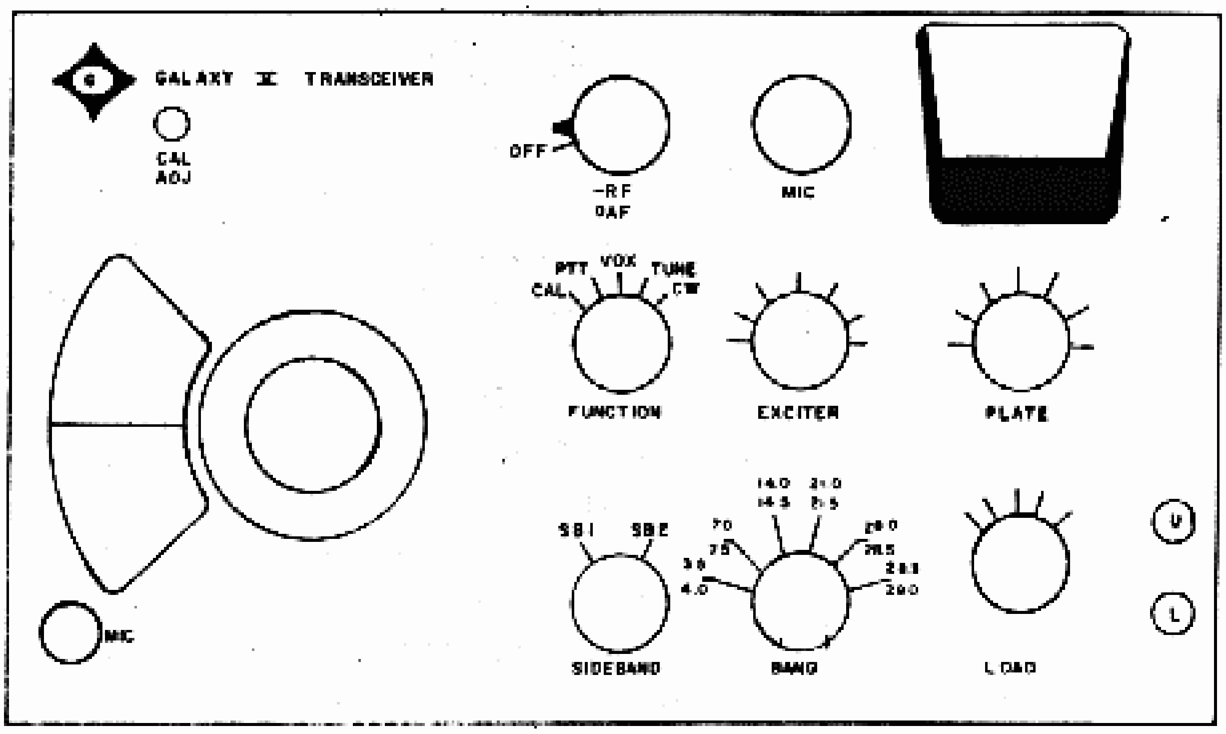
GALAXY V

(030166)

MANUAL # 183-40
PRICE $2.00

INSTRUCTION MANUAL

GALAXY V

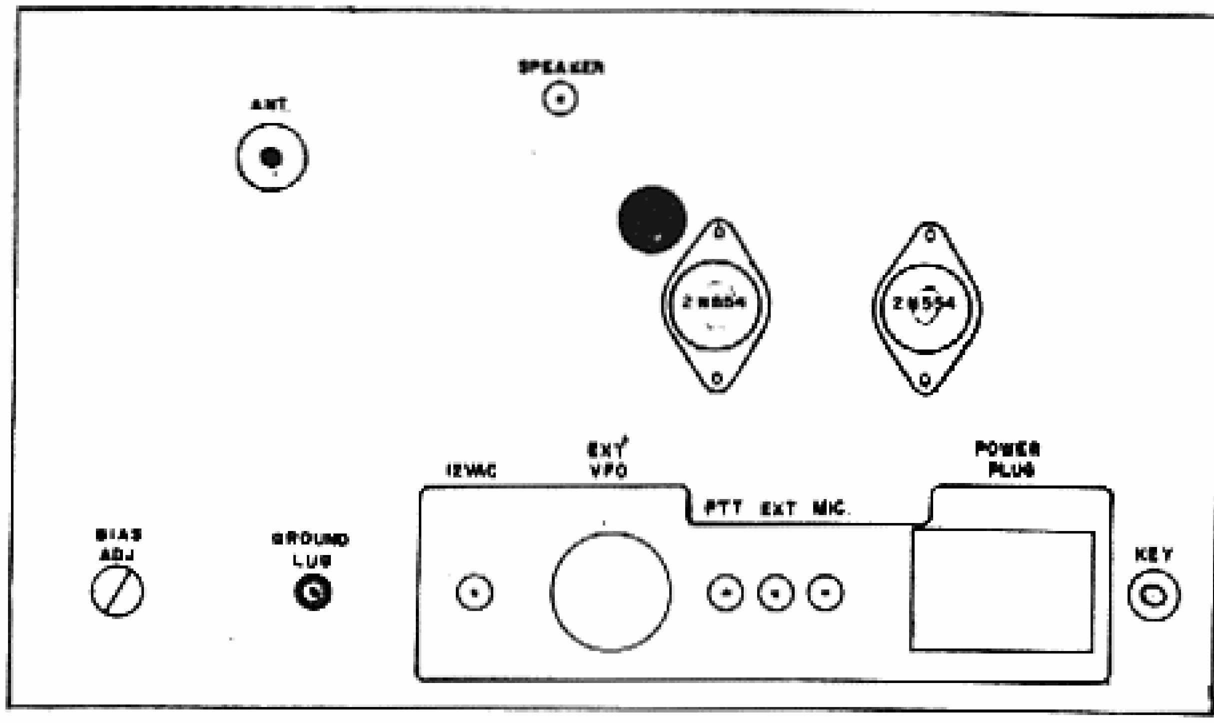


2-1 LOCATION OF CONTROLS, FRONT PANEL

CAL	Small knurled knob in upper left-hand of panel. Used to set actual frequency and dial indication in agreement.
O AF	At top of panel. Knob part of concentric control for audio volume on receiving.
- RF	Under above knob. Small lever control sets receiver RF gain. Used to reduce overload on extremely strong signals. Maximum RF gain occurs with the control maximum clockwise.
FUNCTION	A five-position rotary switch. Function controls:
CAL	Turns on internal 100 Kc. Calibrator if this accessory is installed.
PTT	Allows push-to-talk operation with a suitable microphone. Will not permit VOX to operaté.
VOX	Will enable VOX to be used if this accessory item is installed and properly adjusted. PTT can also be used in this position.
TUNE	Turns transmitter on at reduced power for proper tune-up. NOTE! SB switch must be on SB2 position.
CW	Sets transmitter on CW mode. To be used only after unit tuned on TUNE position. NOTE! MIC. control must be max. clockwise for CW operation. You must use SB2 sideband position.

2-1 LOCATION OF CONTROLS, FRONT PANEL, Continued

EXCITER	Tunes receiver input and final grid to resonance.
PLATE	Resonates final transmitter plate circuit.
LOAD	Matches final output to load presented by the antenna, within normal matching range of 40-100 Ohms resistive.
SIDEBAND	This switch serves two operations. In normal operation it selects the desired sideband, either upper or lower

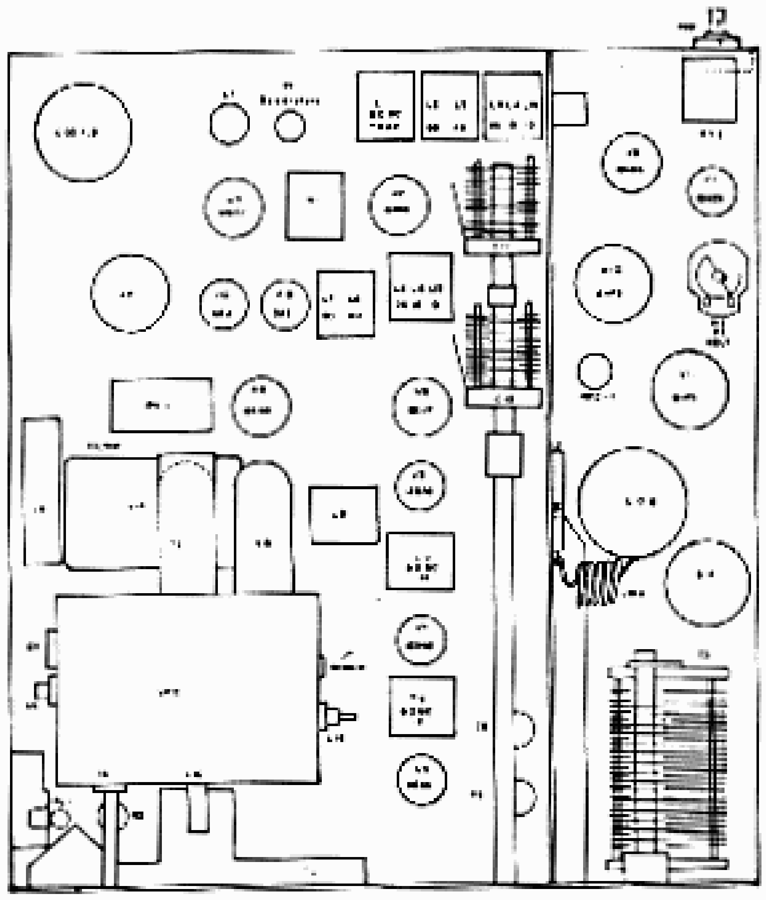


2-1 LOCATION OF CONTROLS, REAR PANEL

ANT.	Coax jack accepting PL259 plug. 52 Ohm nominal.
SPEAKER	Audio output jack J10. Attach 3/8 Ohm PM type speaker or earphones.
HOLE	Hole, near transistor, for passing coax cable from remote VFO to internal VFO.
BIAS ADJ.	Potentiometer R33 to set bias on final amplifier tubes.
12 VAC	Jack J12. To obtain voltage for meter illumination on DELUXE ACCESSORY CONSOLE.
EXT. VFO	Socket J1. Supplied with jumper plug which is removed when the accessory REMOTE VFO is connected.
PTT	Used to connect remote PTT switch for foot operation, etc., J6.
EXT.	Used to control other devices which require a grounded circuit (J5) in transmit condition. Do not apply over 70 volts AC/DC, or over 1 Amp. through these contacts.
MIC.	Accessory input for microphone. Normally used for phone patch in DELUXE ACCESSORY CONSOLE. J4
POWER PLUG	Main power connector for AC or DC power supply. P1
KEY	Keying jack J3. Use standard two-circuit plug. Switchcraft 240, etc.

2-1 LOCATION OF CONTROLS, REAR PANEL, Continued

GROUND LUG — A bolt to attach an external ground wire.



CHASSIS TOP VIEW

The only internal adjustments usually made are: The "S" meter, R2, located on the chassis beside the VFO dial light. The VOX, in socket J9, where the controls are on the printed circuit board and the 100 Kc. calibrator which plugs into the octal socket J2.

The VOX socket is supplied with a jumper plug which must be inserted to operate the transmitter.

Other internal controls and adjustments should not be moved unless they

2-2 CONNECTIONS FOR POWER, MICROPHONE, ETC., Continued

NOTE: Some microphones have the element shorted when the push-to-talk is off. In this case, the contacts must be disabled to operate VOX.

2-4 ANTENNA CONSIDERATIONS, continued.

There are many considerations to a proper antenna system, which are too broad in scope to be covered here. The user should refer to appropriate handbooks.

SECTION III

3-1 TRANSMITTER TUNE-UP

After some time of use, the operator can quickly tune most any equipment, however, we believe this unit will prove easy to tune the first time, if the operator will read the instructions carefully, before trying to tune the equipment.

TO RECEIVE ONLY, just adjust the EXCITER tuning control for best reception.

To set-up for transmitting, set the sideband selector switch to SB-2. (It must be on SB-2 whenever the function switch is, or will be, set to either TUNE or CW positions). Set the MIC. GAIN fully clockwise. Set the LOAD control fully counter-clockwise. --------The next step places the equipment in a transmit condition, so proceed promptly to complete the following steps-------Set the function switch to TUNE position--adjust the EXCITER control for maximum meter reading--adjust the PLATE control for a "dip" in plate current(minimum meter reading). Now, to load to rated power, advance the LOAD control clockwise to produce a slight increase in meter reading, then re-adjust the PLATE control for a "dip" . Repeat advancing the LOAD control clockwise and then re-adjusting the PLATE control until the last adjustment of the PLATE control produces a "dip" where the meter reading is at the word "tune" above the small triangle marking on the meter. --- Now turn the MIC. GAIN control down, counter-clockwise, until the meter reading drops to the S7 marking on the meter and then re-adjust the EXCITER control, as necessary, to produce maximum or peak meter reading. Now set the MIC. GAIN fully counter-clockwise. Tuning is now complete and the function switch may be returned to PTT or VOX positions as desired for the method of keying to be used. Set the sideband selector to upper or lower(U-upper/L-lower on the indicator lamps on the right hand side of the panel) sideband as desired.

Now, for voice operation, you may energize the transmitter section with PTT or VOX as desired and while speaking into the microphone in a normal voice, advance the MIC. GAIN control clockwise until the meter swings up to the word "tune" at the triangle marking on the meter. This represents full 300 watts P.E.P. input power. The physical setting of the gain control is of no importance and the proper setting is where voice output from the microphone causes the meter to swing to the proper meter reading.

3-1 TRANSMITTER TUNE-UP, Continued

If you desire to operate CW you do NOT tune differently than above. For CW use plug in a suitable key, set the MIC. gain full clockwise, set the SIDEBAND selector to SB2. Now when you place the FUNCTION switch to CW you will be in transmit condition and will transmit a signal whenever you close the key. To return to receive condition, you must manually return the FUNCTION switch to PTT position. You should unplug the microphone from the set when operating CW. As shifted carrier CW is used, you will be approximately on the received signals frequency when you have the received signal tuned in so as to produce about a 1,000 cycle tone in the speaker. Also, if you should want to operate with reduced power for a local CW QSO, you may directly control power input by the MIC. gain control. When the MIC. control is full clockwise you will run full power (the meter will read higher than SB and indicate about at the CW power mark) and, if you want less power, simply reduce the MIC. gain control setting. This will show less power by a lower meter reading. NO TUNING IS TO BE DONE WITH THE FUNCTION SWITCH IN THE CW POSITION.

Don't forget to close the key or unplug it when returning to voice operation, or the transmitter will not work.

NOTE: If in the tuning above, the first dip, with the LOAD control at minimum, results in a dip above the TUNE mark on the meter, it indicates the antenna impedance is below that for which the PI-net can match. If full rotation of the LOAD control will not bring the current up to the TUNE mark, it indicates the impedance of the antenna is above that which the PI-network can match. In either case, the only solution is to adjust the antenna to present a load within the capabilities of the PI-network.

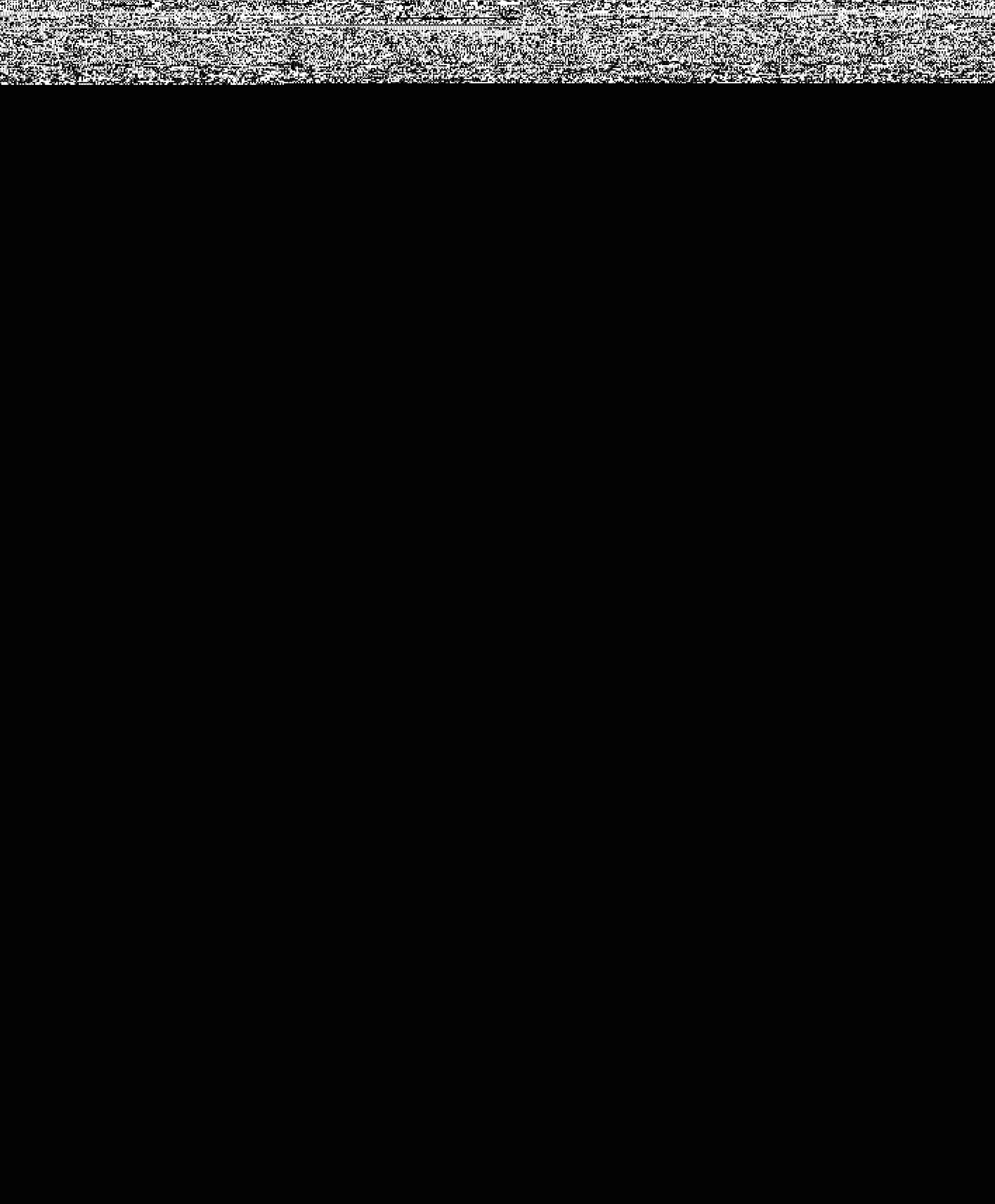
3-2 MOBILE OPERATION

In most all respects, operation in mobile use is the same as fixed station. Tuning is the same, however, the final bias control R-33 must be reset (see set-up adjustments) when a different supply is used, as when changing from house to car.

SECTION III

3-2 MOBILE OPERATION, Continued

We believe the following pictures typify installation of our mobile bracket. It is a very universal bracket and one which permits easy



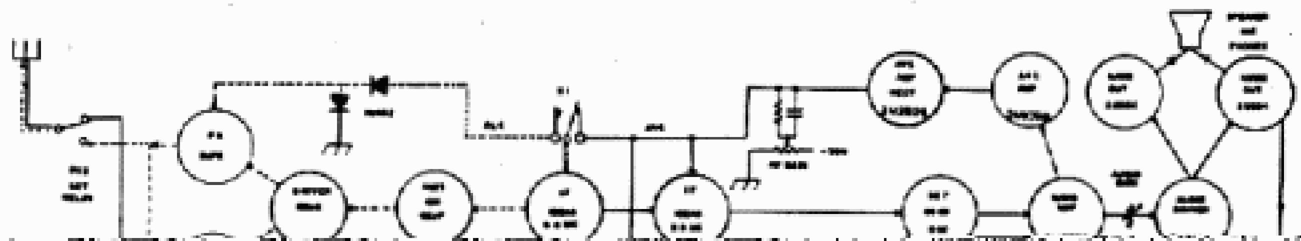
3-2 MOBILE OPERATION, continued

splash as much as possible. It is best to position the DC supply used so the plug or cable carrying high voltage is to the rear, towards the firewall, to minimize water causing an arc. Most DC supplies will NOT receive adequate ventilation if mounted inside the car. The engine compartment is hot, but air movement will normally result in better cooling in the engine compartment. It is best to mount [redacted]

SECTION III

3-3 CONNECTION AND USE OF ACCESSORY ITEMS

The jacks and plugs for connections of accessory items is shown in the drawings in section 2-2. The various accessories and their use will be covered in each manual for the various accessories in detail.



4-1 GENERAL CIRCUIT ANALYSIS, Continued

suppressed carrier signal at 9,001.250 Kc. for lower sideband or 8,998.750 Kc. for upper sideband. The double sideband signal passes through the 9.0 Mc. filter which allows only one sideband to reach the 12BA6 IF amplifier. The single sideband suppressed carrier signal is amplified in the 12BA6 tube and coupled to the 6EJ7 transmit mixer. A signal at 5.0 to 5.5 Mc. from the VFO for the 80-20 meter operation, or from the 6EA8 converter tube at 16.0 to 16.5 Mc. for 40 meter operation, or 30.0 to 30.5 for 15 meter operation, or 37.0 to 38.0 Mc. for 10 meter operation, is also fed into the 6EJ7 transmit mixer. The sum or difference frequency, whichever is the desired output frequency, is selected by the tuned circuits and fed to the 6GK6 driver stage. The 6GK6 drives the final amplifier, a pair of 6HF5's. The IN462 ALC rectifiers detect any trace of grid current in the 6HF5's, and develops a bias voltage which is applied to the 12BA6 to reduce the IF gain whenever grid current flows, thus keeping the final linear in class AB-1, and reducing distortion while increasing effective talk power. The plates of the 6HF5's are connected in parallel to the PI-network output circuit. In CW operation the crystal oscillator is shifted to 9.0 Mc. to provide carrier, and the 6EJ7 is grid block keyed.

RECEIVE OPERATION

The incoming signal from the antenna is coupled to the 12BZ6 receive RF stage through the antenna relay. The output of the 12BZ6 is fed to the 6HG8 receive mixer. A signal at 5.0 to 5.5 Mc. from the VFO is also fed to the 6HG8 for 80-20 meter operation, or from the 6EA8 converter tube at 16.0 to 16.5 Mc. for 40 meters, or 30.0 to 30.5 Mc. for 15 meter operation, or 37.0 to 38.0 Mc. for 10 meter operation. The output of the 6HG8 receive mixer is fed through the 9.0 Mc. crystal filter to the 12BA6 IF amplifier. The signal is further amplified by a second 12BA6

4-1 GENERAL CIRCUIT ANALYSIS, Continued

A portion of the receive audio output from the 2N554 output stage is rectified by the 1N54 diodes and the resulting negative DC voltage is also coupled to the two stage DC amplifier. This negative DC voltage balances out any positive DC voltage that may be coming from the VOX amplifier diodes due to the output from the loudspeaker feeding back into the microphone.

4-2 PERFORMANCE SPECIFICATIONS

(A) GENERAL

Frequency coverage of the GALAXY V as factory supplied is as follows: 3.5/4.0, 7.0/7.5, 14.0/14.5, 21.0/21.5, 28.0/29* Mcs. (* The 10 meter band is covered in two 500 Kcs. ranges, factory supplied 28.0/28.5 and 28.5/29.0 Mcs. It is possible, by the installation of optional crystals, to cover other segments of 28.0/30.0 Mcs.)

Linear capacity tuned VFO; tunes 5.0/5.5 Mcs. at all times. 9.0 Mc. crystal plus VFO frequency covers 20 meters, 9.0 Mc. crystal minus VFO frequency covers 75-80 meters, VFO plus crystal osc. mixed in premixer and 9.0 Mcs. crystal covers the 40-15-10 meter bands.

36:1 planetary drive with 2:1 gear drive (spring loaded for anti-backlash) gives 72:1 slow tuning with fast tuning outer knob provided. Circular dial has over 9 inches of bandspread. 5 Kc. dial marks can be interpolated to nearly 1 Kc.

Stability of the VFO is extremely good with drift of less than 100 cps. in any 15 minute period after warmup. Less than 100 cps. frequency change for 10% change of line voltage.

(B) TRANSMITTING SPECIFICATIONS

300 watts CW, carrier shifted 1000 cps. into bandpass. Grid block mixer keying.
300 watts PEP, SSB input power.
Upper or lower sideband, panel selected.
PTT (or VOX with accessory)
Sideband suppression in excess of 55 DB
Carrier suppression in excess of 45 DB
Overall audio response down 6 DB at 300 and 2,400 cps.
Output impedance, nominal 50 Ohms (40-100 Ohms resistive), adjustable PI-net

4-2 PERFORMANCE SPECIFICATIONS, Continued

A. L. C. used to obtain maximum power and minimize flattopping, as well as increasing talk-power.
High impedance microphone input.

(C) RECEIVING SPECIFICATIONS

Less than 1/2 microvolt produces better than 10 DB S/N.
Full AGC. Audio varies less than 6 DB for 60 DB change. Two speed AGC provides fast attack-fast release for signal variation of 20 DB and slow attack-slow release for greater signal variation. Essentially free

VOLTAGE CHART

Pin	1	2	3	4	5	6	7	8	9	10	11	12

TRAN.	EMITTER	BASE	COLLECTOR
Q1	4.1 / 4.5	4.8 / 4.9	9.9 / 10.1
Q2	9.2 / 10.0	9.2 / 10.0	6.0 / 5.9
Q3	3.1 / 13.0	4.5 / 4.8	10.0 / 13.0
Q4	13.0 / 14.0	12.5 / 14.0	.17 / 14.0
Q5	13.0 / 14.0	12.5 / 14.0	.17 / 14.0
Q6	— 22.0	— 22.0	— .6 / 0

NOTE: All measurements are made from ground to the point being measured. AC power supply connected to the Galaxy and neither VOX

Pin	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
V1	3.3M	47	0	.4	45K	43K	0					
V2	150	100K	.50	.4	0	100K	100K	47K	100K			
V3	3.3M (RXIM)	0	.4	0	48K	100K	47					
V4	3.3M (RXIM)	0	.4	0	48K	42K	100					
V5	2.2M	1K	.4	0	250K	100K	22K					
V6	47K	1M	1.1M	.4	.45	280K	680	1K	125K			
V7	51K	100K	**	0	.4	51K	0	**	.35			
V8	**	100K	**	0	.4	0	47K	88K	0			
V9	**	22K	0	.35	.4	**	47K	75K	0			
V10	.2	**	27K	2.5	7.6K	27K	**	27K	7.6K	2.5	27K	.2
V11	.2	**	27K	2.5	7.6K	27K	**	27K	7.6K	2.5	27K	0
V12	NC	NC	NC	NC	47K	NC	0					
V13	NC	NC	NC	NC	27K	NC	0					
V14	50K	47K	80K	0	1.5	52K	30	470	100			
V15	50K	10K	75K	1.5	.4	50K	220	220	100K			

Transistor	Emitter	Base	Collector
Q1	420	3.2K	330
Q2	420	650	2.3K
Q3	820	5K	400
Q4	2.2	2.8	.8
Q5	2.2	2.8	.8
Q6	13K	21K	3.1M(RXIM)

(** open circuit)

Power Plug P1 =	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
	**	NC	47K	NC	4.5	.4	0	NC	6.5K	***	**	**

(*** tie point for R 114)

NOTE: All measurements are made from ground to point being measured. Power Supply disconnected from GALAXY. VOX and XTAL cal. are not plugged in. All tubes, relay and jumper plugs in their sockets. The band switch set on 14.0-14.5, the function switch set on cal. AF, RF gain and Mic. Gain set fully clockwise. Sideband switch set on SB2. All measurements to be made with a Hewlett Packard 410B VTVM only.

5-2 ALIGNMENT

This is a complicated apparatus, and alignment should not be attempted without a full understanding of the circuitry and adequate equipment.

> DANGER: HIGH VOLTAGE! USE EXTREME CAUTION WHEN THE UNIT IS OUT OF THE CABINET, AS VOLTAGES DANGEROUS TO LIFE EXIST!

TEST EQUIPMENT REQUIRED:

Calibrated signal generator
100 KC crystal calibrator
50 Ohm dummy load capable of handling 200 watts
Output indicator - oscilliscope - RF Analyzer - RF volt meter
Audio signal generator
VTVM or VOM

IF AMPLIFIER ALIGNMENT

1. Remove VOX unit or VOX jumper board from J9. This will prevent you from accidentally keying the transmitter into the signal generator.
2. Set controls as follows:
   a. RF full clockwise
   b. Function switch - PTT
   c. Load Control - 10 o'clock
   d. Plate Control - 12 o'clock
   e. Band Switch - 7.0 to 7.50 mc.
3. Connect signal generator output to GALAXY antenna jack.
4. Set volume control at half scale and allow five minutes for unit to warm up.
5. Adjust potentiometer R-2 for zero S-meter reading.
6. Set signal generator at 10,000 mv. output, 9.000 mc. Vary generator frequency until beat note is heard in transceiver loudspeaker. Adjust plate control for maximum S-meter reading. Set signal generator output level for approximately S-6 on GALAXY S-meter.
7. Adjust the slug of L-9 and the top and bottom slug in T-4 for

5-2 ALIGNMENT, Continued

b. FUNCTION switch to CAL, (if there is no plug-in crystal calibrator in the unit, any other accurate frequency source at 3.5 and 4.0 Mc. may be used.
c. BANDSWITCH to 80 meters (3.5 to 4.0 Mc.)
d. EXCITER control to approximately 10 o'clock position.
e. SIDEBAND switch to SB1 position.
f. CAL. ADJ. control to midrange.
g. MAINTUNING DIAL to be set at 4.0 Mc.

2. Adjust maintuning dial until calibrate signal at 4.0 Mc. is heard. (check to be sure this is the 4.0 Mc. signal with a signal generator, if possible.)
3. Adjust L-18 and main tuning dial until calibrator zero beat signal occurs at 4.0 Mc.
4. Set main tuning dial to 3.5 Mc. Rock tuning dial until calibrator signal is heard.
5. Adjust C-5 and main tuning dial until calibrator zero beat signal occurs at 3.5 Mc.
6. Repeat steps 2 through 5 until calibrator zero beat occurs at 3.5 and 4.0 Mc. dial markings.

CONVERTER ALIGNMENT

CONVERTER ALIGNMENT WILL BE DONE IN RECEIVING

Make a test load circuit as illustrated below.

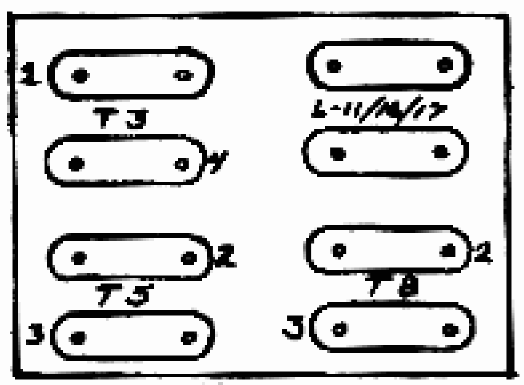


Illustration to left is lug or terminal side of converter sub-chassis.

For the following steps, do each alignment using the directions in the first brackets( ), then repeat all steps with second( ) bracket figures, then the third( ).

1. Set the bandswitch to (7.0-7.5 Mc.)(21.0-21.5 Mc.)(28.0-28.5 Mc.)
2. Set the signal generator to (7.250 Mc.)(21.250 Mc.)(28.5 Mc.)
3. Set the main tuning dial to (7.250 Mc.)(21.250 Mc.)(28.5 Mc.)
4. Adjust the following for maximum "S" meter deflection:
5. Coil (L-11, top slug)(L-17, middle slug)(L-16, bottom slug)
6. On the following steps, turn set off while connecting load clips. Danger, high voltage.
7. On the next step, connect the test load mentioned above from chassis ground

5-2 EXCITER ALIGNMENT, continued.

d. LOAD control to 10 o'clock.
e. Set MIC. GAIN maximum counter-clockwise.
f. Set tuning dial to 4.0 Mc.
g. Set EXCITER tuning control to 9 o'clock.
h. Set function switch to TUNE.
i. Advance MIC. GAIN control until "S" meter rises to S-5.
j. Adjust L-7 and L-2(bottom slugs) for maximum meter reading. Keep meter reading below S-6 by using MIC. GAIN control.

2. Return function switch to PTT position.

40 METERS

a. Set bandswitch to 7.0-7.5 Mc.
b. Set PLATE control to 12 o'clock.
c. Set LOAD control to 10 o'clock.
d. Set MIC. GAIN maximum counter-clockwise.
e. Set tuning dial to 7.5 Mc.
f. Set EXCITER tuning to 9 o'clock.
g. Set function switch to TUNE.
h. Advance MIC. GAIN until "S" meter rises to S-5.
i. [illegible]

5-2 EXCITER ALIGNMENT, continued.

5.
20 METERS

a. Set bandswitch to 14.0-14.5 Mc.
b. Set PLATE control to 11 o'clock.
c. Set LOAD control to 11 o'clock.
d. Set MIC. GAIN to maximum counter-clockwise.
e. Set tuning dial to 14.0 Mc.
f. Set EXCITER tuning to 3 o'clock.
g. Set function switch to TUNE.

5-2 ALIGNMENT, continued.

1. Adjust the audio generator to a frequency of 800 cycles.
2. Energize transmitter by closing switch on PTT circuit.
3. Adjust MIC. GAIN control for meter reading of S-9.
4. Observe and mark-down the reading on the output indicator used.
5. Reset the audio generator to 300 cycles.
6. Set sideband selector switch to SB-2 and adjust the trimmer C-8 until the output now indicated drops to a value 1/2 the indication obtained previously in step 4.
7. Set the sideband selector switch to SB-1 and adjust trimmer C-9 until the output indicated drops to a value 1/2 the indication obtained previously in step 4. Dis-connect generator and keying switch.
8. REPEAT CARRIER SUPPRESSION ADJUSTMENT section.

P.A. NEUTRALIZATION

1. Set the controls as follows:

a. Bandswitch on 28.0-28.5 Mc. position.
b. Sideband selector switch to SB-2 position.
c. MIC. GAIN to maximum counter-clockwise.
d. Set the following, all to 11 o'clock position: EXCITER -PLATE -LOAD
e. Set the tuning dial to 28.5 Mc.
f. Set the function switch to TUNE and adjust the MIC. GAIN control until the meter reads S-5. Adjust EXCITER tuning for maximum reading.
g. Advance the MIC. GAIN control fully clockwise, then adjust the final PLATE and LOAD controls for normal loading to the meter "tune" mark.
h. Set the function switch to the CW position.
i. Rock the PLATE control slightly through the dip and observe the output

SECTION VI

6-2 RETURNING EQUIPMENT FOR SERVICE(continued)

damaged condition will be inspected to ascertain the cost of repairing the damage, and we will advise you of this information. On receipt of the damage information you should immediately file claim with the carrier.

GALAXY V

Resistor Parts List

R No.	Value	Part No.	Price
1	2.5K Pot	13-7	$0.60
2	50 K Pot	13-8	1.02
3	6.8 K 1/2 w	10-15	0.12
4	1 K 1/2 w	10-42	0.12
5	100 K 1/2 w	10-32	0.12
6	47 K 1/2 watt	10-13	0.12
7	39 K 2 watt	10-68B	0.24
8	270 ohm 1/2 w	10-68	0.12
9	6.8K 1/2 w	10-15	0.12
10	10 K 1/2 w	10-56	0.12
11	10 K 1/2 w	10-56	0.12
12	22 K 1/2 w	10-6	0.12
13	100 ohm 1 w	10-65A	0.18
14	68 K 1 w	10-68A	0.18
15	100 ohm 1 w	10-65A	0.18
16	10 ohm 1 w 5%	10-71A	0.24
17	10 ohm 1 w 5%	10-71A	0.24
18	10 ohm 1 w 5%	10-71A	0.24
19	10 ohm 1 w 5%	10-71A	0.24
20	100 ohm 1 w	10-65A	0.18
21	33 K 2 watt 5%	10-69B	0.30
22	27 K 1 w	10-49A	0.18
23	1.2 K 1/2 watt 5%	10-78	0.12
24	4.7 K 1 watt	10-35A	0.18
25	22 K 1 watt	10-47A	0.18
26	3.3 meg 1/2 w	10-57	0.12
27	47 K 1/2 watt	10-13	0.12
28	15 K 1/2 w	10-81	0.12
29	47 ohm 1/2 w	10-29	0.12
30	10 K 1/2 watt	10-56	0.12
31	10 K 1/2 w	10-56	0.12
32	6.8K 1/2 w	10-15	0.12
33	7.5 K Pot	13-12	0.60
34	220 ohm 1 w	10-67A	0.18
35	100 K 1/2 w	10-32	0.12
36	100 K 1/2 w	10-32	0.12
37	150 ohm 1/2 w	10-43	0.12
38	47 K 1 watt	10-46A	0.18
39	100 K 1/2 watt	10-32	0.12
40	47 K 1/2 watt	10-13	0.12

Resistor Parts List

R No.	Value	Part No.	Price
41	47 K 2 watt	10-52B	$0. 24

[redacted]

Resistor Parts List

R No.	Value	Part No.	Price
83	1 K 1/2 w	10-42	$ 0.12
84	6.8 K 1/2 w	10-15	0.12
85	6.8 K 1/2 w	10-15	0.12
86	1 K 1/2 w	10-42	0.12
87	18 K 1/2 w	10-80	0.12
88	1 K 1/2 w	10-42	0.12
89	100 ohm 1/2 w	10-7	0.12

GALAXY V

Capacitor Parts List

C No.	Value	Part No.	Price
1	Factory Selected TCN	20-41	$ 0.35
2A, B, C	1100 PF variable	25-10	3.15
3	300 PF variable	25-15	8.95
4	5-25 PF NPO	26-6	0.81
5	15 PF variable	25-20	2.67
6	3 PF (Cal. control)	25-19	1.50
7	5-25 PF NPO	26-6	0.81
8	5-25 PF NPO	26-6	0.81
9	5-25 PF NPO	26-6	0.81
10	50 PF (Main VFO tuning)	25-17	1.67
11	140 PF variable	25-21A	2.85
12	140 PF variable	25-21B	2.70
13	4-22 PF Nut. cap. var.	25-11A	1.70
14	150 PF	22-26	0.17
15	680 PF silver mica 5%	22-13	0.40
16	100 PF	22-21	0.16
17	.01 mfd.	20-5	0.24
18	.005 mfd.	20-3	0.15
19	.005 mfd.	20-3	0.15
20	18 PF	22-24	0.12
21	33 PF	22-7	0.12
22	100 PF	20-23	0.15
23	.001 mfd.	20-24	0.15
24	.005 mfd.	20-3	0.15
25	.001 mfd.	20-24	0.15
26	.001 mfd.	20-24	0.15
27	.001 mfd.	20-24	0.15
28	.001 mfd.	20-24	0.15
29	.001 mfd.	20-24	0.15
30	.001 mfd.	20-24	0.15
31	.001 mfd.	20-24	0.15
32	.001 mfd.	20-24	0.15
33	.001 mfd.	20-24	0.15
34	.001 mfd.	20-24	0.15
35	.001 mfd.	20-24	0.15
36	.001 @5 KV	22-18	2.85
37	10 PF	20-27	0.12
38	47 PF	20-50	0.20
39	91 PF (TCZ)	20-30	0.30
40	1000 PF	22-19	0.33
41	2000 PF	22-27	0.40
42	33 PF	22-7	0.12

GALAXY V

Capacitor Parts List

C No.	Value	Part No.	Price
43	10 PF	20-27	0.12
44	.005 mfd.	20-3	0.15
45	18 PF	22-24	0.12
46	33 PF	22-7	0.12
47	100 PF	22-21	0.16
48	.01 mfd.	20-5	0.24
49	.1 mfd. 200V	23-7	0.21
50	.005 mfd.	20-3	0.15
51	.001 mfd.	20-24	0.15
52	.001 mfd.	20-24	0.15
53	.001 mfd.	20-24	0.15
54	33 PF	22-7	0.12
55	.01 mfd.	20-5	0.24
56	.01 mfd.	20-5	0.24
57	50 PF	22-11	0.12
58	.001 mfd.	20-24	0.15
59	.01 mfd.	20-5	0.24
60	.001 mfd.	20-24	0.15
61	7 PF	20-21	0.15
62	50 PF 1000 volt	22-11	0.12
63	470 PF	20-39	0.15
64	.001 mfd.	20-24	0.15
65	25 PF	20-8	0.15
66	.01 mfd.	20-5	0.24
67	500 PF	20-37	0.15
68	.005 mfd.	20-3	0.15
69	25 PF	20-8	0.15
70	.001 mfd.	20-24	0.15
71	7 PF	20-21	0.12
72	.001 mfd.	20-24	0.15

GALAXY V

Capacitor Parts List

C No.	Value	Part No.	Price

Capacitor Parts List

C No.	Value	Part No.	Price
126	100 @ 15v	29-9	0.81
127	100 @ 15v	29-9	0.81
128	2000 @ 15v	24-20	2.04
129	.01 Mfd.	20-5	0.24
130	.01 Mfd.	20-5	0.24
131	.005 Mfd.	20-3	0.15
132	.01 Mfd.	20-5	0.24
133	.01 mfd.	20-5	0.24
134	25 PF	20-8	0.15
135	.001 Mfd.	20-24	0.15
136	.01 Mfd.	20-5	0.24
137	.01 Mfd.	20-5	0.24
138	.01 Mfd.	20-5	0.24
139	.005 Mfd.	20-3	0.15
140	4 mfd. 350v	24-18	0.63
141	100 PF	22-21	0.16
142	.005 Mfd.	20-3	0.15
143	.005	20-3	0.15
144	15 pf	22-38	0.15

GALAXY V

Transformer Choke - Coils

RFC No.	Value	Part No.	Price
1	Plate Choke	30-13	$ 0.78
2	Choke 15 m VFO	30-14	0.21
3	750 uh RF choke	30-3	0.45
4	750 uh RF choke	30-3	0.45
5	750 uh RF choke	30-3	0.45
6	Choke 10m VFO	30-15	0.24
7	750 uh RF choke	30-3	0.45
8	Choke 40 uh	30-11	0.23
9	2.5 mh	30-9	0.40
10	2.5 mh	30-9	0.40
L No.			
1	9.0 Mc. trap coil	42-36	1.20
2	80M PA grid/rec. RF plate coil	part of *	
3	40M PA grid/rec. RF plate coil	42-34 *	1.06
4	20M PA grid/rec. RF plate coil	part of **	

[redacted]

Transformer Choke - Coils

PC No.	Value	Part No.	Price
1	Parasitic plate choke	33-5	$ 0.41
2	Parasitic plate choke	33-5	0.41

S No.			
1B, C, D, E, F, G, H, J, K, L & M	Bandswitch	53-18	5.40
1A	PA coil switch	53-19	1.29
S2	On-off switch	(part of R91-R92)	
3A, B, C, D	Function switch	53-14	1.53
4A, B & C	Sideband select switch	53-13	1.10
1-N & 1-O	Mixer Osc, switch 2 wafer 4 pole	53-20	1.71
1-P & 1-Q	Mixer Osc. switch 2 wafer		

J No.			
1	Octal socket 8 pin	61-7	0.25
2	Octal socket 8 pin	61-7	0.25
3	Key jack	102-1	0.45
4	Phone jack conn. & gnd.		
5	Phone jack conn. & gnd. (I part)	100-5	0.15
6	Phone jack conn. & gnd.		
7	Phone Jack	100-4	0.10
8	3 way PTT mic jack 3/16" ID	103-3	0.65
9	10 conn. VOX socket	61-17	3.50
10	Phono jack single conn & gnd	100-4	0.10
11	Antenna connector	101-1	0.60
12	Phono jack single conn. & gnd.	100-4	0.10

D No.			
1	Diode, IN54A	112-IN54A	0.95
2	Diode, IN462	112-IN462	0.72
3	Diode, IN462	112-IN462	0.72
4	Diode, silicon, 400 PIV, 500 ma	112-501	[illegible]

V No.	Tubes	Part No.	Price
1	12BZ6	110-12BZ6	1.13
2	6HG8 ECF 86	110-6HG8	2.18
3	12BA6 HF93 (EF93)	110-12BA6	0.83
4	12BA6	110-12BA6	0.83
5	6GX6	110-6GX6	1.25
6	6EA8	110-6EA8	1.60
7	12AT7 ECC81	110-12AT7	1.53
8	6EJ7 EF184	110-6EJ7	1.53
9	6GK6	110-6GK6	1.45
10	6HF5	110-6HF5	3.90
11	6HF5	110-6HF5	3.90
12	OA2	110-OA2	1.32
13	OA2	110-OA2	1.32
14	6EA8	110-6EA8	1.60
15	6EA8	110-6EA8	1.60

Q No.			
1	2N2926	111-6	1.40
2	2N1098	111-8	.75
3	2N2926	111-6	1.40
4, 5	2N554's	111-3	(Matched 5.40 pair)
6	2N2926	111-8	.75

Bulbs			
NE1	Sideband indicator(lower)		0.57
N2-2	Sideband indicator(upper)		0.57
	VFO Light 6v Min	113-12	0.25

K No.			
1	Relay	116-7	8.65
2	Relay	116-8	6.96
M	Meter	115-6	12.10

Miscellaneous Parts

Octal remote socket jumper plug	109-1	0.20
Mica washer for transistor	124-37	0.24
Feet, small	133-15	0.05
Feet, large	133-7/15	0.05
Cabinet	140-13	12.60
Panel front Galaxy V	141-17	4.37

Knobs

VFO Dial Escucheon	130-14-1	0.35
Large VFO tuning knob	130-14-2	0.35
Small VFO tuning knob	130-14-3	0.30
RF gain knob	130-14-4	0.30
On-Off, AF gain knob	130-14-5	0.25
Mic gain knob	130-14-6	0.25
Function switch knob	130-14-6	0.25
Bandswitch knob	130-14-7	0.35
Exciter knob	130-14-6	0.25
Sideband selector knob	130-14-6	0.25
Plate Control knob	130-14-6	0.25
Load control knob	130-14-6	0.25
Cal. adjust knob	151-9	0.25
Hairline (plastic)	172-19	2.35
VFO 2 color dial	172-17	3.30
Manual		2.00
Carton	182-14	1.00
Dummy plug for VOX	200-4	0.45
Brass band switch coupler	172-24	0.20
26 tooth gear	151-2	1.35
52 tooth gear	151-3	1.80
Jackson Drive	172-11A	1.20
Steel 45% Gear	151-10	1.45

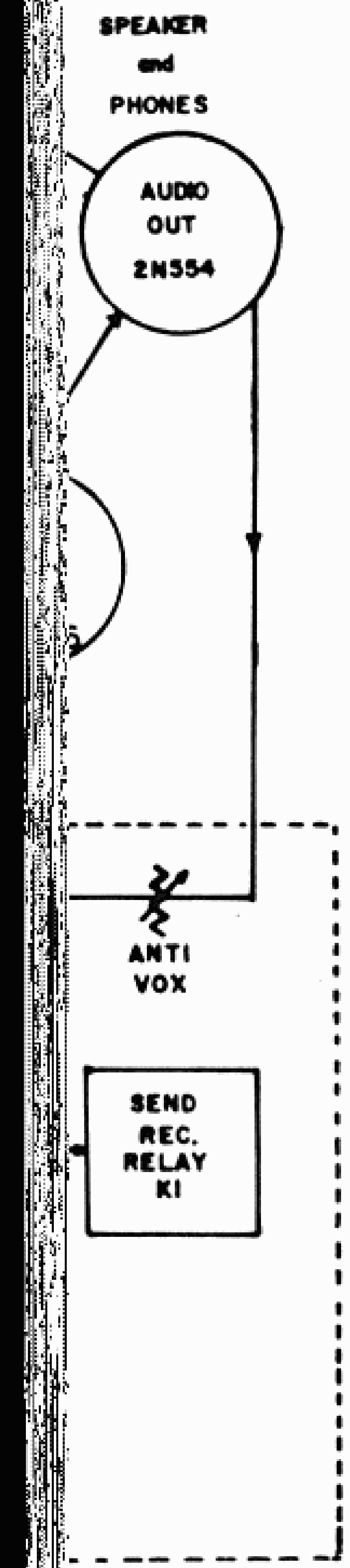
Sockets

XV1	61-14S	1.79
XV10, 11	62-5	1.95
XV3, 4, 5, 12, 13	61-12	1.00
XV2, 6, 7, 8, 14, 15	61-13	1.29
XV9	66-15S	2.15
Relay Socket K1	61-16	1.71
VFO Light	67-2	0.20
Vector mtg.	61-18	0.15
Crystal sockets	64-2	0.95

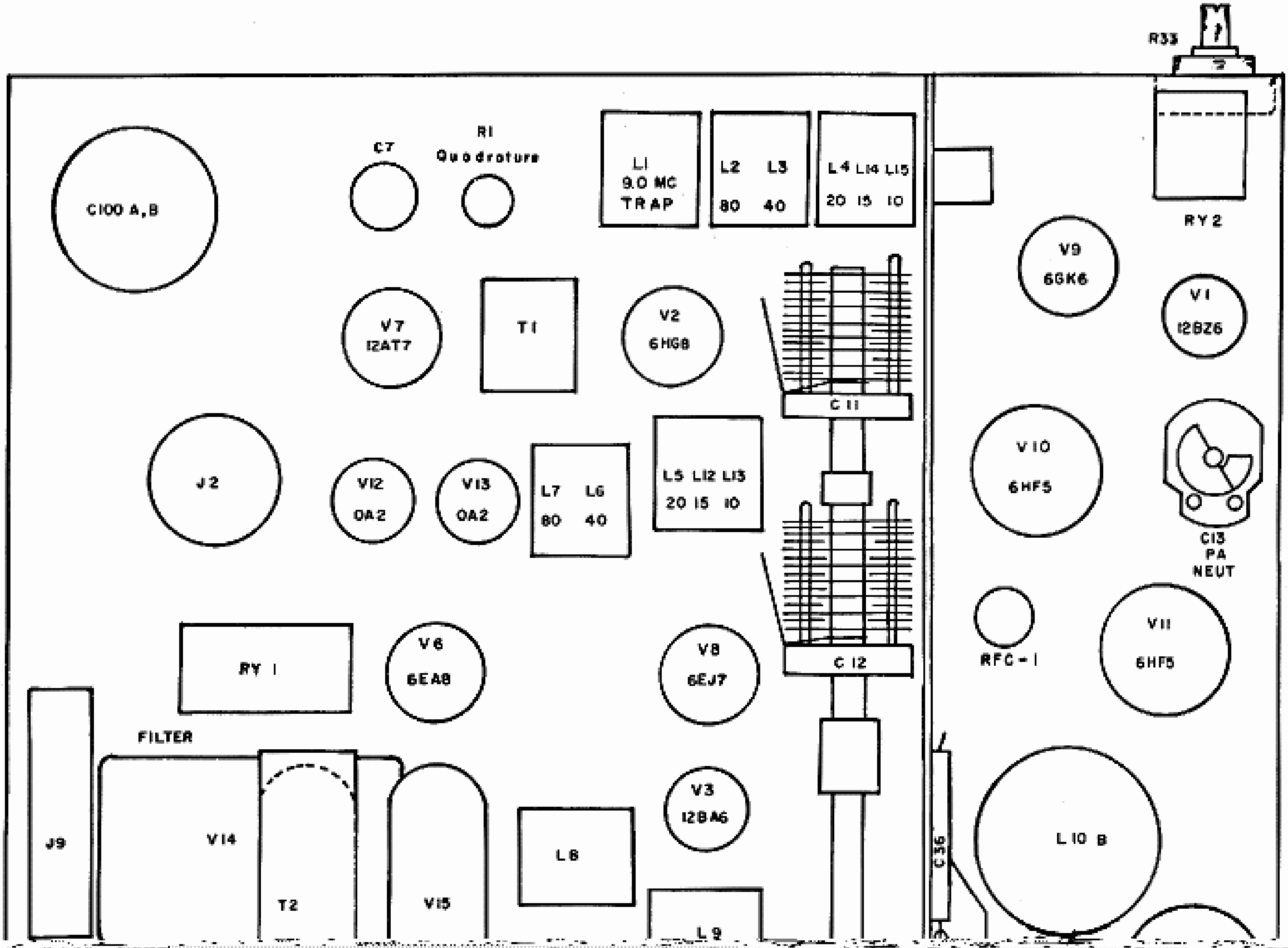
SECTION VIII

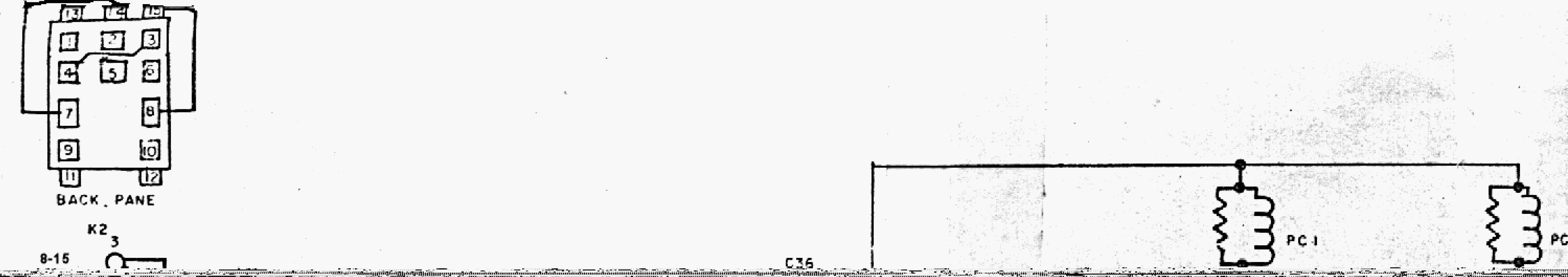
8-1 WARRANTY

GALAXY ELECTRONICS warrants each new product manufactured by it to be free from defective material or workmanship and agrees to remedy any such defect or to furnish a new part in exchange for any part of a unit of its manufacture which under normal installation, [illegible]

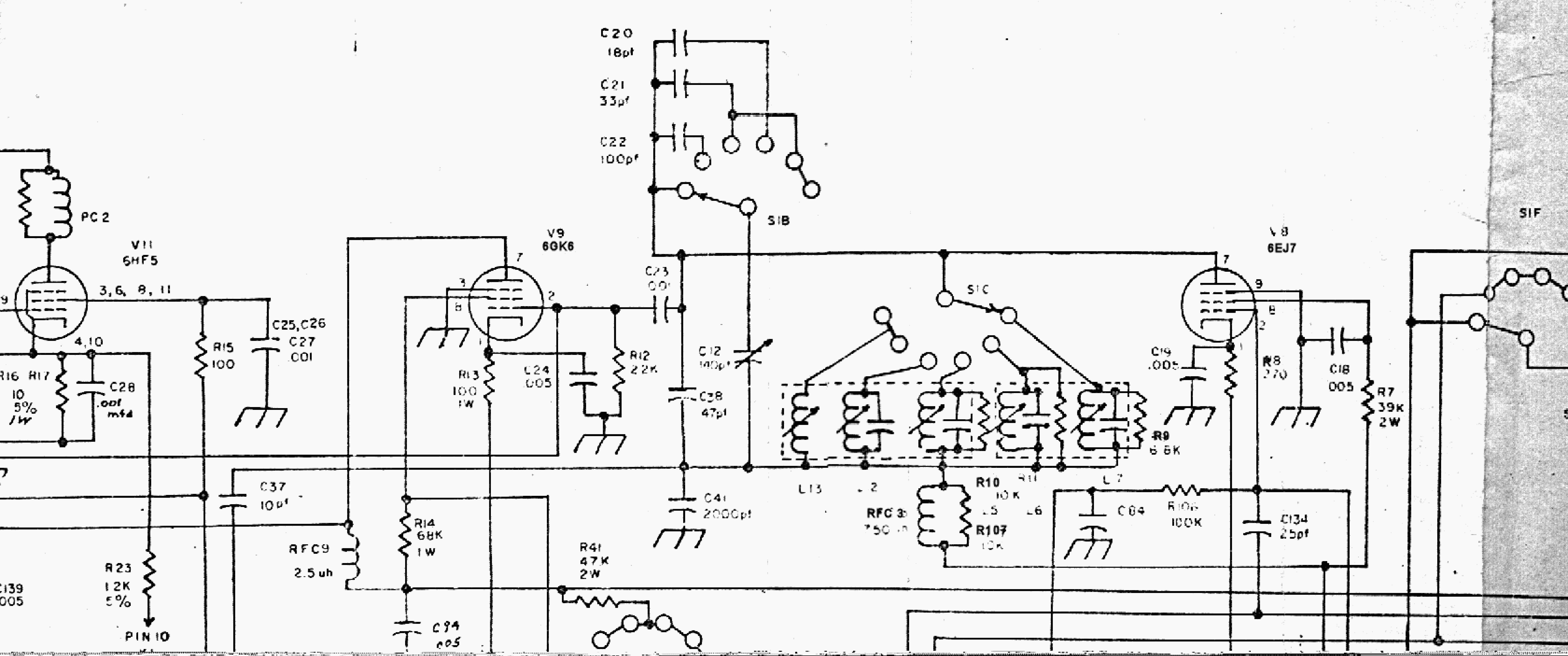

SPEAKER
and
PHONES
AUDIO
OUT
2N554
ANTI
VOX
SEND
REC.
RELAY
KI

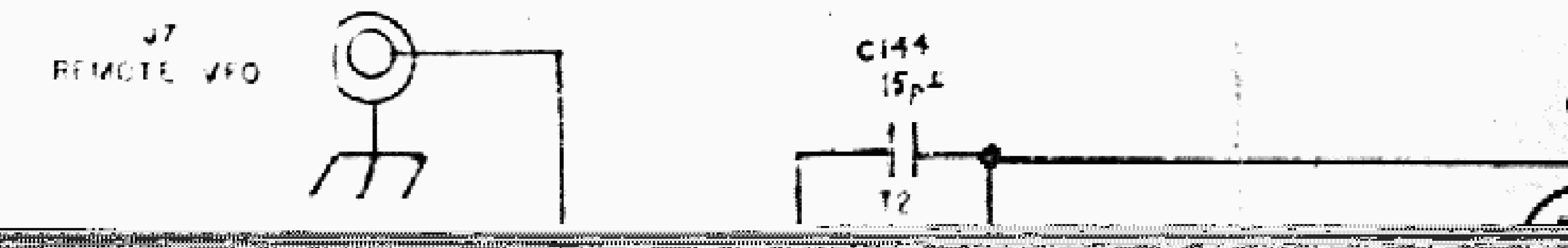
AGRAM

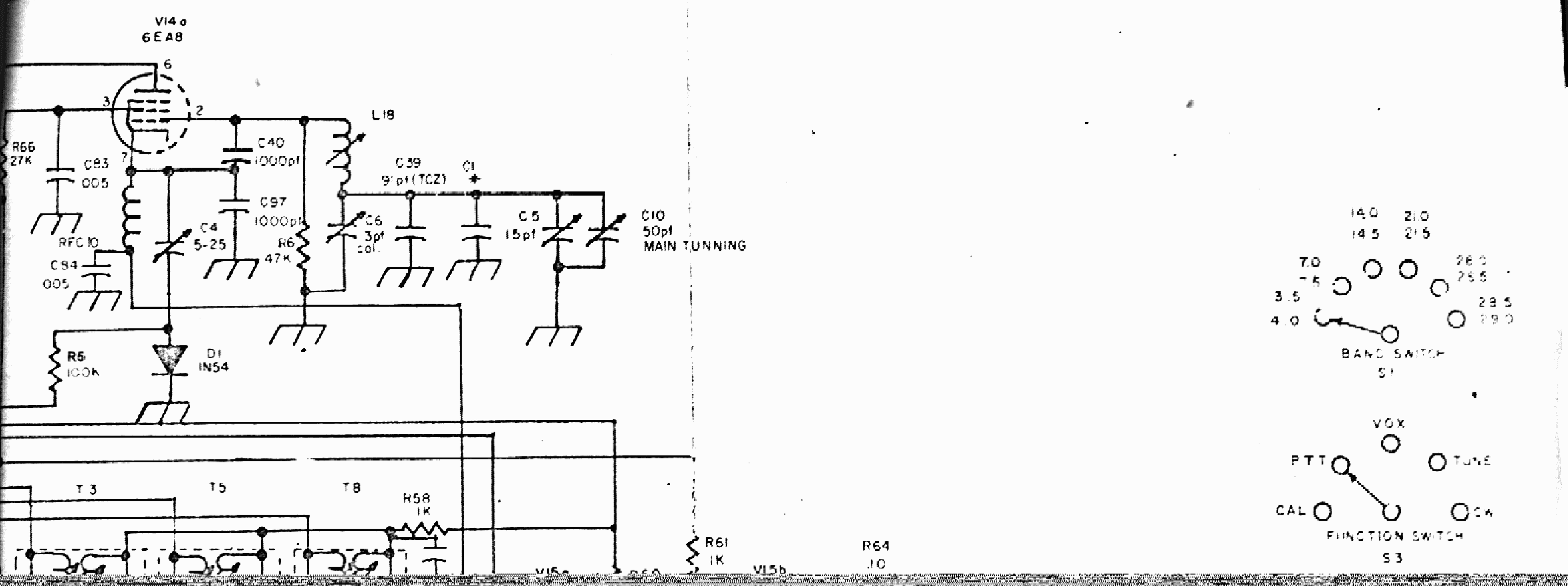

R33
RY 2
C100 A,B
C7
R1
Quadrature
L1
9.0 MC
TRAP
L2 L3
80 40
L4 L14 L15
20 15 10
V9
6GK6
V1
12BZ6
V7
12AT7
T1
V2
6HG8
C 11
J2
V12
OA2
V13
OA2
L7 L6
80 40
L5 L12 L13
20 15 10
V10
6HF5
C13
PA
NEUT
RFC-1
V11
6HF5
RY 1
V6
6EA8
V8
6EJ7
C 12
FILTER
J9
V14
T2
V15
L8
V3
12BA6
L9
C36
L10 B



BACK . PANE
K2
3
8-15
C36
PC 1
PC


C20
18pf
C21
33pf
C22
100pf
S1B
V11
6HF5
PC2
3, 6, 8, 11
C25,C26
C27
.001
R15
100
R16 R17
10
5%
1W
C28
.001
mfd
4,10
V9
6GK6
C23
.001
C12
100pf
C38
47pf
C24
.005
R12
2.2K
R13
100
1W
C37
10pf
R14
68K
1W
RFC9
2.5 uh
R23
1.2K
5%
PIN 10
C139
.005
C94
.005
R41
47K
2W
C41
2000pf
S1C
L13
L2
L5
L6
L7
R9
6.8K
R10
10K
R11
RFC3
750
R107
10K
C84
R106
100K
C134
25pf
V8
6EJ7
C19
.005
R8
270
C18
.005
R7
39K
2W
S1F


J7
REMOTE VFO
C144
15p
T2



V14a
6EA8
R66
27K
C93
.005
RFC10
C94
.005
C40
1000pf
C97
1000pf
C4
5-25
R6
47K
L18
C6
3pf
C39
9 pf (TCZ)
C1
C5
15pf
C10
50pf
MAIN TUNNING
R5
100K
D1
IN54
T3
T5
T8
R58
1K
R61
1K
V15b
R64
.10
14.0
14.5
21.0
21.5
7.0
7.5
28.0
28.5
3.5
4.0
29.5
29.0
BAND SWITCH
S1
VOX
PTT
TUNE
CAL
CW
FUNCTION SWITCH
S3