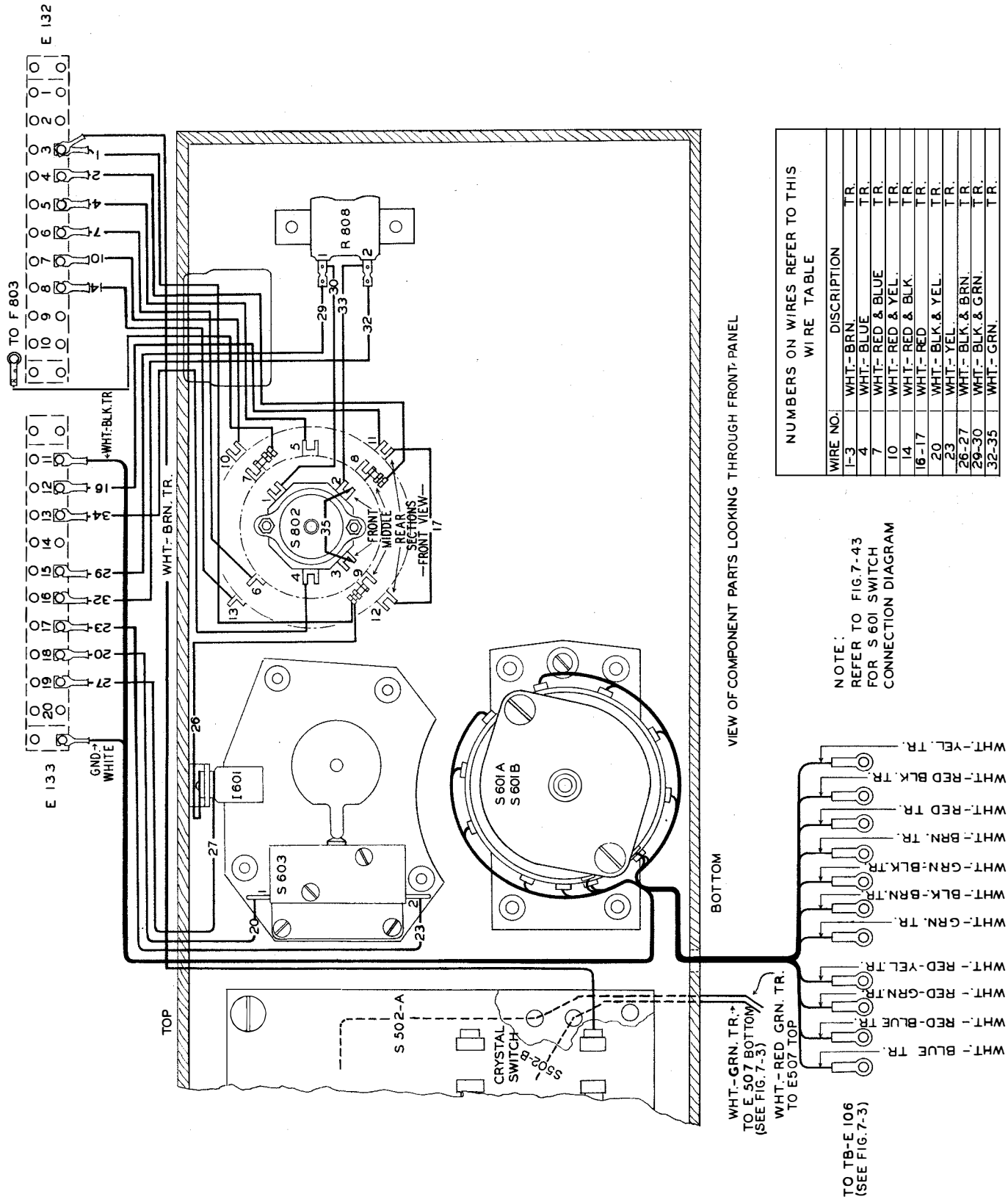


Figure 7-39. Withdrawing Selector Unit



NUMBERS ON WIRES REFER TO THIS WIRE TABLE

WIRE NO.	DISCRIPTION
1-3	WHT.-BRN. TR.
4	WHT.-BLUE TR.
7	WHT.-RED & BLUE TR.
10	WHT.-RED & YEL. TR.
14	WHT.-RED & BLK. TR.
16-17	WHT.-RED TR.
20	WHT.-BLK.& YEL. TR.
23	WHT.-YEL. TR.
26-27	WHT.-BLK.& BRN. TR.
29-30	WHT.-BLK.& GRN. TR.
32-35	WHT.-GRN. TR.

Figure 7-40. Selector Mechanism, Connection Diagram (T-618859)

(3) CRYSTAL SWITCH.

(*a*) REMOVING THE SWITCH ASSEMBLY.—The crystal oven jack plate and the crystal switch must be removed as a unit to make repairs or replace switch wafers. With the selector mechanism out of the chassis, the crystal oven jack plate and associated switch may be removed as follows:

Step 1. Mark the large gear on the rear of the housing at points where it meshes with the smaller gears as shown in Figure 7-38. Remove the C-washer and slip the gear off the stud.

Step 2. Mark the two gears at the rear of the r-f selector, so that they can be engaged properly when reassembled.

Step 3. Mark the points at which the gear on the r-f drum meshes with the gear on the crystal switch. With the r-f dial locked, remove the four nuts holding the r-f selector in the housing.

Step 4. Remove the four nuts holding the crystal switch.

Step 5. Free the white with brown tracer wire that passes through the top of the selector housing, and withdraw the crystal switch and r-f selector simultaneously until the threaded studs on both are free of the housing. Disengage the crystal switch gearing from the selector gear and remove the switch without disturbing its setting.

Step 6. Slide the r-f selector back into the housing and temporarily replace the holding nuts.

Step 7. Mark the large brass gears in the gear section of the crystal switch, with a reference mark on the back plate so they can be set properly when the switch is replaced.

(*b*) SWITCH WAFER REPLACEMENT.—To replace a switch wafer in the switch proceed as follows:

Step 1. Unsolder the wires connected to the terminal strip on the rear of the switch and to the ground post.

Step 2. Remove the four screws from the face of the jack plate.

Step 3. Separate the switch and gear assemblies and put the gear assemblies aside.

Step 4. Remove the four screws from the back of the jack plate support.

Step 5. Remove the cable lacing from the corner of the assembly and remove the metal plate and spacers. The wiring to the switch wafers will then be exposed.

Step 6. Unsolder the leads to the defective switch wafer.

Step 7. Place the new wafer in the position previously occupied by the defective switch wafer and resolder the leads.

Assemble the switch by reversing the procedure given for dismantling. Set the rotor of the switch wafer, just installed, in position to engage the drive shaft in the gearing assembly. Particular care should be taken to make certain that the rotor is not rotated 180 degrees from its correct position.

(*c*) REPLACING THE SWITCH ASSEMBLY.—Set the gears in the switch to the position where the marks on the gears, made in step 7 when dismounting the switch, coincide with the reference mark on the switch assembly. Insert a wooden wedge in the teeth of either gear near the jack plate support.

Loosen and withdraw the r-f selector from the housing to the point where the large gear on the side of the crystal switch can be slipped behind the bronze gear on the selector and the smaller gear engaged with the teeth on the drum of the selector as marked. Slide the selector and switch into place together and fasten them loosely. Engage the gears at the rear of the r-f selector and fasten both selector and switch in position. Make certain the gear on the switch meshes correctly with the selector drum teeth, as marked at step 3 of the disassembly procedure.

Replace and fasten the large gear on the back of the assembly; mesh it into smaller gears according to markings.

CAUTION

Do not move gearing in selector housing while selector or crystal switch is out of the housing.

(4) CRYSTAL OVEN.—If drift occurs in the heterodyning frequencies, causing fading, it is possible that the crystal oven is not maintaining the proper temperature. Continuity tests of the heating elements and thermostat contacts are inconclusive; therefore, the oven must be tested under simulated operating

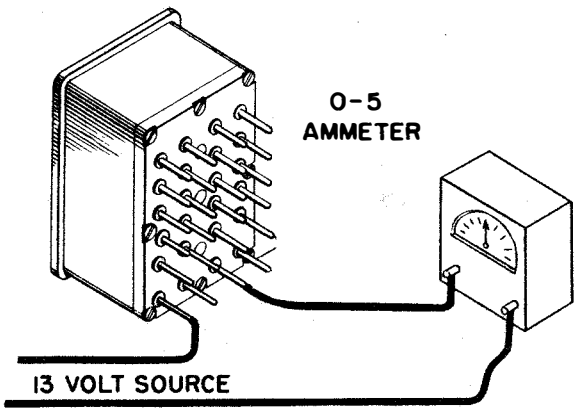


Figure 7-41. Crystal Oven Test Circuit

conditions: Connect one side of a 13-volt supply source to pin X, and the other side through an ammeter to pin Z, as shown in Figure 7-41.

With both thermostats and heaters functioning properly, a reading of approximately 2.5 amperes should be obtained when first switched on. After a few minutes heating, the booster heater will be cut off and the load will drop to 1.25 amperes. As the temperature rises, the other heater will be cut out and in by its thermostat, and zero reading will be obtained periodically.

Any deviation from this cycle of operation is an indication that the thermostats or heating units are defective. Since no adjustment of the thermostats or repair of the heating elements is possible, the entire heating assembly must be replaced if any component is faulty.

To remove the heating unit, remove the eight screws which hold the plastic cover in place, as shown in Figure 7-42. Loosen the four screws around the bottom edge of the oven element and carefully pry the element loose from the base by inserting a knife blade under the plug end. A new heating element can be plugged into place. Removal of the oven element exposes the crystal holders. Reassemble in the reverse order.

(5) CHANNEL SELECTOR AND HOMING SWITCH.—These switches can be serviced without removing the selector mechanism from the chassis. The switches are removed by the following procedure:

Step 1. Place receiver chassis on a bench in an inverted position, and remove selector cover, crystal oven, and selector panel.

Step 2. Disconnect all leads to terminal board E106 on bottom of chassis.

Step 3. Loosen, but do not remove, the two screws in the metal plate on the front of the switch, being careful not to lose spacers on the screws.

Step 4. With the screws still in the assembly, swing the switch out, loosening the leads disconnected from E106. Remove spacers from screws.

Step 5. Note particularly the position of the slot in the blade section of the homing switch.

Step 6. Separate wafers slightly and unsolder leads to the defective switch.

Step 7. Remove the screws and separators, and slip a new wafer into place with the contact member in the same position as on the wafer removed. Insert screws and spacers. Resolder the leads.

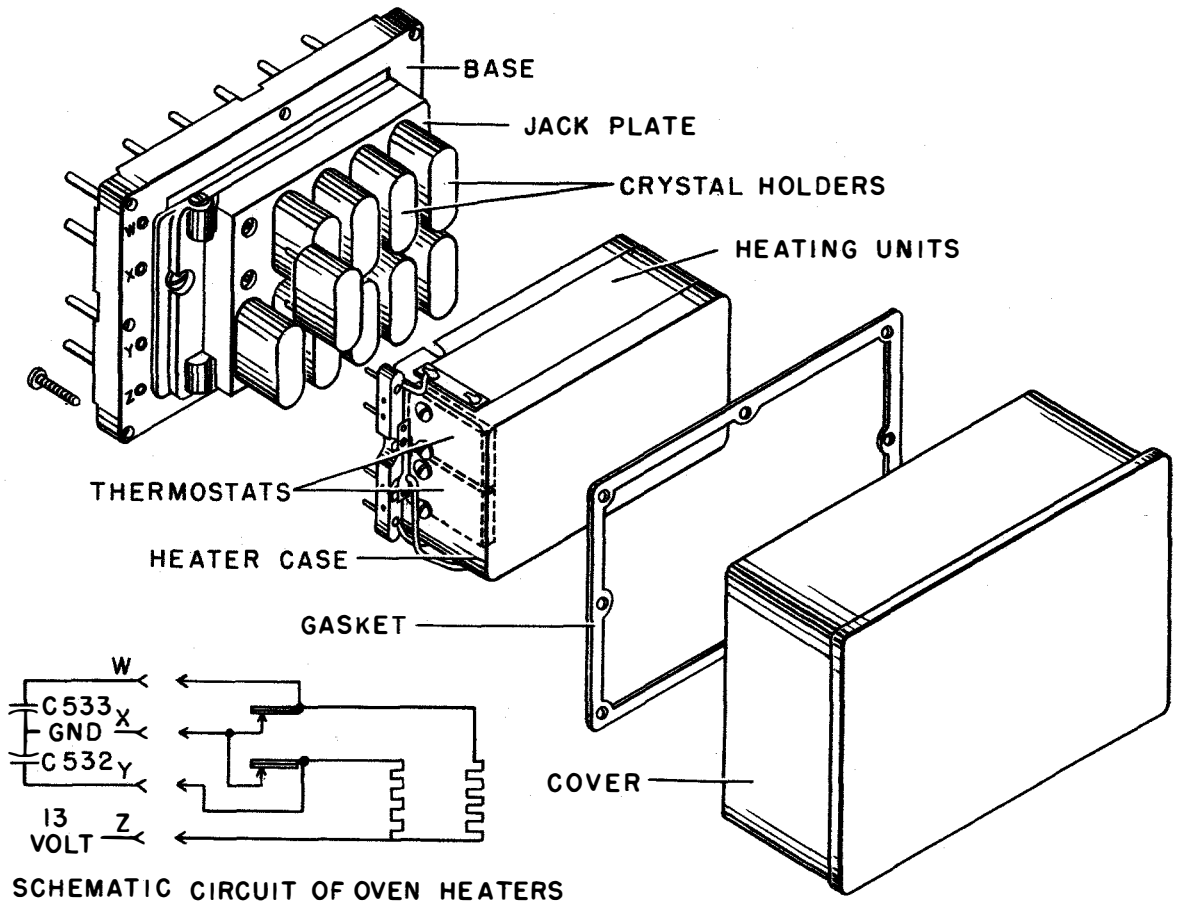


Figure 7-42. Crystal Oven CFT-40148, Exploded View

Step 8. Swing the switch back into position, engage the blade contact member with the shaft of the gear mechanism, and fasten the switch in place.

Step 9. Reconnect leads to terminal board, E106.

3. ANTENNA, NAVY TYPE CRV-66147.

The antenna assembly is not subject to wear or deterioration from normal operation.

The part most likely to suffer damage is the insulator, which can be replaced in the following manner:

Step 1. Disconnect the transmission line cable and dismount the antenna.

Step 2. Remove both radiating rods by loosening the lock nuts and unscrewing the rods by inserting round end of the wrench in the holes in the rods.

Step 3. Clamp the center junction at the dipole end of the antenna in a vise and remove the hexagonal shaped plug in the casting as shown in Figure 7-44.

Step 4. Remove the nut and lockwasher connecting the stud in the insulator to the center conductor of the antenna.

Step 5. Remove the caulking compound from the holes in the insulator with a small screwdriver. Save the compound for use in refilling screw holes after installation of a new insulator.

Step 6. Remove the six screws, then tilt the insulator toward the rear of the assembly to disengage the stud in the insulator from the central conductor.

Remove gasket.

Install a new insulator by following a reverse procedure. Engage the hole in the end of the stud on the

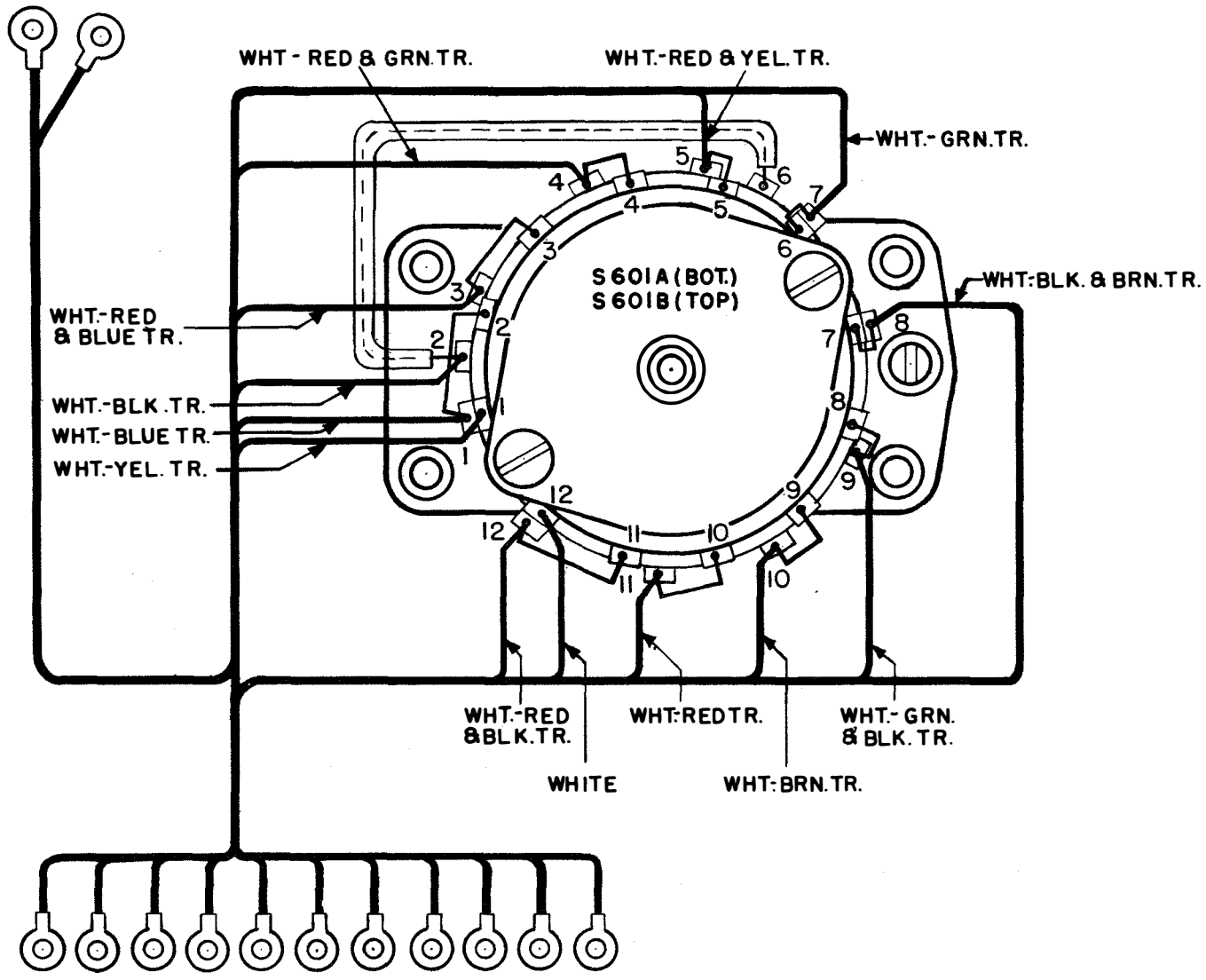


Figure 7-43. Selector and Homing Switch, Connection Diagram (P-728968)

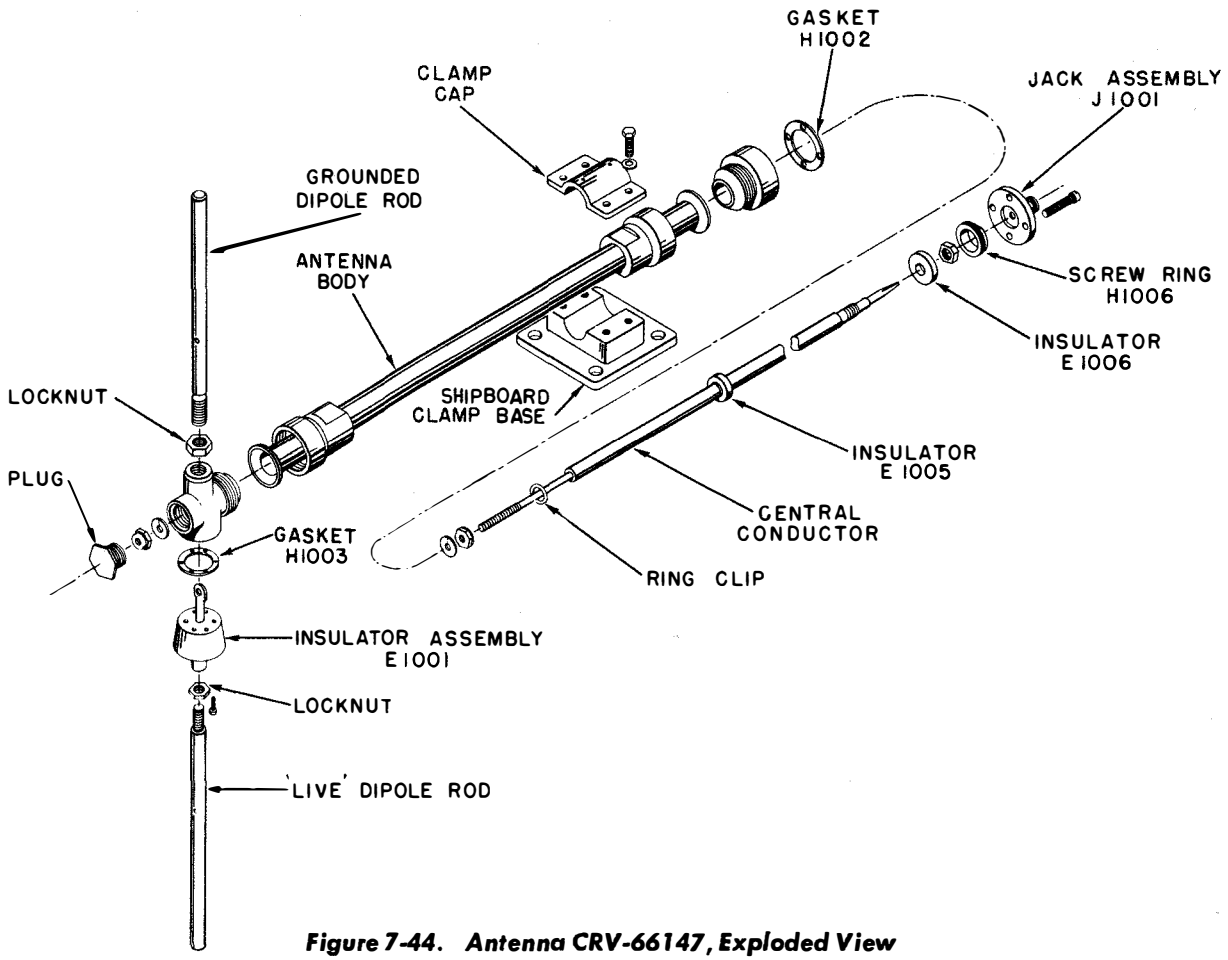


Figure 7-44. Antenna CRV-66147, Exploded View

central conductor before replacing the screws. Install a new gasket under the insulator and recaulk screw-holes with compound removed in step 5.

The transmission line connector on the antenna can be removed by loosening the four screws which hold the connector plate to the casting. The connector will come off with the plate, sliding off the center post.

To remove the inner conductor, disconnect the lug on the insulator as in step 4 of the procedure for removing the insulator. Remove the connector at the rear end of the antenna. Use the open end of the spanner wrench to remove the screw ring which holds the inner conductor spacer at the rear end of the antenna. Withdraw the inner conductor from the tubular body.

The large insulating spacer may be removed by loosening the hexagonal nut which holds it on the rod. The small spacer may be removed by prying off the snap ring adjacent to the spacer. The antenna is thus completely disassembled for repair. To assemble, reverse the procedure, replacing any gaskets that may have been broken in disassembly.

Note

Do not attempt to remove the end castings from the supporting tube without holding both the tube and the casting rigid while loosening the nut.

4. GASOLINE ENGINE GENERATOR SET, NAVY TYPE CCW-73037.

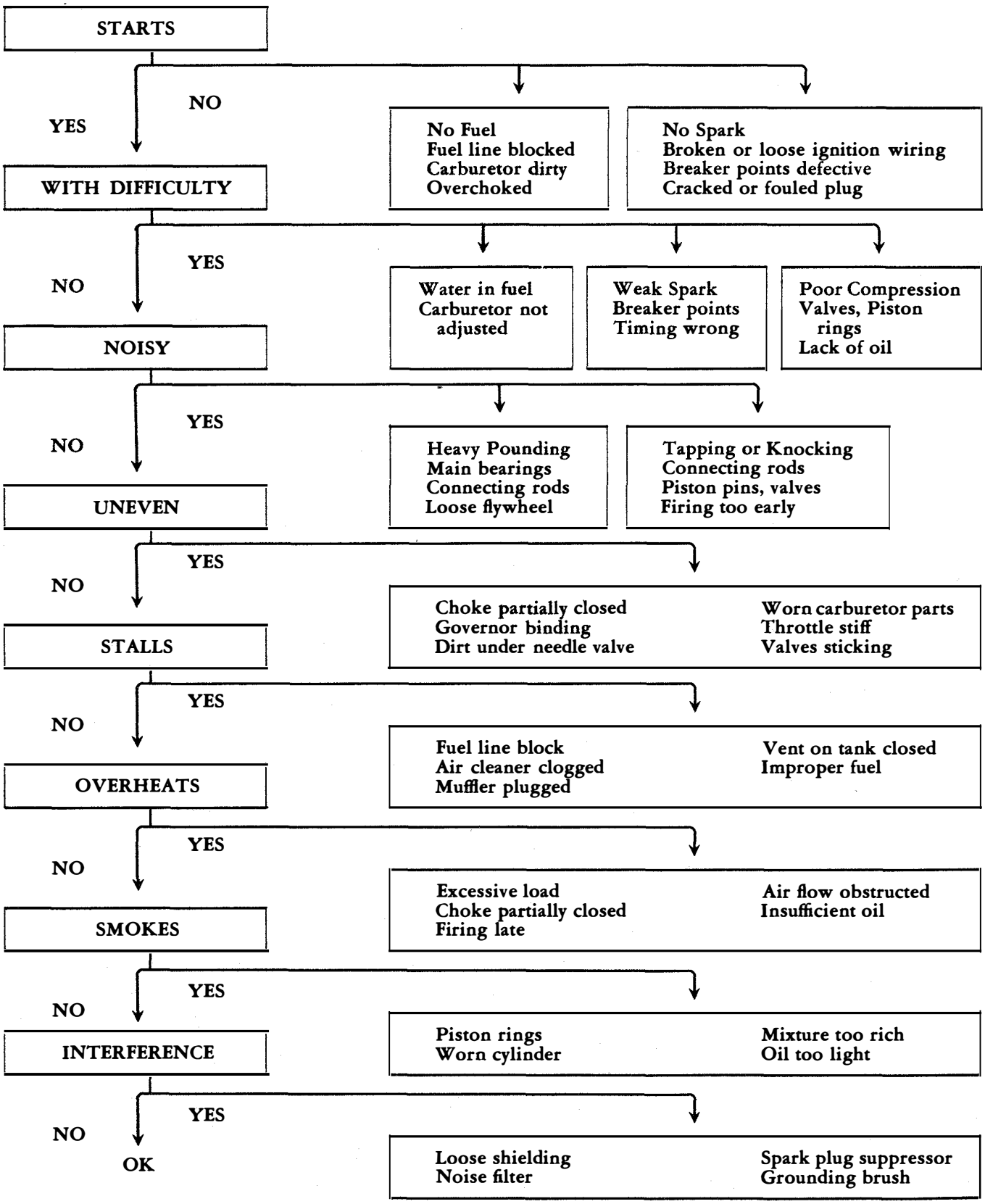
The shipping chest for the generator set contains, in addition to the engine case, containers for fuel and oil, the tools necessary for servicing the gasoline engine, and a quantity of spare parts to make most engine repairs. The trouble shooting chart, Table 7-5, will serve as a guide in locating the cause for improper engine operation. The following paragraphs describe in detail the various maintenance procedures for both engine and generator.

a. GASOLINE ENGINE.

(1) CARBON REMOVAL.—At the end of every 50- to 100-hour period of operation it will be necessary to remove the carbon deposit from the engine. A leaded gasoline will require more frequent carbon removal. The procedure for removing carbon is as follows:

TABLE 7-5

GASOLINE ENGINE TROUBLE SHOOTING CHART



Step 1. Disconnect plug shield and ignition cable, then remove the spark plug and gasket.

Step 2. Clean and examine the plug, and if the porcelain is cracked, discard it. If the porcelain is in good condition, clean the points thoroughly and set to 0.020 inches. Use a round feeler to set plug gap.

Step 3. Remove the upper shroud extension by loosening the captive thumb nut.

Step 4. Remove the cylinder head nuts and washers. Using a rawhide hammer or block of wood tap the head lightly to loosen it, then remove the head and gasket.

Step 5. Turn the engine over until the piston is at the top of the cylinder and both valves are closed. Scrape the carbon from the cylinder head, cylinder face, piston top, and valves. Remove all traces of gasket sealing compound.

Step 6. With a brush or air blast, carefully remove all loose carbon particles and dust.

Step 7. Turn the engine over and, as each valve opens, squirt a few drops of kerosene or light penetrating oil on the valve seats and stems. Bring piston to the top again to close both valves; then, by means of a screwdriver, rotate both valves on their seats a few times to insure proper seating. With piston in highest position, check for excessive play in cylinder. If necessary, replace rings as described in 4*a*(3).

Apply some suitable gasket sealing compound to the top of the cylinder and place a new head gasket in position. Do not use the old gasket, unless absolutely necessary. Apply gasket sealing compound to the top of the gasket. Replace the cylinder head, washers, and head-nuts. Tighten each head-nut slightly in succession, working in a circle so as to tighten the nuts uniformly.

Replace shroud extension, spark plug gasket, spark plug, and ignition cable.

After the first operating period, and with engine cooled off, retighten the head-nuts.

(2) VALVE GRINDING.—After 75 to 100 hours operation, the valves will require reseating. In addition to removing the ignition cable, shroud section, cylinder head and gasket, as described in paragraph 4*a*(1), the following steps are involved.

Step 1. Loosen the knurled nut which holds the air duct to the shroud (blower housing).

Step 2. Remove the four screws from the shroud. Close the gasoline line valve, loosen the gasoline line nut, and remove the shroud.

Step 3. Loosen the starter pulley retaining nut and back the nut off until it extends over the end of the shaft. Wedge a heavy screwdriver between the flywheel and the bearing plate, then strike the pulley nut a sharp blow with a steel hammer. This will jar the flywheel loose and it may be removed. Note position of the clamp for the magneto high tension lead and the

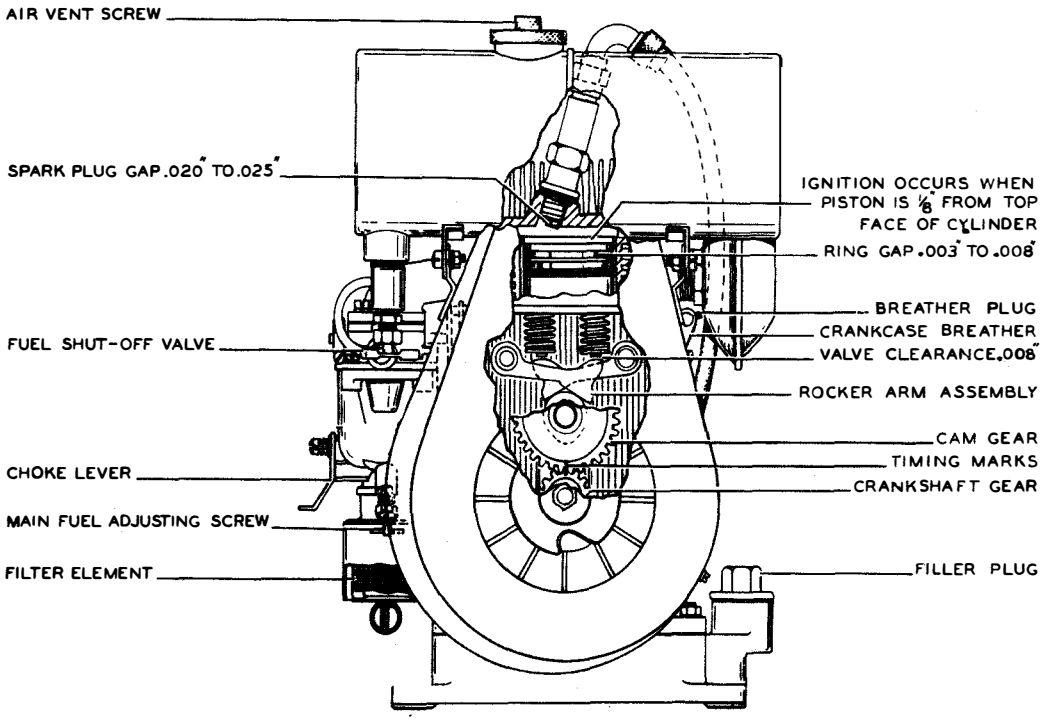


Figure 7-45. Gasoline Engine CCW-73037, Partially Sectioned

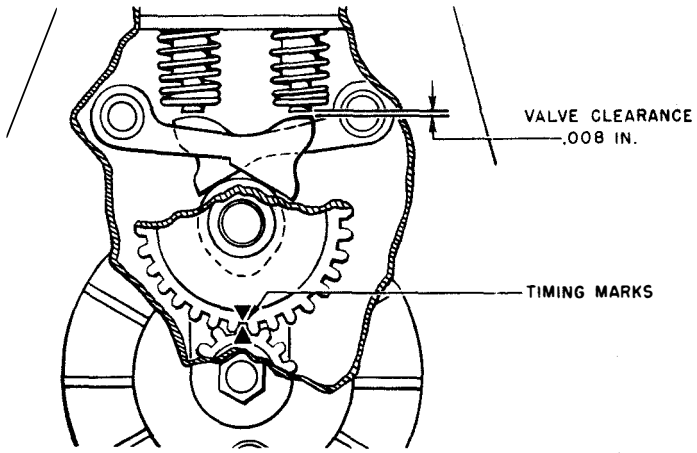


Figure 7-46. Valve Setting

routing of the lead. Take care not to lose the crankshaft key.

Step 4. Unscrew the brush holder cap, located in the bearing plate directly behind the magneto housing, and remove the copper brush and spring assembly.

Step 5. Remove the bearing plate assembly by taking out the holding bolts. Use care in removing the gasket so that it may be reused.

Check the valve clearance, which should be six to eight thousandths of an inch. If less, file or grind the required amount off the valve stem after the valve is removed. Make certain any ground section is square with the valve stem. If the clearance exceeds fifteen thousandths of an inch, the valve must be replaced with a new one from spare stock.

Step 6. Compress the valve springs with a valve spring compressor tool and pull the pin from the hole at the base of the valve stem.

Step 7. Remove valve, valve spring, and washer.

Step 8. Clean underside of valves, valve stems, and seats.

Step 9. Lap valve seats with fine grinding compound until a smooth seat is obtained. Wipe all traces of grinding compound from valve and seat, then put a few drops of light oil on the valve stems.

Replace the valves and assemble the engine by reversing the removal procedure from step 7. At step 5, make certain the clamp for the magneto high-tension lead is in the proper position on the stud and that the lead is routed in back of the coil.

Before replacing the flywheel, check the breaker points for wear at the rocker arm, inspect contact points, and adjust properly as described in paragraph 4*a*(5), and replace lubricating wick of magneto cam if old one has dried out.

Note

It is not necessary to remove the cam and gear assembly in removing the valves.

(3) PISTON REMOVAL.—To inspect rings for wear, proceed as follows:

Step 1. Close valve in gasoline line to carburetor. Disconnect gasoline line at carburetor and remove blower housing as described in paragraph 4*a*(2).

Step 2. Remove plug wiring and cylinder head, etc., as outlined in paragraph 4*a*(1), steps one through six.

Step 3. Drain oil from crankcase.

Step 4. Make an identifying mark on the cylinder and piston, so that they may be reassembled in the same relative position.

Step 5. Remove the four bolts which hold the cylinder block to the engine base and lift the cylinder block with attached generator and control box from the base. Do not damage the gasket when removing the cylinder block.

Step 6. Remove the two cap screws which hold the connecting rod bearing. Remove the nuts and the bearing halves. Mark the bearing halves so that the lower half may be replaced in the same position.

Step 7. Push the piston out through the top of the cylinder. Remove the rings by expanding them until they are free of their respective grooves. Slide the two upper rings over the top of the piston, slip the lower ring over the piston skirt.

Remove any carbon in the upper end of the cylinder. Place one of the removed rings in the cylinder, about one inch below the top. Measure the gap between the ends of the ring with a thickness gauge. If it exceeds 0.035 inch, the ring must be replaced. Before replacing rings, ream top of cylinder to size of worn part, otherwise rings may be broken on installation.

To remove the piston pins, take out the retaining ring on each side of the piston pin. Heat the piston in boiling water, then drive the pin out with a wooden plug.

The piston pin is made in one standard size. If worn, replace both piston and pin. The normal factory clearance of the pin in the bearing is between 0.0001 to 0.00015 inch. Make sure to replace the retaining rings when installing the piston pins.

The connecting rod is of the plain bearing type and must be replaced when the bearing is worn. No attempt should be made to file the bearing cap or to adjust the bearing bolts. The bolts should be drawn up securely at all times.

To assemble the rings and piston, carefully clean the ring grooves and then install the rings on the piston. The compression, or top ring must be placed so that the identification dot is toward the top of the piston. The oil ring (with holes drilled through it) should be placed in the bottom groove.

Note

The gaps in all rings must be staggered around the piston.

Great care should be exercised in inserting the piston in the cylinder to avoid damage to the piston rings. Use a ring compressor made of a strip of 20-gauge sheet metal, 10 inches long and 5/8 inch wide. Wrap the strip of metal around the skirt of the piston to form almost a complete circle, and bend the ends out to act as a grip.

Lubricate the piston rings and piston. Insert the connecting rod end of the assembly into the cylinder so the marks on piston and cylinder, made in step 4, line up. Enter skirt of piston in cylinder, place the metal strip around the ring, and apply pressure to the bent ends to compress the ring. Tap the top of the piston lightly with a wood block until the ring is entered. Repeat with each ring.

Engage the connecting rod with the crankshaft and replace the bearing cap according to the markings, as mentioned in step 6. Insert and tighten bolts securely.

CAUTION

Never attempt to obtain proper connecting rod bearing clearance by adjusting bolts.

The engine assembly may be completed by reversing the dismantling procedures given up to step 5, including the references to carbon removal and valve reseating.

(4) OIL PUMP REMOVAL.—While the engine is disassembled, remove the two clamp studs which hold the pump to the base and lift out the pump assembly. Remove the oil pump gear cover. Unscrew the round head screw and remove the oil strainer screen, oil strainer body, and oil strainer spacer. Clean these parts in gasoline and replace.

Replace the pump by reversing the removal procedure. Fill the base with clean oil and, with the filler neck facing left, rotate the oil pump drive gear counterclockwise. Oil should flow out of the discharge hole located in the oil splash pan. Never attempt to repair the oil pump assembly; if defective, replace with new assembly.

(5) MAGNETO ADJUSTMENT. — If ignition trouble is suspected, remove the plug shield and cable from the spark plug. Hold the cable conductor one-eighth inch from the metal body of the plug and turn the engine over with the starter rope. The appearance of a spark in the gap indicates that the magneto is functioning. The spark plug should be removed and examined for cracked porcelain or fouled points. Non-appearance of the spark leaves the ignition cable and magneto itself as possible sources of trouble.

Assuming the cable is in good condition, the magneto may be adjusted as follows: Close fuel valve and disconnect line at the carburetor. Remove blower housing, as previously described in paragraph 4*a*(2) (Valve Reseating).

Two adjustments are possible on the magneto assembly: one determines the degree of opening of the points, while the other adjusts the moment of fire. Refer to Figure 7-47 during the operations described in the following.

Before adjusting the breaker points, be sure they are clean, come together squarely, and that the fiber rocker arm is not scored. If the points are pitted, use a small flat file to clean and smooth them.

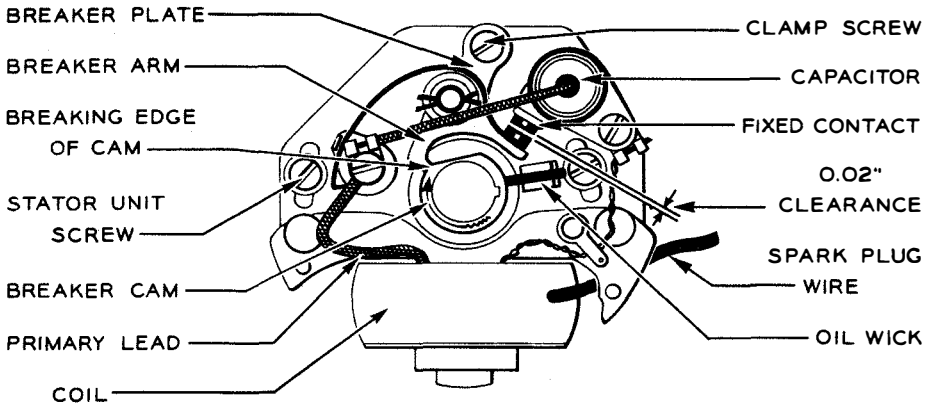


Figure 7-47. Magneto Adjustment

Turn the crankshaft until the breaker arm rests on the highest point of the breaker cam. If the gap between the breaker points is other than 0.020 inch, loosen the breaker-plate screw and tap the contact breaker plate lightly until the proper gap is obtained. Securely tighten the plate screw.

After the breaker points have the proper clearance, set the timing as follows. Turn the engine over in the direction of rotation until the piston is coming up on the compression stroke (both valves closed) and is exactly one-eighth inch from the top of the stroke. The position of the piston can be determined by a wire or rod inserted in the spark plug opening, if the cylinder head is in place. At this position the breaker points should just begin to open. To adjust for this condition, loosen the two screws in the adjusting slots, shift the stator plate to the right or left, and tighten the screws.

If both the gap setting and spark timing are correct, test the fixed capacitor above the points for breakdown. Remove the flexible lead wire from the breaker arm post, and take out the screw which holds the capacitor. After replacement, make certain that the coil ground wire is securely fastened by the capacitor screw.

A breakdown in the magneto coil winding can be checked with a meter; lack of continuity indicates a burnt-out coil. To renew the coil, disconnect the ignition ground and spark plug wire from the assembly. Remove the stator plate and the screw holding the capacitor ground wire. Bend back the coil-holding clip and pull the coil assembly from the pole piece.

(6) GOVERNOR ADJUSTMENT. — Engine speed is automatically maintained by a flyball governor. Rotation of the crankshaft swings small weights which produce movement of the carburetor throttle valve in accordance with engine speed changes. The governor is carefully adjusted at the factory for normal engine speed under rated load. If a change in controlled engine speed is desired, the spring tension can be altered by resetting the spring tension lever on the engine base. Make certain the adjusting lever screw is securely tightened after adjustment. Figure 7-48, showing the governor linkage to the throttle, indicates the location of all parts.

Should the throttle fail to open sufficiently during operation because of shortened working range, loosen the throttle lever screw, leaving the governor spring hooked onto the throttle lever. Grasp the end of the governor shaft with a pair of pliers and turn it to the left as far as its travel will permit. Tighten the clamp screw securely. This should restore the governor's working range. Make certain the throttle lever works freely.

(7) CRANKSHAFT REMOVAL. — To remove the crankshaft or crankshaft bearings, proceed as follows:

Step 1. Disconnect the generator and remove as described in paragraph *4b*(2).

Step 2. Follow all steps outlined in paragraph *4a*(3). In addition, remove the flywheel key, breaker cam, and magneto.

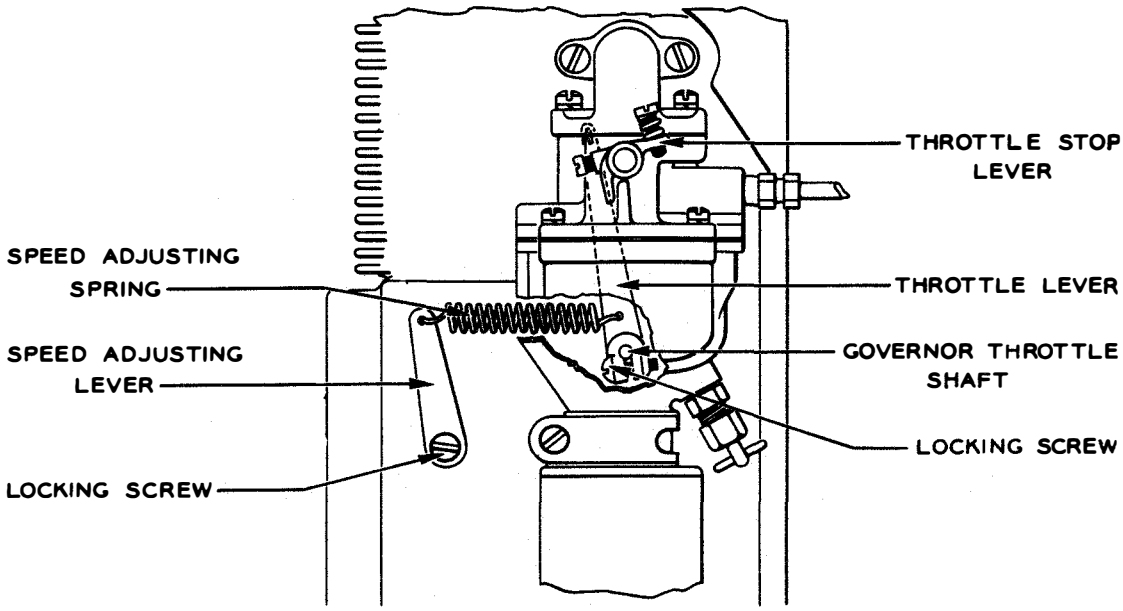


Figure 7-48. Governor Linkage

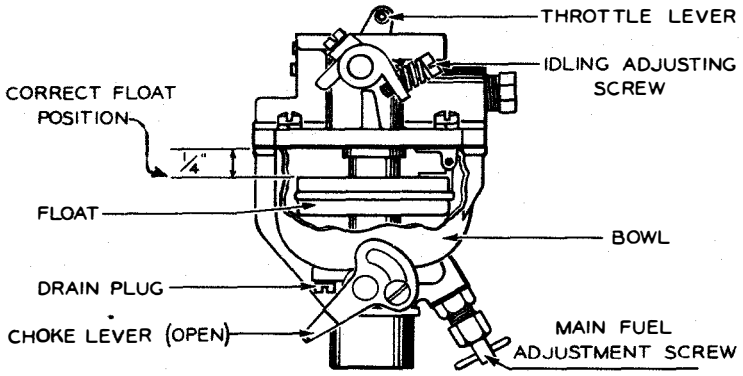


Figure 7-49. Carburetor Assembly

Step 3. Remove the bearing plate by loosening the six bolts which fasten the plate to the cylinder.

Step 4. Remove the cam and gear assembly; then disconnect the governor control shaft assembly. The crankshaft may now be taken out of the cylinder by tapping the end of the shaft with a wooden block and hammer.

If defective, the crankshaft bearing or gear can be removed with a bearing puller. If a puller is not available, the parts may be driven off the shaft by tapping lightly with a brass rod or hard wooden stick.

To replace the crankshaft in the cylinder, insert the ball bearing evenly into the bearing recess. Tap the shaft lightly with a brass rod or wooden stick until properly seated.

Note

Do not attempt to press the shaft into place.

Install the governor control shaft assembly. Place the throttle lever on the control rod, and pull out the shaft as far as it will go, allowing a little clearance between the lever and bearing. Hook the spring into the throttle lever. Using a pair of pliers, turn the control shaft to the left as far as it will go and fasten the lever screw tightly. Reference to Figure 7-48 will make this operation clear.

Replace the cam and gear assembly; make sure that the timing marks on the cam-gear and crankshaft-gear are in register. This position is shown in Figure 7-46. Assemble the remainder of the engine as previously described.

(8) CARBURETOR ADJUSTMENT.—The adjustment screw controlling the fuel mixture is the only adjustment on the carburetor proper. Clockwise rotation results in a leaner mixture, while a counterclockwise movement enriches the mixture. If tampering or accident has changed the valve setting, reset as follows:

Turn the main adjustment screw clockwise until it reaches the valve seat. Do this gently, as force will damage the needle valve seat. Turn the screw counterclockwise one and one-half turns. Start the engine and, after it warms up, disconnect the governor linkage and place the throttle in the idling position. Turn the screw clockwise slowly until the engine begins to run irregularly, then turn the screw counterclockwise slowly as long as the engine speed increases. Shut off engine and reconnect the governor linkage.

A flooding carburetor may be due to a faulty or sticking float or dirt under the valve. Shut fuel valve and remove float bowl assembly by loosening the bolts fitting into the body assembly. If the float works freely and is not loaded with liquid, the trouble is in the inlet valve and seat assembly shown in Figure 7-49. Remove and clean the inlet valve seat carefully with a clean cloth. Place the inlet needle on its seat, and lightly turn the inlet needle several times to insure a new seating surface. Reassemble the carburetor and open the fuel valve. If overflow continues, replace the inlet valve and seat assembly, as well as the inlet seat gasket.

In cases where an engine has been out of operation for some time, heavy fractions in the gasoline may settle in the form of a jelly and clog the carburetor jets and inlet needle valve. Should this happen, remove the old gasoline and clean out the entire fuel system. Remove the spark plug and squirt a little crankcase oil into the combustion chamber. Turn the motor over several times to permit the oil to flow on the valve seats and stems and to seal the pistons and rings.

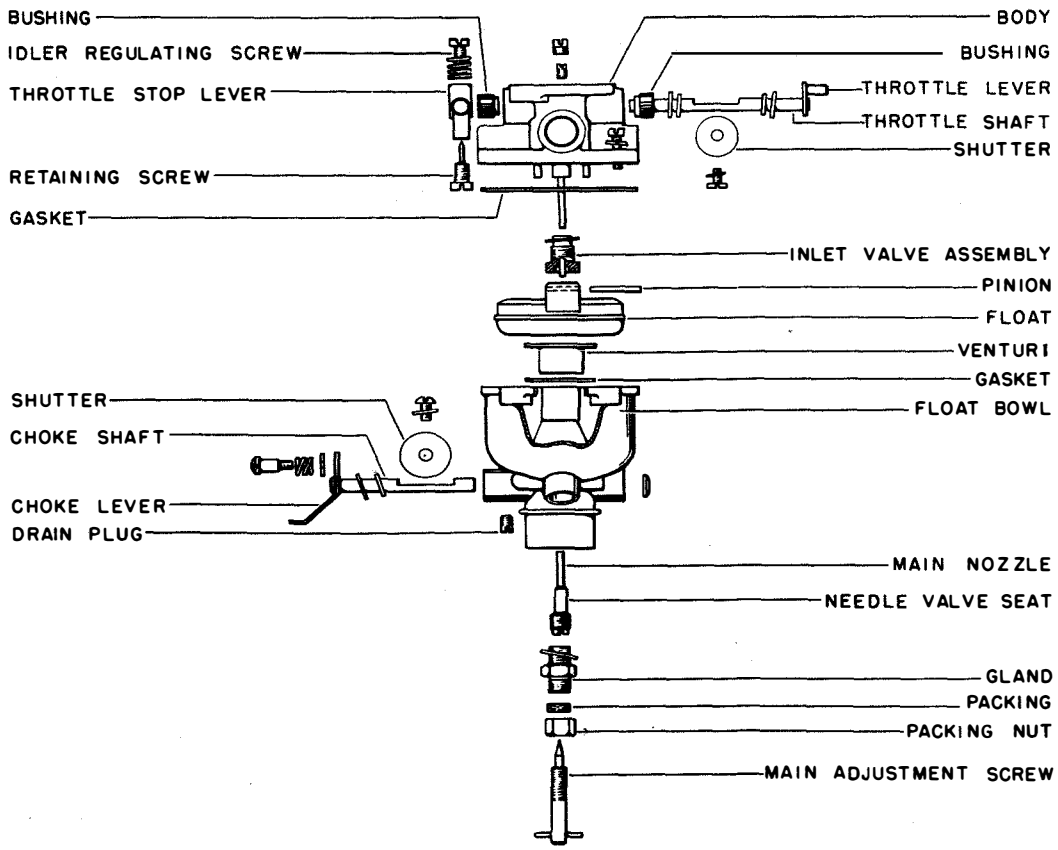


Figure 7-50. Carburetor, Exploded View

b. GENERATOR.

(1) BRUSHES AND COMMUTATOR.—To service the brushes and commutator, remove the screws holding the louvered end cover to the generator, loosen the nut on cable shield, and slide the cover off the generator end bracket.

Remove the brushes by unscrewing the caps. Note the position of each brush as it is withdrawn from the holder, so it can be replaced in the same relative position, if still serviceable. Replace chipped or broken brushes and brushes worn down to ⅜ inch in length. Make certain the brush springs are not broken and that the brushes slide smoothly in the holder. Sandpaper sticking brushes very lightly. Check polarity marks on new brushes, and always install in the proper holder.

A commutator that is smooth and burnished to a dark bronze color indicates proper operation and should not be touched with sandpaper. If blackened or uneven, remove the brushes and apply 000 sandpaper with a flat block while the commutator is turned by hand. Sand it to a bright smooth finish. After sanding, clean the commutator slots with a pointed soft wood stick, and thoroughly remove dirt and dust with a brush. If the commutator is badly grooved or if the bar edges are burnt, remove the armature from the generator as described in paragraph 4*b*(2)(*a*), and turn the commutator down in a lathe.

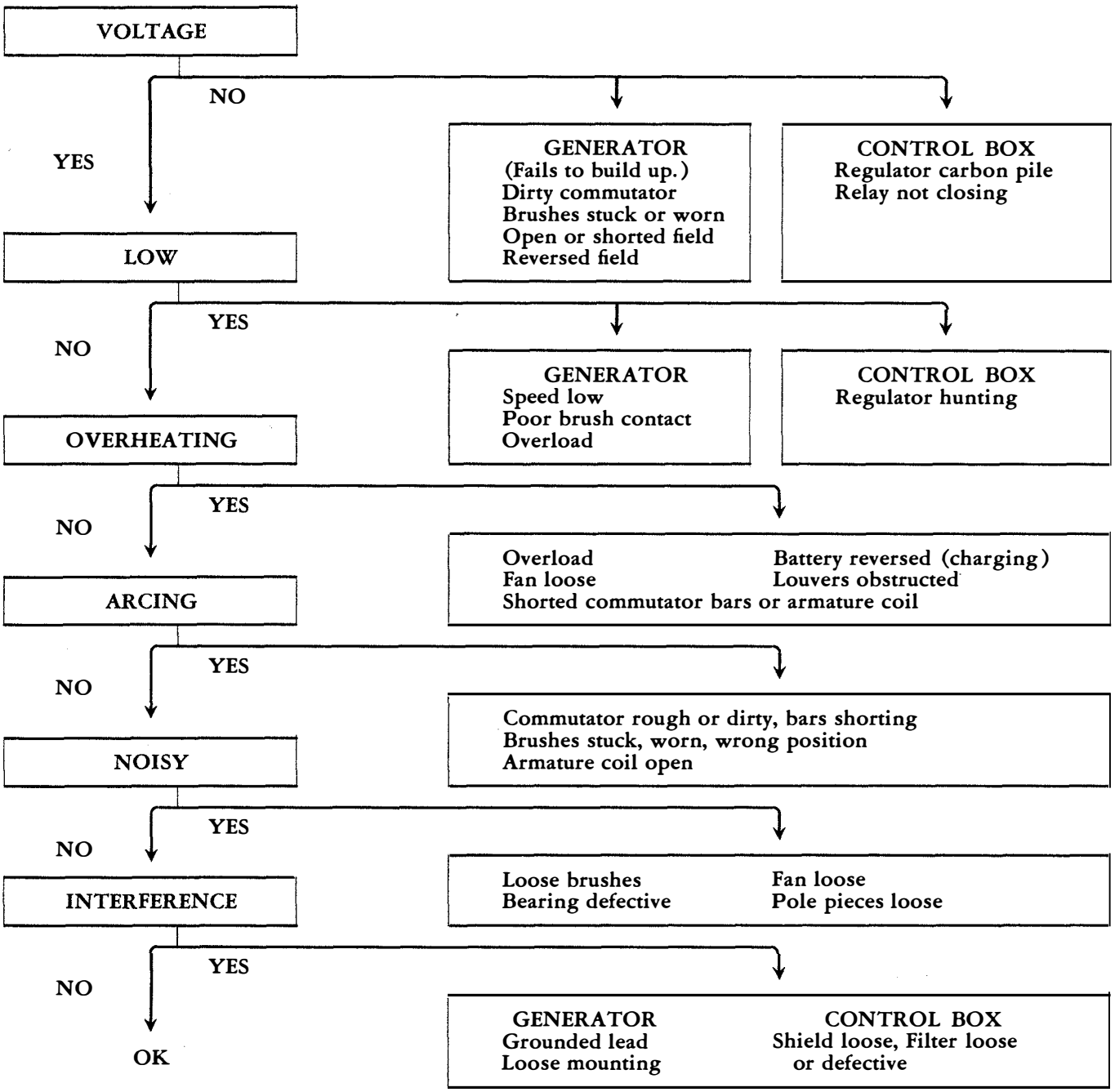
When new brushes are installed, wrap a piece of 0000 sandpaper around the commutator, with the abrasive side toward the brush, and then rock the armature back and forth to sand the brush face to the same curvature as the commutator. Make certain that the brushes slide free but are not loose in the holders.

To establish correct brush position, loosen the screws in the end frame to free the brush holder bracket. Start the engine and apply a load to the generator. After rotating the brush holder bracket clockwise the full distance of its travel, slowly rotate it counterclockwise until sparking disappears. Tighten the brush holder bracket screws securely and check for sparkless operation under all conditions of load.

TABLE 7-6

GENERATOR AND CONTROL BOX TROUBLE CHART

WITH GENERATOR RUNNING



(2) DISASSEMBLY.—When extensive servicing of the generator is necessary, the generator can be dismantled by the following procedure.

Step 1. Place the generator on a workbench and remove the end cover and brushes. Mark the brushes so they can be replaced in their original position.

Step 2. Loosen the set screw in fan hub and slide fan off the armature shaft.

Step 3. Remove the terminal nuts from the lower pair of brush holders and disconnect the armature leads.

Step 4. Disconnect the field leads by sliding the insulating tubing away from the wire connectors and separating the connector halves by first pushing them together by a scissor movement and then unhooking them.

Step 5. Unscrew the two nuts from the studs which tie the end brackets and field yoke together.

Step 6. Tap the end bracket lightly to loosen it; then slide it from the field assembly and armature shaft. Take care not to lose the spring washer located in the bearing recess. Test armature and windings at this point, to determine if further dismantling is necessary.

Step 7. Remove the armature by pulling it in an axial direction to disengage the splined coupling from the engine shaft.

Step 8. Disconnect the knurled nut which holds the end of the air duct to the control box.

Step 9. Remove the field yoke and control box together by sliding the field structure from the studs. One end bracket of the generator will remain attached to the engine by four flat-head screws, which are now accessible.

(*a*) ARMATURE. — To test the armature for short circuit, place it on a growler and hold a thin strip of steel against the armature core. Rotate the armature slowly, and if a short is present, the steel strip will vibrate.

Using a test lamp, touch one probe to the armature shaft and move the other probe slowly around the commutator, being careful not to scratch it. The lamp should not light. If it does, either the armature winding or one or more of the commutator bars is grounded. If tests prove the armature defective, replace it with a new one from spares.

Touch the test probes to each pair of adjacent commutator bars. Failure of the lamp to light on any two bars indicates an open in the coil or at the bar riser. Examine all risers for signs of thrown solder.

If the commutator is pitted or grooved, the armature should be placed in a lathe and just enough material removed from the commutator face to restore a smooth surface. Undercut the mica between commutator bars slightly, to prevent the mica from interfering with the brush action. After turning or undercutting the commutator, burnish the edges of the bars and polish the commutator with 0000 sandpaper. Remove dirt and dust with compressed air or soft brush. Do not dip armature in solvents.

(*b*) BEARING.—The bearing in the generator is factory-lubricated and sealed. A worn or rough bearing can be replaced by disassembling the generator as in 4*b*(2). In replacing the bearing, do not exert pressure on the outer race. Install the bearing with the oil thrower washer in the same position as on bearing removed. Refer to 2*b*(2) for information on handling bearings.

(*c*) FIELD COILS.—Touch the probes of a test light to the leads of the field coils. The lamp should light. If it does not, an open circuit is indicated.

Touch one probe to one lead of the field coils and the other to the generator yoke. The lamp should not light. If it does, there is a ground present in the field coils. Repeat the test, using the other field coil lead.

If tests prove field coils defective, replace with new components. The field assembly may be dismantled as follows:

Remove the four round-head screws which fasten the control box bracket to the field yoke. The control box can then be removed.

Each pole piece is retained by two hexagonal-head screws. Remove the eight screws and pull the pole pieces out of the respective field coils. Mark the pole pieces and generator frame, so pole pieces can be replaced in the positions from which they were removed.

(3) REASSEMBLY. — Before reassembling the generator, examine the oil seal located in the recess of the generator end bracket. If badly worn, remove the four flat-head screws which hold the generator end bracket to the engine. Remove the bracket and then drive the oil seal out. Use a hammer and a block of soft wood to drive a new seal into place. Be careful not to distort the shell. To reassemble the generator, reverse the dismantling procedure. Make certain the spring washer is inserted between the armature bearing and the end bracket.

(4) CONTROL BOX.—Checking continuity and circuit components in the control box is greatly simplified by first disconnecting the armature and field leads at terminals A1 and F1, shown in the connection

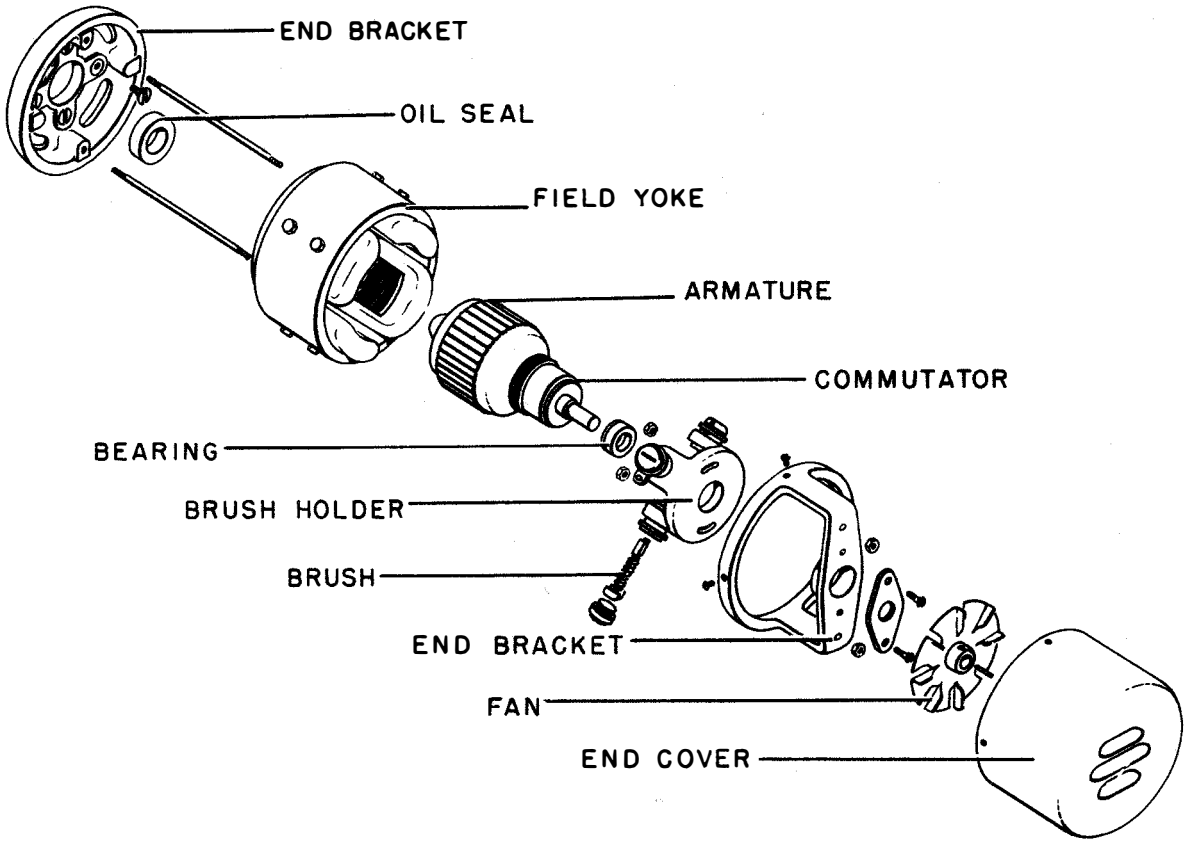


Figure 7-51. Generator, Exploded View

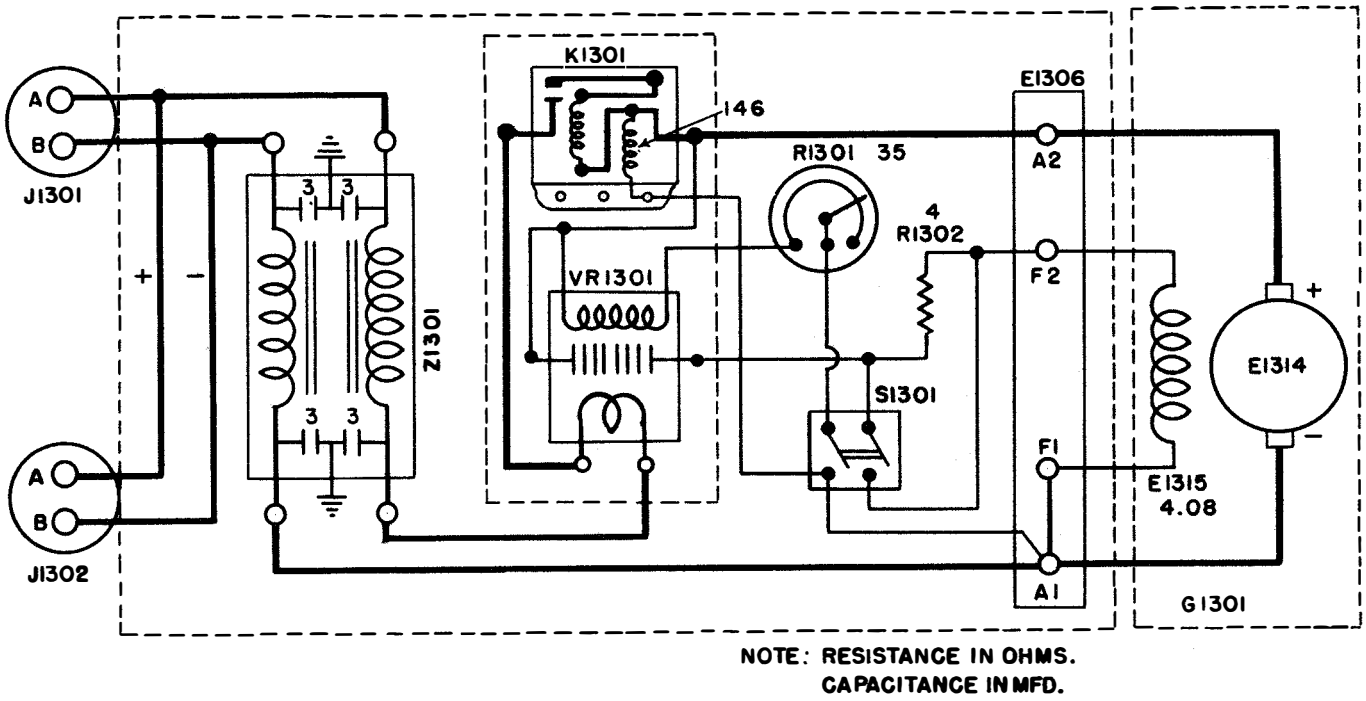


Figure 7-52. Generator and Control Box, Schematic Diagram (M-445781)

diagram, Figure 7-53, and placing the switch in the battery charging position.

Replacement or adjustment of the voltage regulator VR1301, involves the removal of the control box from the generator.

Disconnect all leads to the spring-suspended relay assembly in the box. Remove the four round-head screws from the brackets at the rear of the control box, and swing the box away from the generator. Remove the four fillister-head screws that hold the metal frame of the relay spring-mounting; then lift the assembly from the box.

(*a*) REPLACING CARBON PILE IN VOLTAGE REGULATOR.—To replace the carbon pile in the voltage regulator, proceed as in the following, utilizing the maintenance parts kit, E1304, in the spare parts. The numbers on the various steps in the procedure also reference the parts shown in Figure 7-55.

CAUTION

HANDLE THE CARBON DISKS AND BUTTONS WITH CARE. DO NOT TOUCH WITH BARE HANDS, AS DIRT OR GREASE ON THE DISKS OR BUTTONS IS DETRIMENTAL TO THE OPERATION OF THE VOLTAGE REGULATOR.

Step 1. Disconnect all leads from the voltage regulator; then remove the two screws which hold the regulator to the base.

Step 2. Pry off the pile adjusting screw cover by means of a screwdriver.

Step 3. Hold the regulator with the pile adjusting screw uppermost, and remove the pile adjusting screw by turning it counterclockwise.

Step 4. Insert a thin rod (approximately ⅛ inch in diameter) into hole through the carbon pile.

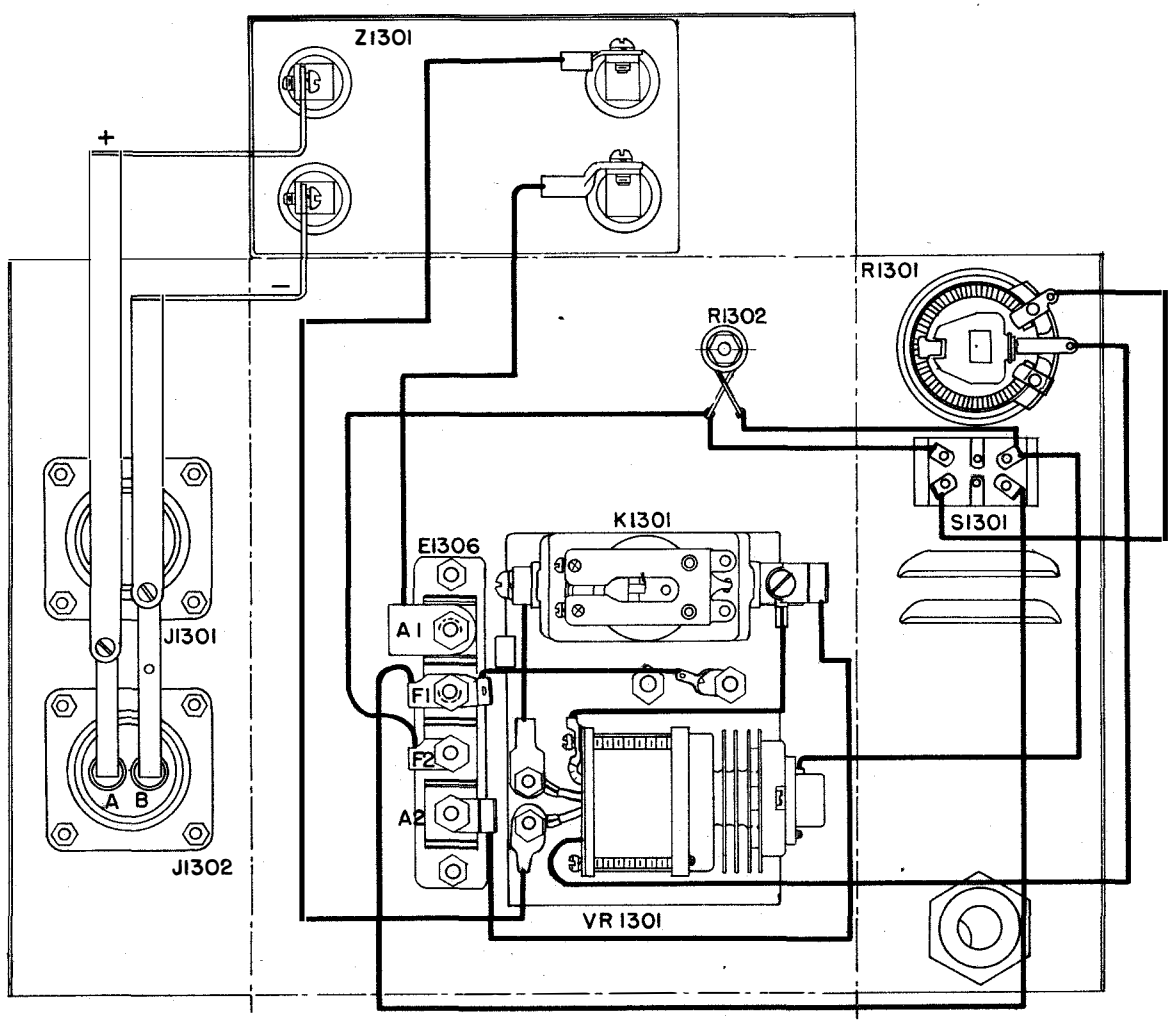


Figure 7-53. Control Box, Connection Diagram (P-735654)

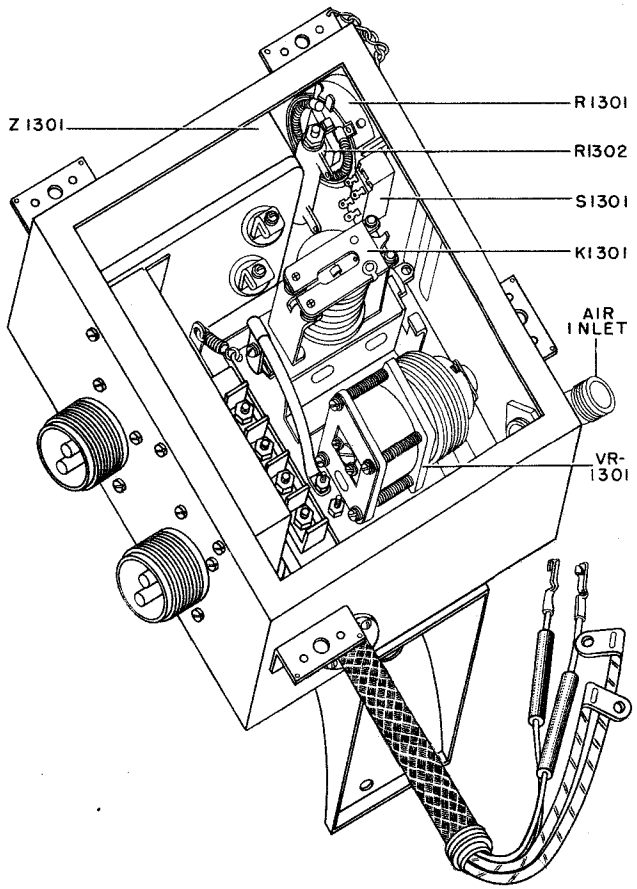


Figure 7-54. Control Box, Component Identification

Step 5. Invert the voltage regulator assembly, and allow all the disks (approximately 13) of the carbon pile to slide out on the rod, as shown in Figure 7-55.

Step 6. Remove the four screws which hold the regulator together, and separate the solenoid from the pile housing.

Step 7. Invert the pile housing and allow the spring assembly to slip out.

Step 8. Press the carbon buttons out of the pile adjusting screw and the spring assembly by means of a suitable rod inserted in the holes provided for this purpose.

CAUTION

Care must be taken not to damage screw threads or spring during step 8.

Step 9. Push new buttons into place (a small arbor press or smooth parallel-jaw vise is best for this operation). The buttons must have their smooth faces exposed when correctly positioned.

Step 10. Place the spring assembly in the pile housing with button pointing into the tube.

Step 11. Assemble the two halves of the regulator. Observe the relative position of the elongated lead hole in the solenoid case and the regulator mounting feet. Tighten the four screws evenly and snugly. Do not over-tighten these screws, as this will distort the solenoid end case.

Step 12. Partially unwrap a new carbon pile and, without touching the disks with the fingers, insert a rod into the hole in the pile. Place the pile housing over the tip of the rod and tilt the rod to allow the disks to slide into place, as shown in Figure 7-55.

Step 13. Hold the regulator with the pile uppermost, and insert the pile adjusting screw. Turn the screw in until the carbon button just touches the pile. This is best indicated by connecting a low-voltage continuity

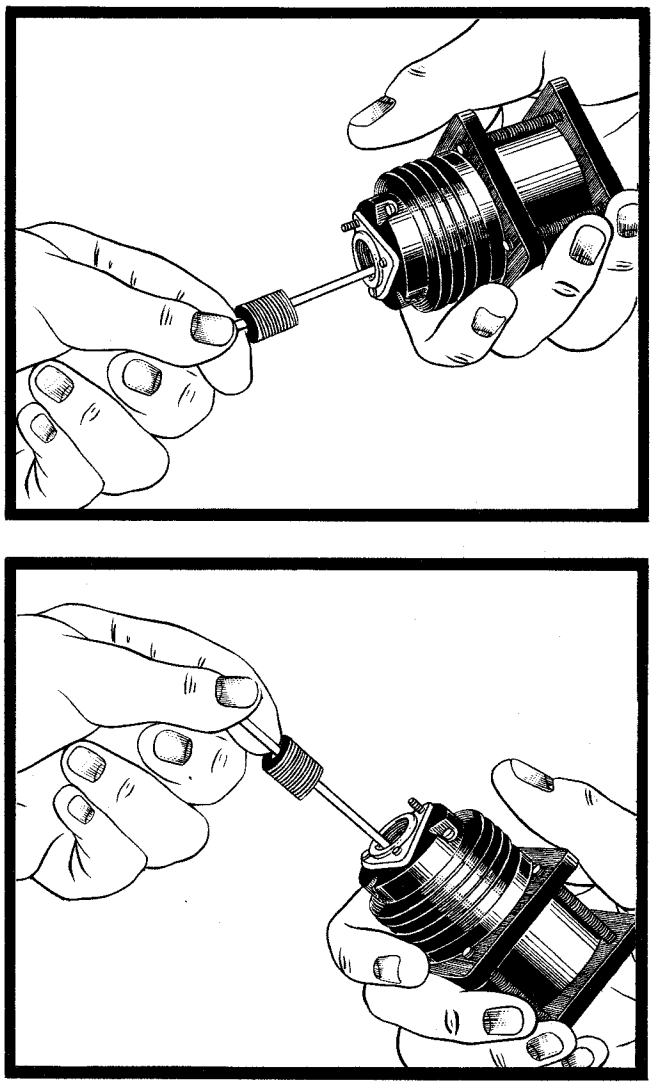


Figure 7-55. Steps in Replacing Carbon Pile in Voltage Regulator

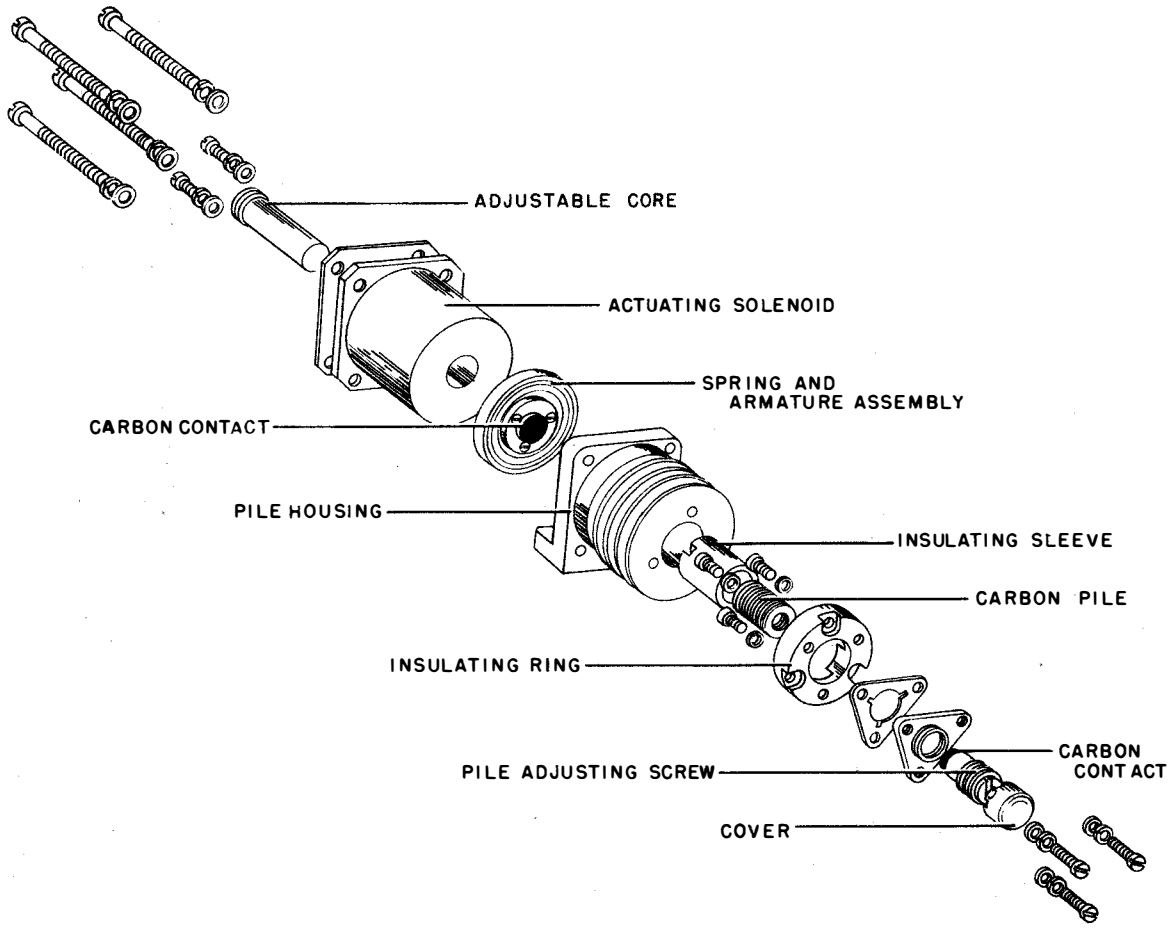


Figure 7-56. Voltage Regulator, Exploded View

indicator between the regulator feet and the terminal stud on the triangular pile screw support.

(*b*) ADJUSTING REGULATOR. — Mount the regulator, with cap off the pile adjusting screw, on the spring-suspended base, and temporarily place the assembly in the control box. Do not replace the mounting screws. Reconnect all leads. Place the control box on the generator and replace the top mounting screws. Support the regulator assembly in the control box by wedging with clean dry rags in such a position as to give access to the pile adjusting screw. Make certain no terminals are shorted or grounded. Adjustment of the regulator can be made as follows:

Step 1. Connect a voltmeter to terminals A1 and A2.

Step 2. Remove the captive cap from the voltage regulator control. Rotate the shaft clockwise to the stop; then back off one-eighth of a turn. (30 ohms in circuit, approximately.)

Step 3. Connect a pair of headphones, in series with a one-mf capacitor, between terminals A2 and F2.

Step 4. Start the gasoline engine and operate the generator at no load. Using an insulated screwdriver, rotate the pile adjusting screw to cause voltage to increase slowly. Continue to turn until the voltage starts to fall off. At this point, or slightly further in, the regulator will start to buzz as evidenced by the sound in the headphones.

Immediately back the pile adjusting screw out to the position at which the buzzing stops. Apply and remove full load a few times. The regulator should not buzz.

Step 5. The no-load voltage should be 12 volts. If not, loosen the two small locking screws at the solenoid end of the regulator, and turn the solenoid core in or out to bring the voltage to 12 volts. Turning clockwise lowers the voltage. Tighten the two locking screws, then recheck the no-load voltage.

Step 6. Apply full load, and give the generator a 30-minute heat run.

Step 7. Recheck the regulator as described in step 5. Replace the adjusting screw cap. While hot, the voltage rise with change in load from 17 amperes to 27 amperes should be approximately 0.5 volt.

When adjustments have been completed, replace the cap on the pile adjusting screw, remove the control box mounting screws, and swing the control box out so the screws can be replaced in the frame of the relay spring mounting and the nuts applied. Tighten the screws and remount the control box on the generator.

5. TROPICALIZATION.

RDR equipment has been tropicalized at the time of manufacture, and further treatment is intended only to renew the fungicide content of the coating and protect parts installed in making repairs. The products listed in Table 7-7 are suitable for the purpose.

TABLE 7-7

MOISTURE AND FUNGUS PROOF VARNISHES

COMMERCIAL DESIGNATION		
VARNISH	THINNER	MANUFACTURER
RCA Finish #763	RCA Thinner #10, Toluol or Solvesco No. 1 or No. 2	Radio Corporation of America, Camden, N. J.
Moisture and Fungus Resistant Varnish #522ASH	Reducer #8	Maas & Waldstein, Newark, N. J.
Tuf-on Bakelite Resin Varnish #74 S	Tuf-on Thinner #74	Wipe-on Corp., New York, N. Y.

The varnish is to be applied with a spray or brush, as found most practical. The varnish contains a fluorescent dye, and failure to coat any part is detected when the work is exposed to ultra-violet light.

a. PREPARATION.—Withdraw the receiver chassis from the case and remove all dirt or dust with an air blast or brush. Do not use cleaning solutions that might affect waxed or impregnated parts. Clean off excessive deposits of resin by scraping or chipping, never by the use of solvents.

Mask the following parts of the chassis, by covering with paper or cloth, gummed or tied into place.

(1) Front, edges, and inner grounding flange of panel and all panel controls.

(2) Bottom surfaces of runner strips on side of the chassis.

(3) Meter switch, where it protrudes into the i-f section.

(4) Selector assembly, top and bottom.

(5) Remove tubes from the equipment and replace with dummy or defective tubes.

(6) Remove cover from bottom of i-f section. As a general rule, all exposed current-carrying contact surfaces should be protected from the coating.

b. PREHEATING.—When facilities permit, the equipment should be preheated to a temperature of 50° to 60° C (122° to 140° F) for a period of two hours in a convection oven before tropicalization. Spray, while warm, with the moisture and fungus resistant varnish. Small areas may be coated with a brush.

CAUTION

Handle the varnish and thinner in ventilated areas, away from open lights and flames.

Do not spill the material on hands or other parts of the body. Wear rubber gloves and approved protective clothing.

Ultra-violet lamps must be fitted with filters or screens, to protect the operator from the extreme ultra-violet portion of the spectrum.

c. SPRAYING.—Thin the varnish in the proportion of two parts of varnish to one of thinner. The varnish should never be sprayed at a viscosity less than the value marked on the container for 20 per cent non-volatile matter. Spray all unmasked surfaces and wiring, applying one coat having a thickness of not less than 0.002 inch.

The spray gun should be regulated to give a narrow wet spray without mist, and the varnish applied in a uniform, wet coat.

Inspect the coating under an ultra-violet light source, if available. The absence of a glow on any surface indicates an uncoated area that should be touched up with a brush.

d. DRYING.—Allow the equipment to air dry at room temperature for one-half hour in a well ventilated room or booth, and then remove masking material. Leave tubes and dummy fixtures in place until the coating is thoroughly dry. Drying may be speeded up after the first half hour by heating in an oven. The oven should be vented for handling inflammable vapors, and the temperature should not exceed 60° C (140° F). After the coating is thoroughly dry, the tubes may be replaced and the equipment put back into service.

CAUTION

Do not replace the equipment in the case until the finish is thoroughly dry. Vapor exuded by the coating is combustible, and may cause an explosion if ignited.

6. WINDING AND INSULATOR DATA.

TABLE 7-8
MOTOR AND GENERATOR WINDING DATA

	DYNAMOTOR		SELECTOR MOTOR NAVY TYPE CZA-211452-A	GENERATOR NAVY TYPE CCW-73037
	MOTOR	GENERATOR		
FIELD	SERIES **	SHUNT	SERIES (DUAL)*	SHUNT
Conductor Size	No. 15 2 in parallel	No. 24	No. 34	No. 18
Conductor Ins.	E	E	HF	HF
Turns per Coil	2 R.H. Pole	310 L.H. Pole 240 R.H. Pole	850	215
Resistance per Coil (ohms)	0.009	7.4 L.H. Pole 5.8 R.H. Pole	75.4	1.02
Resistance between Terminals (ohms)	0.009	13.2		3.96 ±5%
No. of Coils	1	2	2*	4
ARMATURE				
Conductor Size	No. 18*** No. 19	No. 31	No. 35	2 x No. 14
Conductor Ins.	E	E	HF	TF
Turns per Coil	3	27	83	4
No. of Slots	13		7	21
Resistance, Brush to Brush (ohms)	0.033	46	54.4	0.002
No. of Coils	13	52	7	21

*One coil used for each direction of rotation.
**Series winding on one pole only.
***Parallel wound.

TABLE 7-9
COIL DATA

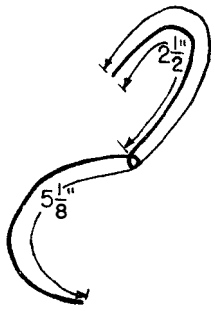
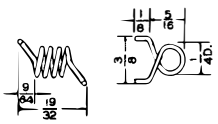
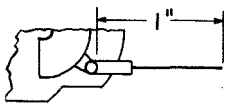
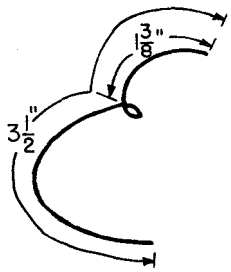
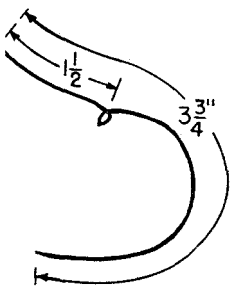
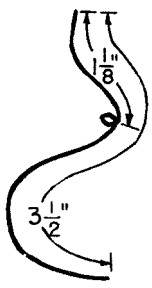
SYMBOL DESIG.	RCA DWG. NO.	DIAGRAM	WINDING	WIRE SIZE	TURNS	D-C OHMS	REMARKS
L201	T-618528-23		Single	No. 20 Tinned Soft Copper Bus.	1		
L202 L205 L208 L211	K-889845-1		Single	No. 20 Tinned Soft Copper.	4½		
L203 L206 L209 L212	T-618528-28 29 30 31		Single	No. 20 Tinned Soft Copper Bus.	1		
L204	T-618528-24		Single	No. 20 Tinned Soft Copper Bus.	1		
L207	T-618528-25		Single	No. 20 Tinned Soft Copper Bus.	1		
L210	T-618528-26		Single	No. 20 Tinned Soft Copper Bus.	1		

TABLE 7-9 (Continued)
COIL DATA

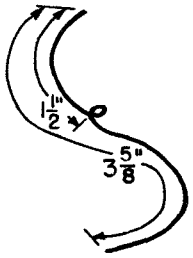
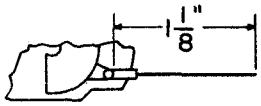
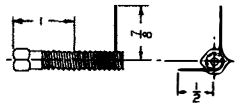
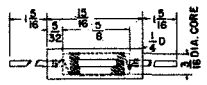
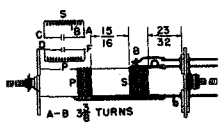
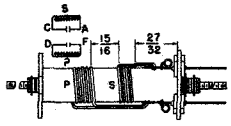
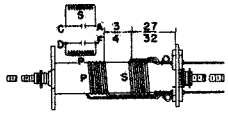
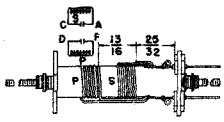
SYMBOL DESIG.	RCA DWG. NO.	DIAGRAM	WINDING	WIRE SIZE	TURNS	D-C OHMS	REMARKS
L213	T-618528-26		Single	No. 20 Tinned Soft Copper Bus.	1		
L215	T-618528-32		Single	No. 20 Tinned Soft Copper Bus.	1		
L217	K-889883-501		Single	No. 20 Tinned Copper.	8¼		
L218	K-8855989-1		Single	No. 24E Copper.	16		
L301 L302 L303 L304 L305	K-888776-1		Single	No. 30E Copper.	45	0.3	Impedance at 50 MC, 500 ohms. Resonant frequency above 50 MC.
Z301	T-618106-501		Secondary Primary	No. 18 Tinned Copper. No. 18 Tinned Copper.	5¾ 4¾		
Z302	T618106-502		Secondary Primary	No. 18 Tinned Copper. No. 18 Tinned Copper.	4¾ 4¾		
Z303	T618106-503		Secondary Primary	No. 18 Tinned Copper. No. 18 Tinned Copper.	4¾ 4¾		
Z304	T-618106-504		Secondary Primary	No. 18 Tinned Copper No. 18 Tinned Copper.	4¾ 4¾		

TABLE 7-9 (Continued)
COIL DATA

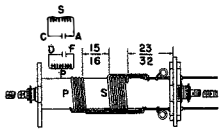
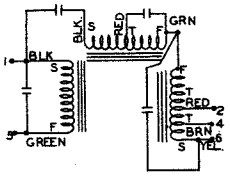
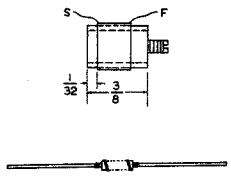
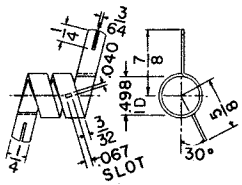
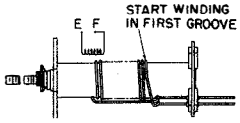
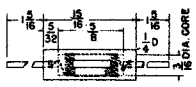
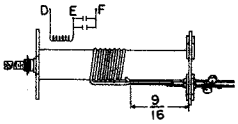
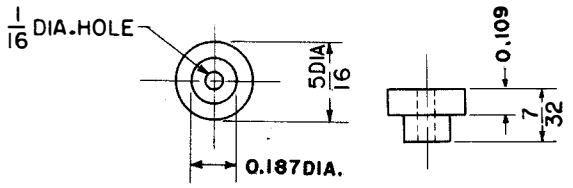
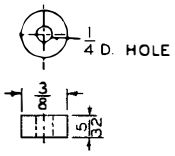
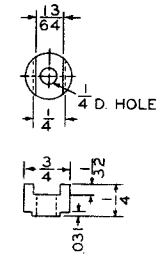
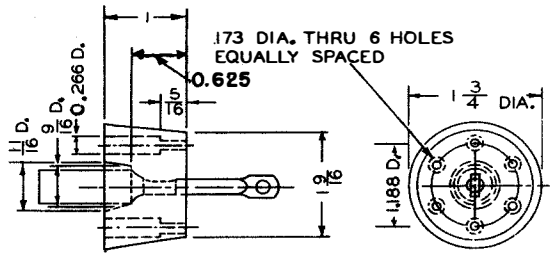
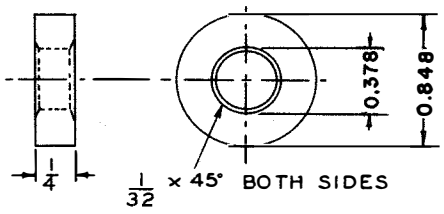
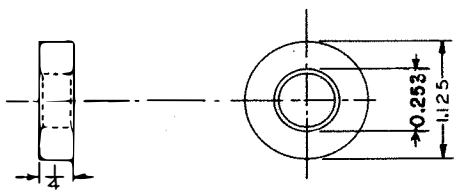
SYMBOL DESIG.	RCA DWG. NO.	DIAGRAM	WINDING	WIRE SIZE	TURNS	D-C OHMS	REMARKS
Z305	T-618106-505		Secondary Primary	No. 18 Tinned Copper. No. 18 Tinned Copper.	5¼ 4¼		
Z401	K-901816-501		Coil #1 Primary #1 Coil #2 Primary #2 Primary #2 Primary #3 Coil #3 Primary #1	No. 39 R.F. No. 35E Copper. No. 35E Copper. No. 39E Copper. No. 41 H.F.	3400 Tapped at 2350 560 258 2180 5500	428 36 29 448 1102	Reactor adjusted to resonate shunt circuit at 7000 cycles ±5%. Reactor adjusted to resonate total circuit at 870 cycles ±5%. Reactor adjusted to resonate circuit at 1050 cycles ±5%. Complete assembly vacuum impregnated in Trotter's Compound. Hi-Pot a-c volts 1500.
Z402	P-722615-501 PT-13 P-722615-501 PT-14		Single Single	No. 30E Copper. No. 30E Copper.	32 14		Natural resonant frequency between 32 and 40 MC. Natural resonant frequency shall be above 400 MC.
L502	P-727334-502		Single	0.032" thick x ¼" wide soft copper.	2		
L504	T-618106-507		Single	No. 18 Tinned Copper.	26¾		
L506 L509	K-888776-1		Single	No. 30 Tinned Copper.	45	0.3	Impedance at 50 MC 500 ohms.
Z501	T-618106-508		Single	No. 11 Tinned Copper.	6⅞		

TABLE 7-10
INSULATOR DATA

SYMBOL DESIG.	RCA DRAWING NO.	MATERIAL	FUNCTION	DIMENSIONS (INCHES)
E310	894393-2	Glass bonded mica, Class L	For C329 or C337	
E504	887849-1	Steatite, Grade G	Multiplier output terminal	
E506	887863-1	Steatite, Grade L4	Multiplier output terminal	
E1001	439155-1	Styramic	Antenna dipole	
E1005	888721-1	Styramic	Antenna body bead	
E1006	888721-2	Styramic	Antenna body bead	

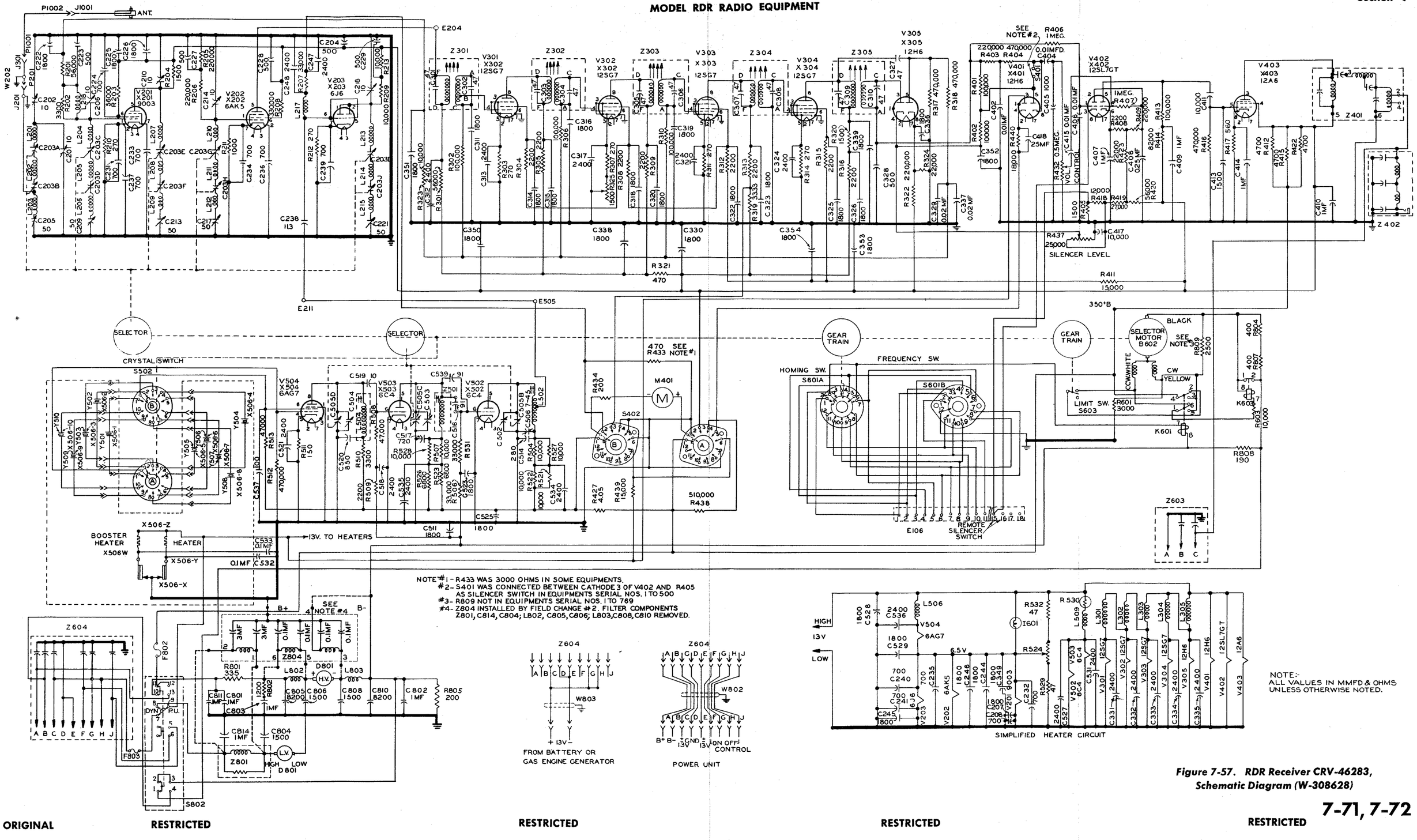


Figure 7-57. RDR Receiver CRV-46283, Schematic Diagram (W-308628)

* TABLE 8-1A
LIST OF MAJOR UNITS
RDR RECEIVER EQUIPMENT (CRV-46283)

QUANTITY	NAME OF MAJOR UNIT	NAVY TYPE DESIGNATION	SYMBOL GROUP
1	RADIO RECEIVER UNIT	CRV-46283	201 - 699 801 - 899
1	ANTENNA ASSEMBLY	CRV-66147	1001 - 1099

* COMPLETE TABLE 8-1 INCLUDES TABLES 8-1A AND 8-1B.

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS										SPARE PARTS					
										EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
A-101	Support assem: selector drive mechanism, consisting of support, three shafts, two gear assem, three gears, four ball bearings, six needle bearings and two retainer rings mtd on bracket 4.4217" lg x 1.406" wd x 1-25/32" thk	For Vertical Selector Drive			2Z9057-32	1	719691-501	A-101	1					2	1
A-102 to A-104	Not Used														
A-105	Housing assem: consisting of aluminum housing 12-5/16" lg x 4-11/16" wd x 3-9/32" wd, crystal switch assem, homing selector switch assem, limiter switch assem, selector switch, gears, gear assem, cover assem, and hardware	For RDR Unit			2C770	1	888181-502	A-105	1			2	1	2	2
A-801	Mount, vibration: sq. mtg, 10 lb load rating, 1-1/4" lg x 1-1/4" wd x 0.591" h o/a; two neoprene cushions 50-60 durometer each 7/8" diam x 0.250" thk, plate mtd, brass center sleeve w/0.173" diam bolt hole; four 0.128" diam holes on 1" x 1" mtg/c	For Dynamotor D-801			2Z8402-38	1	8858159-501	A-801	4	1	1	2	4	2	4
A-1001	Cap assem: consisting of one amphenol cap and 3" #10 nickel silver bead chain, cap 3/4" diam x 1/4" wd tapped W/5/8-24 thds, including one neoprene washer 3/32" thk	Cap Assem for Dipole Antenna Z-1000			2Z1612.1	1	433921-4	A-1001	1					2	1
B-601	Not Used														
B-602	Motor assem: consisting of motor 115 v dc, 1/40 hp, 5800 rpm, starting current 0.6 amp max, running current 4 amp max, series wound reversible 3.125" lg x 2-3/8" diam shaft end x 1-7/8" diam other end, three mtg holes #6-32 x 5/16" d equally spaced on 1-15/16" diam centers, shaft 0.2500" diam extends 0.206", three wire leads black, white and yellow 10" lg, gear assem, consisting of stainless steel pinion 0.3749" OD x 0.375" lg, 48 pitch, 16 teeth, 0.333" pitch diam, 14-1/2° pressure angle, 3/10" face, stainless steel hub 0.562" lg x 0.437" OD x 0.2501" ID for 0.366" x 0.2801" ID to end #6-32 tap, two holes 0.063" diam one side	Selector Motor	-211452-A		3H3100A-25	1358	429658-501	B-002	1	1	1	2	2	2	3
B-602A	Brush: electrical contact, complete with spring 0.260" diam x 7/8" lg overall, marked positive	For Motor B-602			3H545-180	1358 X-4551-T	889582-1	B-602A	1	1	5	2	10	2	20

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TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS										SPARE PARTS					
										EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
B-602B	Brush: electrical contact, complete with spring 0.260" diam x 7/8" lg overall, marked negative	For Motor B-602			3H525-180	1358 X-2551-U	889582-2	B-602B	1	1	5	2	10	2	20
B-602C	Brush holder assem: 0.498"/0.496" turn diam complete W/lug tinned for 1/4"	For Motor B-602			3H2507-46	1358 Dwg X-2011-T	889890-1	B-602C	2	1	2	2	4	2	6
C-201	Capacitor: variable, air rated less than 2.2 mmf min and more than 9 mmf max, one stator, two rotor plates 1-7/32" diam x 1-5/32" lg x 15/16" wd, must withstand 500 v rms at 60 cyc between opposing plates without breakdown	Antenna Compensator	-482812		3D9009V-15	1	433576-1	C-201	1	1	1	1	1	2	1
C-202	Capacitor: variable, air, 10.3 mmf max cap, 2.3 min cap, six stator, six rotor plates 3/4" diam x 1-13/32" lg x 5/8" wd	Antenna Circuit Trimmer	-483889		3D9010VE3-2	887	433585-1	C-202,206,210, 214,218	5	1	3	1	5	2	5
C-203	Capacitor assem: variable, consisting of one variable capacitor, base material steatite or glass bonded mica ten sect C-203A to C-203J, max 6.7 mmf and min less than 2.5 mmf, ea sect 500 v rms test, 10.250" lg x 4.5" wd x 2" thk, with shaft extension stainless steel 0.312" lg x 0.343" diam, including two brass bushings and five coils L-202,205,208,211,216, mtd on an aluminum chassis and partition assem	R-F Tuning	-482817		3D9006VE7-1	509	618530-501	C-203	1						
C-203A	Part of C-203	Antenna Circuit Tuning													
C-203B	Part of C-203	Antenna Circuit Tuning													
C-203C	Part of C-203	V-201 Grid Tuning													
C-203D	Part of C-203	V-201 Grid Tuning													
C-203E	Part of C-203	V-201 Plate Tuning													
C-203F	Part of C-203	V-201 Plate Tuning													
C-203G	Part of C-203	V-202 Grid Tuning													
C-203H	Part of C-203	V-202 Grid Tuning													
C-203I	Part of C-203	V-203 Plate Tuning													
C-203J	Part of C-203	V-203 Plate Tuning													

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TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS											SPARE PARTS					
											EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS, JAN, OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
C-204	Capacitor: fixed, silver mica, 500 mmf ±10%, 350 v ac, 500 vdcw, two brass silver-plated term lug type, 29/64" diam 7/16" lg	Plate and Screen Supply Bypass	-482813-10		3D9500-143	727 Cat. #830	888508-1	C-204,223,227, 228,229	5	1	1	1	3	2	5
C-205	Capacitor: variable, air, dual, 4.5 to 50 mmf, one sect 1-1/8" d x 15/16" wd x 1-7/32" h, seven stator, seven rotor plates, rotor grounded to mtg lug, must withstand 500 v rms at 60 cyc between opposing plates, ceramic base, two #4-40 tapped holes on 21/32" mtg/c	Antenna Padder	-482811		3D9050V-60	1	433905-1	C-205,209,213, 217,221	5	1	3	1	5	2	5
C-206	Same as C-202	Grid Trimmer of RF Amplifier Tube V-201	-483889		3D9010VE3-2										
C-207	Capacitor: titanium oxide, fixed, 1800 mmf +50% -20%, 350 vdcw, 1-1/8" lg x 5/16" hex, two hook term	V-201 Filament Bypass	-482869-20		3DA1.800-8	727 High K	887883-3	C-207,222,225, 226,244,245, 246,247,349, 350,351,352, 353,354,511, 525,528,529	18	1	4	1	12	2	18
C-208	Capacitor: titanium oxide, ceramic, insulated, 700 mmf ±20%, 350 vdcw, single radial lead 2-1/4" lg, 19/32" hex #2-56 tap for screw 1/4" d	V-201 Filament Bypass	-482816-20		3D9700-15	1 High K	893972-2	C-208,224,231, 232,233,234, 235,236,237, 239,240,241	12	1	3	1	8	2	12
C-209	Same as C-205	Grid Padder of RF Amplifier Tube V-201	-482811		3D9050V-60										
C-210	Same as C-202	Plate Trimmer of RF Amplifier Tube V-201	-483889		3D9010VE3-2										
C-211 & C-212	Not Used														
C-213	Same as C-205	Plate Padder of RF Amplifier Tube V-201	-482811		3D9050V-60										
C-214	Same as C-202	Grid Trimmer of First Detector Tube V-202	-483889		3D9010VE3-2										
C-215 & C-216	Not Used														
C-217	Same as C-205	Grid Padder of First Detector Tube V-202	-482811		3D9050V-60										

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TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS											SPARE PARTS					
											EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
C-218	Same as C-202	Plate Trimmer of Tripler Tube V-203	-483889		3D9010VB3-2										
C-219 & C-220	Not Used														
C-221	Same as C-205	Plate Padder of Tripler Tube V-203	-482811		3D9050V-60										
C-222	Same as C-207	V-201 AVC Filter	-482869-20		3DA1.800-8										
C-223	Same as C-204	Grid Return of Amplifier Tube V-201	-482813-10		3D9500-143										
C-224	Same as C-208	Screen Bypass of RF Amplifier Tube V-201	-482816-20		3D9700-15										
C-225	Same as C-207	Plate and Screen Supply Bypass	-482869-20		3DA1.800-8										
C-226	Same as C-207	Plate and Screen Supply Bypass	-482869-20		3DA1.800-8										
C-227	Same as C-204	Grid Filter of First Detector Tube V-202	-482813-10		3D9500-143										
C-228	Same as C-204	Screen Bypass of First Detector Tube V-202	-482813-10		3D9500-143										
C-229	Same as C-204	Plate Bypass of Tripler Tube V-203	-482813-10		3D9500-143										
C-230	Not Used														
C-231	Same as C-208	Cathode Bypass of RF Amplifier Tube V-201	-482816-20		3D9700-15										
C-232	Same as C-208	Heater Bypass of RF Amplifier Tube V-201	-482816-20		3D9700-15										
C-233	Same as C-208	Cathode Bypass of RF Amplifier Tube V-201	-482816-20		3D9700-15										
C-234	Same as C-208	Cathode Bypass of First Detector Tube V-202	-482816-20		3D9700-15										
C-235	Same as C-208	Heater Bypass of First Detector Tube V-202	-482816-20		3D9700-15										

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TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS											SPARE PARTS					
											EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS, JAN, OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
C-236	Same as C-208	Cathode Bypass of First Detector Tube V-202	-482816-20		3D9700-15										
C-237	Same as C-208	V-201 Cathode Bypass	-482816-20		3D9700-15										
C-238	Capacitor: fixed, ceramic, 11.3 mmf ±0.1 mmf, temp coeff 0°/C +0.000060 or -0.000110 deg, rated 500 vdcw, 0.562" max lg x 0.250" max diam, two axial wire leads 1-1/2" lg	Coupling from Multiplier to RF Tripler	-483890-1		3D9011A3	207 Style K	981039-4	C-238	3	1	1	1	1	2	1
C-239	Same as C-208	Cathode Bypass of Tripler Tube V-203	-482816-20		3D9700-15										
C-240	Same as C-208	Heater Bypass of Tripler Tube V-203	-482816-20		3D9700-15										
C-241	Same as C-208	Heater Bypass of Tripler Tube V-203	-482816-20		3D9700-15										
C-242 & C-243	Not Used														
C-244	Same as C-207	6.3 V Heater Bypass	-482869-20		3DA1.800-8										
C-245	Same as C-207	12.6 V Heater Supply Bypass	-482869-20		3DA1.800-8										
C-246	Same as C-207	6.3 V Heater Supply Bypass	-482869-20		3DA1.800-8										
C-247	Same as C-207	Grid Return of Tripler Tube V-203	-482869-20		3DA1.800-8										
C-248	Capacitor: fixed, silver mica, 2400 mmf ±10%, 350 v ac, 500 vdcw, 31/64" x 3/4" lg	Grid Filter of Tripler Tube V-203	-482814-E10		3DA2.400-12	1	887816-1	C-248,312,313, 317,321,324, 331,332,333, 334,335,518, 521,523,527, 531,534,535, 536	19	1	4	1	14	2	19
C-301	Capacitor: fixed, uninsulated, composition, 47 mmf ±2-1/2%, temp coef 0°/C +30 -45 deg, 500 vdcw, 0.460" lg x 0.240" diam, two radial wire leads	Primary Tuning of 1st IF Transformer Z-301	-483936-24		3D9047-19	207	429660-1	C-301,302,303, 304,305,306, 307,308,309, 310	10	1	2	1	6	2	10
C-302	Same as C-301	Secondary Tuning of 1st IF Transformer Z-301	-483936-24		3D9047-19										
C-303	Same as C-301	Primary Tuning of 2nd IF Transformer Z-302	-483936-24		3D9047-19										

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TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46286)

PARTS										SPARE PARTS					
										EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS, JAN OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
C-304	Same as C-301	Secondary Tuning of 2nd IF Transformer Z-302	-483936-2½		3D9047-19										
C-305	Same as C-301	Primary Tuning of 3rd IF Transformer Z-303	-483936-2½		3D9047-19										
C-306	Same as C-301	Secondary Tuning of 3rd IF Transformer Z-303	-483936-2½		3D9047-19										
C-307	Same as C-301	Primary Tuning of 4th IF Transformer Z-304	-483936-2½		3D9047-19										
C-308	Same as C-301	Secondary Tuning of 4th IF Transformer Z-304	-483936-2½		3D9047-19										
C-309	Same as C-301	Primary Tuning of Diode IF Transformer Z-305	-483936-2½		3D9047-19										
C-310	Same as C-301	Secondary Tuning of Diode IF Transformer Z-305	-483936-2½		3D9047-19										
C-311	Capacitor: fixed, ceramic, 1800 mmf ±20%, insulated, operating voltage 350 v dc, 17/32" diam, 11/16" lg, two AWG #20 axial leads 1-1/2" lg	Grid Return Bypass of First IF Tube V-301	-482815-20		3DA1.800-11	1	888556-1	C-311,314,315, 316,318,319, 320,322,323, 325,326,330, 336,338,339	15	1	3	1	9	2	15
C-312	Same as C-248	Plate Bypass of First Detector V-202	-482814-R10		3DA2.400-12										
C-313	Same as C-248	Cathode Bypass of First IF Tube V-301	-482814-R10		3DA2.400-12										
C-314	Same as C-311	Screen Bypass of First IF Tube V-301	-482815-20		3DA1.800-11										
C-315	Same as C-311	Plate Bypass of First IF Tube V-301	-482815-20		3DA1.800-11										
C-316	Same as C-311	Grid Return Bypass of Second IF Tube V-302	-482815-20		3DA1.800-11										
C-317	Same as C-248	Cathode Bypass of Second IF Tube V-302	-482814-R10		3DA2.400-12										
C-318	Same as C-311	Screen Bypass of Second IF Tube V-302	-482815-20		3DA1.800-11										
C-319	Same as C-311	Grid Return Bypass of Third IF Tube V-303	-482815-20		3DA1.800-11										
C-320	Same as C-311	Plate Bypass of Second IF Tube V-302	-482815-20		3DA1.800-11										

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TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS											SPARE PARTS					
											EQUIP.		TENDER		STOCK	
		SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS, JAN, OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
		C-321	Same as C-248	Cathode Bypass of Third IF Tube V-303	-482814-E10		3DA2.400-12										
		C-322	Same as C-311	Screen Bypass of Third IF Tube V-303	-482815-20		3DA1.800-11										
		C-323	Same as C-311	Plate Bypass of Third IF Tube V-303	-482815-20		3DA1.800-11										
		C-324	Same as C-248	Cathode Bypass of Fourth IF Tube V-304	-482814-E10		3DA2.400-12										
		C-325	Same as C-311	Screen Bypass of Fourth IF Tube V-304	-482815-20		3DA1.800-11										
		C-326	Same as C-311	Plate Bypass of Fourth IF Tube V-304	-482815-20		3DA1.800-11										
		C-327	Capacitor: fixed, ceramic, 47 mmf ±10%, 500 vdcw 0.562" lg x 0.250" diam, two axial wire leads 1-1/4" lg	AVC Coupling of Second Detector Tube V-305	CC21UJ470K		3D9047-5	722	722408-426	C-327	1	1	1	1	1	2	1
		C-328	Capacitor: titanium oxide, 500 mmf ±20%, insulated thru capacitor, brass bushing 5/16" hex, #12-28 thd 1-1/8" lg, two axial wire leads with 1/8" hook at ea end	Plate and Screen Supply Bypass	-482867-20		3D9500-179	1 High K	887883-1	C-328	1	1	1	1	1	2	1
		C-329	Capacitor: fixed, paper, tubular, 0.020 mf +30% -20%, 600 vdcw, 7/16" diam x 1-1/2" lg, metal case mineral oil impregnated, two axial wire leads 2-1/4" lg	AVC Time Constant of Second Detector Tube V-305	-482625-20		3DA20-74	590 PX24A	95618-37	C-329,337	2	1	1	1	2	2	5
		C-330	Same as C-311	Plate and Screen Supply Bypass	-482815-20		3DA1.800-11										
		C-331	Same as C-248	Filter Bypass of First IF Tube V-301	-482814-E10		3DA2.400-12										
		C-332	Same as C-248	Filter Bypass of Second IF Tube V-302	-482814-E10		3DA2.400-12										
		C-333	Same as C-248	Filter Bypass of Third IF Tube V-303	-482814-E10		3DA2.400-12										
		C-334	Same as C-248	Filter Bypass of Fourth IF Tube V-304	-482814-E10		3DA2.400-12										
		C-335	Same as C-248	Filter Bypass of Second Detector Tube V-305	-482814-E10		3DA2.400-12										
		C-336	Same as C-311	Cathode Bypass for V-305	-482815-20		3DA1.800-11										

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TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS											SPARE PARTS					
											EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO	QUAN.	BOX NO	QUAN.	BOX NO	QUAN.
C-337	Same as C-349	AVC Time Constant of Second Detector Tube V-305	-482625-20		3DA20-74											
C-338	Same as C-311	IF Plate Supply Bypass	-482815-20		3DA1.800-11											
C-339	Same as C-311	Plate Bypass for V-304	-482815-20		3DA1.800-11											
C-340 to C-348	Not Used															
C-349	Same as C-207	Filament Line Feed thru Bypass AF/RF Partition	-482869-20		3DA1.800-8											
C-350	Same as C-207	Plate and Screen Supply Bypass	-482869-20		3DA1.800-8											
C-351	Same as C-207	V-201 AVC Bypass	-482869-20		3DA1.800-8											
C-352	Same as C-207	Detector Cathode Bypass of Second Detector Tube V-305	-482869-20		3DA1.800-8											
C-353	Same as C-207	Plate and Screen Supply Bypass	-482869-20		3DA1.800-8											
C-354	Same as C-207	Screen Supply Feed thru Bypass Selector Partition	-482869-20		3DA1.800-8											
C-401	Not Used															
C-402	Capacitor: fixed, paper, 0.010 mf +60% -40%, 400 vdcw, metal case, pyranol oil filled, 1" lg x 7/16" diam, one axial wire lead 1-1/2" lg and one term soldered at right angles to side; for replacement use Navy Type -482808	R-F Bypass	-482808-20		3DA1D-358	207	889572-1	C-402,406	2	1	1	1	3	2	5
C-403	Not Used															
C-404	Capacitor: fixed, mica, 10,000 mmf ±10%, 500 vdcw, 1-1/32" lg max x 41/64" max wd x 11/32" max d, two axial leads ea 1-3/8" lg	A-F Coupling	CM40B103K		3K4010321	203	722035-563	C-404,411,415, 417,	4	1	1	1	3	2	4

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS											SPARE PARTS					
											EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS, JAN, OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
C-405	Capacitor: fixed, molded mica, 1000 mmf ±10%, 500 vdcw, 53/64" sq x 9/32" thk, with two axial leads 1-1/8" lg	R-F Bypass	CM30B102K		3K3010221	793 Type CM30	722017-559	C-405	1	1	1	1	1	2	1
C-406	Same as C-402	V-402 Grid Bypass	-482808-20		3DA1D-358										
C-407	Capacitor: fixed, oil filled, 1.0 mf +10% -3%, 400 vdcw, sealed in metal can, 2-3/4" h x 1-11/32" lg x 23/32" d overall	Cathode Bypass of First AF and Squelch Tube V-402	-48595A		3DB1.52	1 72053-508	720555-2	C-407,409,410 414	4	1	2	1	6	2	10
C-408	Capacitor: paper, oil filled, 0.250" mmf +10% -3%, 400 vdcw, 1-7/8" h x 1-11/32" lg x 23/32" wd	V-402 Plate Bypass	-481176		3DA25-30	1 72053-511	720555-1	C-408	1	1	1	1	2	2	3
C-409	Same as C-407	Plate Bypass of First Af and Squelch Tube V-402	-48595A		3DB1.52										
C-410	Same as C-407	Bleeder Bypass	-48595A		3DB1.52										
C-411	Same as C-404	V-403 A-F Coupling	CM40B103K		3K4010321										
C-412	Not Used														
C-413	Capacitor: fixed, molded mica, 1500 mmf ±10%, 500 vdcw, 53/64" sq x 9/32" thk with two axial leads 1-1/8" lg	V-403 Grid Bypass	CM30B152K		3K3015221	1	722017-563	C-413	1	1	1	1	1	2	1
C-414	Same as C-407	Cathode Bypass of AF Output Tube V-403	-48595A		3DB1.52										
C-415	Same as C-404	Output Coupling of Voltmeter Rect	CM40B103K		3K4010321										
C-416	Not Used														
C-417	Same as C-404	Silencer Bypass	CM40B103K		3K4010321										
C-418	Capacitor: fixed, dry electrolyte, 25 mf, 25 vdcw, 2-19/32" lg x 1" diam, two lug term	V-401 Cathode Ripple Filter	-482976		3DB25-78	714 LS-EP	895054-4	C-418	1	1	1	1	3	2	3

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TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS											SPARE PARTS					
											EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
C-501	Capacitor: variable, trimmer, ceramic, rounded at one end, 7/8" lg x 11/16" wd x 3/8" h overall, rated 1.5 to 7.0 mmf (part of C-505)	This Trimmer which is an Integral Part of C-505 is Not Used in RDR Circuit				1	719687-1	C-501,502,503 504	4						
C-502	Same as C-501 (part of C-505)	and Tripler Trimmer													
C-503	Same as C-501 except rated 3 to 12 mmf (part of C-505)	1st Tripler Trimmer													
C-504	Same as C-501 (part of C-505)	Oscillator-Doubler Trimmer													
C-505	Capacitor assem: variable, air dielectric consisting of four sections A,B,C,D, four ceramic trimmers C-501,502,503, 504, and three copper straps silver plated, mtd on steatite bonded mica base plate, three #8-32 tapped mtg holes on 0.937" x 6.92" mtg/c 10-1/4" lg x 2-3/8" wd x 2" h, approx overall including shaft 1/2" lg x 0.250" diam	Multiplier Gang Tuning	-483891		3D9072VB75	1	719687-1	C-505	1	1	1	1	1	2	1
C-505A	Capacitor: variable, air dielectric, consisting of six stator and seven rotor plates, silver plated, rated capacity including trimmer 6.4 ±1 mmf to 45.30 mmf (part of C-505)	This Section which is an Integral Part of C-505 is Not Used in RDR Circuit				1	719687-1	C-505A	1						
C-505B	Capacitor: variable, air dielectric, consisting of nine stator and ten rotor plated, silver plated, rated capacity including trimmer 7.8 ±2 mmf to 67.95 mmf (part of C-505)	Plate Tuning of Second Tripler Tube V-502				1	719667-1	C-505B	1						
C-505C	Capacitor: same as C-505B except rated capacity 6.4 ±1 mmf to 67.95 mmf (part of C-505)	Plate Tuning of First Tripler Tube V-503				1	719687-1	C-505C	1						
C-505D	Capacitor: same as C-505B except rated capacity 5.8 ±1 mmf to 67.95 mmf (part of C-505)	Plate Tuning of Oscillator Doubler Tube V-504				1	719687-1	C-505D	1						
C-506	Capacitor: variable, ceramic dielectric, 7 mmf min to 45 mmf max, temp coef -500 mmf/mmf/°C x 10 -6, 55/64" lg x 41/64" wd x 3/8" h, two radial lug terminals	Plate Pad Trimmer of Second Tripler Tube V-502	-481623		3D9045V-14	207 Type N500 Style TS2A	868903-3	C-506	1	1	1	1	1	2	1
C-507 to C-510	Not Used														

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TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS										SPARE PARTS					
										EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
C-511	Same as C-207	R-F Filter	-482869-20		3DA1.800-8										
C-512 & C-513	Not Used														
C-514	Capacitor: fixed, silver mica, 280 mmf ±2-1/2%, 500 vdcw, 29/64" diam x 11/32" lg with 9/32" lg lug terminal one end and #4-40 tap x 1/8" d hole other end	Plate Pad of Second Tripler Tube V-502	-483892-E2#		3D9280-2	727 830	888508-3	C-514	1	1 o	1	1	1	2	1
C-515	~~Not Used~~														
C-516	Capacitor: fixed, ceramic dielectric, 91 mmf ±10%, 500 vdcw, uninsulated two-wire term	Grid Coupling of Second Tripler Tube V-502	CC30TJ910K		3D9091-6	32	722423-383	C-516,539	2	1	1	1	2	2	2
C-517	Capacitor: fixed, silver mica, 720 mmf ±2-1/2%, 500 vdcw, 15/32" lg x 31/64" diam with 9/32" lg lug term one end and #4-40 tap hole x 1/8" d in 7/32" diam hub other end	Plate Pad of First Tripler Tube V-503	-483893-E2#		3D9720-2	834 Cat #834	894398-1	C-517	1	1	1	1	1	2	1
C-518	Same as C-248	Grid Bypass of First Tripler Tube V-503	-482814-E1C		3DA2.400-12										
C-519	Capacitor: fixed, ceramic dielectric, JAN C20, 10 mmf ±1 mmf, 500 vdcw, 0.562" lg x 0.250" diam, two axial wire leads 1-1/4" lg x 0.025" or 0.032" diam	For Grid Coupling of First Tripler Tube V-503	CC21CH100F		3D9010-84	207	722408-63	C-519	1	1	1	1	1	2	1
C-520	Capacitor: fixed, silver mica, 850 mmf ±2-1/2%, 500 vdcw, 15/32" lg x 31/64" diam with 9/32" lg lug term one end and #4-40 tap hole x 1/8" d in 7/32" diam hub other end	Plate Pad of Osc Doubler Tube V-504	-483894-E2#		3D9850-3	727 Cat #834	894398-2	C-520	1	1	1	1	1	2	1
C-521	Same as C-248	V-504 Cathode Bypass	-482814-E10		3DA2.400-12										
C-522	Not Used														
C-523	Same as C-248	V-505 Plate Bypass	-482814-E10		3DA2.400-12										
C-524	Not Used														

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TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS											SPARE PARTS					
											EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
C-525	Same as C-207	Plate and Screen Supply Bypass	-482869-20		3DA1.800-8										
C-526	Not Used														
C-527	Same as C-248	Heater Bypass of Second Tripler Tube V-502	-482814-E10		3DA2.400-12										
C-528	Same as C-207	12.6 V Heater Supply Lead Thru Bypass	-482869-20		3DA1.800-8										
C-529	Same as C-207	6.3 V Heater Supply Lead Thru Bypass	-482869-20		3DA1.800-8										
C-530	Not Used														
C-531	Same as C-248	Heater Bypass of First Trinler Tube V-503	-482814-E10		3DA2.400-12										
C-532	Capacitor: fixed, oil impregnated, 0.1 mf ±20%, 300 vdcw, molded case 1-7/16" lg, 3/8" thk, 3/4" wd, axial leads 1-1/4" lg	Thermostat Bypass	-481027-20		3DA100-612	721	97670-10	C-532,533	2	1	1	1	3	2	5
C-533	Same as C-532	Thermostat Bypass	-481027-20		3DA100-612										
C-534	Same as C-248	Plate Filter of Second Trinler Tube V-502	-482814-E10		3DA2.400-12										
C-535	Same as C-248	Plate Filter of First Tripler Tube V-503	-482814-E10		3DA2.400-12										
C-536	Same as C-248	Heater Bypass of Osc Doubler Tube V-504	-482814-E10		3DA2.400-12										
C-537	Capacitor: fixed, mica, 100 mmf ±5%, 500 vdcw, 51/64" max lg x 15/32" max wd x 7/32" max thk, two axial wire leads 1-1/8" lg	Screen Shunt of Osc Doubler Tube V-504	CM20C101J		3K2010132	203	722004-523	C-537	1	1	1	1	1	2	1
C-538	Not Used														
C-539	Same as C-516	Grid Coupling for V-502	CC30TJ910K		3D9091-6										

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TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS											SPARE PARTS					
											EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
C-801	Capacitor: fixed paper, 1 mf, 500 vdcw, metal case, hermetically sealed, pyranol oil filled, 2-9/16" wd x 13/16" d x 2-9/16" lg, with mtg plate notched 1-15/16" between centers, two terminal soldering lugs	For Dynamotor Filter	-481852		3DB1-105	246 Cat #23F207 -G2	889896-2	C-801,802,803, 811,814	5	1	3	1	8	2	13
C-802	Same as C-801	For Dynamotor Filter	-481852		3DB1-105										
C-803	Same as C-801	For Dynamotor Filter	-481852		3DB1-105										
C-804	Capacitor: fixed, molded mica, 1500 mmf ±10%, 500 vdcw, 53/64" sq x 9/32" thk with 1-1/8" axial wire leads	For Dynamotor	CM30A152K		3K3015211	714	722016-563	C-804,806,808	3	1	1	1	2	2	3
C-805	Capacitor: fixed, molded mica 8200 mmf ±10%, 500 vdcw, 53/64" sq x 11/32" thk with two axial wire leads 1-1/8" lg	For Dynamotor Filter	CM35A822K		3K3582211	203	722025-561	C-805,810	2	1	1	1	2	2	2
C-806	Same as C-804	For Dynamotor	CM30A152K		3K3015211										
C-807	Not Used														
C-808	Same as C-804	For Dynamotor	CM30A152K		3K3015211										
C-809	Not Used														
C-810	Same as C-805	For Dynamotor Filter	CM35A822K		3K3582211										
C-811	Same as C-801	Dynamotor Filter	-481852		3DB1-105										
C-812 & C-813	Not Used														
C-814	Same as C-801	For Dynamotor Filter	-481852		3DB1-105										

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TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS											SPARE PARTS					
											EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS, JAN, OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
D-801	Dynamotor: plate voltage supply, 385 v dc at 500 ma 13 v dc at 21 amps, 7500 rpm, 8-5/16" max lg x 3-7/16" diam, four #10-32 tap mtg holes on 2" mtg/c, four color code leads, white, w/black tracer, white w/red tracer, white w/blue tracer	DC Supply	-211483		3H1514-27	670	719697-1	D-801	1	1	1	2	2	1	3
D-801A	Brush and spring assem: 9/16" lg x 0.373" sq, spring 11 turns #24 BC wire formed 0.306" OD x 1-19/32" free length, marked positive	For Dynamotor D-801			3H550-26	670	889584-2	D-801A	4	1	5	2	10	2	20
D-801B	Brush and spring assem: 9/16" lg x 0.373" sq, spring 11 turns #24 BC wire formed 0.306" OD x 1-19/32" free length, marked negative	For Dynamotor D-801			3H550-26	670	889584-3	D-801B	4	1	5	2	10	2	20
D-801C	Brush and spring assem: 1/2" lg x 0.248" wd x 0.092" thk, spring 32 turns #28 BC wire formed 0.181" OD x 1-45/64" free length, marked positive	For Dynamotor D-801			3H550-27	670	889584-4	D-801C	4	1	5	2	10	2	20
D-801D	Brush and spring assem: 1/2" lg x 0.248" wd x 0.093" thk, spring 32 turns #28 BC wire formed 0.181" OD x 1-45/64" free length, marked negative	For Dynamotor D-801			3H550-27	670	889584-5	D-801D	4	1	5	2	10	2	20
D-801E	Wheel: blower, 0.412" thk x approx 3-1/8" diam, 0.2360" bore diam, two #6-32 tapped holes in hub	For Dynamotor D-801			3H370.2-9	670	889589-1	D-801E	1	1	1	2	2	2	3
E-101 to E-105	Not Used														
E-106	Terminal: strip, black molded bakelite, 7-3/8" lg x 7/8" wd x 13/32" thk, 18 terminals, 14 with links and screws engraved 1 to 14, four blanks	Remote Control Terminals			2Z9418.57	334	888968-1	E-106	1						
E-107 to E-131	Not Used														
E-132	Terminal board: black molded bakelite, 4-3/8" lg x 7/8" wd x 13/32" thk overall, four 0.161" diam mtg holes on 4-1/8" x 5/16" centers	Interconnection Terminal Board			2ZK9480-6	334 Cat. #10-140-1	430764-9	E-132,133	2						
E-133	Same as E-132	Interconnection Terminal Board			2ZK9480-6										
E-134 and E-135	Not Used														

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TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS										SPARE PARTS					
										EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS, JAN. OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
E-136	Knob: micro, aluminum, 2" lg with one end 1" diam x 1/4" thk and knurled, other end with 0.1569" ID x 3/4" lg hole and outer surface cut to form gear of 14 teeth, 13/64" lg for full tooth	For Microswitch			2Z5821-113	1	888940-1	E-136	1					2	1
E-201	Shield: tube, for type SO11 socket and 6AX5 tubes or similar, 7/8" OD x 0.810" ID x 1-3/8" h, inner spring free length 5/8", approx 3-1/2" turns	Tube Shield	SOS3		2Z8304.108	755	99147-1	E-201,202	2					2	2
E-202	Same as E-201	Tube Shield	SOS3		2Z8304.108										
E-203	Knob assem: aluminum, for 0.234" diam shaft, two hex socket type setscrews, #8-32 thds, 3/4" diam x 1-3/32" h x 1-1/8" d overall, shaft hole 21/32" diam, six indents equally spaced 45° apart	Control for C-301			2Z5816.25	1	872497-501	E-203,401,402, 403,404	5					2	5
E-204	Terminal assem: consisting of one thru term 15/16" lg x 3/8" diam stock and brass plate 15/16" wd x 0.125" thk, with four holes	For RF Detector Output			2Z9041.115	1	886809-501	E-204	1					2	1
E-205	Shield: 0.020" thk aluminum, 1-1/4" h x 1-1/8" lg, with three slots 1" h x 0.020" wd, base 1/2" lg x 5/16" d, with hole 0.128" diam	For RF Interstage			2Z7093-65	1	888761-1	E-205	3					2	3
E-206	Shield: 0.020" thk aluminum, 1-1/4" h x 1-1/8" lg, with three slots 1" h x 0.020" wd, base 1/2" lg x 5/16" d, with hole 0.128" diam	For RF Interstage			2Z7093-64	1	888761-2	E-206	3					2	3
E-207	Not Used														
E-208	Selector switch assem: consisting of clutch assembly lever, lever plate, shaft, push rod, locking plate, ten selector disks and spacers, nine separator disks, end plate ball bearing, plug, cage assem, base plate assem with gear, knob assem, 0 - 100, back plate and hardware	RF Selector Assembly			3Z9903A-35.1	1	881729-504	E-208	1	1	1	4	1	2	1
E-208A	Knob assem: round, consisting of one aluminum knob, one aluminum gear and dial 0 -100 , 1.916" OD x 0.5775" thk overall, six tapped holes #4-40 thd equally spaced on 1.250" diam mtg/c	For RF Selector Tuning			2Z5816.26	1	889211-502	E-208A	1						

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TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS										SPARE PARTS					
										EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS, JAN, OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
E-208B	Gear: dial, aluminum, 1.916" OD x 0.140" thk overall, 48 pitch, 1.875"pitch diam, 90 teeth, 14-1/2 degree pressure angle, six holes tapped #4-40 thd, equally spaced on 1.250" diam mtg/c	RF Selector Gear			2Z4875-148	1	433991-1	E-208B,509B	2						
E-208C	Not Used														
E-208D	Bearing: ball, single row, steel, grease packed, 0.3125" bore x 0.8125" OD x 0.297" wd overall	For RF Selector			3H320-57	211 #K5A	878272-4	E-208D,509D	2						
E-208E	Disk assem: clutch, consisting of one disk plate, one stainless steel plate, three chrome steel balls, three phosphor bronze springs, one stainless steel ring assem, one brass gear, worm and one cr steel coupling, 1.7379" pitch diam x 0.343" thk overall less rivet and pin on ring assem	RF Selector Assembly			2Z3806.19	1	719604-501	E-208E,509E	2						
E-208F	Bearing: ball, single row, extra small steel, 0.1875" bore, 0.500" OD, 0.156" wd overall	RF Selector Bearing			3HK230-7	211 #33-5	855083-8	E-208F,509F, O-1003	3						
E-209 and E-210	Not Used														
E-211	Bead: fish spine, 0.200" OD x 0.092" ID, approx 0.171" lg	R-F/I-F Lead Insulator			3G1250-3.18	616 #3B	67503-3	E-211	14					2	1
E-301	Sleeve: beryllium copper, 0.718" lg x 0.120" diam, 0.093" diam hole for 1/4" one end, other end graduated with hole 0.070" diam x 0.375" lg, 0.005" max gap slot, two holes 1/16" diam in side	Inner Conductor Terminal (Part of J-301)			2Z8552-47	1	892835-2	E-301,1002	2						
E-301A	Sleeve: beryllium copper silver-plated, 0.718" lg x 0.120" diam, 0.093" diam hole for 1/4" one end, other end graduated with hole 0.070" diam x 0.375" lg, 0.005" max gap slot, two holes 1/16" diam in sides	Spare Part for Terminal E-301			2Z8552-51	1	892835-1	E-301A,1002A	2	1	1	2	1	2	2
E-302	Terminal board assem: laminated phenolic sheet 1-1/2" lg x 3/4" wd x 3/32" thk, complete with two brass post type term 0.120" diam, stenciled R-302, two mtg holes 0.136" diam on 0.375" mtg/c	Terminal Board Mounting R-302			2Z9402.344	1	893941-504	E-302	1						

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS										SPARE PARTS					
										EQUIP.		TENDER		STOCK	
*SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS, JAN, OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
E-303	Terminal board assem: laminated phenolic 1-7/8" lg x 1-1/2" wd x 3/32" thk, complete with eight brass post type term 0.120" diam, stenciled R-301, R-304,L-301,R-305, two mtg holes 0.136" diam on 1.500" mtg/c	For Mounting L-301,R-301, R-304,R-305			2Z9408.183	1	893942-502	E-303	1						
E-304	Terminal board assem: laminated phenolic 1-1/2" lg x 3/4" wd x 3/32" thk, complete with two brass post type term 0.120" diam, stenciled R-306, two mtg holes 0.136" diam on 0.375" mtg/c	Terminal Board Mounting R-306			2Z9402.346	1	893941-503	E-304	1						
E-305	Terminal board assem: laminated phenolic 1-7/8" lg x 1-1/2" wd x 3/32" thk, complete with eight brass post type term 0.120" diam, stenciled R-307, R-308,R-309, two 0.136" diam mtg holes on 1.5 mtg/c	IF - AF Terminal Board			2Z9408.183	1	893942-501	E-305	1						
E-306	Terminal board assem: laminated phenolic 1-1/2" lg x 3/4" wd x 3/32" thk, complete with two brass post type term 0.120" diam, stenciled R-310, two mtg holes 0.136" diam on 0.375" mtg/c	Terminal Board Mounting R-310			2Z9402.347	1	893941-502	E-306	1						
E-307	Terminal board assem: laminated phenolic natural paper base term bd, 3/32" thk with 28 brass post type term 5-3/4" lg x 1-1/2" wd x 13/32" d overall, three holes 0.136" diam on 2.687" x 3/4" mtg/c, stenciled E-307	Mounting C-330,338, L-303, 304,305, R-312,313,315, 319,321,322,324,419,420, 423			2Z9428-27	1	429683-501	E-307	1						
E-308	Board assem: laminated phenolic 1-1/2" lg x 3/4" wd x 3/32" thk, complete with two brass post type term 0.120" diam and stenciled R-323, two 0.136" diam mtg holes on 0.375" centers	Terminal Board Mounting R-323			2Z9402.348	1	893941-501	E-308	1						
E-309	Bracket assem: consisting of one bracket 0.043" thk material, 1-1/4" h x 5/8" wd x 33/64" d, one nut, quintlock #4-40 and two thru term	Mounting for C-328			2Z1243-11	1	887817-501	E-309	1					2	1
E-310	Insulator: bushing, glass bonded mica, grade L4, 1/16" diam hole, shoulder 5/16" diam x 0.109" lg, shank 0.187" diam x 0.109" lg	For C-329,C-337			3G1838-3.2	1	894393-2	E-310	2					2	1

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TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS										SPARE PARTS					
										EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
E-311	Shield: side, consisting of 14 #4-40 quintlock nuts, one shield 0.040" thk aluminum PS 590 H W 9-5/8" lg x 2-63/64" wd x 2.820" h overall, 3/8" flange top and bottom with 14 mtg/nuts on 1-1/4" x 0.562" x 2.593" x 4.437" x 6.937" x 7-1/2" x 8.812" mtg/c	Separating IF From AF Section Bottom			2Z7098-31	1	433916-501	E-311	1					1	1
E-312	Shield: side, 0.040" thk aluminum PS 590 H W 7-13/16" lg x 3" wd x 3-5/16" h overall, 3/8" flange with seven 0.147" mtg/h on 1-1/4" x 2-19/32" mtg/c	Separating IF From AF Section Top			2Z7098-30	1	433500-1	E-312	1					1	1
E-401	Same as E-203	For Front Panel Controlling S-401			2Z5816.25										
E-402	Same as E-203	For Front Panel Controlling S-402A,B			2Z5816.25										
E-403	Same as E-203	For Front Panel Controlling R-432			2Z5816.25										
E-404	Same as E-203	For Front Panel Controlling R-437			2Z5816.25										
E-405 to E-411	Not Used														
E-412	Terminal board assem: consisting of laminated phenolic bd PBE natural, 3/32" thk, 13/32" d x 1-1/2" wd x 3" lg overall, with ten post type term stenciled "E-412," two 0.136" diam holes on 2.625" mtg/c	Mounting C-416,R-413,R-414, R-418,R-421			2Z9410.145	1	429683-503	E-412	1						
E-413	Terminal board assem: ten brass post type term 1/8" thk mycalex, 4" lg x 1-7/8" wd x 7/16" d, two 0.173" diam mtg holes on 3.500" centers	For Terminal Board Mounting C-404,C-405,C-411,C-413, C-415,R-409			2Z9410.143	1	893991-501	E-413	1						
E-414 to E-416	Not Used														
E-417	Terminal board assem: laminated phenolic 3/32" thk with four brass post type term, 2-3/4" lg x 1/2" wd x 7/16" d overall, two 0.147" diam mtg holes on 1.250" centers	AF Terminal			2Z9404.256	1	888916-501	E-417	1						

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS										SPARE PARTS					
										EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS, JAN, OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
E-501	Not Used														
E-502	Shield: tube, for type SO11 socket and one T4 tubes or similar, 7/8" OD x 0.810" ID x 1-3/8" h, inner spring free length 5/8" approx, 3-1/2" turns	For Second Tripler Tube V-502			2Z8320-13	755	99147-2	E-502,503	4					2	4
E-503	Same as E-502	For First Tripler Tube V-503			2Z8320-13										
E-504	Insulator: disk, ceramic steatite, 5/32" thk x 3/8" OD x 0.125" ID	For Multiplier Output	-61602		3G1405-3	28	887849-1	E-504	1	1	1	2	1	2	2
E-505	Stud: terminal, brass, 15/16" lg, head 5/16" lg x 3/16" sq with #4-40 tap, 7/32" d, shank threaded 5/16" from end with #4-40 thd	For Multiplier Output			3Z12050-6.3	1	887850-1	E-505	1	1	1	2	1	2	1
E-506	Insulator: bushing, steatite, 0.375" OD x 0.125" ID x 1/4" thk, with 13/64" wd x 1/32" d slot in top	For Multiplier Output	-61603		3G1250-4.17	28	887863-1	E-506	1	1	1	2	1	2	2
E-507	Terminal assem: consisting of brass plate 1-1/2" lg x 1/2" wd x 0.0403" thk, two holes 0.147" diam, two holes 0.281" diam, two thru term 15/16" lg, hermetically sealed, glass insulation	For Multiplier Input			2Z9402.338	1	888133-501	E-507	1					2	1
E-508	Not Used														
E-509	Selector switch assem: consisting of clutch assem, lever, lever plate, shaft, push rod, locking plate, ten selector disks and spacers, nine separator disks, end plate, ball bearing, plug, cage assem, base plate assem w/gear, knob assem, 100 - 0, back plate and hardware	Multiplier Selector Assembly			3Z9903A-35.2	1	881729-507	E-509	1	1	1	2	1	2	1
E-509A	Knob assem: round, consisting of one aluminum knob, one aluminum gear and dial 100 - 0, 1.916" OD x 0.5775" thk overall, six tapped holes #4-40 thd, equally spaced on 1.250" diam mtg/c	For Multiplier Selector Tuning			2Z5816.27	1	889211-501	E-509A	1						
E-509B	Same as E-208B	Multiplier Selector Gear			2Z4875-148										
E-509C	Not Used														
E-509D	Same as E-208D	For Multiplier Selector			3H320-57										
E-509E	Same as E-208E	Multiplier Selector Assembly			2Z3806.19										
E-509F	Same as E-208F	Multiplier Selector Bearing			3HK230-7										

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TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS										SPARE PARTS					
										EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
E-510	Terminal board assem: consisting of a laminated phenolic natural paper base term bd 3/32" thk, with eight brass post type term, 2" lg x 1-1/2" wd x 13/32" d overall, two 0.136" diam mtg holes on 1.625" centers, stenciled "E-510"	Mounting L-506,R-509,R-511, R-512			2Z9408.184	1	429668-501	E-510	2						
E-511	Terminal board assem: consisting of a laminated phenolic natural paper base term bd 3/32" thk, with four brass post type term, 1-1/4" lg x 1-1/2" wd x 13/32" d overall, two 0.136" diam mtg holes on 0.875" centers, stenciled E-511	Mounting R-513,R-523			2Z9404.257	1	429668-502	E-511	1						
E-512	Terminal board assem: consisting of a laminated phenolic natural paper base term board 3/32" thk, with two brass post type term, 2-1/8" lg x 7/8" wd x 13/32" d overall, two 0.136" diam mtg holes on 0.750" x 7/16" centers, stenciled E-512	Mounting R-521,R-522			2Z9402.343	1	429668-503	E-512	1						
E-513	Not Used														
E-514	Crystal oven: 24 pins, brass silver-plated, 12 v AC or DC, max overall dim 3.642" lg, 2.580" wd, 2.218" h	For Crystal	-40148		2Z6897-1	218 Dwg.#RY681-12A	433958-1	E-514	1	1	1				
E-515	Not Used														
E-516	Terminal board: eight post type term, 1-1/8" between terminal centers, laminated phenolic board, 2" lg x 1-1/2" wd x approx 3/4" thk o/a, two 0.144" diam holes on 3/16" x 1.625" mtg/c, stenciled "E-516"	Terminal Board Multiplier				1	429668-506	E-516	1						
E-517	Insulation: laminated phenolic, 1/32" thk x 3-1/8" lg x 2-3/4" wd, natural paper base, four 0.147" holes on 2.625" x 1.250" x 3/4" centers	Insulation for Crystal Oven E-514			3G1838-50.9	1	888909-1	E-517	1	1	1	2	1	2	2
E-601	Knob assem: consisting of black molded compound, knob 1-1/16" diam x 7/8" thk, w/8 equally spaced indents and pointer, brass insert 1/2" OD x 0.251" ID x 5/16" lg, two #8-32 tapped holes	Control for S-601B			2Z5821-88	1	433571-501	E-601	1					2	2

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-48283)

PARTS										SPARE PARTS					
										EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS, JAN, OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
E-801	Terminal board assem: 12 brass post type term, laminated phenolic 3/32" thk, 7-1/2" lg x 2" wd x 21/32" thk overall, four 0.173" diam holes on 5-5/8" x 1-1/2" mtg/c; item deleted by NFC #2, RDR	Terminal Board, Dynamotor				1	441621-501	E-801	1						
E-802	Terminal board assem: four brass post type term, two brass lug type term and two phosphor bronze fuse clips, laminated phenolic 3/32" thk, 6" lg x 2" wd x 59/64" thk overall, four 0.173" diam holes on 5-1/2" x 1-1/2" mtg/c; item deleted by NFC #2, RDR	Fuse Board				1	441620-501	E-802	1						
E-802A	Terminal board assem: c/o eight brass post type term, one brass lug type term and two phosphor bronze fuse clips; three resistors, R-603, R-802 and R-803; laminated phenolic 3/32" thk x 6" lg x 2" wd; four 0.173" diam holes on 5-1/2" x 1-1/2" mtg/c; see NFC #2, RDR for data	Resistor and Fuse Mounting				1	447778-501	E-802A	1						
E-803	Terminal board: black molded bakelite, 1-5/8" lg x 1-1/8" wd x 1/2" thk, four 0.173" diam holes on 1-5/16" x 7-16" centers; item deleted by NFC #2, RDR	Dynamotor			2Z9402.44	334 Cat. #2-141	430313-1	E-803	1						
E-804	Not Used														
E-805	Knob: aluminum, 3/4" diam, 25/32" h, with one wing 5/8" lg, two #8-32 tap holes, one 5/8" diam hole and one 0.251" diam hole	Control for S-802			3Z5821-112	1	441680-2	E-805	1					2	1
E-1001	Insulator assem: consisting of one molded styramic insulator 1-3/4" diam x 1" lg, with six thru holes 0.173" diam, reamed to 0.266" diam x 11/16" depth, one brass connector 2.937" lg x 0.500" diam one end, other end swaged to 3/8" wd x 1/8" thk	Dipole Feedthru			3G1912	1	439155-501	E-1001	1	1	1	2	1	2	2
E-1002	Same as E-301	Inner Conductor Terminal (Part of J-1001)			2Z8552-47										
E-1002A	Same as E-301A	Spare Part for Terminal E-1002			2Z8552-51										
E-1003	Insulator: polystyrene, 0.264" lg x 0.446" OD x 0.120" ID each end	For Transmission Line Plug P-1001				1	892833-1	E-1003, 1004	2						
E-1004	Same as E-1003	For Transmission Line Plug P-1002													
E-1005	Insulator: bead, styramic, 0.848" OD x 0.378" ID x 1/4" thk, 1/32" x 45° chamfer both sides of ID	Antenna Mast Bead	-61600		3G1837-8.22	1	888721-1	E-1005	1	1	1	2	1	2	2

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TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS											SPARE PARTS					
											EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
E-1006	Insulator: bead, styramic, 1.125" OD x 0.253" ID x 1/4" thk	Antenna Mast Bead	-61601		3G87-6	1	888721-2	E-1006	1	1	1	2	1	2	2
E-1007	Coupling: jack to jack, 2-1/4" lg x 17/32" diam, 5/8"-24 thds, 5/16" on coupling ends	Connects Two Antenna Cables for Extension	UG-29/U		2Z7390-29	1364	439173-1	E-1007	1			2	1	2	1
F-801	Not Used														
F-802	Fuse: cartridge, 1 amp, 250 v, glass body, ferrule 1/4" diam x 1-1/4" lg	HV Overload Protection	-28032-1		3Z1926	768 3AG1 784 1040	811485-14	F-802	1	1	10	2	20	2	50
F-803	Fuse: cartridge, 250 v, 30 amp, renewable fiber body ferrule ends 2" lg x 9/16" diam	LV Overload Protection	-28069-30		3Z1920	765 Cat. #7061 768 Cat. #1015 837 Cat.#F3045 743 Cat. #1010 246 Cat. #GE-1027	99108-7	F-803	1	1	10	2	20	2	50
H-101	Not Used														
H-102	Gasket: molded neoprene, durometer 35±3, rectangular, 20.051" lg x 8.051" wd outside x 19.051" lg x 7.051" wd inside, 21/64" thk	Receiver Panel Seal			2Z4868.352	1	433538-1	H-102	1	1	1	2	2	1	4
H-103	Gasket: molded neoprene, durometer 35±3, rectangular, 19.718" lg x 7.718" wd outside x 18.750" lg x 6.750" wd inside, 3/8" thk	Receiver Outer Cover Seal			2Z4868.351	1	433538-3	H-103	1	1	1	2	2	1	4
H-104	Gasket: molded neoprene, durometer 35±3, rectangular, 13.048" lg x 5.423" wd outside x 12.455" lg x 4.830" wd inside, 1/4" thk	Receiver Selector Panel Seal			2Z4868.353	1	433538-5	H-104	1	1	1	2	2	1	4
H-105 to H-115	Not Used														
H-116	Gasket: neoprene, durometer 50, 3-13/10" lg x 2-13/16" wd x 1/4" thk, inside opening 3-1/16" lg x 2-1/16" wd, 12 holes 3/32" diam	Crystal Oven Seal			2Z4868.362	1	888782-1	H-116	1	1	1	2	2	2	4

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TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS											SPARE PARTS					
											EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS, JAN. OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
H-117	Not Used															
H-118	Seal: water, neoprene, durometer hardness 50±5, natural water, sealing washer, 1/4" OD x 1/16" ID x 3/32" diam thk	Water Seal			2Z8273-9	492	887824-15	H-118	1					2	8
H-119	Not Used															
H-120	Seal: water, neoprene, durometer hardness 50±5, natural water, sealing washer, 1-25/64" OD, 1-13/64" ID x 3/32" diam thk	Water Seal			2Z8273-10	492	887824-17	H-120	1					2	1
H-121	Screwdriver: Marine Corps green enamel finish, 3-27/32" lg overall x 1/2" wd x 1/8" thk shaft, tip 1/16" thk	Screwdriver			6R18343-1	1301	887891-1	H-121	1	1	1	2	1	2	2
H-122	Not Used															
H-123	Seal: water, neoprene, durometer hardness 50±5, natural water, sealing washer, 1-17/64" OD x 15/64" ID x 3/32" diam thk	Water Seal			2Z8273-11	113	887824-16	H-123	1					2	1
H-124	Seal: water, neoprene, durometer hardness 50±5, natural water, sealing washer, 23/32" OD x 17/32" ID x 3/32" diam thk	Water Seal			2Z8273-14	492	887824-5	H-124	1					2	2
H-125	Seal: water, neoprene, durometer hardness 50±5, natural water, sealing washer, 15/64" OD x 3/64" ID x 3/32" thk	Water Seal			2Z8273-19	492	887824-14	H-125	1					2	4
H-126	Wrench: Allen, short series steel, Marine Corps green enamel finish, "L" shaped, 3/16" hex x 2-27/32" lg x 1-1/32" wd, for 3/8" set and 1/4" capscrews	Wrench			6R57400-1	731	8881007-2	H-126	1	1	1	2	1	2	2
H-127	Wrench: Allen, short series steel, Marine Corps green enamel finish, "L" shaped, 5/64" hex x 1-31/32" lg x 45/64" wd, for #8 setscrews	Wrench			6R57400	731	8881007-3	H-127	1	1	1	2	1	2	2
H-128	Wrench: Allen, short series steel, "L" shaped, 1/16" hex x 1-27/32" lg x 21/32" wd, for #6 setscrews	Wrench			6R57400-6	731	828505-13	H-128	1						
H-129	Wrench: Allen, short series steel, Marine Corps green enamel finish, "L" shaped, 0.050" hex x 1-27/32" lg x 21/32" wd, for #4 setscrews	Wrench			6R55499	731	8881007-5	H-129	1	1	1	2	1	2	2

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TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS											SPARE PARTS					
											EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
H-130	Wrench: Allen, short series steel, Marine Corps green enamel finish, "L" shaped, 1/16" hex x 3-3/32" lg x 21/32" wd, for #6 setscrews	Wrench			6R57400-6.1	731	8881007-6	H-130	1	1	1	2	1	2	2
H-131	Wrench: spintite, 3/16" hex x 6" lg overall wood handle, with 9/32" diam shank	Wrench			6R57413-5	906 Cat. #3406	897570-1	H-131	1	1	1	2	1	2	2
H-132	Wrench: Allen, short series steel, light zinc plated, "L" shaped, 5/32" hex x 2-19/32" lg x 3/8" wd, for 5/16" set and #10 capscrews	Wrench				731	8881760-1	H-132	1						
H-201	Spring: music wire, 0.035" diam, cadmium-plated, 9/32" ID, 5/16" free length, 3-1/2 turns, approx 3-1/2" developed lg, right-hand wound, sq ends and ground	For Mounting Cap (For Antenna Compensator Capacitor C-201)			2Z8878-126	308	865344-4	H-201,408,409, 410,602,806	6	1	6	2	12	2	24
H-202	Washer: stainless steel, 0.0187" thk x 0.406" OD, 0.252" ID	For Antenna Capacitor C-201			6L58024-14	1	868141-18	H-202,411,412, 413,603,807	12					2	12
H-203	Bushing: threaded, duraluminum, 3/4" hex x 11/32" thk w/15/32"-32 thd, center hole 0.252" diam	For Mounting Capacitor C-201			2Z1409-74	1	887271-1	H-203,604,620	3					2	2
H-204	Washer: neoprene, durometer hardness 50 ±5, cross section 1/16" diam, 3/8" OD x 1/4" ID	For C-201 (Outer)			2Z8273-13	113	887824-1	H-204,419,420, 421,605,808	12					2	12
H-205	Washer: neoprene, durometer hardness 50 ±5, cross section 1/16" diam, 21/32" OD x 17/32" ID	For C-201 (Inner)			2Z8273-12	113	887824-2	H-205,422,423, 424,425,606, 809	7					2	7
H-206	Cap: duraluminum, 11/16" hex x 1/8" one end, other end 9/16" diam x 3/8", 1/2" h overall, hex end tapped 1/4" w/15/32"-32 thds, other end with 0.257' hole	For Mounting Antenna Capacitor C-201			2Z8273-18	1	887838-1	H-206,426,432, 433,611,810	6					2	6
H-207	Clamp: aluminum, 59/64" lg x 17/32" wd x 0.031" thk overall, one hole 0.147" diam, one hole 0.281" diam	RF Detector Output Bushing			2Z7093-66	1	888136-1	H-207	1					2	1
H-208	Bushing: nickel-plated brass, 51/64" lg x 5/8" wd x 0.250" thk overall, two holes #4-40 tap x 1/8" lg, one hole 3/64" diam, shaft hole 0.250" diam	Bushing (Part of C-201)			2Z580-39	509	888156-1	H-208	1					2	1

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS										SPARE PARTS					
										EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS, JAN. OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
H-209	Bushing: nickel-plated brass, 0.7655" lg x 5/8" wd x 0.250" thk, one end bent up 3/16", two holes #4-40 tap x 1/8" lg, shaft hole 0.250" diam	Bushing (Part of C-201)			2Z580-40	509	888157-1	H-209	1					2	1
H-210	Bushing assem: consisting of glass bonded mica bushing, 0.273" lg x 3/8" diam overall, brass eyelet 0.087" diam x 0.318" lg	RF Detector Output Terminal			2Z1409-89	1	888177-501	H-210,510	2	1	1	2	2	2	4
H-211	Spring: music wire, cadmium-plated, 0.032" diam, L shaped, 39/64" lg x 23/64" with one hooked-shaped anti-backlash spring	Contact Spring (Part of C-201)			2Z8879-167	1	888155-1	H-211	1	1	1	2	2	2	3
H-301	Clamp assem: tube, consisting of stainless steel tube clamp and laminated phenolic insulator, 0.894" lg x 1/2" wd x 0.650" d overall	For First IF Tube V-301			2Z2642.118	1	894360-501	H-301,302,303, 304,305,430, 431	7	1	2	2	2	2	4
H-302	Same as H-301	For Second IF Tube V-302			2Z2642.118										
H-303	Same as H-301	For Third IF Tube V-303			2Z2642.118										
H-304	Same as H-301	For Fourth IF Tube V-304			2Z2642.118										
H-305	Same as H-301	For Second Detector Tube V-305			2Z2642.118										
H-306	Clamp: aluminum, 29/32" lg x 25/32" wd x 0.091" thk overall, 0.281" diam, hole 0.400" diam x 0.062" d, counterbore two holes #6-32 tap	IF Input Bushing			2Z7093-71	1	888135-1	H-306	1					2	1
H-307	Plate: aluminum, 29/32" lg x 25/32" wd x 0.045" thk overall, one hole 0.281" diam, two holes 0.156" diam	IF Input Bushing			2Z7091-132	1	888137-1	H-307	1	1	1	2	1		
H-401	Clamp: steel, zinc-plated, 2-1/4" lg x 0.731" wd x 1.8125" h, two mtg slots 17/64" lg x 5/32" wd on 1.875" x 1/4" centers	For Cathode Bypass C-407			2Z2635.176	1	90545-1	H-401,402,403, 404	4					2	4
H-402	Same as H-401	For Plate Bypass C-409			2Z2635.176										
H-403	Same as H-401	For Bleeder Bypass C-410			2Z2635.176										

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TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS											SPARE PARTS					
											EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS, JAN, OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
H-404	Same as H-401	For Cathode Bypass C-414			2Z2635.176										
H-405	Clamp: steel, zinc-plated, 2-1/4" lg x 0.731" wd x 1.000" h, two mtg slots 17/64" lg x 5/32" wd on 1.875" x 1/4" centers	For Plate Silencer C-408			2Z2635.176	1	90545-2	H-405	2					2	2
H-406	Not Used														
H-407	Bushing: aluminum, 9/16" thk, 3/4" wd, 1.7185" lg, 0.252" diam hole through ctr, ctb 9/32" diam from rear face to within 0.108" ± .010 of outside front face, 15/32"-32 thd, two holes tapped #6-32 thd	Bushing for Mounting of Silencer Control R-437			2Z580-38	1	433910-2	H-407,427,428, 434,	4					2	4
H-408	Same as H-201	For Mounting Cap (For Silencer Switch S-401)			2Z8878-126										
H-409	Same as H-201	For Mounting Cap (For Silencer Potentiometer R-437)			2Z8878-126										
H-410	Same as H-201	Mounting Cap Spring (For Output Line Control Resistor R-434)			2Z8878-126										
H-411	Same as H-202	For Silencer Switch S-401			6L58024-14										
H-412	Same as H-202	For Volume Control Resistor R-434			6L58024-14										
H-413	Same as H-202	For Level Control R-437			6L58024-14										
H-414	Spring: 0.020" diam music wire, 34 turns per inch, 13/16" ID, 0.9985" OD	For Output Filter Z-402			2Z8879-133	1	894319-1	H-414	1	1	1	2	2	2	3
H-415	Gasket: neoprene, grade FR, water seal, 0.958" OD, 0.750" ID x 19/64" thk o/a, hole in top 0.375" diam	Output Filter Water Seal			2Z4866.10	1045 #32A41934	887545-1	H-415	1	1	1	2	2	2	4
H-416	Water seal assem: consisting of shell and black bakelite plug button cap, hairpin loop and coil spring 1-9/32" lg x 15/16" h x 13/16" wd overall	For Output Filter			2Z8273-16	1235 Type XA 631896G1	887546-2	H-416	1	1	1	2	2	2	4
H-417	Plate: aluminum, oval-shaped, 0.004" thk x 3/4" wd at center x 1.7185" lg, with 0.390" diam center hole and two slots 21/64" lg x 0.156" wd ea end	For Volume Control R-434			2Z7091-131	1	887814-1	H-417	2					2	2

TABLE 8-2
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RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS											SPARE PARTS					
											EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS, JAN, OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
H-418	Plate: aluminum, oval-shaped, 0.064" thk x 3/4" wd at center x 1.7185" lg with 0.391" diam center hole with 1/16" x 1/32" keyway and two slots 21/64" lg x 0.150" wd ea end	For Silencer Switch S-401			2Z7091-130	1	887814-2	H-418	1					2	1
H-419	Same as H-204	For S-401 (Outer)			2Z8273-13										
H-420	Same as H-204	For R-437 (Outer)			2Z8273-13										
H-421	Same as H-204	For R-432 (Outer)			2Z8273-13										
H-422	Same as H-205	For S-401 (Inner)			2Z8273-12										
H-423	Same as H-205	For Z-402 (Inner)			2Z8273-12										
H-424	Same as H-205	For R-437 (Inner)			2Z8273-12										
H-425	Same as H-205	For R-432 (Inner)			2Z8273-12										
H-426	Same as H-206	For Mounting of Silencer Switch S-401			2Z8273-18										
H-427	Same as H-407	Bushing for Mounting of Volume Control R-432			2Z580-38										
H-428	Same as H-407	Bushing for Mounting of Silencer Switch S-401			2Z580-38										
H-429	Washer: flat, buna S, 0.359" ID, 3/4" OD, 0.015" thk	Water Seal, Outer of Output Filter Z-402			2Z8273-8	1	60178-15	H-429	1					2	1
H-430	Same as H-301	For Voltmeter Rectifier Tube V-401			2Z2642.118										
H-431	Same as H-301	For AF Output Tube V-403			2Z2642.118										
H-432	Same as H-206	For Mounting of R-437			2Z8273-18										
H-433	Same as H-206	For R-432			2Z8273-18										
H-434	Same as H-407	Bushing for Mounting of Voltmeter Selector Switch S-402A,B			2Z580-38										
H-435	Clamp: mounting, stainless steel, 1-1/4" diam plus one clip, one bracket with 3/16" x 5/16" slot, leg bent 3/4"	For V-402			2Z2642.142	961	438114-11	H-435	1	1	1	2	1	2	1

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TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS										SPARE PARTS					
										EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
H-501	Not Used														
H-502	Clamp: tube, annealed spring steel, 0.040" thk material, clamp end 7/10" wd x 9/16" lg with seven teeth 1/32" h and center slot 0.156" wd x 15/64" lg, stem end 1/8" wd x 3/4" h	For Oscillator Doubler Tube V-504			2Z2642.113	1	887827-1	H-502	1	1	1	2	1	2	1
H-503 to H-508	Not Used														
H-509	Ring: aluminum, oval-shaped, 1.125" lg x 0.781" wd x 0.312" h	Converter Output Shield Mounting			2Z7858-55	179	887867-1	H-509	1					2	1
H-510	Same as H-210	For Converter Output Terminal			2Z1409-89										
H-601	Nut: hexagon, dural, single chamfer 3/4" across flats, 1/8" thk, tapped 9/16"-28 thd	For Panel Lamp Mounting			6L2459-28	1	818983-9	H-601	1					2	1
H-602	Same as H-201	For Mounting Cap (For Frequency Selector Switch S-601B)			2Z8878-126										
H-603	Same as H-202	For Selector Switch S-601B			6L58024-14										
H-604	Same as H-203	For Mounting of Selector Switch S-601B			2Z1409-74										
H-605	Same as H-204	For S-601B (Outer)			2Z8273-13										
H-606	Same as H-205	For S-601B (Inner)			2Z8273-12										
H-607	Washer: neoprene, durometer hardness 50±5, cross section 1/16" diam x 3/4" OD x 5/8" ID	For Panel Lamp			2Z8273-17	113	887824-3	H-607	1					2	1
H-608	Lens: indicator, light-clear, threaded 1/16" thk, water-clear plexiglas, 7/8" lg x 13/16" hex, 5/8"-27 thd, 3/16" lg aluminum natural finish lens, w/down reflector	For Panel Lamp			2Z5991-72	780	896537-1	H-608	1	1	1	2	1	2	1
H-609	Cap: brush holder, brass cadmium-plated 0.140" thk x 5/16" diam, 32 thds per inch with 3/64" sq slot in head	For Selector Motor B-602			3H683-39	1358 Dwg. #X2486A	889891-1	H-609	1	1	2	2	4	2	6
H-610	Not Used														
H-611	Same as H-206	Cap for Mounting of Selector Switch S-601B			2Z8273-18										

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS										SPARE PARTS					
										EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
H-612	Lubricant: 4 oz oil, Univis #60 in 4 oz screw top container	Selector Lubricant			6G1398.6	1	427916-501	H-612	1	1	1	2	2	2	3
H-613	Cap assem: consisting of one amphenol cap and 3" #10 nickel silver bead chain, cap 1-1/2" diam x 7/16" wd, similar to amphenol cap and chain 9760-22 tapped w/1-3/8"-18 thds, including one neoprene washer 3/32" thk	For Connector Z-604			2Z1012.13	701	433921-2	H-613	1					2	1
H-614	Sleeve: 1.375" OD diam x 1.253" ID diam x 0.828" lg, 1-3/8"-28 thd, 3/8" on one end, flange 1-5/8" x 1-5/8" x 3/16" thk on other end, with four 0.106" diam taper, counterbore 0.143" diam x 0.015" d holes on 1.450" centers	Sleeve for Connector Z-604				1	889452-2	H-614	1						
H-615	Plate: 1-5/8" lg x 1-5/8" wd x 1/8" thk, aluminum alloy, five tapered holes, four 0.156" diam to 0.310" diam on 1.450" centers, one 1.253" diam to 1.394" diam hole on 13/16" centers	For Connector Z-604				1	889248-1	H-615	1						
H-616	Nut: knurled, aluminum alloy, 1-1/2" OD x 1-1/8" ID x 7/16" thk overall, 1/32" x 45° chamfer on outside corners, 1-1/4"-28 thd, 5/16" d	For Connector Z-604				1	889253-1	H-616	1						
H-617	Sleeve: 1.250" OD x 1.128" ID x 7/16" ID diam x 0.828" lg, 1-1/4"-28 thd, 3/8" on one end, flange 1-1/2" x 1-1/2" x 3/16" thk on other end, with four 0.106" diam taper, counterbore 0.143" diam x 0.015" d holes on 1.148" centers	Sleeve for Connector Z-603				1	889251-2	H-617	1						
H-618	Plate: aluminum alloy, 1-1/2" sq x 1/8" thk, one hole 1.128" diam w/45 peg chamfer, four holes 0.156" diam w/45 deg countersunk on 1.156" sq mtg/c	For Connector Z-603				1	889249-1	H-618	1						
H-619	Nut: knurled: aluminum alloy, 1-3/8" OD x 1" ID x 7/16" thk overall, 1/32" x 45° chamfer on outside corners, 1-1/4"-28 thd, 5/16" d	For Connector Z-603				1	889250-1	H-619	1						
H-620	Same as H-203	Bearing for Power Switch S-802			2Z1409-74										
H-801 to H-805	Not Used														
H-806	Same as H-201	For Mounting Cap (For ON-OFF Switch S-802)			2Z8878-126										
H-807	Same as H-202	For ON-OFF Switch S-802			6L58024-14										

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TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS											SPARE PARTS					
											EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
H-808	Same as H-204	For S-802 (Outer)			2Z8273-13											
H-809	Same as H-205	For S-802 (Inner)			2Z8273-12											
H-810	Same as H-206	For ON-OFF Switch S-802			2Z8273-18											
H-1001	Washer: flat ankoprene 6850/C1, durometer hardness 40-50, 15/16" ID x 1-5/32" OD x 1/16" thk	For Antenna Capacitor A-1001			2A3196.1-2	37	60178-23	H-1001	1	1	1	2	2	2	4
H-1002	Gasket: ankoprene 6850/C1, durometer 40-50 1-7/8" OD x 1-3/8" ID x 1/16" thk, four holes 0.140" diam equally spaced	For Antenna Mast Junction			2A3196.1-4	37	888590-1	H-1002	1	1	1	2	2	2	4
H-1003	Gasket: ankoprene 6850/C1, durometer 40-50 1-7/16" OD x 15/16" ID x 1/16" thk, six holes 0.140" diam equally spaced	For Dipole Junction			2A3196.1-3	37	888591-1	H-1003	1	1	1	2	2	2	4
H-1004	Nut: brass, 5/16" hex x 1/4" lg, tapped 1/4"-28 thd	For Antenna Line			6L3504-28-SM	1	888706-1	H-1004	1					2	1
H-1005	Gasket: ankoprene 6850/C1, durometer 40-50 1" sq x 1/32" thk, 5/8" diam hole in center, 0.125" diam hole ea corner	Mast Base Connector			2A3196.1-1	1	888720-1	H-1005	1	1	1	2	2	2	4
H-1006	Screw ring: aluminum, 1.250" OD x 0.875" ID x 0.218" thk, 1-1/4"-12 thd	Antenna Support Ring			6L7937-3AL	1	888722-1	H-1006	1					2	1
H-1007	Not Used														
H-1008	Wrench: cr steel, 3-15/32" lg x 1/8" thk x 1-3/32" wd, with 1/2" x 1/4" cutout one end, other end 1/8" diam for 1/2"	Dipole Spanner			6R57522-4	1	880981-1	H-1008	1	1	1	2	1	2	2
HS-401	Headset assem: consisting of two headphones, plug and adjustable band plug, 3-1/8" lg, for use with extension cord Navy Type CW-49534	Headset	-49507		2B955	069	433938-1	HS-401	1	1	1	2	2	1	4
I-601	Lamp: 6-8 v, 0.15 amp, 0.94 watt, bulb T 3-1/4 clear, miniature bayonet base, 1-1/8" lg overall	For Filament Indicator			2Z5952	246 Mazda 47	61114-22	I-601	1	1	2	2	4	2	6

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TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-48283)

PARTS										SPARE PARTS					
										EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS, JAN, OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
J-201	Receptacle: with bakelite insulator molded over terminal, 0.0225" diam hole 11/64" d in terminal, 3/8"-32 thd, 11/16" sq x 0.780" lg, four holes 0.102" diam, 0.500" on centers, same as AN type UG 87/U, except for 0.102" diam holes, molded insulator and hole in terminal	Receiver Input	UG-87/U		2Z7390-87	1	433908-1	J-201	1	1	1	2	1	2	2
J-301	Connector jack assem: female contact, brass shell silver-plated, 0.957" lg x 3/4" diam overall, mtg plate near centers 1" sq with four mtg holes 0.0120" diam on 23/32" centers	R-F Input	UG-281/U		2Z7390-281	1	439193-501	J-301	1	1	1	2	1	2	2
J-1001	Jack assem: consisting of polystyrene insulator, 0.446" OD x 0.123" ID x 0.264" thk, brass silver-plated plate, 1" sq x 0.075" thk with one 0.578" diam hole in ctr, and four 0.120" diam mtg holes on 23/32" x 23/32" ctr and brass silver-plated fittings with 35 pitch straight knurl and 5/8"-24 thd OD	Antenna Input Jack	UG-58/U		2Z8276-38	699	438110-507	J-1001	1	1	1	2	1	2	2
K-601	Relay: armature, coil 12 v, 250 ohms contacts 2 form C nileuns, closed in one direction when coil not energized to open before making contact on other side when coil is energized nitrogen filled, hermetically sealed case 2-3/16" lg x 1.102" wd x 1.508" h, eight term extending 5/8", stenciled 1 to 8, three mtg studs #8-32 thds x 5/16" lg	Selector Control	-29726		2Z7585-188	713 Type SK-13001	429680-1	K-601	1	1	1	1	2	2	3
K-602	Not Used														
K-603	Relay: voltage regulator, hermetically sealed, nitrogen filled coil, 2900 ohms ±5% d-c resistance, one form B contact normally closed, open when energized, contacts to operate at 190 v ±10 v, 2-11/16" lg x 1-3/8" wd x 1-3/4" h, eight term extending 7/8" stenciled 1 to 8, three mtg studs #6-32 thds	Voltage Regulator	-29727		2Z7585-157	713 Type SK-13002	429680-2	K-603	1	1	1	1	2	2	3

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS										SPARE PARTS					
										EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
L-201	Wire: bare, copper, #20 AWG, soft tinned, 4" lg	RF Tuning (Part of Wiring)				1	618528-23	L-201	1						
L-202	Coil: radio, RF, 19/32" lg x 7/16" wd x 3/8" thk, four turns RH wound #20 AWG tinned copper wire, 1/4" OD, 5/64" pitch (Part of C-203)	RF Tuning			3C1084H-19	1	889845-1	L-202, 205, 208, 211	4						
L-203	Wire: bare, copper, #20 AWG, soft tinned, 1-1/8" lg	RF Tuning (Part of Wiring)				1	618528-28	L-203	1						
L-204	Wire: bare, copper, #20 AWG, soft tinned, 3-5/8" lg	Grid Tuning of RF Amplifier Tube V-201				1	618528-24	L-204	1						
L-205	Same as L-202	Grid Tuning of RF Amplifier Tube V-201													
L-206	Wire: bare, copper, #20 AWG, soft tinned, 1-1/8" lg	Grid Tuning Amplifier Tube V-201 (Part of Wiring)				1	618528-29	L-206	1						
L-207	Wire: bare, copper, #20 AWG, soft tinned, 4" lg	Plate Tuning of RF Amplifier Tube V-201				1	618528-25	L-207	1						
L-208	Same as L-202	Plate Tuning of RF Amplifier Tube V-201													
L-209	Wire: bare, copper, #20 AWG, soft tinned, 1-1/8" lg	Plate Tuning of RF Amplifier Tube V-201 (Part of Wiring)				1	618528-30	L-209	1						
L-210	Wire: bare, copper, #20 AWG, soft tinned, 3-1/2" lg	Grid Tuning of First Detector Tube V-202				1	618528-26	L-210	1						
L-211	Same as L-202	Grid Tuning of First Detector Tube V-202													
L-212	Wire: bare, copper, #20 AWG, soft tinned, 1-1/8" lg	Grid Tuning of First Detector Tube V-202				1	618528-31	L-212	1						
L-213	Wire: bare, copper #20 AWG, soft tinned, 3-1/2" lg	Plate Tuning of Tripler Tube V-203				1	618528-27	L-213	1						
L-214	Coil: radio, RF, 19/32" lg x 7/16" wd, 3/8" thk, three turns RH wound #20 AWG tinned copper wire, 1/4" OD	Plate Tuning of Tripler Tube V-203			3C1084-18	1	889845-2	L-214	1						
L-215	Wire: bare, copper, #20 AWG, soft tinned, 1-1/4" lg	Plate Tuning of Tripler Tube V-203				1	618528-32	L-215	1						
L-216	Not Used														

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS										SPARE PARTS					
										EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS, JAN, OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
L-217	Coil: radio, RF assem, integral type, single winding unshielded, 8-1/4 turns #20 AWG tinned copper wire assembled on co-polymer of styrene coil form with brass bushing, 1-1/2" lg x 29/32" wd x 3/8" thk overall	Grid Ammeter Filter of Tripler Tube V-203	-472329		3C1084H-20	1	889883-501	L-217	1			2	1	2	1
L-218	Coil: RF, choke, integral type, single winding, single layer wound, unshielded, 16 turns #24 AWG E wire, body approx 3/8" lg x 3/32" ID, air wound, 3/4" lg axial wire leads	RF Choke	-472330		3C370-85	1	8855989-1	L-218	1	1	1	2	2	2	3
L-301	Coil: radio, RF, choke; integral type, molded, 45 turns #30 AWG E copper wire, natural resonant frequency above 50 mc, impedance 500 ohms at 50 mc, 0.3 ohms max d-c resistance, 15/16" lg x 1/4" diam overall, two axial leads 1-15/16" lg each, core 5/8" lg x 3/16" diam	V-301 Heater Choke	-47810		3C1084H-23	795	888776-1	L-301,302,303, 304,305,506, 509	7	1	7	2	14	2	21
L-302	Same as L-301	V-302 Heater Choke	-47810		3C1084H-23										
L-303	Same as L-301	V-303 Heater Choke	-47810		3C1084H-23										
L-304	Same as L-301	V-304 Heater Choke	-47810		3C1084H-23										
L-305	Same as L-301	V-305 Heater Choke	-47810		3C1084H-23										
L-501	Not Used														
L-502	Coil: radio, RF, inductor and tripler tuning, single winding, single layer wound, unshielded, two turns of 0.032" thk x 1/4" wd copper, 3/8" pitch, formed 0.498" ID, 1-1/4" approx overall diam x 3-5/16" approx overall lg	Plate Tuning of Second Tripler Tube V-502			3C1084H-22	1	727334-502	L-502	1	1	1	2	2	2	3
L-503	Not Used														
L-504	Transformer assem: enclosed in shield can, consisting of coil 30 turns #18 AWG copper wire, with an adjustable iron core assem bottom end, overall dim 1.375" sq x 3.389" h, excluding term at top and core assem bottom	Plate Coil of Oscillator Doubler Tube V-504	-47937		3C1084H-27	1	618106-507	L-504	1	1	1	2	2	2	3
L-505	Not Used														
L-506	Same as L-301	V-504 Heater Choke	-47810		3C1084H-23										
L-507	& L-508 Not Used														
L-509	Same as L-301	V-502, V-503 Heater Choke	-47810		3C1084H-23										

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TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS										SPARE PARTS					
										EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS, JAN, OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
L-801	Not Used														
L-802	RF: choke, winding housed internally in mold with 1-3/8" leads 0.030" diam ea end, body 3/4" lg x 1/4" OD, 29 turns #24 AWG wire close wound	R-F Choke, D-801 HV Circuit	-47871		3C370-81	795 Type CF #170	889568-2	L-802,803	2	1	2	2	4	2	6
L-803	Same as L-802	R-F Choke, D-801 HV Circuit	-47871		3C370-81										
M-401	Meter: output 0 to 1.0 ma dc, 100 ohms, full scale amps 0.001 ± 2%, 1-3/4" sq x 19/64" thk mtg flange, four mtg holes 1.312" between centers x 13/16" max thk, dull black dial white markings, calibrated in arbitrary units from 0 to 10, four 0.125" diam holes on 1.312" sq mtg/c	Voltage and Current Indicator	-22504		3F901-20	246 8DN-1	430715-1	M-401	1					2	1
O-101	Gear: worm, stainless steel, 48 pitch 0.333" pitch diam, single thread, RH, 14-1/2 deg pressure angle, 0.065" lead, 3° 35' thread angle, 17/32" minimum lg of full thread, 0.373" OD x 0.1879" ID x 11/16" lg	Selector Drive			2Z4872-76	508	872512-1	O-101	3			1	3	2	6
O-102	Bearing: needle, steel, 11/32" overall diameter x 3/16" shaft diam x 1/4" lg	Selector Drive Shaft Horizontal Needle			3H321-53	863 Type GB34X	886818-1	O-102,103	2			1	4	2	4
O-103	Same as O-102	Selector Drive Shaft Vertical Needle			3H321-53										
O-104	Shaft: stainless steel, 12" lg x 0.1876" diam	Selector Drive Horizontal			2Z8203-132	1	886874-1	O-104	1					2	1
O-105	Collar: stainless steel, 1/4" thk x 3/8" OD with 1/4" x 1/16" hub, 0.1879" ID, one 0.047" diam hole thru one side only, and one tapped hole #4-40 thds	Selector Drive Horizontal Collar			2Z2935-33	1	886876-1	O-105	4					2	4
O-106	Gear: bevel drive, stainless steel, 48 pitch, 78 teeth, 1.625" pitch diam, 14-1/2 deg pressure angle, 1.667" overall diam, with 7/16" diam hub, 0.281" overall width at hub	Main Selector Drive			2Z4872-75	695	887260-1	O-106	1			1	1	2	1

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TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS										SPARE PARTS					
										EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS, JAN. OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
O-107 to O-119	Not Used														
O-120	Gear: spiral, hardened steel, 0.393" OD x 0.1879" diam center hole x 0.375" lg, RH, 8 teeth, 24 diametral pitch, pitch diam 0.3333" tooth angle 45°, pressure angle 14-1/2 deg	Selector Spiral Gear			2Z4872-77	1	886861-1	O-120	1			1	1	2	2
O-121 to O-124	Not Used														
O-125	Collar: stainless steel, 3/8" OD x 0.1879" ID x 0.316" thk, #4-40 tap hole inside, 0.047" diam hole thru one side only	Selector Drive			2Z2935-36	1	886875-1	O-125	2					2	2
O-126	Coupling: assembly, consisting of a bushing, plate, spring and pin, 1-5/8" diam x 3/8" thk, 0.250" diam shaft hole	For A-101			3H1290.3-2	1	888751-501	O-126	1			1	1	2	2
O-127	Spring: music wire, finish black, 0.035" diam, triangular-shaped 7/16" x 13/32" x 3/8"	Retainer Spring for O-501			2Z8877.153	1	888937-1	O-127	1	1	1	1	2	2	5
O-128	Not Used														
O-129	Shaft: stainless steel, 7-5/8" lg x 0.1876" diam	Selector Drive Shaft			2Z8203-162	1	890159-18	O-129	1					2	1
O-201	Coupling: flexible drive, duralumin, 3/8" OD x 0.1875" ID x 1-1/8" lg	For Drive of C-201			2Z3373-78	T41 86	868655-4	O-201	1			1	1	2	2
O-202	Shaft assembly: consisting of two dural shafts 1-3/32" lg x 0.187" diam, laminated insulated coupling 1" lg x 7/16" diam, with 0.1875" hole 13/32" d each end, two steel screws #6-32 x 1/8" lg, two stainless steel taper pins #6-0 x 1/2" lg, 2-13/32" overall length	For Antenna Compensator Capacitor C-201			2Z3273-83	1	888104-501	O-202	1			1	1	2	1
O-203	Gear assembly: consisting of aluminum support with two 1/2" diam hubs, two stainless steel shafts, one 1" lg x 0.1871" diam, other 29/32" lg x 0.2496" diam overall, two brass miter gears, 3/8" pitch diam, face 7/64", 48 pitch, 18 teeth, four setscrews 1/8" lg, #4-40	Drive for Antenna Capacitor C-201			2Z4872-72	1	888125-501	O-203	1			1	1	2	1

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TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS										SPARE PARTS					
										EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
O-203A	Gear: miter, brass, 3/8" pitch diam, 7/64" face, 48 pitch, 18 teeth, shaft 0.125" diam, 17/64" d, two #4-40 tapped holes in side	For Drive Meter Gear			2Z4878-123	86 Cat.#53-G-461	888124-1	O-203A	2						
O-203B	Gear: miter, brass, 3/8" pitch diam, 7/64" face, 48 pitch, 18 teeth, 5/16" OD, 0.125" bore diam, 17/64" lg overall	For Meter Drive			2Z4872-82	86 Cat.#53	8821185-1	O-203B	1						
O-204	Gear: aluminum: 0.7916" OD x 5/16" thk, 0.7500" pitch diam, 48 diametral pitch, 36 teeth, 14-1/2 deg pressure angle, hub 7/16" diam, bore 0.1875" diam	RF Tuning Condenser			2Z4875-143	1	888528-2	O-204	1			1	1	2	1
O-205	Gear assembly: consisting of aluminum gear, 0.7916" OD x 0.249" thk, 0.7500" pitch diam, 48 diametral pitch, 36 teeth, 14-1/2 deg pressure angle, hub 5/16" diam, bore 0.1875" diam, stainless steel plate 0.032" thk stock, 15/64" wd x 37/64" lg to center of mtg holes	For RF Tuning Condenser			2Z4872-71	1	888548-501	O-205	1			1	1	4	1
O-206	Coupling assembly: consisting of two plate assem, bushing, shim and spring, approx 1-1/2" OD x 0.253" OD x 0.3085" thk	Receiver RF Coupling			2Z3273-75	100	433932-501	O-206	1			1	1	2	1
O-207	Shaft: stainless steel, PS #521, 1-25/64" lg x 0.2496" diam overall, 1/64" x 45° chamfer both ends, 9/64" lg x 0.187" left end, one undercut of 1/32" wd x 0.010" d, 17/64" from small end	To Connect Front Panel Knob with Capacitor C-201			2Z8203-161	1	887214-1	O-207	1					2	1
O-208	Gasket: neoprene, durometer #50 blk, 1/16" thk x 1-13/16" sq, 1-31/64" diam hole in center, four 3/32" diam holes on 1-5/16" sq mtg/c	For Front Panel Under Meter M-401			2Z4868.513	1	889575-1	O-208	1	1	1	1	2	2	4
O-209	Dryer air assembly: consisting of silica gel crystals complete with sealed-in box 4" lg x 2" wd x 9/16" thk overall w/adhesive tape, w/mica indicating window	Air Dryer	-10495		2Z3602-18	1 Grade D	888713-501	O-209	2			1	2	2	4
O-210	Gear drive assem: consisting of following parts: coupling, O-201, shaft assem, O-202, gear assem, O-203, shaft O-207	C-201 Tuning				1	446661-501	O-210	1						
O-501	Gear assembly: consisting of two gears, stainless steel, 1.500" pitch diam, 48 diametral pitch, 72 teeth, 14-1/2 deg pressure angle 0.037" thk x 1.5416" OD, complete w/stainless steel pin, one gear w/0.3745" OD hole, other w/0.314" hex hole for shaft, shim spring and hub, stainless steel, 1/2" OD x 0.250" ID x 0.392" lg overall	Multiplier Tuning Condenser			2Z4872-74	1	433931-501	O-501	1			1	1	2	1

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS										SPARE PARTS					
										EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
O-502	Gear assembly: consisting of two gears, stainless steel 1.500" pitch diam, 48 diametral pitch 72 teeth, 14-1/2 deg pressure angle, 0.037" thk x 1.5416" OD, complete with stainless steel pin, one gear with 0.3745" OD hole, other with 0.314" hex hole for shaft, shim, spring and bushing, stainless steel 1/2" OD x 0.253" ID x 0.328" lg overall, size 1.5416" diam x 0.328" thk	Multiplier Tuning Condenser			2Z4872-73	1	433931-502	O-502	1			1	1	2	1
O-503	Gear: aluminum, 2.5416" OD x 0.375" thk, 2.500" pitch diam, 48 diametral pitch, 120 teeth, 14-1/2 deg pressure angle, hub 7/16" diam, bore 0.1878" diam, six holes 1/2" diam on 1-1/4" centers	For Multiplier Tuning Condenser			2Z4875-142	695	888529-1	O-503	1			1	1	2	1
O-504	Shaft: stainless steel, 5/8" lg x 5/16" diam overall, with 0.1562" diam x 3/32" lg hole one end	Multiplier Tuning Condenser			2Z8202.67	1	888524-1	O-504	1					2	1
O-505 to O-507	Not Used														
O-508	Coupling assembly: consisting of two plate assem, bushing, shim and spring, approx 1-1/2" diam x 0.376" thk	Multiplier Driver			2Z3273-76	1	433932-502	O-508	1			1	1	2	1
O-509	Spring: lock, music wire PS 45, 0.0317" diam, 5/32" lg w/1/32" rad, 15/64" lg w/1/64" rad, triangular shape	For Plate Tuning Inductor L-502			2Z8877.152	1	75969-2	O-509	1	1	1	1	2	2	5
O-601	Coupling assembly: consisting of stainless steel shaft 31/32" lg x 0.249" diam, with cap 5/8" diam x 0.062" thk, stainless steel coupling disk 0.032" thk stock, 1-5/8" diam x 1/4" h	For Selector Switch S-601B			2Z3273-77	1	888752-501	O-601	1			1	1	2	1
O-602	Bearing: ball, 0.8659" OD, 0.27545" ID, 0.2731" wd with seven balls 5/32" diam each	For Selector Motor B-602			3H304-9	439 #77037	885655-7	O-602	1	1	1	1	1	2	1
O-603	Not Used														
O-604	Bearing: ball, steel, single row radial shield, bore 0.2362" x 0.7480" overall x 0.2362" wd overall	For Dynamotor D-801			3H1787A/6	439 BRG #7036	885824-3	O-604	1	1	5	1	10	2	20
O-605 to O-609	Not Used														

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TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS											SPARE PARTS					
											EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS, JAN. OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
O-610	Gear: pinion, stainless steel, 48 pitch, 12 teeth 0.2500" pitch diam, 14-1/2 deg pressure angle, 3/16" face, 0.2916" OD x 1.270" lg overall	For Selector Drive			2Z4878-125	508	889841-1	O-610	1						
O-611	Gear: stainless steel, 48 pitch, 36 teeth, 0.750" pitch diam, 14-1/2 deg pressure angle, 1/8" face, 0.7916" OD x 11/32" thk overall, bore 0.1875" diam, tapped hole #4-40 thd for setscrew and other hole 0.063" diam	For Selector Drive Motor			2Z4878-124	1	889843-1	O-611	1						
O-612	Not Used														
O-613	Bearing: ball, 0.6297" OD x 0.15735" ID x 0.1944" wd with six 1/8" diam balls	For Commutator End of Selector Motor B-602				439 77034	885655-8	O-613	1						
O-614	Gear assem: homing switch drive, consisting of one aluminum plug, one stainless steel shaft, one Fafnir 33-5 ball bearings, one back plate, one clutch assem, one base plate assem, one cage assem, and four stainless steel spacers, with four stainless steel mtg plugs on 1.546" x 1.546" mtg/c, 1.889" sq x 2.312" lg overall, excluding mtg studs	Homing Switch Drive			2Z4872-110	1	728108-501	O-614	1	1	1	1	1	3	1
O-801	Bearing: ball, steel, single row radial, single shield, 0.4998" OD x 0.18735" ID x 0.1944" wd with seven 3/32" diam balls	For Commutator End of Dynamotor D-801				439 7R3	885655-9	O-801	1						
O-1001	Gear assembly: consisting of one aluminum die casting bracket, four Fafnir Co. Cat. 33-5 ball bearings, one stainless steel shaft 2-15/32" lg, 0.1874" diam w/5/16" diam collar spaced 9/16" from one end, one stainless steel shaft 1-13/16" lg, 0.1874" diam w/5/16" diam, collar spaced 5/8" from one end, one stainless steel gear 36 teeth, 48 diametral pitch, 0.750" pitch diam, 63° 26' pitch angle, 23° 43' face angle, 0.768" OD, one stainless steel gear, 18 teeth, 48 diametral pitch, 0.375" pitch diam, 26° 34' pitch angle, 60° 35' face angle, 0.411" OD, one stainless steel collar 7/16" OD x 1/4" thk, one stainless universal joint 3/8" diam x 1-1/8" lg overall, one aluminum alloy gear 36 teeth, 0.750" pitch diam, 0.7916" OD, 48 diametral pitch, 14-1/2 deg pressure angle w/five steel taper pins and six steel setscrews approx 2-7/16" wd x 2-1/8" h x 15/16" lg overall	Antenna Compensator Drive			2A1177-14	1	439121-501	O-1001	1						

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TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS										SPARE PARTS					
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS, JAN, OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	EQUIP. BOX NO.	EQUIP. QUAN.	TENDER BOX NO.	TENDER QUAN.	STOCK BOX NO.	STOCK QUAN.
O-1002	Gear assem: consisting of laminated phenolic gear and aluminum hub, 0.750" diam pitch 0.7916" OD, 36 teeth, 48 diametral pitch, 14-1/2 deg pressure angle, 0.843" diam x 3/8" lg overall, bore 0.1877" diam, one hole tapped #4-40 thd, other hole 0.063" diam	Antenna Compensator Drive			2A1178-24	1	895034-501	O-1002	1						
O-1003	Same as E-208F	Antenna Compensator Shaft Bearing			3HK230-7										
O-1004	Gear: miter, stainless steel, 48 pitch, 18 teeth, 0.3750" pitch diam, pressure angle 14-1/2 deg, 21/64" lg, bore 0.1875", one hole tapped #4-40 thd, other hole 0.047" diam	For Antenna Drive			2A1178.8	1	895023-1	O-1004	1						
P-201	Connector: male contact, one pin contact straight, 0.482" diam x 1.655" lg overall	Antenna Cable Connector	UG85/U		2Z7390-85	699	719230-2	P-201	1	1	1	2	1	2	2
P-601	Connector assem: female contact, consisting of connector type AN 3106-20-6S adapter type AN 3055-22-8, and cable clamp AN 3057-8, 2-3/4" lg x 1-15/32" OD approx overall	Plug for Z-603			2Z3064-92	1	897738-501	P-601	1	1	1	2	1	2	2
P-801	Connector: female contact, two round contacts, for AWG wire #4, 1-23/32" diam x 2-1/4" lg, one end tapped 1-1/2"-18 thds and other end 1-7/16"-18 thds, key position #1	Battery Cable Connector	AN-3106-24-9S		2Z3063-6	1	433957-3	P-801	1						
P-802	Connector: female contact, three round contacts for AWG #12 wire size and six round contacts for AWG #20 wire size, 1-19/32" OD x 2-1/8" lg overall, key position 1, one end 1-3/16"-18 thds, other end tapped 1-3/8"-18 thd	Connector for Power Supply Cable	AN-3106-22-16S		2Z3064-85	30	433957-2	P-802,803	2	1	1	2	.1	2	2
P-803	Same as P-802	Connector for Power Supply Cable	AN-3106-22-16S		2Z3064-85										
P-1001	Plug assembly: pin-type, consisting of brass and silver-plated body pin adapter, sleeve, splicer and two nuts, including one neoprene insulator and two neoprene gaskets, overall dimension 3/4" x 11/16" x 1.952" lg	For Transmission Line	UG-21/U		2Z3021-146	1364	438109-501	P-1001,1002	2	1	2	2	4	2	8
P-1002	Same as P-1001	For Transmission Line	UG-21/U		2Z3021-146										

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TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS										SPARE PARTS					
										EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
R-201	Resistor: fixed, composition, 0.22 meg ±10%, 1/2 watt, insulated, small, 0.468" max lg, 0.249" max diam, two axial wire leads 1-1/2" lg	Grid Filter of Amplifier Tube V-201	RC20BF224K		3RC20BF224K	722	722318-90	R-201,205,200, 322,403,409	6	1	3	1	18	2	30
R-202	Resistor: fixed, composition, 3300 ohms ±10%, 1/2 watt, insulated, small, 0.468" max lg x 0.249" max diam with two axial wire leads 1.5" lg	L-F Rejection Filter	RC20BF332K		3RC20BF332K	722	722318-68	R-202	1	1	1	1	3	2	5
R-203	Resistor: fixed, composition, 56,000 ohms ±10%, 1 watt, insulated, small 0.750" max lg x 0.280" max diam with two axial wire leads 1.5" lg	Screen Dropping of RF Amplifier Tube V-201	RC30BF563K		3RC30BF563K	722	722333-83	R-203	1	1	1	1	3	2	5
R-204	Resistor: fixed, composition, 1500 ohms ±10%, 1/2 watt, insulated, small, 0.468" max lg x 0.249" max diam with two axial wire leads 1.5" lg	V-201 Plate Filter	RC20BF152K		3RC20BF152K	722	722318-64	R-204,320,405, 506	4	1	2	1	12	2	20
R-205	Same as R-201	Grid Filter of First Detector Tube V-202	RC20BF224K		3RC20BF224K										
R-206	Same as R-201	V-202 Grid Filter	RC20BF224K		3RC20BF224K										
R-207	Resistor: fixed, composition, 33,000 ohms ±10%, 1/2 watt, insulated, small, 0.468" max lg x 0.249" max diam with two axial wire leads 1.5" lg	Grid of Trinler Tube V-302	RC20BF333K		3RC20BF333K	722	722318-80	R-207, 531	2	1	1	1	6	2	10
R-208	Resistor: fixed, composition, 0.33 meg ±10%, 1/2 watt, insulated, small, 0.468" max lg x 0.249" max diam with two axial wire leads 1.5" lg	Screen Dropping of First Detector Tube V-202	RC20BF334K		3RC20BF334K	722	722318-92	R-208	1	1	1	1	3	2	5
R-209	Resistor: fixed, composition, 10,000 ohms ±10%, 1 watt, insulated, small, 0.750" max lg x 0.280" max diam, two axial wire leads 1.5" lg	Plate Shunt of Tripler Tube V-203	RC30BF103K		3RC30BF103K	722	722333-74	R-209,213	2	1	1	1	6	2	10
R-210	Resistor: fixed, composition, 270 ohms ±10%, 1/2 watt, insulated, small, 0.468" max lg x 0.249" max diam with two axial wire leads 1.5" lg	Develops V-201 Cathode Bias	RC20BF271K		3RC20BF271K	722	722318-55	R-210,212,303, 307,311,314	6	1	3	1	9	2	30
R-211	Resistor: fixed, composition, 1000 ohms ±10%, 1/2 watt, insulated, small, 0.468" max lg x 0.249" max diam with two axial wire leads 1.5" lg	Develops V-202 Cathode Bias	RC20BF102K		3RC20BF102K	722	722318-62	R-211	1	1	1	1	3	2	5

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS											SPARE PARTS					
											EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS, JAN, OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
R-212	Same as R-210	Develops V-303 Cathode Bias	RC20BF271K		3RC20BF271K											
R-213	Same as R-209	Plate Filter of First Detector Tube V-202	RC30BF103K		3RC30BF103K											
R-301	Resistor: fixed, composition, 50,000 ohms ±10%, 1/2 watt, insulated, small, 0.468" max lg, 0.249" max diam, two axial wire leads 1-1/2" lg	Plate Filter of First Detector Tube V-202 (Part of Terminal Board E-303)	RC20BF563K		3RC20BF563K	722	722318-83	R-301,420	2	1	1	1	6	2	10
R-302	Resistor: fixed, composition, 0.10 meg ±10%, 1/2 watt, insulated, small, 0.468" max lg x 0.249" max diam with two axial wire leads 1.5" lg	Grid Filter of First IF Tube V-301 (Part of Terminal Board E-302)	RC20BF104K		3RC20BF104K	722	722318-86	R-302,306,310, 401,402,413	6	1	3	1	9	2	30
R-303	Same as R-210	Develops V-301 Cathode Bias	RC20BF271K		3RC20BF271K											
R-304	Resistor: fixed, composition, 2200 ohms ±10%, 1/2 watt, insulated, small, 0.468" max lg x 0.249" max diam with two axial wire leads 1.5" lg	Screen Dropping of First IF Tube V-301	RC20BF222K		3RC20BF222K	722	722318-66	R-304,305,308, 309,312,313, 315,316,408, 509	10	1	5	1	30	2	50
R-305	Same as R-304	Plate Dropping of First IF Tube V-301	RC20BF222K		3RC20BF222K											
R-306	Same as R-302	Grid Filter of Second IF Tube V-302 (Part of Terminal Board E-304)	RC20BF104K		3RC20BF104K											
R-307	Same as R-210	Develops Partial Cathode Bias for V-302	RC20BF271K		3RC20BF271K											
R-308	Same as R-304	Screen Dropping of Second IF Tube V-302	RC20BF222K		3RC20BF222K											
R-309	Same as R-304	Plate Dropping of Second IF Tube V-302	RC20BF222K		3RC20BF222K											
R-310	Same as R-302	Grid Filter of 3rd IF Tube V-303 (Part of Terminal Board E-306)	RC20BF104K		3RC20BF104K											
R-311	Same as R-210	Cathode of 3rd IF Tube V-303	RC20BF271K		3RC20BF271K											
R-312	Same as R-304	Screen of 3rd IF Tube V-303 (Part of Terminal Board E-307)	RC20BF222K		3RC20BF222K											
R-313	Same as R-304	V-303 Plate Circuit Filter	RC20BF222K		3RC20BF222K											

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TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS											SPARE PARTS					
											EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
R-314	Same as R-210	Develops V-304 Cathode Bias	RC20BF271K		3RC20BF271K											
R-315	Same as R-304	V-304 Screen Circuit Filter	RC20BF222K		3RC20BF222K											
R-316	Same as R-304	V-304 Plate Circuit Filter	RC20BF222K		3RC20BF222K											
R-317	Resistor: fixed, composition, 470,000 ohms ±10%, 1/2 watt, insulated, small, 0.468" max lg x 0.249" max diam, two axial wire leads 1.5" lg	AVC Diode Load	RC20BF474K		3RC20BF474K	722	722318-94	R-317,318,404, 416,512	5	1	3	1	15	2	25
R-318	Same as R-317	AVC Diode Load	RC20BF474K		3RC20BF474K											
R-319	Resistor: fixed, wire wound, insulated, 33.33 ohms ±2%, 1/4 watt, 3/8" lg, 11/64" diam, two axial wire leads 1-1/2" lg, temp coef 0.002 %/°C	Shunt for M-401	-635324-2		3Z6003C3-17	1371 Type WRI-1/4	894379-6	R-319	1	1	1	1	3	2	5
R-320	Same as R-204	Plate Dropping of Fourth IF Tube V-304	RC20BF152K		3RC20BF152K											
R-321	Resistor: fixed, composition, 470 ohms ±10%, 1/2 watt, insulated, small, 0.468" max lg x 0.249" max diam with two axial wire leads 1.5" lg	Series Dropping of First and Second IF Tubes V-301, 302 (Part of Terminal Board E-307)	RC20BF471K		3RC20BF471K	207	722318-58	R-321	1	1	1	1	3	2	5
R-322	Same as R-201	AVC Delay Voltage	RC20BF224K		3RC20BF224K											
R-323	Resistor: fixed, composition, 10,000 ohms ±10%, 1/2 watt, insulated, small, 0.468" max lg x 0.249" max diam with two axial wire leads 1.5" lg	AVC Delay Voltage	RC20BF103K		3RC20BF103K	722	722318-74	R-323	1	1	1	1	3	2	5
R-324	Resistor: fixed, composition, 22,000 ohms ±10%, 1/2 watt, insulated, small, 0.468" max lg x 0.249" max diam with two axial wire leads 1-1/2" lg	AVC Delay of Second Detector Tube V-305 (Part of Terminal Board E-307)	RC20BF223K		3RC20BF223K	722	722318-78	R-324,423	2	1	1	1	6	2	10
R-325	Resistor: variable, carbon, 1500 ohms ±10%, 2 watt, three terminals, body 1-1/8" diam x 9/16" wide, shaft 0.250" diam x 9/16" lg	Cathode Bias Control of 2nd IF Tube V-302	-633232-10		3Z7315-8	722 Type J	430116-9	R-325	1	1	1	1	3	2	5

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TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS										SPARE PARTS					
										EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS, JAN, OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
R-401	Same as R-302	Detector Load of Second Detector AVC Tube V-305	RC20BF104K		3RC20BF104K										
R-402	Same as R-302	Detector Load of Second Detector AVC Tube V-305	RC20BF104K		3RC20BF104K										
R-403	Same as R-201	Filter of Voltmeter Rectifier Noise Limiter Tube V-401	RC20BF224K		3RC20BF224K										
R-404	Same as R-317	Filter of Voltmeter Rectifier Noise	RC20BF474K		3RC20BF474K										
R-405	Same as R-204	Part of Bleeder Circuit for V-402	RC20BF152K		3RC20BF152K										
R-406	Resistor: fixed, composition, 1.0 meg ±10%, 1/2 watt, insulated, small, 0.468" max lg x 0.249" max diam with two axial wire leads 1.5" lg	V-402 Grid Circuit Filter	RC20BF105K		3RC20BF105K	722	722318-98	R-406,407	2	1	1	1	6	2	10
R-407	Same as R-406	Resistor V-402 1st AF Grid	RC20BF105K		3RC20BF105K										
R-408	Same as R-304	V-402 A-F Cathode Bias	RC20BF222K		3RC20BF222K										
R-409	Same as R-201	Silencer Coupling	RC20BF224K		3RC20BF224K										
R-410	Not Used														
R-411	Resistor: fixed, composition, 15,000 ohms ±10%, 5 watt, vitreous enamel covered fired on ceramic coil, spiral grooved 2" lg x 5/8" diam, with two radial wire leads 1-3/4" lg	IF Plate Dropping	-634718-10		3Z6615-154	738 Type 5X	891832-19	R-411	1	1	1	1	3	2	5
R-412	Resistor: fixed, composition, 4700 ohms ±5%, 5 watt, vitreous enamel covered, fired on ceramic coil and grooved 2" lg x 5/8" diam, with two radial wire leads 1-3/4" lg	Bleeder	-633033-5		3Z6470-33	738 Type 738	891832-6	R-412,415,422	3	1	2	1	9	2	15
R-413	Same as R-302	1st A-F Plate Dropping and Noise Filter	RC20BF104K		3RC20BF104K										
R-414	Resistor: fixed, composition, 82,000 ohms ±10%, 1/2 watt, insulated, small, 0.468" max lg x 0.249" max diam, with two axial wire leads 1.5" lg	1st A-F Plate Dropping and Noise Filter	RC20BF823K		3RC20BF823K	722	722318-85	R-414	1	1	1	1	3	2	5

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TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS											SPARE PARTS					
											EQUIP.		TENDER		STOCK	
	SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS,JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
	R-415	Same as R-412	Plate and Screen Supply Voltage Drop	-633033-5		3Z6470-33										
	R-416	Same as R-317	Grid of AF Output Tube V-403 (Part of Terminal Board E-411)	RC20BF474K		3RC20BF474K										
	R-417	Resistor: fixed, composition, 560 ohms ±10%, 1 watt, insulated, small, 0.750" max lg x 0.280" max diam, with two axial wire leads 1.5" lg	Develops V-403 Cathode Bias	RC30BF561K		3RC30BF561K	722	722333-59	R-417	1	1	1	1	3	2	5
	R-418	Resistor: fixed, composition, 12,000 ohms ±10%, 1/2 watt, insulated, small, 0.468" max lg x 0.249" max diam, with two axial wire leads 1.5" lg	Part of Bleeder Circuit for V-402	RC20BF123K		3RC20BF123K	722	722318-75	R-418	1	1	1	1	3	2	5
	R-419	Resistor: fixed, composition, 27,000 ohms ±10%, 1/2 watt, insulated, small, 0.468" max lg x 0.249" max diam, with two axial wire leads 1.5" lg	Part of Bleeder Circuit for V-402	RC20BF273K		3RC20BF273K	722	722318-79	R-419	1	1	1	1	3	2	5
	R-420	Same as R-301	Part of Bleeder Circuit for V-403	RC20BF563K		3RC20BF563K										
	R-421	Not Used														
	R-422	Same as R-412	Bleeder	-633033-5		3Z6470-33										
	R-423	Same as R-324	Decoupling	RC20BF223K		3RC20BF223K										
	R-424 to R-426	Not Used														
	R-427	Resistor: fixed, wire wound, insulated 4.05 ohms ±2%, 1/4 watt, 3/8" lg, 11/64" diam, two axial wire leads 1-1/2" lg, temp coef 0.002%/°C	Shunt for M-401	-634714-2		3Z5994-37	1371 Type WRI-1/4	894379-3	R-427	1	1	1	1	3	2	5
	R-428 to R-431	Not Used														
	R-432	Resistor: variable, composition, 500,000 ohms ±10%, 2 watt, 1-1/8" diam x 9/16" thk, shaft 0.250" diam x 1-1/4" lg	Audio Volume Control	-633233-10		3Z7498-50.49	722 Type J	430116-6	R-432	1	1	1	1	3	2	5
	R-433	Resistor: fixed, composition, 470 ohms ±5%, 1/2 watt, insulated, small, 0.468" max lg, 0.249" max diam, two axial wire leads 1-1/2" lg	Shunt for M-401	RC20BF471J		3RC20BF471J	722	722318-151	R-433	1	1	1	1	3	2	5

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TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS											SPARE PARTS					
											EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS, JAN, OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
R-434	Resistor: fixed, wire wound, insulated 200 ohms ±1%, 1/4 watt, 3/8" lg x 11/64" diam, two axial wire leads 1-1/2" lg, temp coef 0.002%/°C	M-401 Range Adjusting	-634715-1		3Z60020-239	1371 WRI-1/4	894379-7	R-434	1	1	1	1	3	2	5
R-435 & R-436	Not Used														
R-437	Resistor: variable, composition, 25,000 ohms ±10%, 2 watt, 1-1/8" diam x 9/16" thk, shaft 0.250" diam x 1-1/4" lg	Silencer Level Control	-633234-10		2Z7270.70	722 Type J	430116-8	R-437	1	1	1	1	3	2	5
R-438	Resistor: fixed, composition, 0.51 ohms ±5%, 1/2 watt, insulated, small, 0.468" max lg x 0.249" max diam, two axial wire leads 1-1/2" lg	350 V Meter Multinlier	RC20BF514J		3RC20BF514J	731	722318-224	R-438	1	1	1	1	3	2	5
R-439	Resistor: fixed, composition, 15,000 ohms ±5%, 1/2 watt, insulated, small, 0.468" max lg x 0.249" max diam, two axial wire leads 1-1/2" lg	For 12 V DC Meter Multiplier	RC20BF153J		3RC20BF153J	731	722318-187	R-439	1	1	1	1	3	2	5
R-440	Resistor: fixed, composition, 18,000 ohms ±5%, 1/2 watt, insulated, small, 0.468" max lg x 0.249" max diam, two axial wire leads 1-1/2" lg	12 V DC Meter Multinlier	RC20BF183J		3RC20BF183J	722	722318-189	R-440	1	1	1	1	3	2	5
R-501 to R-503	Not Used														
R-504	Resistor: fixed, composition, 10,000 ohms ±10%, 2 watt, insulated, 11/16" lg x 5/16" diam, two axial wire leads 1-1/2" lg	V-502 Plate Filter	RC40BF103K "For Replacement use Allen Bradley Only"		3RC40BF103K	722	99126-74	R-504,507,527, 528	4	1	2	1	12	2	20
R-505	Not Used														
R-506	Same as R-204	V-502 Grid Filter	RC20BF152K		3RC20BF152K										
R-507	Same as R-504	V-503 Plate Filter	RC40BF103K "For Replacement use Allen Bradley Only"		3RC40BF103K										
R-508	Resistor: fixed, composition, 47,000 ohms ±10%, 1/2 watt, insulated, small, 0.249" max diam x 0.468" max lg, two axial wire leads 1.5" lg	V-503 Grid Return	RC20BF473K		3RC20BF473K	722	722318-82	R-508	1	1	1	1	3	2	5
R-509	Same as R-304	V-503 Grid Filter	RC20BF222K		3RC20BF222K										

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TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS											SPARE PARTS					
											EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
R-510	Resistor: fixed, composition, 3300 ohms ±5%, 2 watt, insulated, small, 11/16" lg x 5/16" diam, two axial wire leads 1-1/2" lg	V-504 Plate Filter	RC40BF332J "For Replacement use Allen Bradley Only"		3Z6330-34	722 Type HB	99126-171	R-510	1	1	1	1	3	2	5
R-511	Resistor: fixed, composition, 150 ohms ±10%, 1/2 watt, insulated, small, 0.468" max lg x 0.249" max diam, with two axial wire leads 1.5" lg	Develops V-504 Cathode Bias	RC20BF151K		3RC20BF151K	722	722318-52	R-511	1	1	1	1	3	2	5
R-512	Same as R-317	V-504 Grid Return	RC20BF474K		3RC20BF474K										
R-513	Resistor: fixed, composition, 47,000 ohms ±5%, 1 watt, insulated, small, 0.750" max lg x 0.280" max diam, two axial wire leads 1-1/2" lg	V-504 Screen Dropping	RC30BF473J		3RC30BF473J	722	722333-199	R-513	1	1	1	1	3	2	5
R-514 to R-520	Not Used														
R-521	Resistor: fixed, composition, 10,000 ohms ±10%, 2 watt, insulated, small, 1.41" max lg x 0.405" max diam, with two axial wire leads 1.5" lg	Plate Dropping of Second Tripler Tube V-502	RC40BE103K		3RC40BE103K	321	722352-74	R-521,522	2	1	2	1	6	2	10
R-522	Same as R-521	Plate Dropping of Second Tripler Tube V-502 (Part of Terminal Board E-512)	RC40BE103K		3RC40BE103K										
R-523	Resistor: fixed, composition, 6800 ohms ±5%, 2 watt, insulated, 11/16" lg x 5/16" diam, two axial wire leads 1-1/2" lg	Plate Dropping of First Tripler Tube V-503 (Part of Terminal Board E-511)	RC40BF682J		3Z6568-33	722	99126-179	R-523,526	2	1	1	1	6	2	10
R-524	Resistor: variable, composition, 500 ohms ±10%, 2 watt, three term, body 1-1/8" max diam x 9/16" d, shaft 0.250" diam x 9/16" lg	Heater Voltage Balance	-635150-10		3Z6050-195	722 Type J	430116-10	R-524	1	1	1	1	3	2	5
R-525	Not Used														
R-526	Same as R-523	V-503 Plate Dropping	RC40BF682J		3Z6568-33										
R-527	Same as R-504	V-502 Plate Filter	RC40BF103K "For Replacement use Allen Bradley Only"		3RC40BF103K										

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS											SPARE PARTS					
											EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO	QUAN.	BOX NO	QUAN.	BOX NO	QUAN.
R-528	Same as R-504	V-503 Plate Filter	RC40BF103K "For Replacement use Allen Bradley Only"		3RC40BF103K										
R-529	Resistor: fixed, composition, 47 ohms ±5%, 2 watt, insulated, 11/16" lg x 5/16" diam, two axial wire leads 1-1/2" lg	Filament Balance	RC40BF470J		3RC40BF470J	722 Type HR	99126-127	R-529,532	2	1	1	1	6	2	10
R-530	Tube: ballast, glass, 4.08 to 9.08 v, 290 to 310 ma, T-9 bulb 3-5/16" max lg overall including 9/16" contact pins x 1-5/16" max diam, octal base	Regulator for V-502,503			3Z6925-9	35 Type 3V4	8856255-1	R-530	1	1	1	1	3	2	5
R-531	Same as R-207	V-502 Grid Return	RC20BF333K		3RC20BF333K										
R-534	Same as R-529	Filament Balance	RC40BF470J		3RC40BF470J										
R-601	Resistor: fixed, discohm, 3000 ohms ±5%, 1-3/8" OD, 3/8" thk, 3/16" diam hole with 13/32" diam csk 1/8" d in center, two term lugs	Selector Motor Field Load (CW Rotation)	-635325-5		3Z6300-191	752	895024-1	R-601	1	1	1	1	3	2	5
R-602	Not Used														
R-603	Resistor: fixed, composition, 10,000 ohms ±5%, 5 watt, vitreous enamel covered, 2" lg x 5/8" diam, two radial wire leads 1-3/4" lg	Voltage Regulator	-633034-5		3Z6610-275	738 Type 5X	891832-5	R-603	1	1	1	1	3	2	5
R-801	Resistor: fixed, wire wound, 335 ohms ±5%, 10 watt, 4-3/4" lg overall x 1-3/16" wd x 5/8" h, with two radial leads 7/16" lg, two axial mtg term with two 0.190" diam holes on 4-1/4" centers	HV Dropping	-635323-5		3Z6033E5	281	894368-2	R-801	1	1	1	1	3	2	5
R-802	Resistor: fixed, composition, 1200 ohms ±10%, 1 watt, insulated, large, 1.28" max lg x 0.310" max diam with two axial wire leads 1.5" lg	For Dynamotor Filter	RC31BE122K		3RC31BE122K	722	722337-63	R-802	1	1	1	1	3	2	5
R-803	Not Used														
R-804	Resistor: fixed, wire wound, 400 ohms ±5% 4 watt, vitreous enamel covered, 2-1/2" lg overall x 1-3/16" wd x 5/8" thk with two radial term 7/16" lg, two axial mtg lugs with 0.196" diam mtg holes on 2" centers	For Voltage Regulator	-635314-5		3Z6040-84	281	875852-2	R-804,807	2	1	2	1	9	2	15
R-805	Resistor: fixed, composition, 200 ohms ±5%, 5 watt, vitreous enamel covered 2" lg x 5/8" diam, two radial wire leads 1-3/4" lg	V-502, V-503 Fixed Bias	-635341-5		3Z6040-245	738 Type 5X	891834-2	R-805	1	1	1	1	3	2	5
R-806	Not Used														
R-807	Same as R-804	Selector Motor Voltage Regulating	-635314-5		3Z6040-84										

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TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS											SPARE PARTS					
											EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS, JAN, OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
R-808	Resistor: fixed, wire wound, 190 ohms ±5%, 4 watt, vitreous enamel covered 2-1/2" lg overall x 1-3/16" max wd x 5/8" thk, including two radial term and two axial mtg lugs, two 0.196" diam mtg holes on 2" centers	Voltage Regulator	-635320-5		3Z6019-5	281 BR-1-1/4 752 1-1/4 Strip Bulletin #23	875852-13	R-808	1	1	1	1	3	2	5
R-809	Resistor: fixed, wire wound, 2500 ohms ±5%, 4 watts, vitreous enamel covered 2-1/2" lg o/a x 1-3/16" wd max x 5/8" thk, including two radial terminals and two axial mtg lugs, two 0.196" diam mtg holes on 2" centers	Selector Motor Shunt	-635318-5		3Z6250-127	281	875852-9	R-809	1	1	1	1	3	1	5
S-401	Switch: rotary, single pole, single throw 1 amp, 250 v, 3 amps, 125 v, 1-9/32" wd x 1-27/32" lg x 3/4" thk, shaft 0.250" diam x 1-5/16" lg, "ON" position is at extreme CW position	Silencer	-24568		3Z9692-1561	47 Type 1516	888158-1	S-401	1	1	1	2	1	2	1
S-402	Switch: rotary, two ceramic wafers, 12 positions, spring silver alloy contacts, solid silver rotor blades, shaft 1-1/4" lg x 0.250" diam bushing, 3/8"-32 thds	Voltmeter Selector			3Z9825-82.28	451	433522-1	S-402A, 402B	2	1	1	2	1	2	2
S-402A	Wafer (Part of S-402)														
S-402B	Wafer (Part of S-402)														
S-501	Not Used														
S-502	Switch assem: crystal, consisting of three plate assem, gear assem, gear, two switch drive shafts, two switch drive gears, idler gear, socket assem, two wafer assem, four plate spacers	Crystal Selector			3Z9903A-35.5	1	722600-501	S-502	1	1	1	2	1	2	1
S-502A	Wafer assem: ceramic, crystal switch 1-15/16" lg x 1-5/8" wd x 0.429" h, rotor blades, coin silver, contacts spring silver	Part of S-502			3Z9903E-24	695	889279-501	S-502A, 502B	2	1	1	2	1	2	2
S-502B	Same as S-502A	Part of S-502			3Z9903E-24										
S-601	Switch assem: homing selector, consisting of two plate assem, two idler gears, switch, wafer, shaft, switch drive gear	Channel Selector			3Z9903A-35.4	1	717815-502	S-601	1	1	1	2	1	2	1
S-601A	Switch: rotor, 12 contacts, rotor blades, coin silver, contacts spring silver, body of laminated phenolic 1-27/32" diam, rotor shaft hole 0.250" diam x 0.187" flat	Part of S-601			3Z9825-82.29	451	430759-1	S-601A	1	1	1	2	1	2	1

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TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS											SPARE PARTS					
											EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS, JAN. OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
S-601B	Switch, rotary, selector, 12 positions, laminated phenolic rotor blades coin silver, contacts spring silver, 1-1/2" diam x 1.562" between mtg holes x 1-3/32" wd, shaft 0.249" diam x 17/32" lg	Part of S-601			3Z9825-82.27	451	433904-1	S-601B	1	1	1	2	1	2	1
S-602	Not Used														
S-603	Switch assem: limiter, consisting of two plate assem, shaft assem, gear assem, switch arm assem, disc assem, arm assem, clutch disc, clutch drive pinion, switch arm clamp, gear, collar three springs, switch, clutch, gear and three studs	Limit Switch Assembly			3Z9903A-35.6	1	719690-501	S-603	1	1	1	2	1	2	1
S-603A	Switch: limit, single button, two lug term, 1-1/4" lg x 19/32" wd x 1/2" h overall, three 0.093" diam mtg holes on 0.260" x 0.156" centers	Switch (Part of S-603)	-24486		3Z9824-29.14	1	892799-3	S-603A	1	1	1	2	1	2	1
S-801	Not Used														
S-802	Switch: four section, three position, sect one 25 v dc, 0.2 amp, sect two 220 v ac, 1 amp, sect three 13 v dc, 13 amp, continuous 75 amp intermittent sect four 400 v dc, 0.2 amp, shaft 0.249" diam x 3/8" lg, 2-1/4" lg x 2-13/16" wd x 2-3/16" thk	Power Supply Selector			3Z9825-82.34	47	441694-1	S-802	1	1	1	2	1	2	1
V-201	Tube: electron, midget remote cutoff, pentode, miniature button 7-pin base	Receiver RF Amplifier	9003		2J9003	516		V-201	1	1	2	1	3		
V-202	Tube: electron, sharp cutoff, pentode, miniature button 7-pin base	1st Detector	6AK5		2J6AK5	669		V-202	1	1	2	1	3		
V-203	Tube: electron, HF twin triode, miniature button 7-pin base	Receiver Tripler	6J6		2J6J6	516		V-203	1	1	2	1	3		
V-301	Tube: electron, RF pentode, semi-remote cutoff, small wafer octal 8-pin phenolic base	1st IF	12SG7		2J12SG7	516		V-301,302,303, 304	4	1	8	1	12		
V-302	Same as V-301	2nd IF	12SG7		2J12SG7										

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TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS											SPARE PARTS					
											EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS, JAN. OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
V-303	Same as V-301	3rd IF	12SG7		2J12SG7										
V-304	Same as V-301	4th IF	12SG7		2J12SG7										
V-305	Tube: electron, twin diode, small wafer octal 7-pin phenolic base	Second Detector AVC	12H6		2J12H6	516		V-305,401	2	1	4	1	6		
V-401	Same as V-305	Voltmeter Rectifier Noise Peak Limiter	12H6		2J12H6										
V-402	Tube: electron, twin triode high mu amplifier, intermediate shell octal 8-pin phenolic base	1st AF and Squelch	12SL7GT		2J12SL7GT	516		V-402	1	1	2	1	3		
V-403	Tube: electron, beam power amplifier, small wafer octal 7-pin phenolic base	Tube (Receiver AF Output)	12A6		2J12A6	516		V-403	1	1	2	1	3		
V-501	Not Used														
V-502	Tube: electron, HF power triode, miniature button 7-pin base	2nd Tripler	6C4		2J6C4	516		V-502,503	2	1	4	1	6		
V-503	Same as V-502	1st Tripler	6C4		2J6C4										
V-504	Tube: electron, video power amplifier pentode, small wafer octal 8-pin base	Oscillator Doubler	6AG7		2J6AG7	516		V-504	1	1	2	1	3		
W-201	Not Used														
W-202	Cable assem: consisting of cable type RG 58/U, w/jack type UG281/U on one end, 10-3/4" lg overall	R-F Input Transmission Line	CG-434/U (1'4-3/4")		1F425-58.180	218	439521-503	W-202	1	1	1	2	1	2	2
W-202A	Cable: RF, coaxial, flexible, impedance 53.5 ±2.5 ohms, single AWG #20 solid copper axial conductor, solid type "A" dielectric 0.116" diam single tinned copper wire braid 0.150" diam, with black synthetic resin jacket 0.195" diam x 48" lg	Bulk Cable (Replacement for Cable of W-202)	RG 58/U		1F425-58	1	894310-188	W-202	1	1	1	2	1	2	2
W-401	Cord: headset extension, with jack and plug approx 65-1/8" lg, signal corps type PL 55 for plug and JK 26 for jack	For Headset Extension	-49534		3E4035-83	669	888765-1	W-401	1	1	1	2	2	2	4

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TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-49283)

PARTS										SPARE PARTS					
										EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS, JAN, OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
W-801	Cable assem: battery , consisting of cable two conductor, #3 AWG one white, one black, 19/7/.0201" strands, aluminum 2/64 vinylite VE 5901, ●.008" aluminum shielding braid, hipot: conductor to shield 1500 v, cable 60" lg, one aluminum connector, two aluminum clamping rings, one waterproof clamp assem, and two spring clips 2-5/8" lg, 1" jaw spread with neoprene insulators, used over clips, one red and one black	For Battery to Dynamotor	-62223		3E4400-18	1	722658-501	W-801	1	1	1	2	1	2	2
W-802	Not Used														
W-803	Cable assem: power, 5 leads, outer jacket of vinylite VE 5904, 10-1/2" lg x 1-19/32" diam overall, consisting of one cable, two connectors, two clamps	Power Adapter Cable	-62307		3E4400-23	1	728123-501	W-803	1	1	1	2	1	1	2
W-901	Cable assem: consisting of nine conductor, cable 96" lg, 3 of AWG #12 white, black orange, 6 of AWG #20 green, red, blue, brown, slate, yellow, copper shielding braid and vinylite cover, one AN3106-22-16S-101W, nine contact connector ea end, two clamp assem and two soldering ferrules	For Power to Receiver	-62225		3E4400-22	1	722625-502	W-901	1	1	1	2	1	2	2
X-201	Socket: tube, miniature 7-pin type, ceramic, with metallic center shield, seven contacts, 1-1/8" x 0.900" x 1-9/32"	Socket for V-201	-49956		2Z8677.75	755 Type 102M	883996-1	X-201,202,203, 502,503	5	1	3	2	3	2	5
X-202	Same as X-201	Socket for V-202	-49956		2Z8677.75										
X-203	Same as X-201	Socket for V-203	-49956		2Z8677.75										
X-301	Socket: steatite ceramic, one #4 retaining ring, eight contacts phosphor bronze silver-plated, 1-1/4" diam x 51/64" lg	Socket for V-301	-49373		2Z8678.34	30 SS-8M	856956-6	X-301,302,303, 304,305,401, 402,403,504, 508	10	1	5	2	5	2	9
X-302	Same as X-301	Socket for V-302	-49373		2Z8678.34										
X-303	Same as X-301	Socket for V-303	-49373		2Z8678.34										

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TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS										SPARE PARTS					
										EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
X-304	Same as X-301	Socket for V-304	-49373		2Z8678.34										
X-305	Same as X-301	Socket for V-305	-49373		2Z8678.34										
X-401	Same as X-301	Socket for V-401	-49373		2Z8678.34										
X-402	Same as X-301	Socket for V-402	-49373		2Z8678.34										
X-403	Same as X-301	Socket for V-403	-49373		2Z8678.34										
X-501	Not Used														
X-502	Same as X-201	Socket for V-502	-49956		2Z8677.75										
X-503	Same as X-201	Socket for V-503	-49956		2Z8677.75										
X-504	Same as X-301	Socket for V-504	-49373		2Z8678.34										
X-505	Not Used														
X-506	Socket: female contact, type MFE, phenolic body, 24 contacts, beryllium copper silver-plated, numbered 1 to 10, lettered A,B,W,X,Y,Z, five mtg holes with brass inserts 0.144" diam holes, 3-9/16" lg x 2-1/2" wd x 0.406" thk, excluding contacts	Crystal Oven Receptacle	-49623		2Z8761-47	218	433174-1	X-506	1	1	1	2	1	2	1
X-507	Not Used														
X-508	Same as X-301	Socket for R-530	-49373		2Z8678.34										
X-601	Lampholder: miniature bayonet base, brass, 3/8" ID of body, two term insulated from mtg bracket, 0.187" diam mtg hole 27/32" from center of body	Socket Assembly for I-601			2Z5883-320	382	893903-1	X-601	1	1	1	2	1	2	1
Z-200	RF assem: consisting of one condenser assem, one receptacle, 33 capacitors, three sockets, two term assem, six shields, one coil assem, plus one plug button, misc mtg hardware, approx overall dimensions 10-1/2" lg x 4-1/2" h x 2-1/16" wd	R-F Chassis	-46269		2C8138	1	618525-501	Z-200	1	1	1	1	1	1	2
Z-301	Transformer: IF assem, consisting of one coil 5-3/4 turns AWG #18 copper wire, 16 t/in, one coil 4-3/4 turns 0.040" diam copper wire, 16 t/in, adjustable iron core assem each end, and two capacitors C-301 and C-302, enclosed in shield can 3.389" lg x 1.375" sq	1st I-F Transformer	-47931		2Z9643.236	1	618106-501	Z-301	1	1	1	1	2	1	3

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TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS											SPARE PARTS					
											EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
Z-302	Transformer: IF assem, consisting of two coils, each 4-3/4 turns AWG #18 copper wire, adjustable iron core assem each end, enclosed in shield can 3.389" lg x 1.375" sq	2nd I-F	-47932		2Z9643.238	1	618106-502	Z-302	1	1	1	1	2	1	3
Z-303	Transformer: IF assem, consisting of two coils, ea 4-3/4 turns AWG #18 copper wire, 16 t/in, two capacitors C-305 and C-306, adjustable iron core assem ea end, enclosed in shield can 3.389" lg x 1.375" sq	3rd I-F	-47933		2Z9643.237	1	618106-503	Z-303	1	1	1	1	2	1	3
Z-304	Transformer: IF assem, consisting of two coils, ea 4-3/4 turns AWG #18 copper wire, 16 t/in, two capacitors C-307 and C-308, adjustable iron core assem ea end, enclosed in shield can 3.389" lg x 1.375" sq	4th I-F	-47934		2Z9643.237	1	618106-504	Z-304	1	1	1	1	2	1	3
Z-305	Transformer: IF assem, consisting of one coil 5-1/4 turns AWG #18 copper wire, 16 t/in, one coil 4-1/4 turns AWG #18 copper wire, 16 t/in, two capacitors C-309 and C-310, adjustable iron core assem ea end, enclosed in shield can 3.389" lg x 1.375" sq	2nd Detector Input	-47935		2Z9643.239	1	618106-505	Z-305	1	1	1	1	2	1	3
Z-401	Transformer: output filter assem consisting of three coils, ea with 5100 mmf capacitor connected in parallel, coil one; 3400 turns AWG #39 HF wire, 428 ohms d-c resistance, coil two; windings 1/2/3 560 turns AWG #35E wire, 36 ohms d-c resistance, 258 turns AWG #37 E wire, 29 ohms d-c resistance, 2180 turns AWG #39 E wire, 448 ohms d-c resistance, coil three; 5500 turns AWG #41 HF wire, 1102 ohms d-c resistance, hipot: coils to cores 1500 v, sealed in can 3-29/32" h x 2-11/16" lg x 1-3/4" wd, including mtg flange with two 0.199" diam holes on 2-5/16" mtg/c term extend 31/04"	A-F Output Filter Assembly	-301848		2Z1892-28	1	901816-501	Z-401	1	1	1	1	2	1	3
Z-402	Filter: phone jack assem, consisting of brass box 1-7/8" lg, 1.210" wd, 1.400" h, three covers, jack, two RF choke coils, three capacitors 1800 mmf ea	Headset Connector Assembly	-53477		3Z1893-29.3	1	722615-501	Z-402	1	1	1	1	1	1	2
Z-500A	Not Used														

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TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS										SPARE PARTS					
										EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
Z-500B	Multiplier assem: consisting of one variable condenser, two transformer assem, one cover assem, four sockets, four term bd assem, six term, two insulators, one term assem, one coil assem, 17 capacitors, one tube clamp, one chassis assem, one resistor, and misc hardware, chassis 0.040" thk, stock, 10.107" lg inside x 4.046" wd inside x 2.562" d inside	Multiplier Assembly	-35110		2C387	1	618916-504	Z-500B	1			1	1	1	2
Z-501	Transformer assem: consisting of one coil 6-7/8 turns #11 copper wire, 6 t/in, one capacitor C-516, adjustable magnetite core assem bottom end, enclosed in shield can 2.999" h x 1.375" sq	1st Tripler Plate Reactance	-47938		3C1084H.46	1	618106-508	Z-501	1	1	1	1	2	1	3
Z-601 & Z-602	Not Used														
Z-603	Connector assem: bypass capacitor, 2-3/16" lg x 1-1/2" sq overall, consisting of connector, housing, #12-28 nut, capacitor assem, lockwasher, bushing, four 0.156" mtg holes on 1.156" mtg/c	A-F Cable Receptacle	-483312A		2Z7113.9	1	442840-2	Z-603	1	1	1	1	1	1	2
Z-604	Connector assem: consisting of type AN 3102 connector, nine male pin type contacts, aluminum housing, six high "K" type capacitors 1800 mmf -20% +50% 350 vdcw, two bus wires, one 0.0640" diam x 6" lg, other 0.102" diam x 2" lg, and hardware, 2-3/16" lg x 1-5/8" sq overall, four 0.156" diam holes on 1.250" x 1.250" mtg/c	Power Input Cable Receptacle	-483287A		2Z3029-10	1	443889-2	Z-604	1	1	1	1	1	1	2
Z-604A	Cap assem: consisting of one amphenol cap, and 3" #10 nickel silver bead chain, cap 1-3/8" diam x 7/16" wd, similar to amphenol cap and chain 9760-20 tapped w/1-1/4"-18 thds, including one neoprene washer 3/32" thk	Cap for Z-604			2Z1607-61	701	433921-1	Z-604A	1					1	1

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR NAVY MODEL
RDR RECEIVER EQUIPMENT (CRV-46283)

PARTS										SPARE PARTS					
										EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS, JAN, OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
Z-801	Suppressor assem: consisting of coil, 8 turns AWG #10 tinned copper wire, wound over resistor, fixed, composition 27 ohms, 1 watt, insulated, assem 2.36" lg x 1/2" OD; item deleted by NFC #2, RDR	Battery Input Suppressor	-472331		3Z1891-11.8	1	888570-501	Z-801	1			1	1	1	1
Z-802	Not Used														
Z-803	Not Used														
Z-804	Suppressor, electrical noise: capacitor and coil type; approx 6-7/16" lg x 2-3/8" wd x 2-15/16" h o/a; c/o three circuits, two circuits rated 0.5 amp, 425 vdc, one circuit rated 23 amps, 40 vdc; rectangular metal case; integral mtg bkt w/two #8-32 holes on 4-1/2" mtg/c; four solder lug and three screw term; tinned copper gnd strip on one side; see NFC #2, RDR for data	Dynamotor Noise Filter	-53533		3Z1891-51	794 1299 Dwg. #8780	448856-3	Z-804	1		1				
Z-1000	Antenna assem: consisting of conductor assem, two brackets fitted over tube assem, connector assem with screw ring, two rods, one 9.188" lg other 9.000" lg, ea 1/2" diam with junction and insulator assem, assem "T" shaped, overall dimen 19-7/8" lg x 19.688" wd	Dipole Antenna	-66147		2A292-10	1	618539-501	Z-1000	1			1	1	1	2
	Spare parts box	Spare Parts Box					618982-512				1				
	Spare parts box	Spare Parts Box					618982-507						1		
	Spare parts box	Spare Parts Box					618947-521						1		

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TABLE 8-3. CROSS REFERENCE PARTS LIST
RDR RECEIVER EQUIPMENT (CRV-45283)

JAN (OR AWS) DESIGNATION	KEY SYMBOL	NAVY TYPE	KEY SYMBOL
6AG7	V-504	RC20BF183J	R-440
6AK5	V-202	RC20BF222K	R-304
6C4	V-502	RC20BF223K	R-324
6J6	V-203	RC20BF224K	R-201
12A6	V-403	RC20BF271K	R-210
12H6	V-305	RC20BF273K	R-419
12SG7	V-301	RC20BF332K	R-202
12SL7GT	V-402	RC20BF333K	R-207
9003	V-201	RC20BF334K	R-208
CC21CH100F	C-519	RC20BF471J	R-433
CC21UJ470K	C-327	RC20BF471K	R-321
CC30TJ910K	C-516	RC20BF473K	R-508
CM20C101J	C-537	RC20BF474K	R-317
CM30A152K	C-804	RC20BF514J	R-438
CM30B102K	C-405	RC20BF563K	R-301
CM30B152K	C-413	RC20BF823K	R-414
CM35A822K	C-805	RC30BF103K	R-209
CM40B103K	C-404	RC30BF473J	R-513
RC20BF102K	R-211	RC30BF561K	R-417
RC20BF103K	R-323	RC30BF563K	R-203
RC20BF104K	R-302	RC31BE122K	R-802
RC20BF105K	R-406	RC40BE103K	R-521
RC20BF123K	R-418	RC40BF103K	R-504
RC20BF151K	R-511	RC40BF332J	R-510
RC20BF152K	R-204	RC40BF470J	R-529
RC20BF153J	R-439	RC40BF682J	R-523

JAN (OR AWS) DESIGNATION	KEY SYMBOL
SOS3	E-201
SOS6	E-502
NAVY TYPE	**KEY SYMBOL**
-10495	O-209
-22504	M-401
-24486	S-603A
-24568	S-401
-28032-1	F-802
-28069-30	F-803
-29726	K-601
-29727	K-603
-35116	Z-500B
-40148	E-514
-46269	Z-200
-47810	L-301
-47871	L-802
-47931	Z-301
-47932	Z-302
-47933	Z-303
-47934	Z-304
-47935	Z-305
-47937	L-504
-47938	Z-501
-48595A	C-407
-49373	X-301
-49507	HS-401
-49534	W-401
-49623	X-506

NAVY TYPE	KEY SYMBOL	ITEM NUMBER	KEY SYMBOL
-49956	X-201		
-53277	Z-402		
-61600	E-1005		
-61601	E-1006		
-61602	E-504		
-61603	E-506		
62223	W-801		
-62225	W-901		
-62307	W-803		
-66147	Z-1000		
-211452-A	B-602		
-211483	D-801		
-301848	Z-401		
-472329	L-217		
-472330	L-218		
-472331	Z-801		
-481027-20	C-532		
-481176	C-408		
-481623	C-506		
-481852	C-801		
-482625-20	C-329		
-482808-20	C-402		
-482811	C-205		
-482812	C-201		
-482813-10	C-204		
-482814-E10	C-248		
-482815-20	C-311		

TABLE 8-3. CROSS REFERENCE PARTS LIST

RDR RECEIVER EQUIPMENT (CRV-46283)

NAVY TYPE	KEY SYMBOL
-482816-20	C-208
-482817	C-203
-482867-20	C-328
-482869-20	C-207
-482976	C-418
-483287-A	Z-604
-483312-A	Z-603
-483889	C-202
-483890-1	C-238
-483891	C-505
-483892-E3-1/2	C-514
-483893-E3-1/2	C-517
-483894-E3-1/2	C-520
-483936-2-1/2	C-301
-633032-5	R-603
-633033-5	R-412
-633232-10	R-325
-633233-10	R-432
-633234-10	R-437
-634714-2	R-427
-634715-1	R-434
-634718-10	R-411
-635150-10	R-524
-635314-5	R-804
-635318-5	R-809
-635320-5	R-808
-635321-5	R-805

NAVY TYPE	KEY SYMBOL
-635323-5	R-801
-635324-2	R-319
-635325-5	R-601
ARMY/NAVY TYPE NUMBER	**KEY SYMBOL**
AN-3106-22-16S	P-802
AN-3106-24-9S	P-801
CG-434/U (1' 4-3/4")	W-202
RG-58/U	W-202A
UG-21/U	P-1001
UG-29/U	E-1007
UG-58/U	J-1001
UG-85/U	P-201
UG-87/U	J-201
UG-281/U	J-301
SIGNAL CORPS STOCK NUMBER	**KEY SYMBOL**
1F425-58	W-202A
1F425-58.180	W-202
2A292-10	Z-1000
2A1177-14	O-1001
2A1178.8	O-1004
2A1178-24	O-1002
2A3196.1-1	H-1005
2A3196.1-2	H-1001
2A3196.1-3	H-1003
2A3196.1-4	H-1002

SIGNAL CORPS STOCK NUMBER	KEY SYMBOL
2B955	HS-401
2C387	Z-500B
2C770	A-105
2C8138	Z-200
2J0AG7	V-504
2J6AK5	V-202
2J6C4	V-502
2J6J6	V-203
2J12A6	V-403
2J12H6	V-305
2J12SG7	V-301
2J12SL7GT	V-402
2J9003	V-201
2Z580-38	H-407
2Z580-39	H-208
2Z580-40	H-209
2Z1243-11	E-309
2Z1409-74	H-203
2Z1409-89	H-210
2Z1607-61	Z-604A
2Z1612.1	A-1001
2Z1612.13	H-613
2Z1892-28	Z-401
2Z2635.176	H-401
2Z2635.176	H-405
2Z2642.113	H-502
2Z2642.118	H-301

SIGNAL CORPS STOCK NUMBER	KEY SYMBOL	ITEM NUMBER	KEY SYMBOL
2Z2642.142	H-435		
2Z2935-33	O-105		
2Z2935-36	O-125		
2Z3021-146	P-1001		
2Z3029-10	Z-604		
2Z3063-6	P-801		
2Z3064-85	P-802		
2Z3064-92	P-601		
2Z3273-75	O-206		
2Z3273-76	O-508		
2Z3273-77	O-601		
2Z3273-83	O-202		
2Z3373-78	O-201		
2Z3602-18	O-209		
2Z3806.19	E-208E		
2Z4866.10	H-415		
2Z4868.351	H-103		
2Z4868.352	H-102		
2Z4868.353	H-104		
2Z4868.362	H-116		
2Z4868.513	O-208		
2Z4872-71	O-205		
2Z4872-72	O-203		
2Z4872-73	O-502		
2Z4872-74	O-501		
2Z4872-75	O-106		
2Z4872-76	O-101		
2Z4872-77	O-120		

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TABLE 8-3. CROSS REFERENCE PARTS LIST
RDR RECEIVER EQUIPMENT (CRV-46283)

SIGNAL CORPS STOCK NUMBER	KEY SYMBOL	SIGNAL CORPS STOCK NUMBER	KEY SYMBOL	SIGNAL CORPS STOCK NUMBER	KEY SYMBOL	SIGNAL CORPS STOCK NUMBER	KEY SYMBOL	ITEM NUMBER	KEY SYMBOL
2Z4872-82	O-203B	2Z7270.76	R-437	2Z8552-51	E-301A	2Z9643.236	Z-301		
2Z4872-110	O-614	2Z7390-29	E-1007	2Z8677.75	X-201	2Z9643.237	Z-303		
2Z4875-142	O-503	2Z7390-85	P-201	2Z8678.34	X-301	2Z9643.237	Z-304		
2Z4875-143	O-204	2Z7390-87	J-201	2Z8761-47	X-506	2Z9643.238	Z-302		
2Z4875-148	E-208B	2Z7390-281	J-301	2Z8877.152	O-509	2Z9643.239	Z-305		
2Z4878-123	O-203A	2Z7585-157	K-603	2Z8877.153	O-127	3C370-81	L-802		
2Z4878-124	O-611	2Z7585-188	K-601	2Z8878-126	H-201	3C370-85	L-218		
2Z4878-125	O-610	2Z7858-55	H-509	2Z8879-133	H-414	3C1084H-18	L-214		
2Z5816.25	E-203	2Z8202-67	O-504	2Z8879-167	H-211	3C1084H-19	L-202		
2Z5816.26	E-208A	2Z8203-132	O-104	2Z9041.115	E-204	3C1084H-20	L-217		
2Z5816.27	E-509A	2Z8203-161	O-207	2Z9057-32	A-101	3C1084H-22	L-502		
2Z5821-88	E-601	2Z8203-162	O-129	2Z9402.44	E-803	3C1084H-23	L-301		
2Z5821-112	E-805	2Z8273-8	H-429	2Z9402.338	E-507	3C1084H-27	L-504		
2Z5821-113	E-136	2Z8273-9	H-118	2Z9402.343	E-512	3C1084H.46	Z-501		
2Z5883-320	X-601	2Z8273-10	H-120	2Z9402.344	E-302	3D9006VE7-1	C-203		
2Z5952	I-601	2Z8273-11	H-123	2Z9402.346	E-304	3D9009V-15	C-201		
2Z5991-72	H-608	2Z8273-12	H-205	2Z9402.347	E-306	3D9010-84	C-519		
2Z6897-1	E-514	2Z8273-13	H-204	2Z9402.348	E-308	3D9010VE3-2	C-202		
2Z7091-130	H-418	2Z8273-14	H-124	2Z9404.256	E-417	3D9011A3	C-238		
2Z7091-131	H-417	2Z8273-16	H-416	2Z9404.257	E-511	3D9045V-14	C-506		
2Z7091-132	H-307	2Z8273-17	H-607	2Z9408.183	E-303	3D9047-5	C-327		
2Z7093-64	E-206	2Z8273-18	H-206	2Z9408.183	E-305	3D9047-19	C-301		
2Z7093-65	E-205	2Z8273-19	H-125	2Z9408.184	E-510	3D9050V-60	C-205		
2Z7093-66	H-207	2Z8276-38	J-1001	2Z9410.143	E-413	3D9072VE75	C-505		
2Z7093-71	H-306	2Z8304.108	E-201	2Z9410.145	E-412	3D9091-6	C-516		
2Z7098-30	E-312	2Z8320-13	E-502	2Z9418.57	E-106	3D9280-2	C-514		
2Z7098-31	E-311	2Z8402-38	A-801	2Z9428-27	E-307	3D9500-143	C-204		
2Z7113.9	Z-603	2Z8552-47	E-301	2ZK9480-6	E-132	3D9500-179	C-328		

TABLE 8-3. CROSS REFERENCE PARTS LIST

RDR RECEIVER EQUIPMENT (CRV-46283)

SIGNAL CORPS STOCK NUMBER	KEY SYMBOL	SIGNAL CORPS STOCK NUMBER	KEY SYMBOL	SIGNAL CORPS STOCK NUMBER	KEY SYMBOL	SIGNAL CORPS STOCK NUMBER	KEY SYMBOL	ITEM NUMBER	KEY SYMBOL
3D9700-15	C-208	3HK230-7	E-208F	3RC20BF152K	R-204	3Z1893-29.3	Z-402		
3D9720-2	C-517	3H304-9	O-602	3RC20BF153J	R-439	3Z1920	F-803		
3D9850-3	C-520	3H320-57	E-208D	3RC20BF183J	R-440	3Z1926	F-802		
3DA1.800-8	C-207	3H321-53	O-102	3RC20BF222K	R-304	3Z5994-37	R-427		
3DA1.800-11	C-311	3H370.2-9	D-801E	3RC20BF223K	R-324	3Z6003C3-17	R-319		
3DA2.400-12	C-248	3H525-180	B-602A	3RC20BF224K	R-201	3Z6019-5	R-808		
3DA10-358	C-402	3H525-180	B-602B	3RC20BF271K	R-210	3Z6020-245	R-805		
3DA20-74	C-329	3H550-26	D-801A	3RC20BF273K	R-419	3Z6033E5	R-801		
3DA25-30	C-408	3H550-26	D-801B	3RC20BF332K	R-202	3Z6040-84	R-804		
3DA100-612	C-532	3H550-27	D-801C	3RC20BF333K	R-207	3Z6050-195	R-524		
3DB1.52	C-407	3H550-27	D-801D	3RC20BF334K	R-208	3Z6250-127	R-809		
3DB1-105	C-801	3H683-39	H-609	3RC20BF471J	R-433	3Z6300-191	R-601		
3DB25-78	C-418	3H1290.3-2	O-126	3RC20BF471K	R-321	3Z6330-34	R-510		
3E4035-83	W-401	3H1514-27	D-801	3RC20BF473K	R-508	3Z6470-33	R-412		
3E4400-18	W-801	3H1787A/6	O-604	3RC20BF474K	R-317	3Z6568-33	R-523		
3E4400-22	W-901	3H2507-46	B-602C	3RC20BF514J	R-438	3Z6610-275	R-603		
3E4400-23	W-803	3H3100A-25	B-602	3RC20BF563K	R-301	3Z6615-154	R-411		
3F901-20	M-401	3K2010132	C-537	3RC20BF823K	R-414	3Z6925-9	R-530		
3G87-6	E-1006	3K3010221	C-405	3RC30BF103K	R-209	3Z7315-8	R-325		
3G1250-3.18	E-211	3K3015211	C-804	3RC30BF473J	R-513	3Z7498-50.49	R-432		
3G1250-4.17	E-506	3K3015221	C-413	3RC30BF561K	R-417	3Z9692-1561	S-401		
3G1405-3	E-504	3K3582211	C-805	3RC30BF563K	R-203	3Z9824-29.14	S-603A		
3G1837-8.22	E-1005	3K4010321	C-404	3RC31BE122K	R-802	3Z9825-82.27	S-601B		
3G1838-3.2	E-310	3RC20BF102K	R-211	3RC40BE103K	R-521	3Z9825-82.28	S-402A		
3G1838-50.9	E-517	3RC20BF103K	R-323	3RC40BF103K	R-504	3Z9825-82.29	S-601A		
3G1912	E-1001	3RC20BF104K	R-302	3RC40BF470J	R-529	3Z9825-82.34	S-802		
		3RC20BF105K	R-406	3Z1891-11.8	Z-801	3Z9903A-35.1	E-208		
		3RC20BF123K	R-418						
		3RC20BF151K	R-511						

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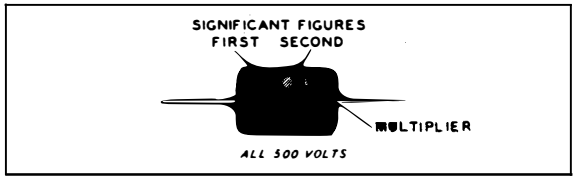
TABLE 8-3. CROSS REFERENCE PARTS LIST
RDR RECEIVER EQUIPMENT (CRV-46283)

SIGNAL CORPS STOCK NUMBER	KEY SYMBOL	NAVY TYPE	KEY SYMBOL	NAVY TYPE	KEY SYMBOL	FEDERAL STOCK NO.	KEY SYMBOL	ITEM NUMBER	KEY SYMBOL
3Z9903A-35.2	E-509								
3Z9903A-35.4	S-601								
3Z9903A-35-5	S-502								
3Z9903A-35.6	S-603								
3Z9903E-24	S-502A								
3Z12050-6.3	E-505								
3Z60020-239	R-434								
6G1398.6	H-612								
6L2459-28	H-601								
6L3504-28-5M	H-1004								
6L7937-3AL	H-1006								
6L58024-14	H-202								
6R18343-1	H-121								
6R55499	H-129								
6R57400	H-127								
6R57400-1	H-126								
6R57400-6	H-128								
6R57400-6.1	H-130								
6R57413-5	H-131								
6R57522-4	H-1008								

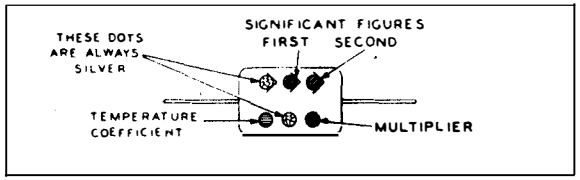
TABLE 8-4. APPLICABLE COLOR CODES AND MISCELLANEOUS DATA

CAPACITOR COLOR CODES

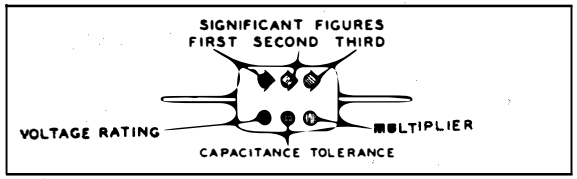
RMA 3-DOT COLOR CODE FOR MICA-DIELECTRIC CAPACITORS



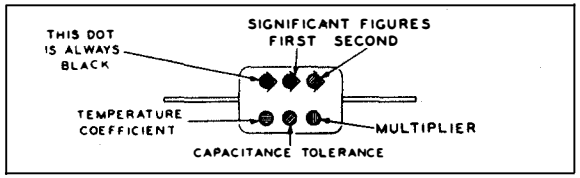
JAN 6-DOT COLOR CODE FOR PAPER-DIELECTRIC CAPACITORS



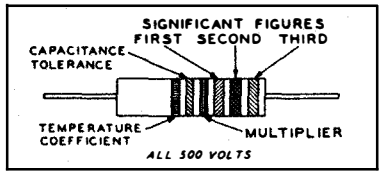
RMA 6-DOT COLOR CODE FOR MICA-DIELECTRIC CAPACITORS



JAN 6-DOT COLOR CODE FOR MICA-DIELECTRIC CAPACITORS

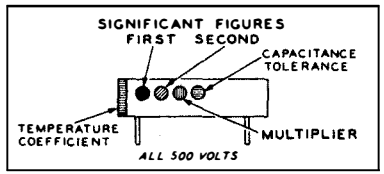


RMA COLOR CODE FOR TUBULAR CERAMIC-DIELECTRIC CAPACITORS

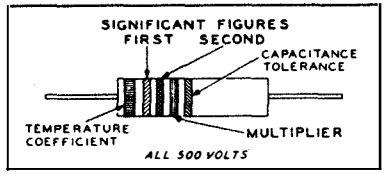


JAN COLOR CODE FOR FIXED CERAMIC-DIELECTRIC CAPACITORS

RADIAL TYPE NON-INSULATED



AXIAL TYPE INSULATED



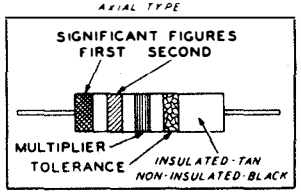
RMA: RADIO MANUFACTURERS ASSOCIATION
JAN: JOINT ARMY-NAVY

RESISTORS		CAPACITORS						
TOLERANCE	MULTIPLIER	SIGNIFICANT FIGURE	COLOR	MULTIPLIER			VOLTAGE RATING	TEMPERATURE COEFFICIENT
				RMA MICA AND CERAMIC-DIELECTRIC	JAN MICA AND PAPER-DIELECTRIC	JAN CERAMIC DIELECTRIC		
	1	0	BLACK	1	1	1		A
	10	1	BROWN	10	10	10	100	B
	100	2	RED	100	100	100	200	C
	1,000	3	ORANGE	1,000	1000	1000	300	D
	10,000	4	YELLOW	10,000			400	E
	100,000	5	GREEN	100,000			500	F
	1,000,000	6	BLUE	1,000,000			600	G
	10,000,000	7	VIOLET	10,000,000			700	
	100,000,000	8	GRAY	100,000,000		0.01	800	
	1,000,000,000	9	WHITE	1,000,000,000		0.1	900	
5	0.1		GOLD	0.1	0.1		1000	
10	0.01		SILVER	0.01	0.01		2000	
20			NO COLOR				500	

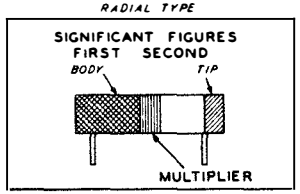
RESISTOR COLOR CODES

RMA COLOR CODE FOR FIXED COMPOSITION RESISTORS

AXIAL TYPE

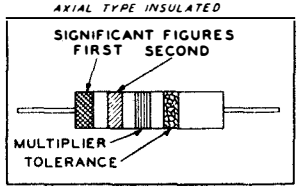


RADIAL TYPE



JAN COLOR CODE FOR FIXED COMPOSITION RESISTORS

AXIAL TYPE INSULATED



RADIAL TYPE NON-INSULATED

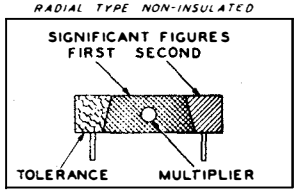


TABLE 8-5
LIST OF MANUFACTURERS
RDR RECEIVER EQUIPMENT (CRV-46283)

CODE NUMBER	MFR. PREFIX	NAME	ADDRESS
701		Bead Chain Mfg. Co.	Bridgeport, Conn.
713	CRY	C.P. Clare and Co.	Sunnyside and Keating Avenue Chicago, Ill.
714	CAW	Aerovox Wireless Corp.	742 Belleville Avenue New Bedford, Mass.
721	CMR	Micamold Radio Corp.	1087 Flushing Avenue Brooklyn, N.Y.
722	CBZ	Allen Bradley Co.	1326 S. 2nd Street Milwaukee, Wis.
727	CBN	Central Radio Lab Centralab	900 E. Keefe Avenue Milwaukee, Wis.
731	CAYT	Allen Mfg. Co.	Hartford, Conn.
738	CCC	Continental Carbon Co.	295 Madison Avenue New York, N.Y.
		Factory	Sunray, Texas
743	CAXB	Chase Shawmut Co.	Box #390 Newburyport, Mass.
752	CAO	Ward Leonard Electric Co.	6 South Street Mt Vernon, N.Y.
755	CEB	H.H. Eby Co.	4700 Stenton Avenue Philadelphia, Pa.
765	CYD	Bryant Electric Co.	Bridgeport, Conn.
768	CFA	Bussman Mfg. Co.	2538 W. University Street St Louis, Mo.
780		Dial Light Co. of America, Inc.	90 West Street New York, N.Y.
784	CLF	Littelfuse Lab.	4757 N. Ravenswood Avenue Chicago, Ill.
793	CO	Cornell Dubilier Electric Corp.	1000 Hamilton Blvd South Plainfield, N.J.
795	CPQ	Speer Resistor Corp.	Theresia Street St Marys, Pa.
830		H. A. Douglas Co.	Bronson, Mich.
834		Buffalo Forge Co.	Buffalo, N.Y.
837	CAXV	Economy Fuse and Mfg. Co.	Greenview Avenue at Diversey Parkway, Chicago, Ill.
863		Torrington Mfg. Co.	Torrington, Conn.
887	CTN	Teleradio Engineering Corp.	484 Broome Street New York, N.Y.
906		Stevens Walden, Inc.	475 Shrewsbury Street Worcester, Mass.
961	CAIS	Birtcher Corp.	Los Angeles, Calif.
1045	CGG	Galvin Mfg. Corp.	4545 W. Agusta Blvd. Chicago, Ill.
1235	CPS	Sperling Products Co.	New York, N.Y.
1358	CZA	Alliance Mfg. Co.	Alliance, Ohio
1361		Billings and Spencer	Hartford, Conn.
1364	CANS	Kings Electronics	372 Classon Avenue Brooklyn, N.Y.
1371	CAUZ	Jeffers Electronics	Dubois, Pa.

REVISED 29 MAY 1946

TABLE 8-5

LIST OF MANUFACTURERS

RDR RECEIVER EQUIPMENT (CRV-46283)

CODE NUMBER	MFR. PREFIX	NAME	ADDRESS
1	CRV	Radio Corporation of America	Camden, N.J.
28	CAS	American Lava Corp.	Cherokee Blvd and Mfrs Road Chattanooga, Tenn.
30	CPH	American Phenolic Corp.	1830 S. 54th Street Cicero, Ill.
32		American Rolling Mill Co.	Broad and Chestnut Streets Philadelphia, Pa.
37		Anchor Packing Co.	Manheim, Pa.
47	CHH	Arrow, Hart and Hegeman Electric Co.	102 Hawthorne Street Hartford, Conn.
86	CBH	Boston Gear Works, Inc.	Terminal Commerce Bldg. Philadelphia, Pa.
100		Bruno New York, Inc.	351 Fourth Avenue New York, N.Y.
113		Canfield Rubber Co.	Railroad Avenue and Gordon Street Bridgeport, Conn.
179		Doehler Die Casting Co.	Batavia, N.Y.
203	CMF	Electro Motive Corp.	Willimantic, Conn.
207	CER	Erie Resistor Corp.	644 W. 12th Street Erie, Pa.
211		Fafnir Bearing Co.	Booth Street New Britain, Conn.
218	CFT	Federal Telephone and Radio Corp.	320 Orange Street Newark, N.J.
246	CG	General Electric Co.	Schenectady, N.Y.
281	CHD	Hardwick Hindle, Inc.	40 Hermon Street Newark, N.J.
308		Hunter Pressed Steel Co.	Lansdale, Pa.
321	CIR	International Resistance Corp.	401 N. Broad Street Philadelphia, Pa.
334	CJC	Howard B. Jones Co.	2300 Wabansia Avenue Chicago, Ill.
371		Lord Mfg. Co.	Erie, Pa.
382	CMA	P.R. Mallory and Co., Inc. Yaxley Division	3029 E. Washington Street Indianapolis, Ind.
439		New Departure Div. of General Motors	Bristol, Conn.
451	COC	Oak Mfg. Co.	1200 N. Clybourne Avenue Chicago, Ill.
492		Pierce Roberts Rubber Co.	Trenton, N.J.
508		Quaker City Gear Works	Front and Berks Streets Philadelphia, Pa.
509	CRK	Radio Condenser Co.	Camden, N.J.
516	CRC	Radio Corporation of America	Harrison, N.J.
590	CSF	Sprague Specialties Co.	North Adams, Mass.
616	CSD	Struthers Dunn, Inc.	1321 Arch Street Philadelphia, Pa.
669	CW	Western Electric Co., Inc.	195 Broadway New York, N.Y.
		Factory	300 Central Avenue Kearney, N.J.
670	CAY	Westinghouse Electric and Mfg. Co	3001 Walnut Street Philadelphia, Pa.
695		Santay Corp.	351 N. Crawford Avenue Chicago, Ill.
699	CUF	Ucinite Co. (Division of United Can Fastener)	1 Nevada Street Newtonville, Mass.

* TABLE 8-1B
LIST OF MAJOR UNITS
FIELD ACCESSORIES FOR USE WITH MODEL RDR RADIO RECEIVING EQUIPMENT

QUANTITY	NAME OF MAJOR UNIT	NAVY TYPE DESIGNATION	SYMBOL GROUP
1	SET ANTENNA ACCESSORIES		1001 - 1099
1	SHIPPING CHEST	CAAQ-10525	
1	GASOLINE ENGINE GENERATOR SET	CCW-73037	1301 - 1399
1	METAL CARRYING CASE FOR GASOLINE GENERATOR SET	CBDV-10620	
1	SHIPPING CHEST	CANR-10621	

* COMPLETE TABLE 8-1 INCLUDES TABLES 8-1A AND 8-1B

TABLE 8-2

COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR
FIELD ACCESSORIES FOR USE WITH MODEL RDR RADIO RECEIVING EQUIPMENT

PARTS										SPARE PARTS					
										EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS, JAN, OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
	ANTENNA ACCESSORIES														
A-1001	Not Used														
A-1002	STOPPER: synthetic rubber; 7/16" diam x 3/4" lg o/a; molded type; water tight; tapers from 7/16" diam to 11/32" diam;	Water Tight Plug for Antenna Rod Mounting Holes			6Z8424	611 Size 1	895876-1	A-1002	1		0				
A-1003	STOPPER: synthetic rubber; 19/32" diam x 1" lg o/a; molded type; water tight; tapers from 19/32" diam to 13/32" diam;	Water Tight Plug for Antenna Rod Mounting Holes			6Z8424-1	611 Size 00	895876-3	A-1003	1		0				
A-1004 to A-1011	Not Used														
A-1012	CAP: to make antenna connector water tight; c/o one cap, one chain, aluminum; 7/8" diam, approx 3/8" lg o/a; mts by 5/8"-24 thd, 1-3/32" thk, internal neoprene washer to insure water-tight fit; cap similar to cap of Amphenol cap and chain their type #9760-10 except hole to be suitable to allow assembly of chain	Water Tight Cover for Antenna Cable Connector			2Z1612.1	1	433921-4	A-1012	1		0				
A-1013	MOUNTING, Antenna: to mount dipole antenna; c/o two "V" brackets, one circular hinged bracket for antenna post mtg. one 41" chain tightening handle; aluminum alloy, Marine Corp lusterless green enamel fin; pipe vise shape, mts by fastening chain around nearest tree, mast post, etc; mtg surface V-shaped 5" spread, chain tightened by revolving handle on base	Antenna Mounting Vise			2Z2639-86	1	722684-501	A-1013	1		0				
A-1014	CASE: antenna; Navy type -10591; for carrying antenna assembly and accessories; fiber covering over plywood frame; 33-1/4" lg x 6-1/8" wd x 7-1/8" h o/a; one large compartment, three small compartments, duck lined, rubber padding for securing various items; olive drab cotton webbing sling approx 42" lg; sling fastened at either end; two sections hinged; two suitcase bolt locks; fungus and mildew resistant	Carrying Case	-10591		2A393-9	1	308137-1	A-1014	1		0				
H-1008	WRENCH: single open end; 1/4" radial opening w/ jaws bent 90 deg for 3/8" lg; 3-15/32" lg x 1-3/32" wd x 3/8" h o/a; steel, zinc pl; straight type handle, other end handle 1/8" diam x 1/2" lg	Dipole Spanner			6R57522-4	1	880981-1	H-1008	1		0				

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR
FIELD ACCESSORIES FOR USE WITH MODEL RDR RADIO RECEIVING EQUIPMENT

PARTS										SPARE PARTS					
										EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS, JAN. OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
ANTENNA ACCESSORIES (Continued)															
W-1001	LINE, RF transmission: Army-Navy RG-8/U; coaxial; 52 ohms impedance; inner conductor 7/#21 AWG 0.0285" diam copper wire; outside sheath black synthetic resin 0.0405" diam; stabilized polyethylene dielectric 0.285" max diam; outside conductor single copper wire braided 0.340" max diam; 50' 3-1/2" lg less connectors; ea end w/ one Navy type #49268 plug connectors; w/ 2 cap ring and chain assemblies, cap 5/8-24 thd x 5/8" lg, bead chains 3-1/2" lg	Antenna Cable			3E4400-20	1	722281-308	W-1001	1		0				
W-1002	LINE, RF transmission: Army-Navy RG-8/U; coaxial; 52 ohms impedance; inner conductor 7/ #21 AWG 0.0285" diam copper wire; outside conductor single copper wire braided 0.340" max diam; stabilized polyethylene dielectric 0.285" ± .010" max diam 10 ft 3-1/2" lg less connectors; ea end with one Navy type -49268 plug connector	Antenna Cable			3E4400-21	1	722281-507	W-1002	1		0				

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TABLE 8-2

COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR
FIELD ACCESSORIES FOR USE WITH MODEL RDR RADIO RECEIVING EQUIPMENT

PARTS										SPARE PARTS					
										EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS, JAN. OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
	GASOLINE ENGINE GENERATOR SET														
A-1301	CLEANER ELEMENT, air: bakelite impregnated paper; reusable; cylindrical shape; 1-9/16" OD x 1-3/16" ID x 1-1/8" lg	For Engine			3H956	1111 73-1	8856280-7	A-1301	1	1	4	3	8	1	16
A-1302	SHOE, pole: 0.031" thk steel laminations, approx 1-1/2" lg x 15/16" wd x 1-23/32" h overall; two mtg holes #10-32 tap spaced 1" center to center	For Generator			3H5241S-1	938 9-102	8856280-33	A-1302	4			1	4	5	8
A-1303	END-BELL: driven end; aluminum casting; 5-1/4" diam x 1-5/32" d overall; two #10-32 tapped mtg holes 1/2" d equally spaced on 4-1/2" diam	For Generator			3H1900A1.1-1	938 BRA-17	8856280-34	A-1303	1			1	4	5	8
A-1304	BRACKET: brush holder; pedestal shape; aluminum casting; 5.121" max diam x 2-1/2" wd; mounts by two #8-32 holes 90 deg apart in rim	For Generator			3H437.12	938 BRA-18	8856280-36	A-1304	1			1	4	5	8
A-1305	PLATE, end: aluminum; diamond shape w/rounded corners; 3-3/16" lg x 1-3/4" wd x 1/8" thk overall; one 9/16" hole in center; two 7/32" diam mtg holes csk on 82 deg to 3/8" diam and equally spaced on 2-5/8" mtg/c	Forms Armature Thrust Plate			3H4328.15	938 EPL-2	8856280-37	A-1305	1			1	4	5	8
A-1306	BLADE, fan: steel, zinc plated; 4" diam x 1/2" thk overall; 0.359" diam shaft hole; #10-32 set screw hole in hub	For Generator Cooling			3H370.1-8	938 28-102	8856280-38	A-1306	1			1	4	5	8
A-1307	COVER: commutator end; aluminum sheet; cup shape; drawn from 0.050" thk sheet; 5.227" diam x 3-7/32" lg; three Louvers in closed end; two mtg holes 0.171" diam spaced 90 deg apart 0.187" from open end	End Cover For Generator			3H1900A1.1	938 COV-16	8856280-39	A-1307	1			1	4	5	8
A-1308	PLATE, mounting: 0.064" thk aluminum; 5-7/8" lg x 3-7/8" wd x 3/4" h overall four holes 0.169" diam on 2-7/8" x 5-5/16" mtg/c	For Generator Control Box			3H4328.8-2	938 MTG-106	8856280-44	A-1308	1			1	4	5	8
A-1309	MOUNTING, power unit: stainless steel; green enamel finish; 10" lg x 9-3/4" wd x 1-1/2" h overall; four spring-type vibration mounts on 7-1/2" x 9" mtg/c	For Engine Generator Set	-10619		3H3900.3-1	938 BAS-15	8856280-47	A-1309	1			3	1	1	2
A-1310	CASE: power unit; magnesium alloy, green finish; 17-9/16" lg x 12" wd x 14-3/4" h overall; black interior finish; flush folding type handle on top; water tight removable cover	For Engine Generator Set and Base	-10620		3H759.3-2	938 CAS-4	8856280-48	A-1310	1					2	2

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18-38462-8EXV1

TABLE 8-2

COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR
FIELD ACCESSORIES FOR USE WITH MODEL RDR RADIO RECEIVING EQUIPMENT

PARTS										SPARE PARTS					
										EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS, JAN, OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
					GASOLINE ENGINE GENERATOR SET										
A-1311	BASE, engine: aluminum casting, green finish; 7-11/32" lg x 3-13/16" wd x 1-29/32" h overall; four mtg holes 9/32" diam on 6-1/8" x 2-7/8" mtg/c	For Engine			3H175.1	1111 15-1-1	8856280-79	A-1311	1			4	4	2	8
A-1312	COVER: steel, green enamel finish; approx 3" lg x 6-3/4" wd x 9-1/4" h overall; four mtg holes 11/32" x 13/64" irregularly spaced 1/4" from inside edge; #10-24 screw on top; bracket welded each side; coupling elbow one side near bottom	For Engine Shroud			3H1380.16	1111 1A104-1	8856280-85	A-1312	1			4	4	2	8
A-1313	BRACKET: L shape; aluminum, green finish; 2-3/32" lg x 1-3/8" wd x 23/32" h overall; two 9/32" diam mtg holes on 7/8" x 1/4" mtg/c	For Carburetor Support			3H437.13	1111 22-3	8856280-101	A-1313	1			4	4	2	8
A-1314	COVER: extension to blower cover; steel, green E finish; approx 2-1/2" lg x 4-3/4" wd x 3-1/16" h overall; one knurled nut with #10-24 tap fastened to top	For Engine Shroud Extension			3H1380.17	1111 1A83-1	8856280-96	A-1314	1			4	4	2	8
C-1301	CAPACITOR, fixed: paper; 300,000 to 340,000 mmf; 500 vdcw; metal case 1.465" lg x 11/16" OD; wax impregnated; one wire lead with lug terminal located in top center, 2-11/32" lg to center of lug; incl bracket with mtg hole for #8 screw on 19/32" mtg/c	For Spark Supression			3DA340	1663 X5342	8856280-113	C-1301	1			4	2	2	4
E-1301	PLUG, spark: machine thd, 14 mm diam; special aviation type; hex size 13/16"; shielded; special terminal; built-in resistor 20,000 ohms	For Engine Ignition			3H4412-10S	972 RC-10S 1283-12	8856280-1	E-1301	1	1	4	3	8	1	16
E-1302	BRUSH ASSEMBLY: electrical contact; Morganite Grade CM5H; 1-19/32" lg x 5/8" wd x 5/16" thk overall; consisting of brush and flexible shunt enclosed in stainless steel wire helical spring and terminating in metal U cap	Generator Brush			3H225-215	938 2-107	8856280-5	E-1302	4	1	20	2	40	5	80
E-1303	MOUNTING ASSEMBLY: brush holder 4-1/4" lg x 3-5/8" h x 1-9/16" d overall; consisting of black bakelite plate mtg four brush holders with stud terminals; two curved mtg slots 21/32" lg x 7/32" wd equally spaced on 5/8" diam circle	For Generator			3H3900.1-4	938 74-100	8856280-29	E-1303	1	1	1	1	2	5	4

TABLE 8-2

COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR
FIELD ACCESSORIES FOR USE WITH MODEL RDR RADIO RECEIVING EQUIPMENT

PARTS										SPARE PARTS					
										EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS, JAN, OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
	GASOLINE ENGINE GENERATOR SET														
E-1304	MAINTENANCE PARTS KIT: regulator repair; consisting of one carbon pile of approx 13 washers Morganite Grade 890, each 0.511" lg x 0.432" OD x 0.197" ID; two contact plugs, carbon, silver-plated side and one end, 0.3915" diam x 0.203" lg, Morganite Grade 3114	For Voltage Regulator			3H2700.7	938 KIT-5	8856280-32	E-1304	1			1	2	5	4
E-1305	BAR, bus: copper; 2-5/8" lg x 1/2" wd x 1/4" thk	For Output Circuit			3H167-1	938 BAR-12	8856280-41	E-1305	2			1	8	5	16
E-1306	BOARD, terminal: black bakelite; four screw terminals 21/32" between centers; 3-9/16" lg x 3/4" wd x 1-5/32" h overall; two 3/16" diam mtg holes on 3-3/16" centers; tropicalized	For Control Circuit			2Z9404.283	938 PLA-17	8856280-42	E-1306	1			1	4	5	8
E-1307	CONTROL BOX ASSEMBLY: consisting of metal box with removable cover containing reverse current relay, voltage regulator, fixed and variable resistor, toggle switch, two AN type connectors, filter pack, terminal board and wiring; aluminum body, green enamel finish; approx 8" lg x 5-3/4" wd x 9-3/8" h overall; mounts on generator by curved bracket on rear of box with four 7/32" diam holes	For Controlling Electrical Operation			3H1280-4	938 20-105	8856280-52	E-1307	1			2	4	4	8
E-1308	CABLE ASSEMBLY, special purpose: single cond seven strands steel wire 0.039" diam, extruded insulation, glass braid black synthetic jacket, seven mm size, Packard Elec Spec #52466-R; approx 23" lg excluding terminations; conduit assembly consisting of following Breeze part/dwg no: 1 E-1200-21-2 conduit 9" lg, 2 E-1110-23-1 ferrule, 2 E-1026-29-B4P coupling nut, 2 E-1124-85-10 elbow assembly, 2 E-1201-9-10 gasket, 2 E-1025-28-1 collar, 1 E-1055-44-1 adaptor, 1 E-1018-14-1 terminal, 1 3188-19 clip	For Spark Plug Wire			3E4400-37	1111 1A45-4	8856280-98	E-1308	1	1	2	4	4	2	8
E-1309	CABLE ASSEMBLY: four cond consisting of 14" lg AWG #8 stranded wire, white with black tracer; 10-5/8" AWG #8 stranded wire, white with red tracer; 12-3/8" lg AWG #16 stranded wire, white; 9-1/2" lg AWG #16 stranded wire, white with green tracer; insulation each conductor synthetic resin with glass braiding; eight lug terminals; enclosed in copper braiding shielding conduit approx 5/8" diam x 4-1/8" lg with nickel-plated brass fittings each end	Generator to Control Box Cable			3E4400-43	938 30-100	8856280-40	E-1309	1			2	4	5	8

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TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR
FIELD ACCESSORIES FOR USE WITH MODEL RDR RADIO RECEIVING EQUIPMENT

PARTS										SPARE PARTS					
										EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
	GASOLINE ENGINE GENERATOR SET														
E-1310	BRUSH, electrical contact: Morganite Grade CM5; cylindrical shape; 0.118" diam x 5/8" lg; shunt 13/32" lg; includes 0.012" diam stainless steel wire spring 1/2" lg x 3/16" OD with 12 turns	Ground for Crankshaft			3H525-240	1111 134-1	8856280-116	E-1310	1	1	5	4	8	2	20
E-1311	ROTOR, magneto: aluminum, green enamel finish; 5-5/16" diam x 2-5/8" lg; mounts on engine crankshaft by 0.650" tapered hole in center	For Voltage Inducing Field			3H2699-49/1	1663 Y5335	8856280-111	E-1311	1			4	2	2	4
E-1312	CAM: magneto breaker; steel; 21/32" lg, outside dimension varies from 0.407" min radius to 0.453" max radius; shaft hole 0.6567" max diam; keyway 0.128" max wd	For Operating Breaker Set			3H680-1	1663 5336	8856280-112	E-1312	1			4	2	2	4
E-1313	CONTACT, magneto: breaker set; consisting of one Wico Dwg. #X5433 breaker arm group with molded formica arm, SS spring and tungston contact, approx 2-1/4" lg x 1-1/16" wd x 3/8" thk overall; one Wico Dwg. #X5427 fixed contact group with steel plate and tungston contact, approx 1-13/16" lg x 1-13/16" wd x 17/32" thk overall; 3/16" diam mtg hole in arm, 5/16" diam hole in plate	For Magneto			3H1032.3	1663 X5474	8856280-2	E-1313	1	1	2	3	4	1	8
E-1314	ARMATURE, DC generator: including shaft, commutator, oil throw washer, ball bearing and splined coupling; rated 30 amp 13.7 volts at 4200 rpm; approx 6-1/2" lg x 3-1/4" diam overall	For Generator			3H..35-26	938 AW-43	8856280-26	E-1314	1	1	1	2	2	5	4
E-1315	WINDING, generator field: four coils 215 turns #18 AWG wire per coil, series connected, total DC resistance 4.08 ohms at 25 deg C; 13-1/2" lg x 3-19/32" wd extended; two leads approx 7" lg; hole 1-21/32" lg x 7/8" wd center of each coil for mtg on generator pole pieces	For Generator			3H8400.1-8	938 FW-43	8856280-27	E-1315	1	1	1	2	2	5	4
G-1301	GENERATOR, DC: 411 watts; 13.7 v DC, two wire; closed frame; 5-17/32" diam x 7" lg overall; nonprotruding shaft fitted with splined coupling within frame for connection with 12 tooth 20 pitch 0.600 pitch diam spline on engine crankshaft; 4200 rpm; power driven, self-excited; fixed mtg; four mtg holes 11/32" diam equally spaced in end bell on 1-1/4" radius; includes one ball bearing	For Electric Power Source			3H2440-11	938 GEN-5215	8856280-51	G-1301	1			1	4	6	8

TABLE 8-2

COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR
FIELD ACCESSORIES FOR USE WITH MODEL RDR RADIO RECEIVING EQUIPMENT

PARTS										SPARE PARTS					
										EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS, JAN. OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
GASOLINE ENGINE GENERATOR SET															
G-1302	POWER UNIT, gasoline: including Navy Type No. -10620 housing; 400 w; 13.3 v DC, 30 amps, 2 wire; integral mtg base 10" lg x 9-3/4" wd x 1-1/2" h overall; with four spring type vibration mounts; unit 15-19/32" lg x 9-13/16" wd x 12-3/4" h overall; housing 17-9/16" lg x 12" wd x 14-3/4" h; DC generator 4200 rpm; self-excited; direct coupled to Lauson type LJC 194 engine; 0.9 hp; four stroke cycle; 1-5/8" bore; 1-1/2" stroke; air cooled; manual starting	For Power Source	-73037		3H4500N-6	938 1-115	8856280-49	G-1302	1					4	1
G-1303	MAGNETO, ignition: consisting of one rotor Wico part Y5335, one stator plate group Wico part X5344 and one breaker cam Wico part 5336; 5-5/16" diam x 3" lg overall mounts on engine crankshaft	For Generating Ignition Power			3H2699-49	1663 L538a, Spec. FW-1691B	8856280-50	G-1303	1			3	2	3	4
H-1301	NUT, hexagon: steel, zinc plated; 1/4"-28 thd; 7/32" thk; 7/16" wd across flats	For Engine			6L3504-28S1	938 NUT-Q128	8856280-8	H-1301	6						
H-1302	WASHER, flat: steel, cadmium plated; 17/64" ID x 9/16" OD x 1/16" thk	For Engine			6L58024-18C	938 WAS-N29	8856280-9	H-1302	6						
H-1303	CAP: brush holder; molded plastic with brass insert; 0.812" diam x 0.445" lg overall; 5/8"-32 x 0.203" lg thd one end; screwdriver slot other end; milled side 0.4375" ID x 0.192" d hole in thd end	For Generator			3H685.6-1	246 K-5085516AB	8856280-10	H-1303	4	1	8	2	16	5	32
H-1304	SPRING: steel spring wire, parkerized; helical compression type; 13/16" lg x 7/16" ID; 6-1/2 turns 0.072" diam wire; squared ends, ground	For Valve			3H5255.20-4	1111 57-1	8856280-56	H-1304	2	1	1	3	6	3	12
H-1305	CAP: retainer; 20-gauge spring steel; saucer shape; 9/16" OD x 23/64" ID x 0.0843" h; 15/64" diam mtg hole in center	For Valve			3H683-54	1111 50-1	8856280-57	H-1305	2	1	1	3	6	3	12
H-1306	PIN, dowel: steel drill rod; 1/16" diam x 11/32" lg	For Valve			6L3941-5-1	1111 38-1	8856280-58	H-1306	2	1	1	3	6	3	12
H-1307	CAP: retainer; steel, 0.0156" thk; bowl shape; 5/8" OD x 21/64" ID x 1/8" h	For Valve			3H683-53	1111 50-2	8856280-59	H-1307	1	1	1	3	6	3	12
H-1308	PLUG ASSEMBLY: consisting of steel plug 29/32" lg x 1-3/16" diam with 7/8"-14 thd one end, 5/8" hex head other end; attached to 3-link chain by steel clip; steel lug with 9/32" diam hole other end of chain	For Oil Filler			3H5216	1111 1A85-3	8856280-104	H-1308	1			4	4	2	8

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TABLE 8-2

COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR
FIELD ACCESSORIES FOR USE WITH MODEL RDR RADIO RECEIVING EQUIPMENT

PARTS										SPARE PARTS					
										EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS, JAN, OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
	GASOLINE ENGINE GENERATOR SET														
H-1309	ADJUSTER, jet: brass body, stainless steel needle; 1-9/16" lg x 5/8" wd x 3/16" thk overall; #10-32 thd 9/16" lg on screw	For Carburetor Mixture Adjustment			3H6	1664 07843	8856280-107	H-1309	1			4	4	2	8
H-1310	MAINTENANCE PARTS KIT: consisting of various items of hardware and repair parts for servicing carburetor	For Carburetor			3H2700.4-5	1664 08047	8856280-109	H-1310	1			4	4	2	8
H-1311	HARDWARE KIT: consisting of various items of miscellaneous hardware for mounting and assembling of gas engine power unit	For Operating and Equipment Spares			3H2495-5	938 HDW-52151	8856280-114	H-1311	1	1	2				
H-1312	HARDWARE KIT: consisting of various items of miscellaneous hardware for mounting and assembling of gas engine power unit	For Tender and Stock Spares			3H2495-6	938 HDW-52152	8856280-115	H-1312	1			4	4	2	8
H-1313	SPRING: helical extension type; 0.023" diam steel spring wire; 1-1/8" lg x 9/32" diam overall; hook terminals parallel in center of coil; terminals bent on 1/8" radius located on 7/8" mtg/c	For Governor			3H5255.20-3	1111 57-2	8856280-13	H-1313	1	1	1	3	2	1	4
H-1314	Not Used														
H-1315	SPRING: stainless steel; helical extension type; 13/16" lg x 1/4" OD; 12 active turns 0.024" diam wire; hook terminal indexed 90 deg; terminal bent to 1/4" ID	Suspends Mounting Plate in Control Box			3H5255.20-5	938 SPR-3	8856280-30	H-1315	5	1	5	1	10	5	25
J-1301	CONNECTOR, male contact: two round male contacts; straight type; 1-7/16" lg x 1-3/4" sq overall; cylindrical aluminum body; black bakelite insert; four 0.147" diam holes on 1-3/8" mtg/c; 1-1/2"-18 thd one end	Output Connector on Control Box			2Z3022-101	938 PLU-4	8856280-18	J-1301,1302	2	1	1	2	2	5	4
J-1302	Same as J-1301	Output Connector on Control Box			2Z3022-101										
K-1301	RELAY, armature: SPST, normally open; silver contacts rated 35 amp, 12 v DC; two concentric windings; closes at 12 v ±1/2-2 v, opens at 1/2 to 4 amps reverse current; shunt coil, multiple wound, 146 ohms DC resistance, grounded, series coil, single wound, 0.0062 ohms DC resistance, insulated; both coils inductive; screw terminals on coil and contacts; approx 3-5/16" lg x 1-15/16" wd x 1-13/16" h overall; three mtg holes 9/32" diam on 15/16" mtg/c; impregnated for tropical use	Controls Current Flow			2Z7585-170	938 SW1-15	8856280-22	K-1301	1	1	1	2	2	5	3

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR
FIELD ACCESSORIES FOR USE WITH MODEL RDR RADIO RECEIVING EQUIPMENT

PARTS											SPARE PARTS					
											EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS, JAN, OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
	GASOLINE ENGINE GENERATOR SET															
O-1301	GASKET SET: maintenance, gasoline engine; consisting of 1 Lauson part/dwg #35-2 bearing plate gasket, 1 part/dwg #35-3 carburetor gasket, 2 part/dwg #35-4 intake pipe and muffler flange gasket, 1 part/dwg #35-5 base gasket, 1 part/dwg #35-6 breather gasket, 1 part/dwg #35-7 filler cap gasket, 1 part/dwg #35-9 filler plug gasket; also Tillotson part/dwg #08046 carburetor gasket repair kit consisting of 1 part/dwg #07826 body gasket, 3 part/dwg #07824 throttle shaft seal, 3 part/dwg #06371 throttle shaft seal washer, 1 part/dwg #08045 flange gasket, 1 part/dwg #02510 inlet seal gasket, 1 part/dwg #0676 main adj screw gland gasket, 1 part/dwg #0705 main adj screw packing, 1 part/dwg #07827 ventura gasket, 1 part/dwg #08142 main nozzle gasket	For Engine			3Ha155-8	938 100	8856280-3	O-1301	1	1	2	3	4	1	8
O-1302	GASKET: graphite faced asbestos; irregular shape; 3-5/8" lg x 2-17/32" wd x 1/32" thk; six 9/32" diam holes irregularly spaced	For Engine			3Ha154.9-2	1111 35-1	8856280-4	O-1302	1	1	6	3	12	1	24
O-1303	ROPE ASSEMBLY: cotton; braided; 5/32" diam; white; waxed, fungus treated; 125 lb breaking strength; 110 ft per lb; 3 ft lg, one end with maple or birch handle stained black, 3" lg x 7/8" diam; other end knotted	For Starting Engine			627895	1111 1A103-1	8856280-6	O-1303	1	1	3	3	6	1	12
O-1304	JET, carburetor: needle valve; 0.0465" diam opening; 5/16"-32 x 5/32" lg male thd; slotted head; 7/16" OD x 19/32" lg overall; head counterbored 7/32" diam x 3/32" d; fiber washer included	For Engine Carburetor			3Ha655-1	1664 07488	8856280-12	O-1304	1	1	1	3	2	1	4
O-1305	LINE, fuel: preformed copper tube, cadmium plated; 3/16" OD x 5-1/2" lg extended; 0.031" wall; 3/8"-24 male fitting each end	Fuel Tank to Carburetor			3Ha694-13	1111 1A115-1	8856280-14	O-1305	1	1	1	3	2	1	4
O-1306	MUFFLER: steel, green enamel finish; knob shape; approx 3-9/16" OD x 1-5/8" lg overall; inlet 1/2" female pipe thread; outlet nine holes 3/16" diam	Engine Exhaust			3H3981-7	1111 1A120-1	8856280-15	O-1306	1	1	1	3	2	1	4
O-1307	BEARING, ball: single row radial; double shield; bore 12 mm; OD 32 mm; width 10 mm; weight 0.09 lb	Supports Armature			3Ha575-115B/B1	439 77501	8856280-28	O-1307	1	1	1	2	1	5	1

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TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR
FIELD ACCESSORIES FOR USE WITH MODEL RDR RADIO RECEIVING EQUIPMENT

PARTS										SPARE PARTS					
										EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS, JAN, OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
	GASOLINE ENGINE GENERATOR SET														
O-1308	RETAINER, oil seal: steel, cadmium plated; 1.505" max OD x 25/64" thk; mounts on 1" diam shaft	For Generator Oil Protection			3H5034-1	792 1501	8856280-35	O-1308	1			1	4	5	8
O-1309	LINE, air: straight tube approx 5/8" OD x 4-5/8" lg; flexible wall brass convolution tubing with copper braiding; ferrule soldered each end; coupling nut with 7/8"-20 female thread each end	For Cooling Control Box			3H4500N-6/6	938 FIT-7	8856280-97	O-1309	1			1	4	5	8
O-1310	PLATE, mounting: asbestos grade paper base bakelite; 4" lg x 3" wd x 1/8" thk; five mtg holes 0.040" diam, three on top spaced 1-3/8" between centers two on bottom spaced 2-3/4" between centers; tropicalized	Mounts Regulator and Relay in Control Box			3H4328.8-3	938 PLA-18	8856280-43	O-1310	1			1	4	5	8
O-1311	CONTAINER: oil; 1 qt size; terne plate, blue finish; rectangular shape; 8" lg x 3-11/16" wd x 4-3/8" h overall; spout on top 1-1/4" ID x 1-7/16" h held closed by spring; metal handle on top	For Oil Reserve	-18003		6Z3193-2	938 CAN-1	8856280-45	O-1311	1			3	4	1	8
O-1312	CONTAINER: gasoline; 1 gal size; terne plate, red finish; rectangular shape; 8" lg x 3-11/16" wd x 11-5/16" h overall; spout on top with strainer 1-1/4" ID x 1-7/16" h held closed by spring; metal handle on top	For Gas Reserve	-18002		6Z3192-4	938 CAN-2	8856280-46	O-1312	1			3	4	1	8
O-1313	PLATE ASSEMBLY: aluminum body; approx 6-1/2" h x 6-3/8" wd x 2" thk overall; four #10-24 mtg holes irregularly spaced; includes ball bearing, oil seal with retainer and brushholder	For Crankshaft Bearing			3H4328.16	1111 1A109-1	8856280-61	O-1313	1			4	4	3	8
O-1314	SEAL, oil: neoprene; 1.072" max OD x 1/4" wd x 21/32" diam center hole; one side grooved 7/8" OD x 21/32" ID x 3/16" d	For Crankshaft Bearing			3H5225.2-19	1111 54-1	8856280-62	O-1314	1			4	4	3	8
O-1315	RETAINER, oil seal: steel, 0.031" thk; 1.070" OD max x 1/8" h overall; 7/8" diam hole in center	For Crankshaft Bearing			3H5034-2	1111 41-1	8856280-63	O-1315	1			4	4	3	8
O-1316	BEARING, ball: single row radial; double shield; bore 17 mm; OD 40 mm; width 12 mm, weight 0.14 lb	For Supporting Crankshaft			3H2342B/B2	439 77503	8856280-64	O-1316	1			4	4	3	8
O-1317	PISTON ASSEMBLY: engine; aluminum; metal ring seal type; standard size; two compression and one oil seal grooves; 1-5/8" diam x 5-1/4" lg overall; two 0.437" ID radial wrist pin holes; includes connecting rod, wrist pin and rings	For Compressing Mixture			3H4190.1-4	1111 1A5-1	8856280-65	O-1317	1			4	2	3	4

TABLE 8-2

COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR
FIELD ACCESSORIES FOR USE WITH MODEL RDR RADIO RECEIVING EQUIPMENT

PARTS										SPARE PARTS					
										EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS, JAN, OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
	GASOLINE ENGINE GENERATOR SET														
O-1318	PISTON, engine: aluminum alloy casting; standard size; 1.624" max diam x 1-5/8" lg overall; two compression and one oil seal ring grooves; two radial wrist pin holes 0.437" diam	For Compressing Mixture			3H4190.1-5	1111 3A5-1	8856280-66	O-1318	2			4	2	3	4
O-1319	RING, piston: cast iron, graf flox surfaced; compression type; rectangular cross section; 1-5/8" OD x 0.0925" wd x 0.065" min to 0.075" max thk with outside surface tapered approx 0.001" to 0.005" max; square joint; 0.003" min to 0.008" max gap; standard size	For Piston			3H5040-10	1111 14-1	8856280-67	O-1319	1	1	2	4	4	3	8
O-1320	RING, piston: cast iron, graf flox surfaced; oil type; rectangular cross section; 1-5/8" OD x 0.1235" wd x 0.065" min to 0.075" max thk; ventilated slotted face; square joint; 0.003" min to 0.008" max gap; std size	For Piston			3H5040-10.1	1111 14-2	8856280-68	O-1320	1	1	1	4	2	3	4
O-1321	ROD, piston connecting: aluminum alloy casting; 4-3/4" lg x 1-1/2" wd x 0.745" thk; hole at wrist pin end 0.437" diam; crankshaft end hole 0.6875" diam	For Connecting Crankshaft with Piston			3H5055-6	1111 1A25-1	8856280-69	O-1321	1			4	2	3	4
O-1322	BLOCK, cylinder: consisting of 1 Lauson pt/dwg #2A1-1 cylinder casting, 1 pt/dwg #52-1 cam gear shaft, 1 pt/dwg #97-1-1 exhaust valve guide, 1 pt/dwg #97-2-1 intake valve guide, 2 pt/dwg #79-11 valve seat inserts, 6 pt/dwg #68-1 cylinder head studs, 6 pt/dwg #72-1 bearing plate studs, 1 pt/dwg #52-2 rocker arm shaft; 2 pt/dwg #75-1 rocker arm bushing, 2 pt/dwg #72-3 exhaust flange stud, aluminum body green E finish; approx 4-7/8" lg x 5-5/16" wd x 7-3/4" h overall; four mtg holes 9/32" diam in base on 4-3/4" x 2-3/4" mtg/c	For Combustion Chamber of Engine			3H371-3	1111 1A1-1	8856280-53	O-1322	1			3	4	3	8
O-1323	VALVE, engine intake: steel; head 25/32" diam x 3/32" thk at outer edge; stem 1-31/32" lg x 0.2182" diam; one hole 0.067" diam centered 1/8" from stem end; marked "in" on head	For Engine			3H668a-6	1111 1A20-1	8856280-54	O-1323	1			3	4	3	8
O-1324	VALVE, engine exhaust: steel; head 25/32" diam x 3/32" thk at outer edge; stem 1-31/32" lg x 0.2182" diam to 1-13/32" from end where diam reduces to 0.202"; one hole 0.067" diam centered 1/8" from stem end; marked "ex" on head	For Engine			3H668a.1-8	1111 1A20-2	8856280-55	O-1324	1	1	2	3	4	3	8

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TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR
FIELD ACCESSORIES FOR USE WITH MODEL RDR RADIO RECEIVING EQUIPMENT

PARTS										SPARE PARTS					
										EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS, JAN. OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
	GASOLINE ENGINE GENERATOR SET														
O-1325	HEAD, cylinder: aluminum alloy casting, green outside finish; 4-3/8" lg x 3-1/4" wd x 1-3/8" h overall; finned top with fins spaced 3/16" apart; six 9/32" diam mtg holes irregularly spaced; 31/64" diam x 14 mm tapped hole for spark plug	For Engine			3H2500-6	1111 4-1	8856280-60	O-1325	1			3	4	3	8
O-1326	CARBURETOR: aluminum, green outside finish; updraft; approx 3-3/4" h x 3-1/4" wd x 2-7/8" d overall; two 1/4"-20 tap holes on 1-1/2" mtg/c	For Vaporizing and Mixing Gasoline			3H711.2	1664 YA-1A	8856280-70	O-1326	1			4	4	3	8
O-1327	LEVER: throttle; steel, 0.078" thk; cadmium plated with green outside finish; approx 3-1/4" lg x 5/8" wd x 11/32" d overall; one 3/16" x 5/8" lg stove bolt one end and 0.195" wd x 0.5085" lg slot at other end	For Control of Fuel Flow			3H2681.2-1	1111 1A55-1	8856280-71	O-1327	1			4	4	3	8
O-1328	BEARING, sleeve: brass, cadmium plated; 1-1/4" lg overall; 0.159" ID counterbored 3/16" ID for 1/4" one end, 5/16" OD for 1/16", 1/2" hex for 1/8", 21/64" OD for 1/16", 3/8"-24 thd for 1/2" 0.315" max OD for 1/2"	For Governor Shaft			3H321-72	1111 48-1	8856280-72	O-1328	1			4	4	3	8
O-1329	LEVER: 16 gauge steel, cadmium plated; 1-27/32" lg x 7/16" wd x 1/4" thk overall; 0.195" diam hole on 7/32" radius mtg/c one end, 3/32" diam hole on 1/8" radius mtg/c other end	Governor Adjusting			3H2681.3-1	1111 55-59	8856280-73	O-1329	1			4	4	3	8
O-1330	MANIFOLD, intake: aluminum, green enamel finish; approx 2-3/4" lg x 1-3/4" wide x 1-1/4" h overall; two 17/64" diam mtg holes on 1-1/4" mtg/c one end, two 9/32" diam mtg holes on 1-1/2" mtg/c other end	Conducts Mixture			3H2702.2-2	1111 43-1-1	8856280-74	O-1330	1			4	4	3	8
O-1331	SHAFT ASSEMBLY: consisting of steel shaft with phosphor bronze shoe and brass spacer; 3-1/4" lg x 3/16" wd x 21/64" h overall; bearing mounting end of shaft 5/32" diam	For Governor Throttle			3H5230.2-1	1111 1A52-1	8856280-75	O-1331	1			4	4	3	8
O-1332	CRANKSHAFT ASSEMBLY: engine; steel; 8-11/32" lg x 2-13/32" wd x 2-1/2" h overall; 12 tooth 20 pitch spline cut in one end; 3/8"-24 thd other end; includes ball bearing, gear, spacer, and governor ball, yoke and collar	For Engine			3H1409-6	1111 1A24-1	8856280-76	O-1332	1			4	4	3	8

TABLE 8-2
COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR
FIELD ACCESSORIES FOR USE WITH MODEL RDR RADIO RECEIVING EQUIPMENT

PARTS										SPARE PARTS					
										EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS, JAN. OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
	GASOLINE ENGINE GENERATOR SET														
O-1333	BEARING, ball: single row radial; bore 20 mm; OD 47 mm; width 14 mm	For Crankshaft			3H2707A/B2	439 77504	8856280-77	O-1333	1			4	4	2	8
O-1334	GEAR: spur; steel; 16 straight teeth; 16 pitch, 1" pitch diam; 1.125" OD x 0.6692" ID x 0.459" max wd overall; straight face; 1/16" keyway	For Activating Rocker Arms			3H2230.1-14	1111 12-1	8856280-78	O-1334	1			4	4	2	8
O-1335	ARM ASSEMBLY: rocker; steel; approx 2-1/8" lg x 7/8" wd x 0.545" thk overall; includes phosphor bronze bearing with hole 1/4" diam	For Valves			3H119.4-1	1111 1A65-1	8856280-81	O-1335	2			4	8	2	16
O-1336	CAM AND GEAR ASSEMBLY: consisting of steel gear, 16 pitch, 32 teeth, 2" pitch diam; two steel cams, each 0.869" max lg x 0.752" max wd; phosphor bronze bearing, 51/64" lg x 0.4390" max OD x 0.3760" max ID	For Rocker Arms			3H4500N-6/4	1111 1A9-1	8856280-82	O-1336	1			4	4	2	8
O-1337	BREATHER ASSEMBLY: consisting of aluminum body, 1-9/16" lg x 1" wd x 2-1/8" h overall; brass housing and seat; bakelite disc and dixie moss; two mtg holes 7/32" diam on 1-1/8" mtg/c	For Crank Case			3H438.4	1111 1A95-1	8856280-83	O-1337	1			4	4	2	8
O-1338	PLUG AND CHAIN ASSEMBLY: consisting of steel plug, 1-1/2" lg x 13/32" diam with 1/8"-27 tapered pipe thread one end; steel pin, 1" lg x 1/8" diam other end; attached to four-link chain cadmium plated; iron lug with 13/64" d diam mtg hole other end of chain	For Breather			3H4500N-6/8	1111 1A85-1	8856280-84	O-1338	1			4	4	2	8
O-1339	TANK, fuel; aluminum, 0.040" thk; green finish outside; capacity approx 1 qt; 8-1/4" lg x 3-11/32" wd x 4-9/16" h overall; filler cap and chain assembly included; two mtg brackets welded to tank, each with two 7/32" diam holes on 2-1/16" radius mtg/c and 5-1/8" between brackets	Holds Gasoline for Engine			3H1095-5	1111 1A116-1	8856280-86	O-1339	1			4	4	2	8
O-1340	CAP ASSEMBLY: consisting of aluminum cap, 1-7/16" diam x 9/16" lg with 1"-14 thd; aluminum air-vent tube and cap, brass wire connecting ring and music wire cross-bar; approx 4-3/8" lg x 1-5/8" wd x 1-7/16" d overall	For Fuel Tank			3H683-55	1111 1A50-1	8856280-87	O-1340	1	1	2	4	4	2	8
O-1341	VALVE, needle: aluminum and brass; green outside finish; approx 1-3/8" lg x 3/4" wd x 2-7/8" h overall; 3/8" pipe thd one end; 3/8"-24 female thd one side	For Fuel Line			3H6682.2-3	1665 F245X1	8856280-88	O-1341	1			4	4	2	8

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TABLE 8-2

COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR
FIELD ACCESSORIES FOR USE WITH MODEL RDR RADIO RECEIVING EQUIPMENT

PARTS											SPARE PARTS					
											EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS, JAN. OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
	GASOLINE ENGINE GENERATOR SET															
O-1342	PULLEY: aluminum with steel insert; 2-3/16" diam x 1-1/4" lg overall; 3/8"-24 shaft hole	For Starter Rope			3H4600P5	1111 1A32-1	8856280-89	O-1342	1	1	2	4	4	2	8
O-1343	FITTING, coupling: brass; 11/16" lg x 7/16" hex; 1/8" pipe thread one end; 3/8"-24 female thread other end	For Fuel Line			6Z3663-7.4	1111 126-2	8856280-90	O-1343	2			4	4	2	8
O-1344	FITTING, nipple and flange: steel; 1-1/16" lg x 7/8" wd x 1-21/32" h overall; two holes 7/32" diam on 1-1/4" mtg/c; 1/2" taper pipe thread one end	For Muffler			3H2115.1	1111 1A60-1	8856280-91	O-1344	1			4	4	2	8
O-1345	PUMP ASSEMBLY: oil; gear driven; 2-9/16" lg x 3-3/8" wd x 3-1/8" h overall; includes strainer and splash pan; 5/32" diam intake and discharge; two 9/32" diam holes on 2-1/4" mtg/c	For Lubrication			3H4601.2-1	1111 1A118-1	8856280-92	O-1345	1			4	4	2	8
O-1346	BODY, oil strainer: cup shaped; formed from 0.187" thk steel; 1-9/16" ID x 1/8" h overall; slot 35/64" lg x 3/8" wd in bottom; 13/64" diam mtg hole in center	For Oil Strainer			3H175.2	1111 95-4	8856280-93	O-1346	1			4	4	2	8
O-1347	STRAINER: oil; brass screen; 20 mesh; 1-5/8" diam; one hole 13/64" diam in center	For Oil Strainer			3H5342.1	1111 92-1	8856280-94	O-1347	1			4	4	2	8
O-1348	COLLAR, spacing: steel; 5/16" OD x 13/64" ID x 1/8" thk	For Oil Strainer			3H987.2-1	1111 40-3	8856280-95	O-1348	1			4	4	2	8
O-1349	FILTER ASSEMBLY, air; consisting of steel body and replaceable filter element held in position by steel cover with spring; approx 2-1/4" lg x 1-7/8" wd x 2-1/8" h overall; mounts by 1" ID clamp on neck	For Cleaning Intake Air			3H995-12	1111 1A100-1	8856280-102	O-1349	1			4	4	2	8
O-1350	Not Used														
O-1351	GLAND: stuffing box; brass; 11/16" lg x 7/16" hex overall; 5/16"-32 male thread each end; 0.196" ID x 7/32" lg each end; #10-32 female thread 1/4" lg in center	For Carburetor			6H6226/S11	1664 0702	8856280-108	O-1351	1			4	4	2	8
O-1352	STATOR, magneto: consisting of mounting plate, laminated core, coil, capacitor and breaker set; approx 3-5/8" diam x 2" lg overall; two mounting slots approx 3/8" lg x 1/4" wd on 1-3/8" and 1-1.8" radius	For Voltage Generating Element			3H2699-49/2	1663 X5344	8856280-110	O-1352	1			4	2	2	4

TABLE 8-2

COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR
FIELD ACCESSORIES FOR USE WITH MODEL RDR RADIO RECEIVING EQUIPMENT

PARTS										SPARE PARTS					
										EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS, JAN, OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
	GASOLINE ENGINE GENERATOR SET														
O-1353	TOOL KIT: consisting of canvas tool roll, approx 21" lg x 19" wd containing one each of following tools; 8" adjustable crescent wrench; 4-1/2" screwdriver; gas pliers; 3/4" x 5/8" open end wrench; ball peen hammer; breaker point file; spark plug socket and handle; handle for sockets; 3/8" x 7/16" open end wrench; 4" thin nose pliers; #10 Allen wrench; set of feeler gauges; 5/16", 11/32", 3/8", 7/16", 1/2", 5/8" thin wall sockets; extension driver for sockets; 7/16" x 9/16" open end wrench; sandpaper	For Power Unit			6R37977-1	938 KIT-4	8856280-11	O-1353	1	1	1	3	1	1	2
O-1354	CAN, shielding: aluminum; rectangular shape; 5" lg x 1-3/4" wd x 2-9/16" h overall; three 3/16" diam mtg holes one side; three #10-32 mtg holes other side	Shield in Control Box			3H4500N-6/7	938 CAN-10	8856280-10(	O-1354	1			1	4	5	8
P-1301	CONNECTOR, female contact: two round female contacts; straight type; approx 4-3/4" lg x 1-23/32" diam overall; cylindrical aluminum body; molded black bakelite insert; cable opening 21/32" diam; 1-1/2"-18 female thd one end; includes AN Type No. 3106-24-9S connector and watertight clamp	Cable Connector			2Z3063-115	938 72-101	8856280-17	P-1301,1302	2	1	1	2	2	5	4
P-1302	Same as P-1301	Cable Connector			2Z3063-115										
R-1301	RESISTOR, variable: wire wound; 35 ohms; 25 watts; body 1-23/32" diam x 31/32" lg; slotted shaft 1/4" diam x 1/2" lg; 3/8"-32 split bushing; intermediate stop to operate over range of 15 to 35 ohms; two solder lug terminals; includes acorn cap to fit over bushing	Controls Current Flow	JAN RP101-SA350KK		3RP4504	321 Type PR-25	8856280-25	R-1301	1	1	1	2	3	5	5
R-1302	RESISTOR, fixed: wire wound; 4 ohms ±5%; 16 watts; 2" lg x 19/32" max diam; insulated; inductive; two radial solder lug terminals; for through bolt or bracket mtg; resistant to humidity exposure; for cont operation at 275° C	Controls Current	JAN RW32-G4RO		3RW9901	938 RES-25	8856280-24	R-1302	1	1	1	2	3	5	5
S-1301	SWITCH, toggle: DPST; bakelite body 1-1/16" max lg x 49/64" max wd x 1-21/64" max h; bushing 15/32"-32 thd x 15/32" lg; handle 11/16" max lg; rated 30 amps at 30 volts continuous; four solder lug terminals	For Regulated and Unregulated Operation Control	ST-52K		3Z9849.195	166 8823K4	8856280-31	S-1301	1	1	1	1	1	5	1

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TABLE 8-2

COMBINED PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATION FOR FIELD ACCESSORIES FOR USE WITH MODEL RDR RADIO RECEIVING EQUIPMENT

PARTS										SPARE PARTS					
										EQUIP.		TENDER		STOCK	
SYMBOL DESIG.	NAME OF PART AND DESCRIPTION	FUNCTION	AWS.JAN.OR NAVY TYPE DESIG.	NAVY STOCK NO.	ARMY STOCK NO.	MFR. AND MFR'S DESIG.	CONTRACTOR'S DWG. AND PART NO.	ALL SYMBOL DESIGNATIONS INVOLVED	TOTAL NO. PER EQUIP.	BOX NO.	QUAN.	BOX NO.	QUAN.	BOX NO.	QUAN.
	GASOLINE ENGINE GENERATOR SET														
VR-1301	REGULATOR, voltage: carbon pile type; regulates full load voltage at 13.6 volts with varying current of 17 to 29 amps; 2-27/32" lg x 1-5/8" wd x 1-5/8" h overall; two #8-32 tap holes on 1.188" mtg/c; wire leads; tropicalized	Regulates Voltage			3H4964.1-14	938 REG-1	8856280-23	VR-1301	1	1	1	2	2	5	4
W-1301	CABLE ASSEMBLY, power: two #3 AWG stranded aluminum conductors, vinylite or flamenol insulation, jute filler, soft cotton wrap, aluminum shielding braid, soft cotton wrap, black vinylite or flamenol cover; 297" lg excluding terminations; each end terminated with AN #3106-24-9S connector, RCA part/dwg #433956-504 clamp assembly, RCA part/dwg #888150-1 clamping ring, RCA part/dwg #888149-1 clamping ring	For Connecting Generator to Radio Set	-62251		3E4400-30	938 CBA-3	8856280-16	W-1301	1	1	1	3	1	5	2
W-1302	LEAD, electrical; two cond each 5-1/2" lg #16 AWG stranded tinned copper wire with ceramic beads insulation; wires parallel connected to lug terminals each end	Relay to Terminal Strip Connection			3E4400-42	938 18-158	8856280-19	W-1302	1	1	1	2	1	5	1
W-1303	LEAD, electrical: two cond each 6-3/4" lg #16 AWG stranded tinned copper wire with ceramic beads insulation; wires parallel connected to lug terminals each end	Voltage Regulator to Filter Connection			3E4400-40	938 18-159	8856280-20	W-1303	1	1	1	2	1	5	1
W-1304	LEAD, electrical: 4-1/4" lg #16 AWG stranded tinned copper wire with ceramic beads insulation; lug terminal each end	Relay to Terminal Strip Connection			3E4400-41	938 18-163	8856280-21	W-1304	1	1	1	2	1	5	1
Z-1301	SUPPRESSOR, electrical noise: capacitor and coil type; 4-1/2" lg x 2-1/2" wd x 2-19/32" h overall; rated 30 amps 40 volts AC or DC; rectangular metal case; two #10-32 spade bolts extend 1/4" from bottom on 4-1/4" mtg/c	Filters Out Electrical Noise	-53486		3Z1891-11.12	794 Type 1253, Dwg.#7753	8856280-99	Z-1301	1	1	1	2	2	5	3
	Spare parts box					938 Box-38-K	8856280-117				1				
	Spare parts box					938 Box-38-O	8856280-118						1		
	Spare parts box					938 Box-38-P	8856280-119						1		
	Spare parts box					938 Box-38-S	8856280-120						2		

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TABLE 8-3. CROSS REFERENCE PARTS LIST

FIELD ACCESSORIES FOR USE WITH MODEL RDR RADIO RECEIVING EQUIPMENT

JAN (OR AWS) DESIGNATION	KEY SYMBOL
RP101SA350KK	R-1301
RW32G4RO	R-1302
ST52K	S-1301

NAVY TYPE	KEY SYMBOL
-10619	A-1309
-10620	A-1310
-18002	O-1312
-18003	O-1311
-53486	Z-1301
-62251	W-1301
-73037	G-1302

SIGNAL CORPS STOCK NUMBER	KEY SYMBOL
2A393-9	A-1014
2Z1612.1	A-1012
2Z2639-86	A-1013
2Z3022-101	J-1301, J-1302
2Z3063-115	P-1301, P-1302
2Z7585-170	K-1302
2Z9404.283	E-1306
3DA340	C-1301
3E4400-20	W-1001
3E4400-21	W-1002
3E4400-30	W-1301
3E4400-37	E-1308
3E4400-40	W-1303
3E4400-41	W-1304
3E4400-42	W-1302
3E4400-43	E-1309
3H6	H-1309
3H119.4-1	O-1335
3H135-26	E-1314
3H167-1	E-1305
3H175.1	A-1311
3H175.2	O-1346
3H225-215	E-1302
3H321-72	O-1328
3H370.1-8	A-1306
3H371-3	O-1322
3H437.12	A-1304
3H437.13	A-1313
3H438.4	O-1337
3H525-240	E-1310
3H680-1	E-1312
3H683-53	H-1307
3H683-54	H-1305
3H683-55	O-1340
3H685.6-1	H-1303
3H711.2	O-1326
3H759.3-2	A-1310
3H956	A-1301
3H987.2-1	O-1348
3H995-12	O-1349
3H1032.3	E-1313
3H1095-5	O-1339
3H1280-4	E-1307
3H1380.16	A-1312
3H1380.17	A-1314
3H1409-6	O-1332
3H1900A1.1	A-1307
3H1900A1.1-1	A-1303
3H2115.1	O-1344
3H2154.9-2	O-1302
3H2155-8	O-1301
3H2230.1-14	O-1334
3H2342B/B2	O-1316
3H2440-11	G-1301
3H2495-5	H-1311
3H2495-6	H-1312
3H2500-6	O-1325
3H2575-115B/B1	O-1307
3H2655-1	O-1304
3H2681.2-1	O-1327
3H2681.3-1	O-1329
3H2694-13	O-1305
3H2699-49	G-1303
3H2699-49/1	E-1311
3H2699-49/2	O-1352
3H2700.4-5	H-1310
3H2700.7	E-1304
3H2702.2-2	O-1330
3H2707A/B2	O-1333
3H3900.1-4	E-1303
3H3900.3-1	A-1309
3H3981-7	O-1306
3H4190.1-4	O-1317
3H4190.1-5	O-1318
3H4328.8-2	A-1308
3H4328.8-3	O-1310
3H4328.15	A-1305
3H4328.16	O-1313
3H4412-10S	E-1301
3H4500N-6	G-1302
3H4500N-6/4	O-1336
3H4500N-6/6	O-1309
3H4500N-6/7	O-1354
3H4500N-6/8	O-1338
3H4600P5	O-1342
3H4601.2-1	O-1345
3H4964.1-14	VR-1301
3H5034-1	O-1308
3H5034-2	O-1315
3H5040-10	O-1319
3H5040-10.1	O-1320
3H5055-6	O-1321
3H5216	H-1308
3H5225.2-19	O-1314

ITEM NUMBER	KEY SYMBOL

CONTRACT NXsr-60008

18-38462-V1

TABLE 8-3. CROSS REFERENCE PARTS LIST

FIELD ACCESSORIES FOR USE WITH MODEL RDR RADIO RECEIVING EQUIPMENT

SIGNAL CORPS STOCK NUMBER	KEY SYMBOL	SIGNAL CORPS STOCK NUMBER	KEY SYMBOL	SIGNAL CORPS STOCK NUMBER	KEY SYMBOL	SIGNAL CORPS STOCK NUMBER	KEY SYMBOL	ITEM NUMBER	KEY SYMBOL
3H5230.2-1	O-1331								
3H5241S-1	A-1302								
3H5255.20-3	H-1313								
3H5255.20-4	H-1304								
3H5255.20-5	H-1315								
3H5342.1	O-1347								
3H6682.1-8	O-1324								
3H6682.2-3	O-1341								
3H6682-6	O-1323								
3H8400.1-8	E-1315								
3RP4504	R-1301								
3RW9901	R-1302								
3Z1891-11.12	Z-1301								
3Z9849.195	S-1301								
6H6226/S11	O-1351								
6L3504-28S1	H-1301								
6L3941-5-1	H-1306								
6L58024-18C	H-1302								
6R37977-1	O-1353								
6R57522-4	H-1008								
6Z3192-4	O-1312								
6Z3193-2	O-1311								
6Z3663-7.4	O-1343								
6Z7895	O-1303								
6Z8424	A-1002								
6Z8424-1	A-1003								

TABLE 8-5
LIST OF MANUFACTURERS
FIELD ACCESSORIES FOR USE WITH MODEL RDR RADIO RECEIVING EQUIPMENT

CODE NUMBER	MFR. PREFIX	NAME	ADDRESS
1	CRV	Radio Corporation of America	Camden, N. J.
166	CAE	Cutler-Hammer Inc.	1333 W. St. Paul Avenue Milwaukee, Wis.
246	CG	General Electric Co.	Schenectady, N. Y.
321	CIR	International Resistance Corp.	401 N. Broad Street Philadelphia, Pa.
439		New Departure Division of General Motors	Bristol, Conn.
611		Stockwell Rubber Co.	533 Arch Street Philadelphia, Pa.
792		Chicago Rawhide Mfg. Co.	1301 Eleston Avenue Chicago, Ill.
794	CTD	Tobe Duetschmann Corp.	Canton, Mass.
938	CCW	Atlas Aircraft Products Corp.	5-17 46th Road Long Island City 1, N.Y.
972		Champion Spark Plug Co.	Toledo, Ohio
1111	CLC	The Lauson Company	New Holstein, Wis.

TABLE 8-5 (Continued)
LIST OF MANUFACTURERS
FIELD ACCESSORIES FOR USE WITH MODEL RDR RADIO RECEIVING EQUIPMENT

CODE NUMBER	MFR. PREFIX	NAME	ADDRESS
1663		Wico Electric Co.	West Springfield, Mass.
1664		Tillotson Mfg. Co.	Toledo 12, Ohio
1665		Zenith Carburetor Division, (Bendix Aviation Corp.)	Detroit 14, Mich.