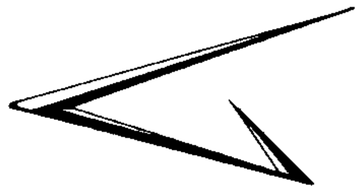
INSTRUCTION MANUAL

for the

GLOBE

"Globe King" 500C



GLOBE ELECTRONICS
A DIVISION OF TEXTRON ELECTRONICS, INC.
22-30 SOUTH 34TH ST. COUNCIL BLUFFS, IA.

MANUFACTURERS OF

World Famous Globe Transmitters

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SPECIFICATIONS

FINAL POWER INPUT: 540 watts CW and Phone 700 watts SB Peak Envelope Power (with external SB exciter).

OUTPUT: Coaxial into 52-300 ohm antenna.

BAND COVERAGE:

160 meters	1750-3000 KC
80 meters	3200-4800 KC
40 meters	6600-9000 KC
20 meters	13-19 MC
15 meters	13-24 MC
10 meters	16-31 MC

POWER REQUIREMENTS: 115 VAC. 50/60 cycles 1300 watts phone, 820 watts CW.

FREQUENCY CONTROL: Xtal or VFO.

DIMENSIONS: 31 inches high, 15 inches deep, 22 inches wide.

SHIPPING WEIGHT: 270 pounds.

TABLE I. TUBE COMPLEMENT.

Quantity	Type	Function
1	6AU6	Oscillator
1	6CB6	Buffer-output
1	0A2	Voltage Regulator

1-8. THEORY OF OPERATION.

1-9. The oscillator stage, utilizing a 6AU6 tube, is basically a series tuned Clapp oscillator but with additional parallel padding. This modification of the Clapp circuit provides much better frequency stability, more constant output and less tube loading. The frequency stability of the oscillator is governed mainly by maintaining a constant temperature in the oscillator compartment and by utilizing temperature compensating condensers at critical points in the circuit. The fundamental oscillator frequency and output is in the 160 and 40 meter bands. Cathode keying of this stage is employed as it is the easiest and most dependable type of keying. A broadband load choke in the output circuit of the oscillator supplies RF drive to the buffer stage through a coupling capacitor.

1-10. The buffer stage employs a type 6CB6 tube operating as a Class "A" RF amplifier. The plate circuit of this stage is bandswitched to broadband RF coils which supply RF output in the 160 and 40 meter bands through an output coupling capacitor. The amount of RF output varies, depending upon the type and length of cable used plus the care exercised in tuning the output coils. (See 5-3).

1-11. The power supply is of the selenium rectifier type and furnished all necessary high voltages without unnecessary heat. The filament power is derived from a transformer. The B supply voltage is held constant by a type 0A2 voltage regulator tube plus the fact that the buffer stage operates continuously and the oscillator current drain is very low. As a result the keying characteristics are very clean and overall stability is greatly improved.

SECTION I
(Contd)

The microphone amplifier tube consists of a 6SJ7 tube which is capacity coupled to the following speech amplifier stage. One 6C5 tube is utilized as a speech amplifier, capacity coupled into a 6L6G driver stage. "Couplates" are used for coupling the afore-mentioned audio stages. They have a restricted audio range and allow full use of useable audio power, also, they discriminate against power wasting high and low audio frequencies. The 6L6G driver stage is transformer coupled to the modulator stage. All speech and driver stages are thoroughly de-coupled, and all DC voltages applied to them are thoroughly filtered. Two 811A tubes, with zero bias, operate as push-pull, class B modulators. Modulator plate current is indicated at all times by a meter in the plate circuit. High voltage for the modulator is supplied by a pair of 816 rectifier tubes in a full wave rectification circuit. A 5Y3GT tube, in a full wave rectification circuit, supplies plate voltage for the speech and driver stages.

The speech compression circuit uses a 6AL5 rectifier operating in the following manner: A portion of the audio voltage developed in the plate circuit of the 6L6G driver stage is fed back through a voltage divider and decoupling network to the 6AL5 rectifier connected as a voltage doubler. The rectified audio from the 6AL5 is applied as a variable bias voltage to the suppressor grid of the 6SJ7 microphone amplifier. A maximum of 7 DB compression is available with this circuit in operation. Due to this feature, 100% modulation cannot be exceeded on voice peaks to cause excessive sideband splatter.

The high voltage supply for the RF uses two 866A tubes in a full wave rectification circuit. The filter section utilizes choke input. The RF driver power supply uses a 5U4G rectifier tube in a full wave rectification circuit with single section choke input filter. Reduced screen voltage on the final amplifier tube is obtained by placing the function switch in tune position. This will prevent the final amplifier tube from drawing excessive plate current during tune-up and testing. A terminal strip on the rear of the main power supply chassis provides 115 VAC when the TRANSMIT switch is in ON position. This is to operate external relays used to silence the receiver, etc. The AC input circuit is fused with a 20 amp. fuse to protect the equipment in the event of component failure.

SECTION II

OPERATING PROCEDURES

CONTROLS AND TUNING.

The following paragraphs describe the various panel controls of the Globe King transmitter Model 500-C. Tune-up and operating procedures are outlines following the description of controls. It is recommended that this

section be studied thoroughly before any attempt is made to place the transmitter in operation.

DESCRIPTION OF CONTROLS.

OSCILLATOR. Tunes oscillator plate circuit to fundamental, second or third harmonic of crystal or VFO frequency.

EXC. BAND SW. Selects proper amount of inductance in both oscillator and buffer plate circuits.

BUFFER. Tunes buffer plate circuit to oscillator frequency or selected harmonic.

METER SW. Places EXCITER meter into any one of the following four circuits. OSC. PLATE, BUFF. PLATE, FINAL GRID or FINAL SCREEN.

FUNCTION SW. Serves three purposes. Inserts high resistance in power amplifier screen grid circuit for tune-up, shorts modulation choke for CW operation, inserts modulation choke into power amplifier screen grid circuit for AM operation.

F. GRID DRIVE. Controls screen voltage of buffer stage, thereby, controlling power amplifier grid current and RF drive.

ANT. COUPLING. Inserts added inductance or capacity into the output circuit for proper antenna match.

FINAL PL. TUNE. Tunes plate circuit of power amplifier stage to resonance. Must be retuned after any adjustment.of either ANT. LOAD control or ANT. COUPLING control.

FINAL BAND SW. Inserts proper amount of inductance into the pi-network to resonate on selected band.

ANT. LOADING. Varies amount of loading by matching power amplifier plate circuit to antenna circuit. Always start with this control in the "MIN" position. This corresponds to maximum capacity of condenser, and at this setting, will match lowest impedance.

SB-AM SWITCH. Changes class of operation of the power amplifier tube from class "C" to class "B". Also removes all low B plus voltages from oscillator and buffer stages for SB operation of the power amplifier.

GAIN. Controls level of modulation in AM operation.

MODE. Serves three functions. In phone position, applies AC filament power to the modulator, applies AC plate power when TRANSMIT switch is turned on, removes short from modulation transformer secondary. In CW position, removes AC power to filament and plate circuits, shorts the modulation transformer secondary.

FILAMENT. (Power supply panel). Applies AC power to the entire transmitter.

EXCITER. Applies AC power to low B plus plate transformer for the exciter section and to the VFO switching relay.

TRANSMIT. Applies AC power to plate transformer for high B plus voltage for the power amplifier tube. Also applies AC voltage to the exciter plate transformer. Push-to-talk switch on the microphone stand will also energize the complete transmitter by relay control.

XTAL-VFO. In VFO position, connects VFO to input of crystal stage.

COMPRESSION. Switches speech compression circuit in or out as desired.

BANDSWITCH. Selects proper band of operation for VFO with the transmitter. Must be set to same band of operation as the EXCITER BANDSWITCH and FINAL BANDSWITCH. Located on power supply panel.

VFO TUNING. Tunes the VFO to the desired frequency of operation.

EXTERNAL CONNECTIONS.

WARNING

Before making any external connections to the transmitter, remove the AC line cord plug from the AC outlet. Also, place all power switches in the OFF, or down position and ground cabinet.

PATCH IN. This jack is wired to the top of the audio GAIN control so that an external audio signal, such as from a phone patch, may be fed into the speech stages independently of the microphone.

KEY. Closed circuit type wired in the grid circuit of the keyer stage for sequential keying.

XTAL. Insertion of proper 160-80-40 meter crystal, allows operation on all amateur bands, 160 meters through 10 meters.

INPUT. Input socket for use of external SB exciter. SB exciter must deliver SB signal of 15-20 watts. Located on rear apron of RF section chassis.

MIC. Located on the front panel of the modulator section. Audio input is between pin 1 and ground. Push-to-talk connections are from pin 2, through push-to-talk switch and to ground.

115V AC. Terminal strip, located on rear of power supply chassis. Provides 115 VAC to operate relay when TRANSMIT switch or push-to-talk is in ON position.

ANTENNA CONNECTORS. Located on rear of RF section. Two coax connectors marked ANT. and RECEIVER.

OPERATING HINTS.

Proper tune-up is necessary for optimum performance of the Globe King 500-C transmitter. Attempted operation of the transmitter without proper tune-up may result in damage.

TABLE II. CRYSTAL CHART

Band	Crystal
160 meters	1800-2000 KC
80-75 meters	3500-4000 KC
40 meters	7000-7300 KC
20 meters	7000-7175 KC
15 meters	7000-7150 KC
10 meters	7000-7425 KC

WARNING

Operation of this equipment involves the use of high voltages which are dangerous to life. Observe all safety precautions! Do not attempt to make adjustments inside the equipment, or change tubes with any power on. Disconnect the main power line before touching any high voltage components.

Dial settings in Table III are typical for frequencies and resistive loads indicated. A deviation of more than 10% from these readings indicates a reactive load presented to the transmitter, causing improper tuning. When the loading control is advanced from the minimum position to obtain loading, the final plate tuning control should NOT have to be retuned more than

SECTION III

PARTS MOUNTING PROCEDURE

3-1. General:

3-2. Following is the parts mounting procedure for kit assembly. It is recommended the procedure be followed as outlined for ease and proper assembly. Prior to assembly the large folded sheet included with the manual should be laid out in a convenient manner for ready identification of the various parts and mounting holes. Check off each step as completed.

1. Install a 1/2" rubber grommet in hole GR2 on top of chassis. (This hole is hidden by transformer T1 in the illustrations. Location is in the right rear corner of the chassis top.)

2. Install a 3/8" rubber grommet in hole GR1 on rear apron of chassis.

3. Mount a 7-pin mica filled socket in hole S01, positioning as shown in Figures 3 or 4. Use two 4-40x3/8" screws and two 4-40x3/16" hex nuts. Add a #4 grounding lug GL1 to the front screw as indicated in Figure 4. Socket should be inserted into hole from bottom of chassis.

4. Mount a 7-pin mica filled socket in hole S02, position as shown in Figure 4. Use 4-40x3/8" screws and 4-40x3/16" hex nuts.

5. Mount a 7-pin mica filled socket in hole S03, adding a #4 grounding lug GL2, positioning the socket and lug as shown in Figure 4. Use 4-40x3/8" screws and 4-40x3/16" hex nuts.

6. Mount key jack in hole K1 from inside the chassis. Install the smooth washer followed by the nut on the outside of the chassis. Position as shown in Figure 4 and tighten securely.

7. Mount the output jack in hole J1, Position as shown in Figure 4 and secure with 6-32x5/16" screws and 6-32x1/4" nuts.

8. Mount selenium rectifiers SR-1 and SR-2 as follows: Slip the 6-32x1/2" screw through the hole nearest GR-2 from top of chassis. Mount SR-2 (minus side to chassis) on this screw. Mount SR-1 (it's minus side to the plus side of SR-2) on this screw also. (NOTE: Bend over, or break off the positioning tabs on the rectifiers to allow them to come together snugly) Position as shown in Figure 4 and secure with a 6-32x1/4" hex nut and lock washer.

9. Insert all the leads of transformer T-1 through grommet GR-2. Route the two black leads through the slot on the transformer core so that all leads come out the same side. Position as shown in Figure 2. Secure the left side (top front view) to the chassis with a 6-32x5/16" screw, #6 lock washer and a 6-32x1/4" hex nut. Tighten with fingers only.

SECTION III

TUNE-UP PROCEDURE - CRYSTAL OPERATION.

a. Place all power and control switches in the OFF position. Place EXCITER switch to XTAL OPERATE.

b. Insert AC line cord plug into a 110-115 volt, 60 cycle, single phase current source.

c. Connect antenna feed line to coax connector marked ANT. (Rear of RF chassis).

d. Select the proper crystal for the frequency from the crystal chart, TABLE II, insert into XTAL socket. Place XTAL-VFO switch in XTAL position.

e. Place FILAMENT switch (power supply panel) to the ON position, and allow three minutes warm-up time.

f. Set EXC. and FINAL bandswitches to the desired band.

g. Place FUNCTION switch to the TUNE position.

h. Set ANT. COUPLING switch to position indicated in TABLE III for band in use and load expected. Set ANT. LOAD control to minimum (counter-clockwise).

i. Rotate F. GRID DRIVE control to position 5.

j. Place SB-AM switch in AM position. (Cu panel of RF section).

k. Place METER switch in OSC. position. Place MODE switch on the MODULATOR section to the CW position.

l. Place EXCITER switch to XTAL TUNE position and adjust OSCILLATOR tuning control for minimum current indication of the meter. Note the tuning chart for approximate dial reading for band in operation.

m. Place METER switch to BUFF. position.

n. Tune BUFFER plate control for minimum current reading. (Check TABLE III for typical dial readings, as a wrong harmonic can be tuned in some instances).

o. Place METER switch to F. GRID position and note the amount of grid current. A reading of approximately 13 Ma should be obtained. If not, tune OSC. and BUFF. for maximum F. GRID current, adjust the F. GRID DRIVE control until a reading of 13 Ma is obtained.

24. Install mounting bracket on rear of condenser C1. The bracket mounts on rear of ceramic frame. See Fig. 7 for details. Use a 3/8" hex nut to secure.

25. Solder a 2" piece of #20 bus-bar wire to lug 3 of C1 as it is inaccessable after the condenser is mounted to the chassis. See Fig. 7 for details.

26. Insert the shaft of C1 into the large hole of its front mounting bracket (this bracket was mounted in an earlier step). Position C1 as shown in Fig. 2 and secure to front bracket with 6-32x5/16" screws.

27. Secure the rear bracket of C1 to the chassis with a 6-32X5/16" screw. A #6 solder lug GL4 mounts on this screw on the top side of chassis. (See Fig. 2). Secure with a 6-32x1/4" nut and lockwasher.

28. Tighten all C1 bracket nuts and screws.

29. Engage the large drive wheel and the drive pulley by inserting the edge of the large wheel into the edge of the split drive pulley. Insert it approximately 1/16" into the small pulley by moving the short drive shaft in its hole.

30. Mount the 4" drive wheel on the shaft of C1, hub side away from C1.

31. Mount the 7/8" drive pulley on the tuning shaft with hub side towards you, Fig. 1.

32. Slide both wheels as close to the chassis as the nut on the tuning shaft will allow. Tighten the 4 set screws.

33. Mount the 160M output coil L1 (Brown Dot) from underneath in the 3/16" hole. Position lugs as shown in Fig. 3. Secure with 5/16" nut on top side of chassis.

34. Mount the 40M output coil L2 (Red Dot) from underneath in the 1/4" hole next to L1. Position lugs as shown in Fig. 3. Secure on top side of chassis with a 3/8" nut. Attach a #6 nut to the core adjusting screw.

35. Mount the slide switch SW-2 on the rear side of the panel with the two lugs nearest to the ON position. Use 4-40x3/8" screws and 4-40x 3/16" hex nuts.

36. Attach the panel to the chassis as follows: Insert the two 6-32x 7/8" screws into the two small panel holes from the front side of the panel. Place two #10 washers over each of the screws from the rear side of the panel, then add the 3/8" brass spacers. Insert the two screws into the two small holes on the front of the chassis. Add a #6 lock washers and a 6-32x1/4" hex nut to each screw from the inside of the chassis. Tighten snugly only.

37. Mount the knobs on the bandswitch and VFO tuning shafts. Set the bandswitch to the OFF position, then align the white indicator line on the knob skirt with the OFF line on the panel. Tighten the set screw. As the tuning knob rotates 360 degrees it may be installed with the indicator line in any position.

3-3. The mounting of parts has now been completed. Advance to the Wiring Procedure 4-1.

p. Place EXCITER switch in XTAL OPERATE position and TRANSMIT switch to ON position. Carefully adjust FINAL PL. TUNE for minimum final current. This indicates resonance in the final plate circuit, dial setting of FINAL PL. TUNE control should correspond closely with the setting in TABLE III.

q. Advance the ANT. LOADING control slowly clockwise, final plate current should increase. When plate current has increased to 190 Ma, re-tune the FINAL PL. TUNE control for minimum plate current again. Repeat the procedure of advancing ANT. LOADING control and re-tuning the FINAL PL. TUNE control to resonance until the minimum plate current dip is 190 Ma.

r. Place FUNCTION switch to the CW position. This should cause an increase in final plate current up to approximately 300 Ma. Re-tune OSC. and BUFFER controls for maximum final grid current, then re-adjust the F. GRID DRIVE control so that 11 Ma of grid current is indicated. When the full voltage is applied to the final stage, normal loading will decrease grid current 10 to 20%, so re-adjusting of the BUFFER and F. GRID DRIVE control is necessary.

s. Repeat the loading procedure by advancing ANT. LOADING control and re-tuning the FINAL PL. TUNE control, until the minimum plate current dip of 300 MA is obtained. This is full load for the final stage and it should not be exceeded or a reduction in power output will result. Do not exceed 11 Ma grid current or shortened tube life will result. The ANT. LOADING control may be advanced until sufficient final loading is obtained. Should the dial indications differ greatly from the typical table readings, a defective antenna or a high reactance is indicated and should be corrected.

t. Re-check all meter readings for safety sake. The screen grid current of the power amplifier has the widest allowable tolerance as its value depends on the plate current. A reading of 15-50 Ma is reasonable. Also, if the final is loaded below 500 watts, the screen grid current will be considerably higher.

TUNE-UP PROCEDURE - VFO OPERATION.

Tune-up procedure for VFO operation varies somewhat from crystal operation tune-up. Proper procedure is as follows:

a. Place all power and control switches in the OFF position. Place the power supply EXCITER switch to VFO OPERATE.

b. Insert AC line cord plug into a 110-115 volt, 60 cycle, single phase current source.

c. Connect antenna feed line to coax connector marked ANT. (Rear of RF chassis).

SECTION IV

WIRING PROCEDURE

4-1. GENERAL.

4-2. Wiring of the VFO is critical. Leads should be routed, and resistors and condensers positioned as specified in the wiring procedure. While this is not difficult, great care should be taken to follow the instructions carefully, so as to obtain best results. In the wiring procedure (S) means solder; (NS) mean do not solder. Check off each step as completed.

1. Select the two black leads of T1. Trim one lead to length and connect to lug 2 of TS1. (NS) Figure 4.

2. Trim the other black lead of T1 to length and connect to lug 2 of FS1. (S). Figure 4.

3. Trim one green lead of T1 to length and connect to lug 4 of TS2. (NS). Figure 3.

4. Trim remaining green lead of T1 to length and connect to the left mounting lug (nearest lug #1) of TS2. (S).

5. Trim one red lead of T1 to length and connect to lug 1 of C16-17. (NS). Figure 4.

6. Trim other red lead of T1 to length and connect lug 1 (plus terminal) of SR1. (S). Figure 4.

7. Connect a 5" length of black hook-up wire from lug 1 of FS1 (S) to lug 5, front wafer (nearest front edge of chassis) of SW1. (S). Figures 3 and 4. Route this lead along the left edge of the chassis.

8. Connect a 9-1/2" length of green hook-up wire from lug 1 of TS1 (NS) to lug 6, front wafer, of SW1. (S). Figures 3 and 4. Route this lead along the left edge of the chassis (viewing from rear upside down).

9. Connect lug 2 of SR1 (S) to lug 1 of SR2 (S) with a short length of #20 bus-bar wire. Fig. 4.

10. Thread a 2-1/2" length of #20 bus-bar wire through lug 2 of SR2, through the center mounting hole of TS1, to a grounding twist lug of C16-17. (S at SR-2 and C16-17). Fig. 4.

11. Connect a .005 mfd. disc condenser (C-11) from lug 1 (S) to lug 3 on K1. (NS).

12. Connect a 2-3/4" length of blue hook-up wire from lug 3 of K1 (NS) to lug 3 of TS-2, (NS). Figures 3 and 4.

13. Connect a 2-1/2" length of green hook-up wire from pin 4 of SO1 (NS) to lug 4 of TS2. (S). Fig. 3.

14. Connect a 3" length of green hook-up wire from pin 4 of SO1 (S) to pin 3 of SO3. (S). Fig. 4.

15. Connect a 2" length of red hook-up wire from lug 2 of C-16-17 (NS) to lug 5 of TS2. (NS). Fig. 4.

16. Thread a 2" length of #20 bus-bar through pin 2 of SO2, through GL2, through pin 7 of SO3, through the center shield of SO3, then through pin 4 of SO3. Fig. 4. (S at all but center post and GL2).

17. Connect a 2-1/4" length of red hook-up wire from pin 5 of SO2 (NS) to pin 6 of SO1. (NS). Fig. 4.

18. Connect a 4" length of red hook-up wire from lug 2 of C16-17 (NS) to pin 6 of SO3. (NS). Fig. 4.

19. Connect a 4-1/2" length of blue hook-up wire from pin 5 of SO3 (NS) to lug 1, front wafer, of SW1. (S). Fig. 3. Route this lead between L1 and L2 and keep clear of chassis by 1/4".

20. Connect a 2-3/4" length of red hook-up wire from pin 6 of SO3 (NS) to the lug of L2 which is nearest to the chassis. (NS). Fig. 3.

21. Connect a short length of #20 bus-bar wire from the bottom lug of coil L1 to the bottom lug of coil L2. These are the lugs nearest to the chassis. (S at L2 only). Fig. 3.

22. Connect a 15,000 ohm 1/2 watt resistor R4 (Brown-Green-Orange) from lug 1 to lug 2 of L1. (S at bottom lug of L-1 only).

23. Connect a 2-1/4" length of blue hook-up wire from the remaining lug of L1 (S) to lug 2, front wafer, of SW1 (S). Fig. 3.

24. Connect a 3" length of blue hook-up wire from the remaining lug of L2 (S) to lugs 3 and 4, front wafer, of SW1. (S). Fig. 3.

25. Thread a 2" length of #20 bus-bar wire through GL1 (NS), through pin 3 of SO1, (S), through the center shield post of SO1 (S), then through pin 2 of SO1. (S). Figure 4.

26. Connect the lead, which has been soldered to the rotor lug of C1 to GL4. (S). Fig. 2.

27. Connect a 2" length of blue hook-up wire from the lug of L3 which is nearest the chassis (S), to lug 2, rear wafer, of SW1. (S). Route this lead through the 1/2" hole between coils L3 and L4, keep wire clear of hole edge. Figures 2 and 3.

28. Connect a 3-1/2" length of yellow hook-up wire from the lug of L4, which is nearest to the chassis (S),to lugs 3 and 4, rear wafer of SW1. (S) Figures 2 and 3.

29. Connect a 2" length of #20 bus-bar wire from the remaining lug of L3 (NS) to lug 1 of C1. (S). This lead must be clear of the condenser frame by 1/4". Fig. 2.

30. Connect a 1-1/4" length of #20 bus-bar wire from the remaining lug of L4 (NS) to lug 2 of C1. (S) This lead must also be clear by 1/4". Fig. 2.

31. Connect a length of #20 bus-bar wire from the stator lug 1 of C3 (S) to the top lug of L4. (NS). Fig. 2.

32. Connect a length of #20 bus-bar wire from the stator lug 1 of C6 (NS) to the top lug of coil L3. (S). Fig. 2.

33. Connect a length of #20 bus-bar wire from the stator lug 1 of C4 (S) to lug 6, rear wafer, of SW1. (S). Figures 3 and 4.

34. Connect a 4" length of green hook-up wire from the top lug of L4 (NS), route through the 1/2" hole in the chassis and connect to lug 5, rear wafer, of SW1. (S). Figures 2 and 3.

35. Connect a 3-1/2" length of #20 bus-bar wire from lug 1 of TS2 (NS) to lug 1, rear wafer, of SW1. (S). Keep this lead clear of all surrounding objects by at least 1/4". Fig. 3.

36. Connect a 500 mmf silver mica condenser with red body (C8) from pin 7 of SO1 (NS) to the grounding hole of TS2 nearest to I1. (S). Position this condenser to lay on edge between SO1 and I1. Fig. 4.

37. Connect the other 500 mmf silver mica condenser with red body (C7) from pin 7 of SO1 (NS) to lug 1 of TS2. (NS). Position this condenser to lay on edge between SO1 and TS2. Fig. 4.

38. Connect the 100,000 ohm 1/2 watt resistor (R1, Brown-Black-Yellow) from pin 1 of SO1 (NS) to GL1. (NS). Fig. 4.

39. Connect the 56 ohm 1/2 watt resistor (R2, Green-Blue-Black) from pin 1 of SO1 (S) to lug 2 of TS2. (NS). Figures 3 and 4.

40. Connect the 4700 ohm, 1 watt resistor (R6, Yellow-Violet-Red) from pin 5 SO2 (S) to lug 5 of TS2. (NS). Figures 3 and 4.

41. Connect the 220 ohm 1 watt resistor (R5, Red-Red-Brown) from lug 1 to lug 2 of C16-17. (S-both connections). Figure 4.

42. Select a 22,000 ohm 1/2 watt resistor (R3 Red-Red-Orange) and a 18 mmf tubular type condenser C20 (Black-Brown-Gray). Parallel C20 across R3. Wrap condenser leads around resistor leads close to resistor body, cut off excess condenser leads and solder each end. Connect one resistor lead to pin 1 of SO3 (NS) and the other resistor lead to GL2 (NS).Fig. 4.

f. Feed a steady tone into the audio input of the SB exciter, in the range of 1,000 to 1,500 cycles. An audio signal generator is excellent for this purpose. Should no generator be available, the operator may whistle into the microphone, holding the tone as steady as possible. Final amplifier grid current should NOT exceed 3 Ma. (A grid current of about 1 Ma on PEAKS is excellent).

g. The final plate current swing for full input should not exceed 260 Ma PEAK. The resting current will be approximately 50-80 Ma. In SB operation, the power amplifier grid and plate current swings are entirely controlled by the amount of excitation from the SB exciter. Heat dissipation at the resting current of 50-80 Ma on the final plate will be evidenced by a slight color on the plate of the tube, however, this will disappear under modulation.

h. Settings of the tuning controls will hold over a slight frequency shift. For large frequency excursions, the transmitter should be retuned.

The best way to tune any SB amplifier for maximum efficiency is to use a RF current indicating device in the antenna system, along with a scope to monitor linearity. Using the two tone test, adjust drive to the final for about 1 Ma. Load the final for maximum RF output, as indicated by the RF indicator so long as the wave-shape stays linear.

SECTION VI

IMPORTANT INFORMATION

EMERGENCY SHUT-OFF

For emergency shut-off, place filament switch (power supply panel) in OFF position. This action removes all voltages.

TYPICAL INSTRUMENT READINGS - PHONE & CW 20 METER BAND.

OSC. PLATE 15-25 Ma	BUFFER PLATE 40 Ma	P.A. GRID 11 Ma	P.A. SCREEN 15-50 Ma	P.A. PLATE 300 Ma
SB Operation		PEAK 1-3 Ma	0-30 MA PEAK	50-260 Ma PEAK

PRECAUTIONS TO BE OBSERVED.

All meter readings should be noted occasionally. Should the readings deviate considerably from that listed in the typical readings, operation should be suspended until the cause is determined. Failure to do this may result in damage to the equipment, or, in any event, cause a poor signal to be transmitted.

CAUTION

DO NOT operate Telegraph (CW) with MODE switch of the modulator in PHONE position. The FUNCTION switch should be in the CW position.

SECTION VII

ANTENNA CONSIDERATIONS.

The Globe King 500-C uses a PI-NET final tank circuit which has the capability of matching a considerable range of non-reactive load impedances. As the reactive component increases in the antenna and feed line, the range of match possible is reduced, as the PI-NET has to compensate with an opposite reactive component, thereby, reducing its capability to match higher impedances. In some cases where the reactive load may be large enough, as compared to the resistive load, the matching range may be reduced to as little as 50-100 ohms. It is to the operator's advantage to correctly measure the impedance at the transmitter end of the feed line and to correct a large reactance at the antenna, rather than trying to tune it out with the PI-NET. Many low power transmitters have a greater capability to tune out reactance from an antenna sys tem than is possible with the 500-C. This is due to the fact that components in the average low power transmitter can have a high capacity, etc., and still have only a very low power rating. These same components will stand a very high power loss without failure in most cases. In a 500 watt transmitter, these components are impractical as they become too large physically, so the compromise consists of not being able to handle as large a reactive load. The capability of handling a LARGE RESISTIVE LOAD is, however, still present in the 500-C transmitter. There are numerous antenna configurations that will give excellent all band results, however, in nearly all cases the impedance presented to the transmitter on one or more bands will not be within the capabilities of the PI-NET, and an antenna tuner will be required. The simple DIPOLE or FOLDED DIPOLE will most likely be easiest to match. While the free space impedance of the dipole, at the center,

SECTION V

ALIGNMENT PROCEDURE

5-1. GENERAL.

5-2. Successful and satisfactory use of the VFO may be realized only if the dial calibration is correct and maximum output is obtained. Therefore, you are urged to follow the alignment procedure meticulously. Do not proceed from step to step until you are certain each step has been performed properly and satisfactorily. Failure on your part to do a good job of alignment will result in generally unsatisfactory operation. Keep in mind the fact that you have spent money for a quality kit, however, the final outcome of kit assembly and operation rests with you. Do a good job and you will have a piece of equipment you will take pride in. Alignment procedure is as follows:

1. Place Calibrate switch in OFF position.

2. Place Bandswitch in 160/80M position.

3. Allow 5 minute warm-up. The VFO may be aligned in or out of the cabinet and as there is only a 350 cycle difference in frequency when out of the cabinet it is optional which way alignment is completed.

4. Tune the receiver (with 100 Kc crystal calibrator) to 1.8 Mc.

5. Tune the VFO to 1.8 Mc. Place CALIBRATE switch in ON position and adjust the slug in coil L3(screw approx. 3/4" out of coil)for zero beat with the calibrator.

6. Tune the VFO and receiver to 2 Mc.

7. Adjust trimmer condenser C6 for zero beat with the receiver.

8. Repeat steps 5, 6, and 7 as many times as necessary until the 1.8 Mc and 2 Mc points on the VFO dial correspond with these same points on the receiver dial.

9. Place the VFO Bandswitch to the 40/10M position.

10. Tune the receiver and VFO to 7 Mc.

11. Adjust the slug in coil L4 (screw approx. 7/8" out of coil) for zero beat with the receiver and calibrator.

12. Tune the receiver and VFO to 7.4 Mc.

13. Adjust trimmer C3 for zero beat with the receiver and calibrator.

14. Repeat steps 10, 11, 12, and 13 as many times as necessary to make the 7 and 7.4 Mc points on the VFO dial correspond to these same points on the receiver dial.

15. Place the VFO bandswitch to the 20/15/11M position.

16. Tune the receiver to 7 Mc and the VFO to 14 Mc.

17. Adjust trimmer C4 for zero beat with the receiver and calibrator.

5-3. This completes the oscillator alignment. Output coils L1 (160M) and L2 (40M) should be adjusted for maximum output after being connected to the stage to be driven. Coil L1 should be peaked to approximately 3.8 Mc and coil L2 should be peaked at 21.225 Mc, with output cable connected to operating transmitter. When adjusting VFO output coils, observe transmitter oscillator plate current for greatest amount of dip when tuned to resonance. Now with transmitter properly tuned, and in operation with the VFO, coils L1 or L2 may be peaked for maximum output while observing Final Grid meter of transmitter for maximum current.

5-4. Install the VFO in the cabinet then secure the panel and the chassis rear apron to the cabinet using three #6x1/4" self-tapping screws.

SECTION VIII

VFO ALIGNMENT.

In the event it should be necessary, for any reason, to re-align the VFO, the following procedure should be followed to assure correct alignment:

PRELIMINARY.

a. Disconnect all cables from the rear apron of the power supply section and remove this section of the transmitter from the cabinet.

b. Place all power and control switches in the OFF position.

c. Insert the AC line cord plug into a 110-115 volt, 60 cycles, single phase current source.

d. Place the power supply section EXCITER switch to the VFO OPERATE position.

e. Place the power supply FILAMENT switch to the ON position and allow a ten-minute warm-up period.

f. Elevate the power supply section chassis to provide convenient access to the VFO slugs and trimmers located on the bottom side of the chassis. It is very important that the power supply section and the VFO remain in their normal operating position or else the compensating capacitors will not function properly and calibration may be off as much as 5-10 KC.

See Figure 1 for identification and location of the alignment slugs and trimmers.

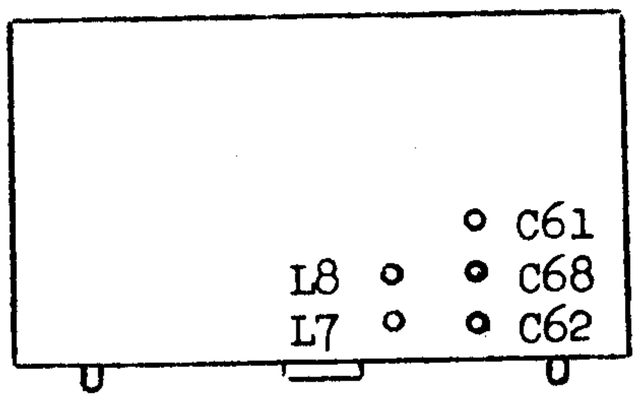


Figure 1 - Bottom View of Power Supply Section

ALIGNMENT PROCEDURE.

a. Place the EXCITER switch to the VFO TUNE position.

b. Place the VFO BANDSWITCH to the 160-80 M position.

c. Tune your receiver (using a 100 KC crystal calibrator) to 1800 KC.

d. Tune the VFO dial to 1800 KC.

e. Adjust the slug-in coil L-8 for zero beat with the receiver.

f. Tune the VFO and receiver to 2.0 MC.

g. Adjust trimmer condenser C-68 for zero beat with the receiver.

h. Repeat steps c, d, e, f and g as many times as necessary until the 1800 KC and 2.0 MC points on the VFO dial correspond with these same points on the receiver.

i. Place the VFO BANDSWITCH to the 40-10 M position.

j. Tune the VFO and the receiver to 7.0 MC.

k. Adjust the slug-in coil L-7 for zero beat with the receiver.

l. Tune the VFO and receiver to 7.4 MC.

m. Adjust trimmer condenser C-62 for zero beat with the receiver.

n. Repeat steps j, k, l and m as many times as necessary to make the VFO track with the receiver.

o. Place the VFO BANDSWITCH to the 20-15-11 M position.

p. Tune the receiver to 7.1 MC and the VFO to 14.2 MC.

q. Adjust trimmer condenser C-61 for zero beat with the receiver.

The VFO alignment is now completed. The VFO output coils should now be peaked for maximum drive to the crystal stage of the transmitter Proceed as follows:

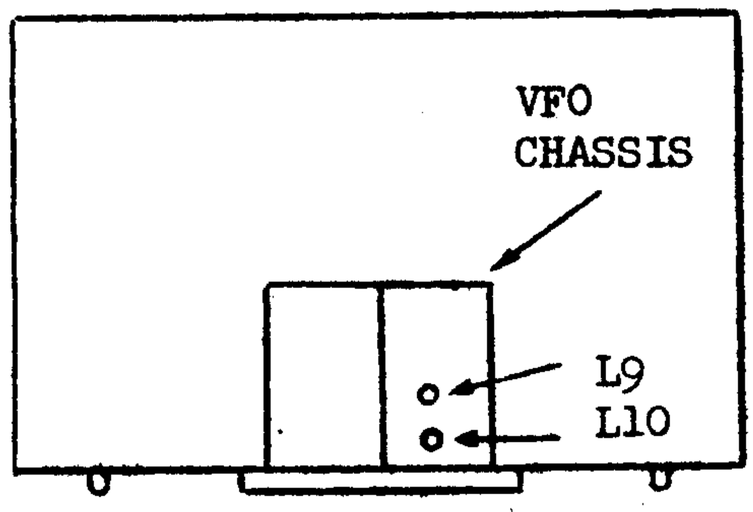


Figure 2 - Top View of Power Supply Section

a. Place all switches on the power supply section to the OFF position.

b. Place the power supply section as close as possible to the RF section of the transmitter.

c. Insert the VFO output cable into power and RF section sockets labeled VFO. They are located on the rear apron of each of the two chassis.

d. Insert the 6-prong power plug from the power supply section into the socket on the RF section labeled POWER.

e. Place the power supply section FILAMENT switch to the ON position.

f. Place the EXCITER switch to the VFO TUNE position.

g. Place the VFO BANDSWITCH and the RF section EXCITER BANDSWITCH to the 80 M position, the frequency to approximately 3.8 MC.

h. Adjust the slug of coil L-10 (refer to Figure 2 for location) for maximum drive to the oscillator stage of the transmitter as determined by the maximum amount of oscillator plate current dip.

i. Place the VFO BANDSWITCH and the RF section EXCITER BANDSWITCH to the 15 M position, the frequency to approximately 21.3 MC.

j. Adjust the slug of coil L-9 (refer to Figure 2 for location) for maximum drive to the oscillator stage as in step h.

VFO alignment and peaking is now completed and the transmitter may be reassembled for normal operation.

SECTION IX

TYPICAL VOLTAGE READINGS.

The voltage readings given in TABLE IV are typical for the conditions as set forth. Some allowance must be given if the meter used is not a 20,000/ohm per volt meter.

WARNING

Use extreme caution when taking voltage readings. High voltages, dangerous to life, are involved.

TABLE IV. VOLTAGE CHART: CONDITIONS: Typical voltage readings Globe King 500-C. 80M band-VFO control-115V AC line-72 ohm dummy antenna 20,000 ohm/volt meter.

Tube Type	Tube Function	Tube Pin Number								Plate Cap.
		1	2	3	4	5	6	7	8	
6AG7	Xtal Oscillator	0	0	0	Minus 5V	0	Plus 140V	6.3VAC	Plus 350V	
6146	Buffer/Doubler	0	0	130V	0	Minus 50V	0	6.3VAC	0	*Plus 480V
6156	Final	5VAC to Pin 5	Plus 400V	Minus 120VAM Minus 65V SB	Plus 400V	5V AC to Pin 1	NC	NC	NC	*Plus 1800V
6X5	Bias Rectifier	0	6.3VAC	Minus 140	0	Minus 140	190 VAC	0	190VAC	
5Y3	Final Screen Rectifier	0	Plus 430V	0	360 VAC	0	360 VAC	0	5VAC to Pin 2	
6Sj7	Mic.Amplifier	0	0	Plus 1V	0	Plus 1V	Plus 25V	6.3VAC	Plus 45V	
6C5	Speech Amplifier	0	0	Plus 75V	Plus 400V	0	0	6.3VAC	0	
6L6G	Mod.Driver	0	0	Plus 410V	Plus 325V	0	Plus 420V	6.3VAC	Plus 27V	
811A	Modulator	6.3VAC to Pin 4	0	0	6.3VAC to Pin 1	NC	NC	NC	NC	
5Y3	Mod. Speech Rectifier	0	Plus 410V plus 500V	0	390 VAC	0	390 VAC	NC	5VAC to Pin 1	
816's	Mod.Rectifier	Plus 1000V Plus 1300V	0	0	2.5 VAC to Pin 1	NC	NC	NC	NC	Plate 1150 VAC
6AL5	Comp.Rectifier	Minus .5V	Minus .5V	6.3VAC	0	0	Minus .3V	Minus .3V	NC	
5U4G	RF Exciter Rectifier	0	Plus 520V	0	580 VAC	0	580 VAC	0	5VAC to Pin 1	
866A's	Final Rectifier	Plus 1800V Plus 2500V	0	0	2.5VAC to Pin 1	NC	NC	NC	NC	Plate 2000VAC
6CB6	VFO Buffer	Minus 4V	Plus 1.5V	6.3VAC	0	Plus 185V	Plus 185V	0	NC	
6AU6	VFO Oscillator	Minus 13V	0	0	6.3VAC	Plus 185V	Plus 150V	Plus .5V	NC	
OA2	VFO Regulator	Plus 150V	0	0	0	Plus 150V	0	0	0	

* RF Choke in series with positive volt meter lead

1. Key open. 2. Key closed. 3. 100% modulation. 4. 0% modulation.

SECTION X

MAIFUNCTIONS AND POSSIBLE CAUSES.

SYMPTOM	PROBABLE CAUSE
1. Main fuse blows when filament switch turned on.	1-1. Shorted capacitor C-55 or C-56. 1-2. Internally shorting tube or tubes.
2. Main fuse blows when high B plus turned on.	2-1. Shielding on M-2 or M-3 shorting to ground at meter connections. 2-2. Internally shorting tubes. 2-3. Insulators ST-1,ST-2,ST-3 or ST-4 punctured and shorting. 2-4. Shorted capacitors C-27, C-60 or C-53.
3. Buzzing relay or relays.	3-1. AC line voltage too low or too high. 3-2. Filings between armature and core of noisy relay.
4. NO modulation.	4-1. Open coil on RLY-4. 4-2. Bad speech or modulator tubes.
5. Rough VFO note.	5-1. Weak 6AU6 tube. 5-2. Gassy 6CB6 tube.
6. Final screen current excessive or insufficient.	6-1. Weak 6156 tube. 6-2. Improper antenna loading. 6-3. Insufficient grid drive to final.
7. Exciter B plus goes on when filament switch turned on.	7-1. Shorted capacitor C-55 or C-56.
8. Excessive final plate current swing when modulating.	8-1. Excessive antenna reactance causing poor loading. 8-2. Capacity of the house wiring being exceeded. 8-3. FUNCTION switch on CW instead of PHONE position.
9. Push-to-talk provision inoperative.	9-1. RLY-3 requires adjustment or replacement. 9-2. Shorted capacitor C-40. 9-3. Defective rectifier SR-1.
10. Inoperative VFO.	10-1. Defective rectifier SR2 or SR3. 10-2. Defective 6AU6 or 6CB6 tube.

SECTION XI
PARTS LIST (RF SECTION)

Circuit Design.	Description	Quan.	Globe Part No.
C-1	Capacitor, ceramic, 120 mmf 600 volt	1	1101-002
C-2	Capacitor, ceramic, 25 mmf 600 volt	1	1101-001
C-3	Capacitor, disc .005 mf 600 volt	1	1101-003
C-4	Capacitor, variable, 75 mmf	1	1105-002
C-5	Capacitor, disc .005, mf 600 volt	1	1101-003
C-6	Capacitor, disc 500 mmf 600 volt	1	1101-005
C-7	Capacitor, disc, 500 mmf 600 volt	1	1101-005
C-8	Capacitor, ceramic, 25 mmf 600 volt	1	1101-001
C-9	Capacitor, disc .005 mf 600 volt	1	1101-003
C-10	Capacitor, disc .005 mf 600 volt	1	1101-003
C-11	Capacitor, disc .005 mf 600 volt	1	1101-003
C-12	Capacitor, disc 500 mmf 600 volt	1	1101-005
C-13	Capacitor, disc .005 mf 600 volt	1	1101-003
C-14	Capacitor, variable, 140 mmf	1	1105-001
C-15	Capacitor, disc .001 mf 3000 volt	1	1101-028
C-16	Capacitor, electrolytic, 12 mf 250 volt	1	1106-009
C-17	Capacitor, electrolytic, 12 mf 250 volt	1	1106-009
C-18	Capacitor, ceramic, 70 mmf 1000 volt	1	1101-018
C-19	Capacitor, disc .005 mf 600 volt	1	1101-003
C-20	Capacitor, disc .005 mf 600 volt	1	1101-003
C-21	Capacitor, disc .005 mf 600 volt	1	1101-003
C-22	Capacitor, disc .002 mf 600 volt	1	1101-009
C-23	Capacitor, disc, 500 mmf 600 volt	1	1101-005
C-24	Capacitor, disc, 500 mmf 600 volt	1	1101-005
C-25	Capacitor, electrolytic, 10 mf 500 volt	1	1106-002
C-26	Capacitor, electrolytic, 10 mf 500 volt	1	1106-002
C-27	Capacitor, ceramic, 500 mmf 5KV	1	1101-010
C-28	Capacitor, by-pass, 500 mmf, 20K volt	1	1107-002
C-30	Capacitor, variable, 250 mmf	1	1105-003
C-29	Capacitor, electrolytic, 20 mfd, 150V	1	1106-014
C-31-C-32	Dual 800 mmf, 1600 volt ceramic disc.	1	1104-002
C-33	Capacitor mica, .001 mf, 2500 volt W.	1	1102-006
C-34	Capacitor, mica, 500 mmf, 2500 volt W.	1	1102-005
C-35	Capacitor, mica, 400 mmf, 2500 volt W.	1	1102-008
C-36	Capacitor, mica, 200 mmf, 2500 volt W.	1	1102-004
C-37	Capacitor, mica, 100 mmf, 2500 volt W.	1	1102-003
C-38	Capacitor, 350, variable	1	1105-004
CH-1	Choke, filter, screen B plus	1	1300-011
CH-2	Choke, screen modulation	1	1300-002

FS-1	Fuse, 3 amp, 3AG	1	1500-002
J-1	Jack, key	1	2004-001
J-2	Jack, SSB Input	1	2000-002
J-3	Connector, antenna coax	1	2000-004
J-4	Connector, antenna coax	1	2000-004
L-1	Coil, Osc. Plate	1	1400-007A
L-2	Coil, Osc. Plate	1	1400-006
L-3	Coil, Buffer Plate	1	1400-004M
L-4	Coil, SB Input Link	1	1400-005
L-5A	Coil, 10M Final Plate	1	1400-029
L-5B	Coil, Final Plate, 20-40 M	1	1400-001
L-5C	Coil, Final Plate, 80-160M	1	1400-009
L-6	Coil, Matching 160 M	1	1400-010
M-1	Meter, 3" Shielded, 0-100 Ma	1	2500-006
M-2	Meter, 3" Shielded, 0-400 Ma	1	2500-008
PS-1	Parasitic Suppressor, buffer plate	1	1301-009
RFC-1	Choke, 2.4 MH, 50 Ma	1	1301-001
RFC-2	Choke, 2.5 MH, 200 Ma	1	1301-002
RFC-3	Choke, 2.5 MH, 200 Ma	1	1301-003
RFC-4	Choke, 1 MH, 600 Ma	1	1301-004
RFC-6	Choke, RF, Meter	1	1301-008
RFC-7	Choke, RF, Meter	1	1301-008
RFC-8	Choke, RF, Meter	1	1301-008
RFC-9	Choke, RF, Meter	1	1301-008
RFC-10	Choke, 2.5 MH, 200 Ma	1	1301-002
RLY-2	Relay, Antenna Changeover and Screen B Plus	1	3500-001
R-1	Resistor, 47K-1/2 watt	1	1000-002
R-2	Resistor, 1 meg, 1/2 watt	1	1000-023
R-3	Resistor, 47K-1 watt	1	1001-009
R-4	Resistor, 22K-1 watt	1	1001-010
R-5	Resistor, 120 ohm-1/2 watt	1	1000-003
R-6	Resistor, 56 ohm-1/2 watt	1	1000-010
R-7	Resistor, 6000 ohm-10 watt	1	1003-010
R-8	Resistor, 1 meg,-1/2 watt	1	1000-023
R-9	Potentiometer, 500 K	1	2300-001
R-10	Resistor, 47K-1/2 watt	1	1000-002
R-11	Resistor, 2500 ohm-10 watt	1	1003-005

R-12	Resistor, 2000 ohm-7 watt	1	1003-008
R-13	Control, 25K Wire Wound	1	2300-003
R-14	Resistor, 2000 ohm-7 watt	1	1003-008
R-15	Resistor, 22 ohm-1 watt	1	1001-001
R-16	Resistor, 25K-10 watt	1	1003-001
R-17	Resistor, 560 ohm-1 watt	1	1001-002
R-18	Resistor, 5000 ohm-10 watt	1	1003-002
R-19	Resistor, 22 ohm-1 watt	1	1001-001
R-20	Resistor, 22 ohm-2 watt	1	1002-001
R-21	Resistor, 56 ohm-1 watt	1	1001-003
R-22	Resistor, 22 ohm-1 watt	1	1001-001
R-23	Resistor, 20K ohm-20 watt	1	1004-001
R-24	Resistor, 50K ohm-10 watt	1	1003-009
R-42	Resistor, 68K ohm-2 watt	1	1002-006
R-43	Resistor, 47K-1/2 watt	1	1000-002
R-55	Resistor, 450 ohm-5 watt	1	1003-013
ST-1	Safety terminal, RF, B plus	1	2200-002
SR-4	Selenium Rectifier, 65 Ma	1	3700-001
SO-1	Socket, RF Power Input	1	1600-003
SO-2	Socket, VFO Input	1	2001-011
SW-1	Switch, Exciter Metering	1	2100-005
SW-2	Switch, Exciter Band Change	1	2100-002
SW-3	Switch, Bias	1	2101-001
SW-4	Switch, Function	1	2100-004
SW-5	Switch, Final Band Change	1	2100-001A
SW-6	Switch, Antenna Loading	1	2100-001A
SW-7	Switch, Xtal-VFO	1	2101-001
T-1	Transformer, Final Filament	1	1202-001
T-2	Transformer, Screen and Bias Power	1	1200-001

Circuit Design.	Description	Quan.	Globe Part No.
C-39	Capacitor, electrolytic, 25 mf, 25 volt	1	1106-003
C-40	Capacitor, electrolytic, 500 mfd, 6 volt	1	1106-015
C-41	Capacitor, electrolytic, 8 mf, 450 volt	1	1106-004
C-42	Capacitor, tubular, .1 mf, 200 volt	1	1100-001
C-43	Capacitor, ceramic, disc .0005 mf, 600 volt	1	1101-005
C-44	Capacitor, electrolytic, 25 mf, 25 volt	1	1106-003
C-45	Capacitor, electrolytic, 8 mf, 450 volt	1	1106-004
C-46	Capacitor, electrolytic, 8 mf, 450 volt	1	1106-004
C-48	Capacitor, tubular, .02 mf, 200 volt	1	1100-002
C-49	Capacitor, electrolytic, 8 mf, 450 volt	1	1106-004
C-50	Capacitor, electrolytic, 25 mf, 25 volt	1	1106-003
C-51	Capacitor, electrolytic, 8 mf, 450 volt	1	1106-004
C-52	Capacitor, ceramic disc, 500 mmf, 600 volt	1	1101-005
C-53	Capacitor, oil, 6 mf, 1000 volt	1	1103-004
C-54	Capacitor, ceramic disc, .01, 1000 volt	1	1101-024
CH-3	Choke, filter, 7H, 200 Ma	1	1300-008
CH-4	Choke, filter, 7H, 350 Ma	1	1300-010
J-5	Jack, Microphone Input	1	2000-001
J-6	Jack, Phone Patch Input	1	2004-002
M-3	Meter, 3" sq., 0-300 Ma	1	2500-007
PC-81	Couplate, Triode	1	1109-001
PC-91	Couplate, Triode	1	1109-002
R-25	Resistor, 47K ohm-1/2 watt	1	1000-002
R-26	Resistor, 2.2 megohm-1/2 watt	1	1000-005
R-27	Resistor, 2200 ohm-1/2 watt	1	1000-006
R-28	Potentiometer, 500K ohm	1	2300-001
R-29	Resistor, 560K ohm-1/2 watt	1	1000-022
R-30	Resistor, 1500 ohm-1/2 watt	1	1000-007
R-31	Resistor, 22K ohm-1/2 watt	1	1000-008
R-32	Resistor, 1 megohm-1/2 watt	1	1000-023
R-33	Resistor, 390K ohm-1/2 watt	1	1000-015
R-34	Resistor, 220K ohm-1/2 watt	1	1000-019
R-35	Resistor, 22K ohm-1/2 watt	1	1000-008
R-36	Resistor, 50K ohm-20 watt	1	1004-002
R-37	Resistor, 390 ohm-2 watt	1	1002-005
R-38	Resistor, 22K ohm- 2 watt	1	1002-003
R-39	Resistor, 47K ohm-1/2 watt	1	1000-002

SECTION XI
PARTS LIST (MODULATOR SECTION)
(Contd)

R-40	Resistor, 100K ohm-1/2 watt	1	1000-009
R-41	Resistor, 50K ohm-50 watt	1	1006-002
R-44	Resistor, 47K ohm-1/2 watt	1	1000-002
ST-2	Terminal, Safety, Modulator B plus	1	2200-002
ST-3	Terminal, Safety, Modulator B plus	1	2200-002
SR-1	Rectifier, Push-to-Talk	1	3700-007
SO-3	Socket, Modulator power input	1	1600-007
SO-4	Socket, Push-to-Talk, connecting	1	2000-003
SW-8A SW-8B SW-8C	Switch, Modulator filament Switch, Modulator shorting Switch, Modulator plate control	1	2100-015
SG-1	Spark Gap Assembly	1	3900-002
SW-10	Switch, Compressor, ON/OFF	1	2101-001
T-3	Transformer, Audio Driver	1	1203-002
T-4	Transformer, Modulation	1	1203-004
T-5	Transformer, Speech Filament	1	1202-010
T-6	Transformer, Modulator Filament	1	1202-007
T-7	Transformer, Low B Plus Rectifier	1	1202-009
T-8	Transformer, High B Plus Rectifier	1	1202-002
T-9	Transformer, Dual High and Low B Plus Plate	1	1201-004

SECTION XI
PARTS LIST (POWER SUPPLY SECTION)
(Contd)

Circuit Design.	Description	Quan.	Globe Part No.
C-55	Capacitor, AC line filter, .1 mfd, 250V AC	1	1104-001
C-56	Capacitor, AC line filter, .1 mfd, 250V AC	1	1104-001
C-57	Capacitor, electrolytic, 30 mf, 250 volt	1	1106-010
C-58	Capacitor, electrolytic, 30 mf, 250 volt	1	1106-010
C-59	Capacitor, electrolytic, 12 mf, 700 volt	1	1106-007
C-60	Capacitor, oil filled, 4 mf, 3000 volt	1	1103-003
C-61	Capacitor, variable trimmer, 9 mmf	1	1105-010
C-62	Capacitor, variable trimmer, 9 mmf	1	1105-010
C-63	Capacitor, neg. temperature, 15 mmf	1	1101-025
C-64	Capacitor, zero temperature, 39 mmf	1	1101-026
C-65	Capacitor, Dual VFO Tuning	1	1105-007
C-66	Capacitor, zero temperature, 18 mmf	1	1101-017
C-67	Capacitor, N150 Compensating, 120 mmf	1	1101-016
C-68	Capacitor, variable trimmer, 15 mmf	1	1105-008
C-69	Capacitor, zero temperature, 130 mmf	1	1101-013
C-70	Capacitor, zero temperature, 82 mmf	1	1101-012
C-71	Capacitor, silver mica, 500 mmf, 500 volt	1	1102-007
C-72	Capacitor, silver mica, 500 mmf, 500 volt	1	1102-007
C-73	Capacitor, ceramic disc, .005 mf, 600 volt	1	1101-003
C-74	Capacitor, zero temperature, 82 mmf	1	1101-012
C-75	Capacitor, zero temperature, 18 mmf	1	1101-017
C-76	Capacitor, ceramic disc, .005 mf, 600 volt	1	1101-003
C-77	Capacitor, ceramic disc, .005 mf, 600 volt	1	1101-003
C-78	Capacitor, zero temperature, 100 mmf	1	1101-014
CH-5	Choke, B plus Filter, 7H, 200 Ma	1	1300-008
CH-6	Choke, B plus Filter, 15H, 50 Ma	1	1300-001
CH-7	Choke, B plus Filter, 7H, 350 Ma	1	1300-010
FS-2	Fuse, AC line, 20A	1	1500-005
I-1	Lamp, Indicator	1	3800-003
I-2	Lamp, Indicator	1	3800-003
I-3	Lamp, VFO Indicator	1	3800-001
L-7	Coil, VFO Grid, 40 M	1	1400-026
L-8	Coil, VFO Grid, 160 M	1	1400-025
L-9	Coil, VFO Output, 40 M	1	1400-024
L-10	Coil, VFO Output, 160 M	1	1400-021A
PL-5	Plug, VFO Power	1	2001-004

RLY-6	Relay, VFO B plus	1	3500-007
RLY-7	Relay, B plus Plate Control	1	3500-010
	Relay, Coil, for RLY-7	1	3500-011
R-45	Resistor, 100K ohm-1/2 watt	1	1000-009
R-46	Resistor, 50K ohm-20 watt	1	1004-002
R-47	Resistor, 75K ohm-100 watt	1	1008-001
R-48	Resistor, 22K ohm-1/2 watt	1	1000-008
R-49	Resistor, 56 ohm-1/2 watt	1	1000-010
R-50	Resistor, 100K ohm-1/2 watt	1	1000-009
R-51	Resistor, 3300 ohm-1 watt	1	1001-011
R-52	Resistor, 22K ohm-1/2 watt	1	1000-008
R-53	Resistor, 120 ohm-1/2 watt	1	1000-003
R-54	Resistor, 15K ohm-1/2 watt	1	1000-013
SR-2	Rectifier, VFO B Plus	1	3700-001
SR-3	Rectifier, VFO B Plus	1	3700-001
ST-4	Terminal, B Plus Safety	1	2200-002
SO-5	Socket, VFO Power	1	1600-007
SO-6	Socket, Push-to-Talk control	1	2000-003
SO-7	Socket, VFO Output	1	2000-006
SO-8	Socket, AC Power Output	1	1600-003
T-10	Transformer, filament, 866A	1	1202-006
T-11	Transformer, filament, 5U4G	1	1202-009
T-12	Transformer, VFO Power	1	1200-003
T-13	Transformer, High B plus Plate	1	1201-006A
T-14	Transformer, Low B plus Plate	1	1201-002

QUARTZ CRYSTAL

Male
Female
Contacts

Receptacle

Plug

Coaxial Receptacle

Coaxial Plug

115 V AC
Female
Male

CONNECTORS

FUSE

EARTH GROUND

HEADSET

Basic Coil
Iron Core
Tapped
Adjustable

INDUCTORS

KEY

Incandescent
Pilot
Neon (AC)

LAMPS

Insert Appropriate Designations
A—Ammeter
V—Voltmeter
Ma—Milliammeter

METERS

M—Motor
G—Generator
etc.

MACHINES

MICROPHONE

CONTACT RECTIFIER

Fixed
Tapped
Adjustable

RESISTORS

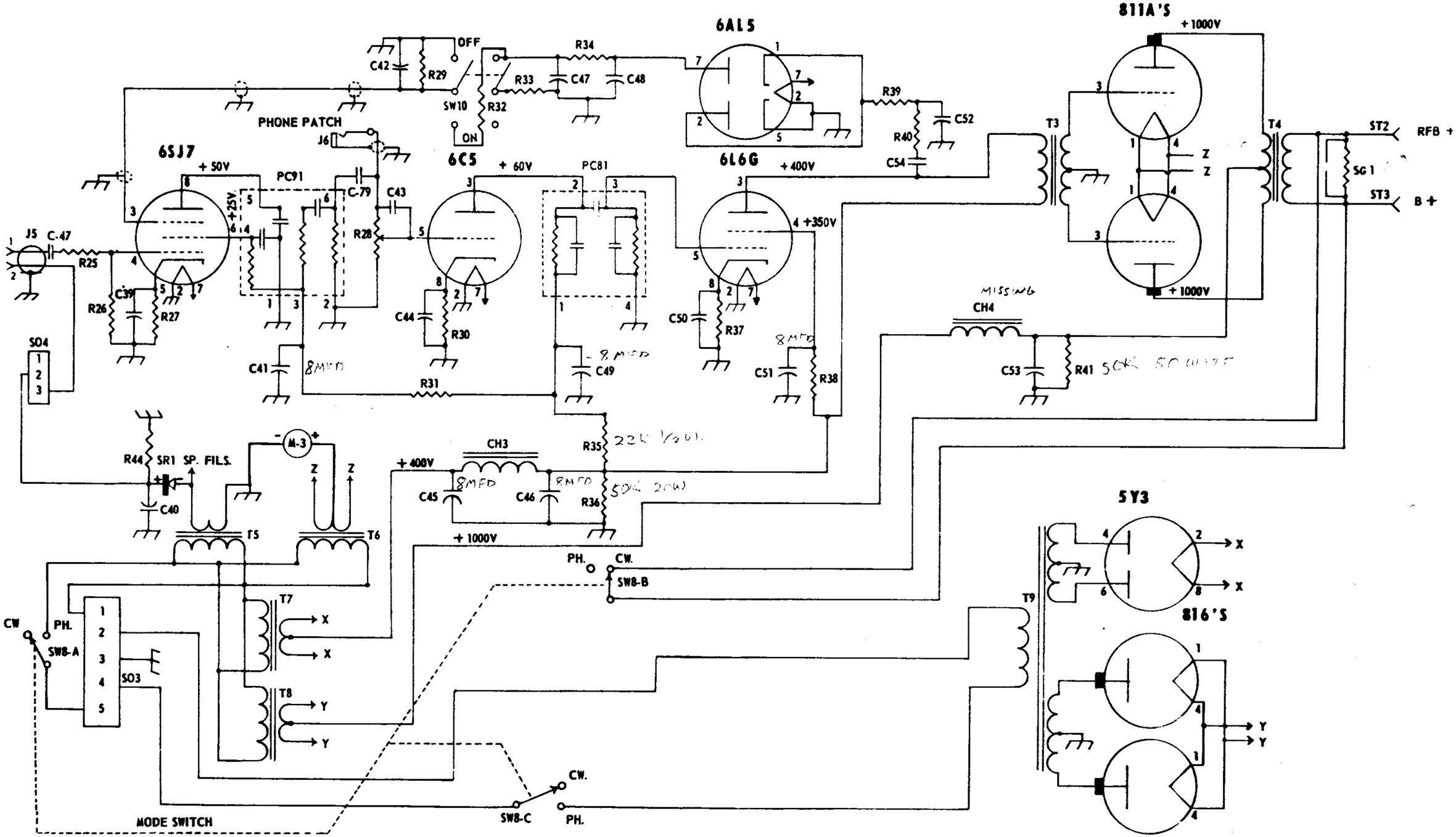
Terminal
Crossing Conductors Not Joined
Conductor Joined
Chassis Connection

Air Core
Iron Core
Adjustable Inductance
Adjustable Coupling
With Link

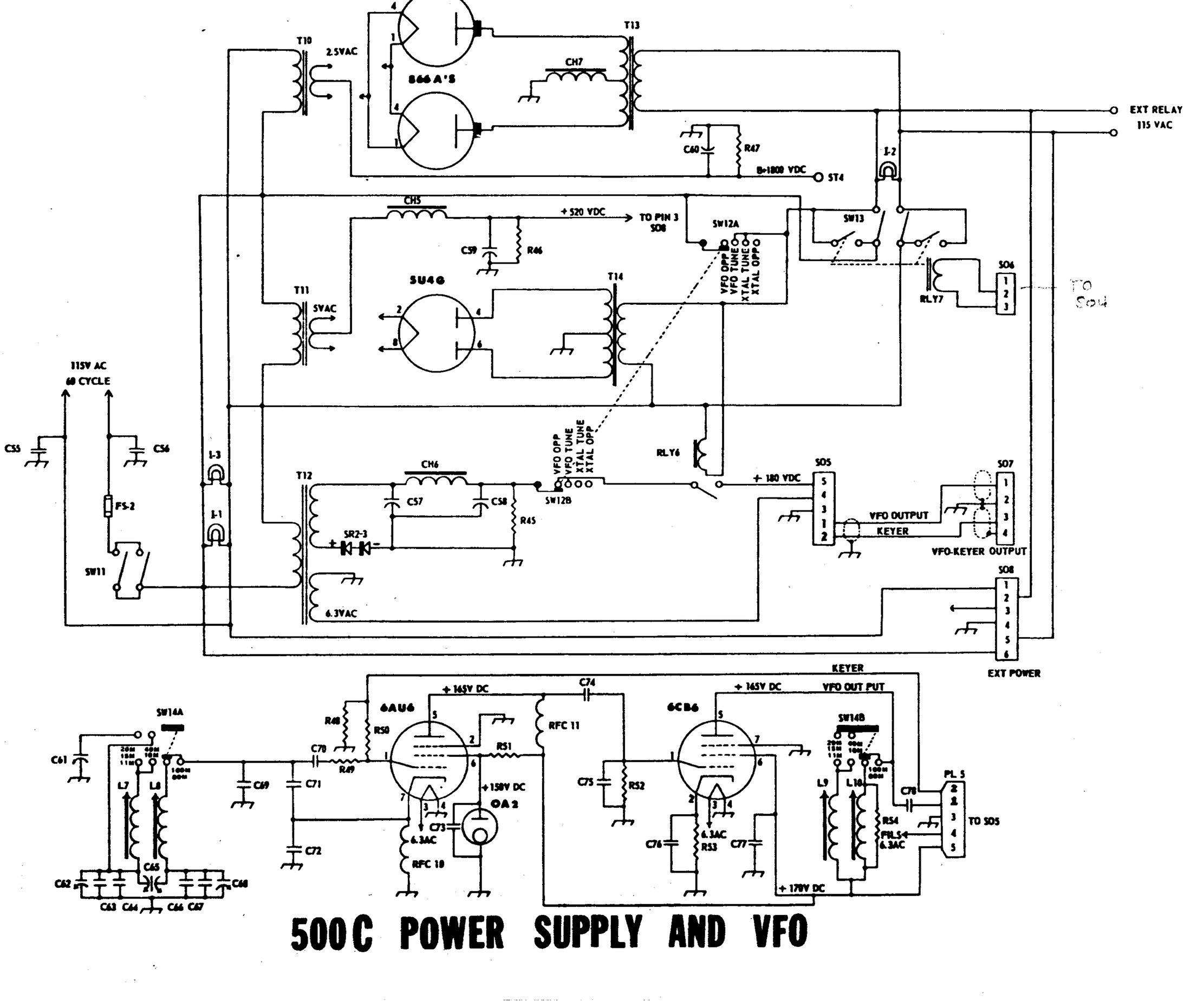
TRANSFORMERS

SPST Toggle
SPDT Toggle
Multipoint

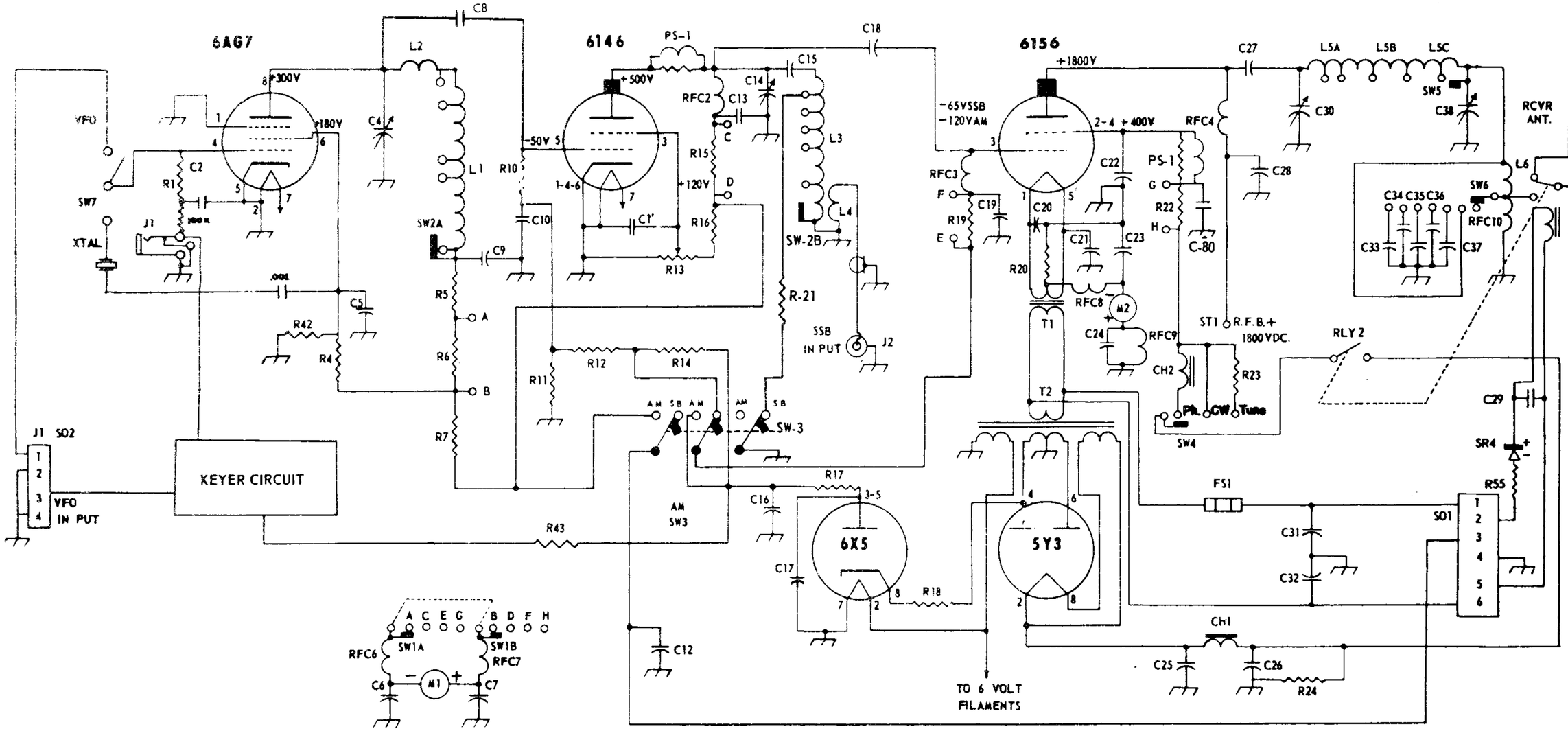
SWITCHES



500C MODULATOR



500C POWER SUPPLY AND VFO



500C RF SECTION

WARRANTY

GLOBE ELECTRONICS warrants each new product manufactured by it to be free from defective material and workmanship and agrees to remedy any such defect or to furnish a new part in exchange for any part of any unit of its manufacture which under normal installation, use and service discloses such defect, provided the unit is delivered by the owner to our authorized wholesaler from whom purchased, intact, for examination, with all transportation charges prepaid within ninety days from the date of sale to original purchaser and provided that such examination discloses in our judgement that it is thus defective.

This warranty does not extend to any of our products which have been subjected to misuse, neglect, accident, incorrect wiring not our own, improper installation, or to use in violation of instructions furnished by us, nor extend to units which have been repaired or altered outside of our factory, nor to cases where the serial number thereof has been removed, defaced or changed, nor to accessories used therewith not of our own manufacture. We do not authorize the purchase of any replacement for any faulty component that may be found in this unit. Under no circumstances will GLOBE ELECTRONICS re-imburse the purchaser of this unit for any such purchase.

Any part of a unit approved for remedy or exchange hereunder will be remedied or exchanged by the authorized wholesaler without charge to the owner.

This warranty applies only to the original purchaser and is not transferable. This warranty is in lieu of all other warranties expressed or implied and no representative or person is authorized to assume for us any other liability in connection with the sale of our products.

GLOBE ELECTRONICS reserves the right to make circuit or component changes, or incorporate new features at any time without incurring any obligation to owners of its products previously sold.