Marconi

INSTALLING & OPERATING INSTRUCTIONS

XG 54
SERIES

CANADIAN MARCONI COMPANY
MARCONI BUILDING, MONTREAL
BRANCHES
VANCOUVER WINNIPEG TORONTO HALIFAX ST. JOHN'S, NFLD.

Form 613

INDEX

INDEX

DRAWINGS

INSTALLING AND OPERATING INSTRUCTIONS FOR

XG54 FIXED FREQUENCY RECEIVERS

TYPES 112-952 A-B-C-D-E & F

SECTION 1 - GENERAL DESCRIPTION

1.1 PURPOSE

The XG54 Receiver is a single channel crystal controlled HF receiver for general purpose use, such as airport control or as the shore terminal of a ship to shore service. It has been economically designed for high performance and the circuits employed are free from complexities. It is arranged for rack mounting and the short panel height permits a number of units to be stacked one above the other in a standard telephone rack to permit reception on a number of frequencies.

1.2 FREQUENCY RANGE

The receiver has been designed to cover the frequency range from 1650 to 18,000 kcs in 6 bands. These bands are:-

Suffix	Range
A	1650 - 2500 kc.
B	2500 - 3750 kc.
C	3750 - 5600 kc.
D	5600 - 8400 kc.
E	8400 - 12,500 kc.
F	12,500 - 18,000 kc.

The receiver will receive radio telephone (voice frequency) and modulated CW, and CW signals.

1.3 POWER SUPPLY

The power supply required to operate the receiver is 115 volts, at any frequency between 25 and 60 cycles. The power required from the mains is approximately 65 watts.

1.4 SENSITIVITY AND POWER OUTPUT

The sensitivity of the receiver is 1 microvolt for an output of 0.5 watts at a signal to signal plus noise ratio of 6 DB. The power output of the receiver is 0.65 watts with 10%

distortion, 1.0 watts absolute maximum.

1.5 OUTPUT IMPEDANCES

The normal output of the receiver is into a 3" permanent magnet loudspeaker mounted on the chassis. However, provision is made for an external loudspeaker having an impedance of 3.5 ohms to be used if required, as well as terminals for connection to a 500 ohm balanced or split line.

1.6 ANTENNA

The receiver is intended to operate with a standard Marconi antenna or a transmission line, either balanced or unbalanced, Jumpers placed on the antenna terminals will accommodate the various antennas.

1.7 REMOTE OPERATION

By appropriate external wiring to the output plug, the following facilities are available, (provided that additional components are supplied by the customer for use at the remote point):-

(a) Remote switching on or off of the squelch.

(b) Remote switching on or off of the squelch, and adjustment of the squelch threshold by means of a remotely fitted rheostat.

(c) Muting of the receiver by an associated transmitter such as the Marconi TH21 or any other transmitter equipped to short, by means of a relay, two leads from the output connector.

(d) Control of a relay to switch on an associated transmitter when a carrier is received.

(e) Remote switching from C.W. to M.C.W.

(f) If required, the use of two DC control circuits.

1.8 CONTROLS

The front panel of the unit contains the following controls:- ON/OFF Switch, Volume Control, Squelch Control, R.F. Gain Control, CW/MCW Switch, B.F.O. Note Control. In addition, a pilot light, fuse holder and a 3" loudspeaker are mounted on the front panel.

1.9 DIMENSIONS AND WEIGHT

The receiver is mounted in rack mounting chassis whose principal dimensions are:-

19 inches wide
3½ inches high
14 inches deep

Weight - 17 pounds approximately

The front panel of the unit is finished in Marconi light grey. The unit is attached to the telephone rack by means of two 12/24 binding head screws on each side of the front panel.

1.10 TUBES

The unit contains the following vacuum tubes which comprise a complete set. Additional sets as spares can be purchased. Modern practice recommends that at least 100% spares be carried.

1 Signal Frequency Amplifier (V1)	RVC 6BA6
1 Converter (V2)	RVC 6BE6
2 I.F. Amplifiers (V4 & V5)	RVC 6BA6
1 Detector (V6)	RVC 6AQ6
1 AVC Amplifier (V7)	RVC 6AQ6
1 Squelch Control and AF Amp. (V10)	RVC 6SL7
1 A F Power Amplifier (V11)	RVC 6AK6
1 Bias Rectifier (V8)	RVC 6C4
1 Power Rectifier (V9)	RVC 6X4
1 Crystal Controlled Osc. (V3)	RVC 6C4
1 Beat Frequency Oscillator (V12)	RVC 6BJ6

SECTION II - TECHNICAL DESCRIPTION

2.1 During the reading of the discussion which follows reference should be made to the Diagram of Connections of the unit, a copy of which will be found at the back of this manual. From an examination of this, the salient features of the equipment can be gathered. The basic circuit of this receiver is that of the superheterodyne and consists of a stage of RF amplification followed by a converter, which is fed from a crystal controlled oscillator. Two stages of IF amplification follow, employing pentodes. The output from the IF amplifier is fed to a detector, followed by an AVC amplifier, AF amplifier and squelch control, and an audio power amplifier.

When CW reception is desired the CW/MCW switch is thrown to the CW position. This action removes the short which is maintained across the R.F. Gain control by one pair of contacts on this switch in the MCW position. Another pair of contacts closes the cathode circuit of the beat frequency oscillator. R.F. energy from this tube, which is connected in a highly stable electron-coupled oscillator circuit, is then fed to the input circuit of the detector, where it beats with the I.F. frequency to produce an audio note whose pitch can be varied by means of the BFO Note control to any desired frequency from zero beat to about 3000 cycles. The BFO Note control consists of a variable air condenser connected across the tuned circuit of the beat frequency oscillator.

In order to provide the most efficient noise rejection for the type of circuit used, the antenna is loosely coupled to the signal frequency amplifier through L1 and L2. The coupling between these coils can be varied to provide the best match for any installation.

The converter stage and the crystal oscillator are conventional, the latter employs a modified form of Pierce oscillator which is especially adapted for use of the second harmonic of the crystal for signal frequencies above about 8000 kcs. The IF stages are likewise conventional in design and operation. The detector stage has associated with it, a noise limiter which uses a 1N34 crystal. This circuit is particularly effective on impulse types of noise. The AVC amplifier uses an auxiliary rectifier to provide the necessary DC voltage. This results in a very stable and effective system of AVC.

A twin triode is used as squelch control tube and AF amplifier. An adjustable control is fitted to the squelch circuit which permits the level at which the squelch becomes operative to be adjusted to suit varying conditions.

A multicontact output plug is provided to connect to associated apparatus or a telephone pair.

SECTION III - INSTALLATION

3.1 INSPECTION ON RECEIPT OF EQUIPMENT

On receipt of the equipment, it is advisable to check that it has suffered no damage in transit. The unit should be examined and any loose packing material, dust or dirt should be removed from the chassis. Any connections that appear to be damaged should be resoldered before the unit is installed. The chassis should be placed in a rack in the position that it will occupy and the mounting screws tightened firmly. The connections should be made to the antenna and to the power supply.

3.2 CONNECTING THE ANTENNA

On the aerial terminal strip there are three terminals marked A1, A2, and G. If the connection to the antenna is by means of a balanced feeder line, terminals A1 and A2 should be used for the line, terminal G being used for Ground connection. If the feeder line is not balanced, but consists of a coaxial cable or a Marconi aerial, terminal A2 and G should be connected together and the antenna connected to terminal A1.

3.3 FREQUENCY OF CRYSTAL FOR GIVEN OPERATING FREQUENCY

The receiver will have been Factory adjusted on the frequency on which it is to operate, and will have the correct coils in place in the unit. The crystal for reception on this frequency must now be inserted in the correct socket. In connection with the crystals it must be remembered that the crystal frequency is 455 kcs higher than that of the signal on signal frequencies lower than 2500 kcs, and 455 kcs lower than the signal for signal frequencies between 2500 kcs and 8000 kcs. Above 8000 kcs. signal frequency the crystals are used on their second harmonic and the crystal frequency will be such that twice the crystal frequency will be 455 kcs. lower than the signal. IF FREQ

X tal type # D E

3.4 FREQUENCY RANGES OF XG54 MODELS

Each of the 6 models of receiver will cover a certain frequency range, the coils for that frequency being inserted in the chassis during manufacture. The following table gives the frequency range for each type.

Range	Receiver Unit
1650 - 2500 kcs.	XG54A - #112-952A
2500 - 3750 kcs.	XG54B - #112-952B
3750 - 5600 kcs.	XG54C - #112-952C
5600 - 8400 kcs.	XG54D - #112-952D
8400 - 12,500 kcs.	XG54E - #112-952E
12,500 - 18,000 kcs.	XG54F - #112-952F

3.5 ALIGNMENT OF SIGNAL FREQUENCY AMPLIFIER

After the crystal has been inserted and external connections checked, set the CW/MCW Switch to "MCW" the squelch to zero, and the a-f and r-f gain controls to maximum. Power may then be applied. If the correct crystal is in place the receiver should function, though its operation may be somewhat subnormal at this stage. As is the case with any receiver it will be necessary to readjust the input stage to provide the best possible match to the antenna system with which the receiver is to be used. This adjustment can be made using the signal from the distant station. Connect a conventional output meter across the loudspeaker. Set the meter to match 4 ohms and with a modulated carrier from the distant station adjust the cores of L1, L2 and L3 for greatest output. These cores have been adjusted at the factory and should not require any large amount of changes. Care must be taken not to remove them too rapidly, as otherwise the original adjustment may be lost.

Then with an unmodulated carrier from the distant station, adjust the pick-up until the noise output is measurably greater with carrier on than with the carrier off. When these conditions have been achieved, adjust the coupling between L1 and L2 to provide the lowest amount of noise output when the carrier of the distant station is on.

This completes the adjustment of the input and output circuit of the Signal Frequency Amplifier for optimum performance in conjunction with the particular antenna being used. The IF stages have been pre-adjusted at the factory, and the foregoing adjustments will be sufficient to produce optimum overall performance of the equipment provided that the factory adjustments have not been too seriously disturbed, by rough handling in transit, or by some other mistreatment.

3.6 EQUIPMENT REQUIRED FOR OVERALL ALIGNMENT

If it is suspected that the unit has been handled roughly, or otherwise abused or tampered with, and if the necessary test apparatus is on hand, the following alignment procedure should be carried out before installation. Because of the rapid A.V.C. action, the threshold of which is under one microvolt, it is not at all easy to carry out a complete realignment using the conventional output meter. Instead, a vacuum tube voltmeter, (such as the Hickok Model 125) having a high input impedance (5 megohms or more, and capable of measuring voltages negative with respect to ground, should be used. With a voltmeter of this type, signal inputs as high as 50 microvolts can be used to align the receiver. However, it is preferable that the signal generator used have an output range of from 10,000 down to about 1 microvolts, as more accurate alignment will then be possible, assuming that a sufficiently noise-free location is available for carrying out the alignment procedure.

If a suitable vacuum-tube voltmeter is not available, a measurement of positive D.C. voltage made at the cathode of V6 (Pin #2) may serve, instead of the v.t. voltmeter measurements at Pin No. 7 of V7 which are specified below. The disadvantage of this method is that the cathode voltage tends to level off at high signal inputs, due to AVC action. For this reason the D.C. voltages used for this measurement should be kept below 6 or 7 volts, which makes necessary the use of a signal generator capable of attenuation down to about 1 microvolt.

3.7 OVERALL ALIGNMENT

Assuming that the recommended type of vacuum tube voltmeter is available, connect it between pin 7 of the AVC amplifier valve (V7) and ground. With the signal generator set to the desired signal frequency and loosely coupled to the antenna, and with the CW/MCW switch set to MCW, the squelch off, and the a-f and r-f gain controls set near maximum, apply a modulated signal from the generator at a level sufficient to produce a reading on the voltmeter of 10 volts or less. Keeping the generator adjusted so that the reading on the voltmeter remains below 10 volts, adjust the tuning screws on the I.F. Transformers, T3, T4 and T5, for maximum voltage reading, using an insulated screw-driver.

NOTE: In adjusting the I.F. Transformers, T3, T4 and T5, it is possible to align these transformers with the cores set to either the inner or outer ends of the windings. If optimum performance is to be obtained the cores must be positioned at the outer ends of the windings. As sets leave the factory the cores are so positioned, and small adjustments can be made from the factory settings. However, if a replacement is made, or if complete retuning is necessary, the tuning procedure should be commenced from the full counterclockwise rotation of the core studs, so that the cores will be correctly located at the outer ends of the coils.

In the same manner, the screws on L3, L2 and L1 should be adjusted. While these adjustments are being made the spacing between L1 and L2 should be about $\frac{3}{4}$" to 1". The voltmeter should then be disconnected and a conventional output meter set to match 4 ohms, connected across the loudspeaker should be used as an indicator. Keeping the a-f gain control adjusted so that the output does not read more than about 100 milliwatts apply a very small unmodulated signal at the frequency on which the receiver is to operate. Adjust the output from the generator until the noise output is measurably greater than when no signal is applied. When this condition has been achieved, the coupling between the two coils should be adjusted until the noise reaches its minimum value when the signal is applied. The receiver should then be ready for service.

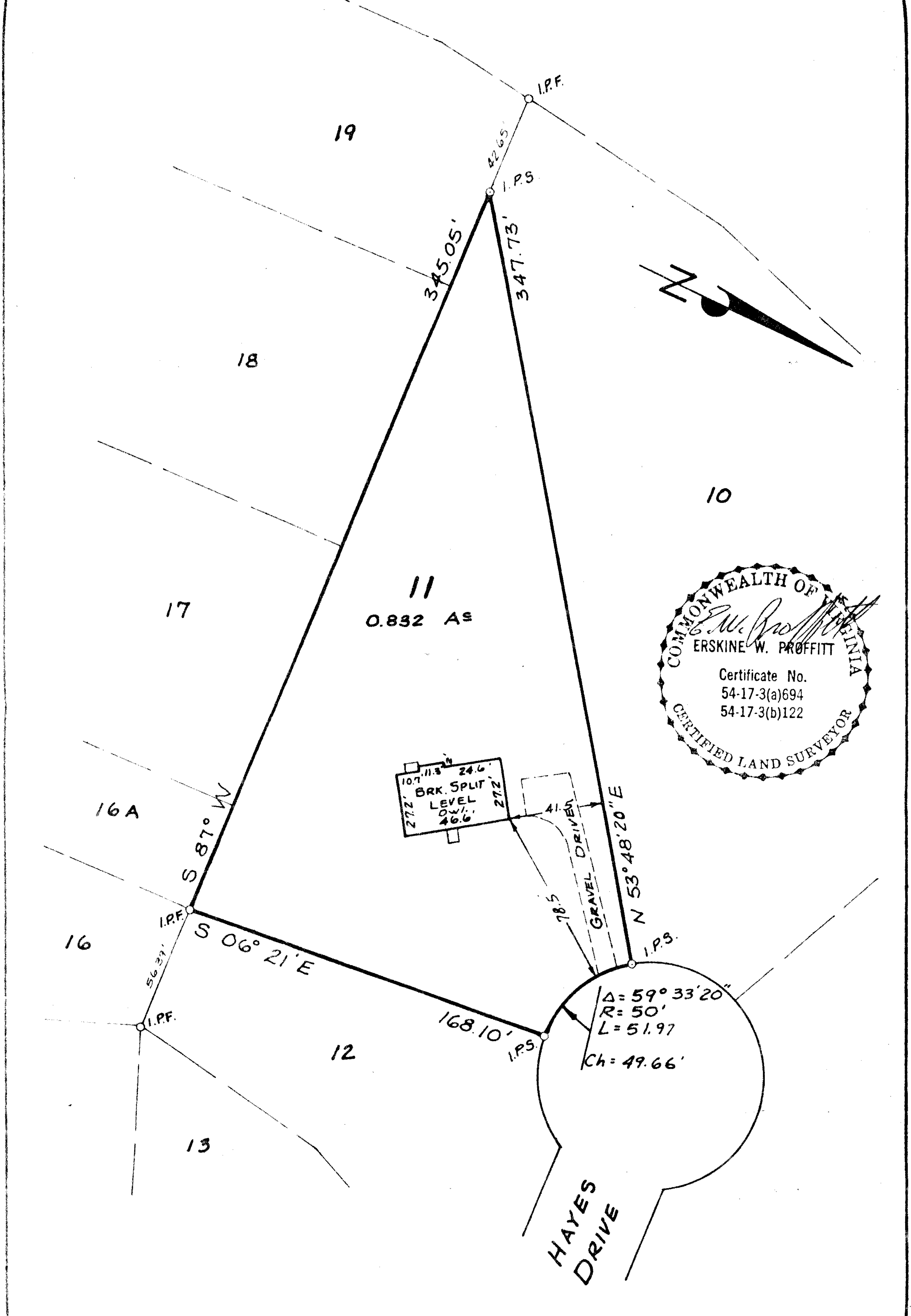
3.8 ALIGNMENT OF BEAT FREQUENCY OSCILLATOR

Now proceed to align the Beat Frequency Oscillator as follows, Set the CW/MCW switch to its CW position. Set the B.F.O. Note control so that the engraved white line points vertically upwards. Remove the modulation from the signal being supplied by the generator, and using an insulated screw driver, adjust the tuning screw on the BFO coil, T6, for zero beat. When this has been done the audio note heard in the loudspeaker should rise to a frequency of about 3000 cycles when the BFO Note Control is turned 90 degrees either clockwise or anticlockwise.

3.9 ALTERNATIVE LOAD CIRCUIT CONNECTIONS

The output connections of the unit are arranged so that several alternative load circuit arrangements can be used. All three windings of the transformer are brought out to terminals on connector K2A. Terminals 7 and 8 are connected to the 3.5 ohm winding and to the internal loudspeaker. If it is required to use an external loudspeaker, the internal one can be disconnected and the external speaker connected to the appropriate terminals of the unwired plug that is supplied.

The other two output windings of the transformer are identical and have a nominal impedance of 125 ohms each. They may be used separately or if they are connected in series by joining contacts 1 and 4, a 500 ohm winding will result. If contact 1 is grounded a balanced line to ground is available. In either case, the output is from contacts 2 and 5. In certain applications it may be necessary to use two DC paths for remote control of the functions of the receiver through relays. In this case if an external blocking condenser is used in place of the jumper between 1 and 4, the desired result will be obtained.


I.P.F.
19
42.65'
I.P.S.
345.05'
347.73'
N
18
10
11
0.832 As
17
COMMONWEALTH OF VIRGINIA
ERSKINE W. PROFFITT
Certificate No.
54-17-3(a)694
54-17-3(b)122
CERTIFIED LAND SURVEYOR
10.7' 11.3' 24.6'
BRK. SPLIT LEVEL DWL.
27.2'
27.2'
46.6'
41.5'
16A
S 87° W
N 53° 48' 20" E
GRAVEL DRIVE
78.5
I.P.F.
16
S 06° 21' E
I.P.S.
56.37'
I.P.F.
Δ = 59° 33' 20"
R = 50'
L = 51.97
Ch = 49.66'
168.10'
I.P.S.
12
13
HAYES DRIVE

3.10 CONNECTIONS FOR REMOTE CONTROL OF SQUELCH

Connections are available for the remote operation of the squelch threshold control. Adjustment of threshold level from 0 to about 100 microvolts is possible by the use of an external rheostat having a maximum value of from .25 to .5 megohms. The rheostat should be connected to the far end of a pair of lines connected to terminals 13 and 7 of the output connector. Since the two threshold controls will then be connected in parallel control of the threshold level will be available from either the remote or the local position provided the other control is set to maximum. For correct operation of this feature it is essential that there be a complete metallic path between the receiver and the control point.

3.11 CONNECTIONS FOR MUTING

If the receiver is used in conjunction with a TH21 transmitter, muting can be effected by connecting the muting terminal of the transmitterto terminal 3 of the receiver output connector. If the receiver is associated with other types of transmitters, muting can be effected by arranging an external relay which will short circuit, when the transmitter is in operation, a pair of wires connected to terminals 3 and 6 of the output connector. The contacts of this relay should be arranged so that they close slightly before the transmitter carrier comes on and radiation takes place. In this case, the muting voltage is supplied from the bias rectifier of the power section of the receiver.

3.12 CONNECTION OF TRANSMITTER CONTROL CIRCUIT

In some cases it may be necessary for the receiver to operate in conjunction with a transmitter which it is desired to switch on when a signal is received. For this application, a voltage from a high impedance source, which requires the use of a relay tube, is available at terminal 9 when a signal is applied to the receiver. This voltage is obtained from the AVC circuit of the receiver, its magnitude depending upon the strength of the received signal and reaching about 30 volts for very high signal levels.

3.13 CONNECTIONS FOR REMOTE CONTROL OF CW/MCW SWITCHING

Remote control of CW/MCW switching will be possible if a single pole double throw switch, or relay, is connected with its pole to terminal 15 and its contacts to terminals 14 and 12 of socket K2B. In this case the jumper between terminals 14 and 15 on plug K2A should be removed.

SECTION IV ROUTINE OPERATION AND MAINTENANCE

4.1 ROUTINE OPERATION

Since the operating controls are few in number and are labelled according to the functions they perform, the manipulation necessary during routine operation will be fairly obvious from the labels appearing on the controls, and from the descriptions already given. This applies particularly to the Power On-Off Switch, the CW-MCW switch, the BFO Note Control and the AF Gain Control.

A few words may be in order concerning the use of the RF Gain Control. The unusually high selectivity which is a feature of this receiver is due, in part, to the use of an infinite impedance detector. Since this type of detector can be used, only over a restricted range of input voltages, it has been found desirable to leave the AVC operative during CW operation. This results in the receiver becoming very sensitive to background noise during "space", if full r-f gain is used. For this reason the R.F. Gain Control should be adjusted by the operator so that on CW, during the "space" periods between dots and dashes, the noise background is at a satisfactory level. The output level during "mark" can then be set by means of the volume control in the usual manner.

4.2 The function of the squelch circuit is to eliminate noise during periods when no signal is being received. The circuit is so arranged that only signals of a certain minimum intensity will operate the receiver. Since the time-constant of the squelch circuit is too great to permit this circuit to function between the dots and dashes of high speed telegraph signals, the squelch control should be set to zero when receiving on CW. For the reception of Phone and MCW signals the Squelch Control should be advanced sufficiently to squelch noise, but care should be taken to insure that this control is not advanced far enough to prevent the receiver from becoming operative when the desired carrier comes on.

4.3 MAINTENANCE

Once the equipment has been installed and is operating in a normal manner, little or no maintenance will be required except a thorough cleaning at regular intervals. On these occasions the dust covers should be removed from the chassis and the unit carefully dusted with a soft cloth, or blown out with an air jet. At this time the tubes should be removed from the chassis and checked in a reliable tube checker. Any tubes that show signs of low emission or other defects should be discarded without delay to avoid the possibility of failure in service.

4.4 VOLTAGE READINGS

If at any time it is found that the performance of the receiver has fallen below normal, a check of the voltages from the various pins of the tube sockets to ground may disclose the location of the defect. The normal readings to be expected are given below. These were measured with a 5000 ohm per volt meter. The conditions existing at the time of the measurement were as follows: No signal input; squelch control to OUT. CW/MCW Switch on MCW. Input voltage 115 volts, 60 cycles. Due to manufacturing tolerances on tubes and components, variations as high as 15% may be expected in these readings on normally operating receivers, but any readings which differ from those given by more than this amount should definitely be regarded as an indication of abnormal operation.

H.T. across C32 - 216V.
H.T. across C33 - 191V.
H.T. at junction of R25 and R27 - 85V.
Bias supply across C30 - Minus 280V.
Bias supply across C31 - Minus 92V.
Bias supply, junction of R30 and R31 - Minus 8.2V.
Bias supply, junction of R32 and R33 - Minus 7.6V.
Bias supply, potential drop across R15 - Minus 8.8V.
Bias supply, junction of R16 and R17 - Minus 2.4 V.
Bias supply, junction of R36 and R38 - 41V

Pin No.

Tube No.	1	2	3	4	5	6	7	8
V1	-0.25	0	6.3 *	0 *	191	85	0	--
V2	-3.8	0	6.3 *	0 *	191	85	-4.5	--
V3	37	0	6.3 *	0 *	37	-4.4	0	--
V4	-4.0	0	6.3 *	0 *	191	85	0	--
V5	-1.5	0	6.3 *	0 *	129	85	0	--
V6	0	4	6.3 *	0 *	0	0	171	--
V7	-80	-80	4.3 *	0 *	-80	-80	-1.5	--
V8	-280	0	-11	-11	-280	-280	-11	--
V9	-11	0	6.3 *	0 *	0	-11.5	216	--
V10	12.5	152	51	-1.5	12.5	-1.0	6.3 *	0 *
V11	-2.4	0	6.3 *	0 *	185	191	0	--
** V12	13.8	13.8	6.3 *	0 *	76.5	30.5	0	--

* Indicates that the voltage measured is A.C. The two heater pins so designated on each socket may be interchanged with no effect.

** CW/MCW Switch on C.W.

4.5 I.F. ALIGNMENT

If, to assist in trouble-shooting, or for any other reason, it may be desired at any time to re-align the I.F. stages to exactly their rated operating frequency of 455 kc, this can be accomplished by the following method:-

Connect the vacuum tube voltmeter between pin 2 of V6 and ground. Remove the crystal from its socket and connect a signal generator to pin 7 of V2 through a 0.01 mfd. mica condenser. Set the signal generator to 455 kc. unmodulated. Starting with a high level of signal align the transformers T3, T4 and T5 for maximum voltmeter readings, reducing the input to keep the scale reading below 7 or 8 volts.

If difficulty is experienced in aligning the I.F. stage, the input from the generator may be successively applied to the grids of V5, V4 and V2, aligning the appropriate transformer each time. At the conclusion of the adjustments an input to the I.F. stages of from 10 to 40 microvolts should give an increase of reading on the VT. voltmeter of about 2.0 volts. (The no signal voltage will be about 3 or 4 volts). If the crystal is now replaced in its sockets and the frequency of the generator shifted to the operating frequency of the receiver, the input required to produce the output mentioned above should be between 25 and 90 microvolts.

Then move the generator output to the antenna terminals, disconnect the mica condenser, and feed the output from the generator to the receiver through a resistor equal to the difference between the generator output resistance and 70 ohms. Set the antenna and signal amplifier coils about ¾" apart. Adjust the cores of L1, L2 and L3 for the maximum gain, adjusting the signal generator output to keep the voltmeter reading below about 7 volts.

When this has been done, connect an output meter across the loudspeaker terminals. Set the meter to match 4 ohms, and with an unmodulated signal of 1 microvolt, adjust the spacing between the antenna and signal frequency amplifier coils for the minimum noise as registered on the output meter.

The Beat Frequency Oscillator alignment should then be checked following the procedure outlined in the section "Installation". The receiver should then be in condition to be replaced in service. It will, of course, be necessary to readjust the antenna coils when connected to the antenna, according to the procedure outlined in the section on Installation.

SECTION V - PARTS LIST

5.1 SPARES AND REPLACEMENT PARTS

When spare or replacement parts are ordered the following information should be given.

1. Name and correct mailing or shipping address of the station.
2. The title of the equipment.
3. The MARCONI type number and serial number, on the nameplate of the equipment.
4. The name and serial number of the unit involved.
5. The name of the part.
6. The MARCONI type number of the part, if one appears.
7. The reference number or component designation of the part.
8. Any other pertinent information.

If the request for replacement material bears the above information in as complete a form as possible, the replacement part or its nearest equivalent, can be forwarded with the minimum of delay.

Circuit Symbol	Specification	Marconi Type No.
CONDENSERS		
C1	180 mmf 5% Mica (1650-2500 kc)	CM20C181J
	62 mmf 5% Mica (2500-3750 kc)	CM20C620J
	330 mmf 5% Mica (3750-5600 kc)	CM20C331J
	120 mmf 5% Mica (5600-8400 kc)	914-121
	180 mmf 5% Mica (8400-12,500 kc)	CM20C181J
	62 mmf 5% Mica (12,500-18,000 kc)	CM20C620J
C2	15 mmf 10% Mica (1650-2500 kc)	914-150
	22 mmf 10% Mica (2500-3750 kc)	914-220
	15 mmf 10% Mica (3750-5600 kc)	914-150
	33 mmf 10% Mica (5600-8400 kc)	914-330
	15 mmf 10% Mica (8400-12500 kc)	914-150
	33 mmf 10% Mica (12,500-18,000 kc)	914-330
C3	10 mmf 20% Mica (1650-2500 kc)	914-100
	15 mmf 10% Mica (2500-3750 kc)	914-150
	10 mmf 20% Mica (3750-5600 kc)	914-100
	33 mmf 10% Mica (5600-8400 kc)	914-330
	10 mmf 20% Mica (8400-12,500 kc)	914-100
	33 mmf 10% Mica (12,500-18,000 kc)	914-330
C4	180 mmf 5% Mica (1650-2500 kc)	CM20C181J
	62 mmf 5% Mica (2500-3750 kc)	CM20C620J
	330 mmf 5% Mica (3750-5600 kc)	CM20C331J
	120 mmf 5% Mica (5600-8400 kc)	914-121
	180 mmf 5% Mica (8400-12,500 kc)	CM20C181J
	62 mmf 5% Mica (12,500-18,000 kc)	CM20C620J
C5	Not used (1650-2500)	
	5 mmf 20% Mica (2500-3750)	914-050
	Not used (3750-5600 kc)	
	22 mmf 10% Mica (5600-8400 kc)	914-220
	Not used (8400-12,500 kc)	
	22 mmf 10% Mica (12,500-18,000 kc)	914-220
C6	180 mmf 5% Mica (1650-2500 kc)	CM20C181J
	62 mmf 5% Mica (2500-3750 kc)	CM20C620J
	330 mmf 5% Mica (3750-5600 kc)	CM20C331J
	120 mmf 5% Mica (5600-8400 kc)	914-121
	180 mmf 5% Mica (8400-12,500 kc)	CM20C181J
	62 mmf 5% Mica (12,500-18,000 kc)	CM20C620J

Circuit Symbol	Specification	Marconi Type No.
C7	220 mmf 10% Mica	914-221
C8	.02 mf paper 400 V.	911-203
C9	100 mmf 10% Mica	914-101
C10	470 mmf 5% Mica	914-471
C11	470 mmf 5% Mica	914-471
C12	470 mmf 5% Mica	914-471
C13	.02 mf paper 400 V	911-203
C14	470 mmf 5% Mica	914-471
C15	470 mmf 5% Mica	914-471
C16	.02 mf paper 400 V	911-203
C17	.02 mf paper 400 V	911-203
C18	120 mmf 5% Mica	914-121
C19	120 mmf 5% Mica	914-121
C20	220 mmf 10% Mica	914-221
C21	2200 mmf 10% Mica	914-222
C22	1000 mmf 20% Ceramic	900-102
C23	0.2 mf paper 200V	910-204
C24	0.2 mf paper 400 V	911-204
C25	0.2 mf paper 400 V	911-204
C26	.02 mf paper 400V	911-203
C27	.02 mf paper 400 V	911-203
C28	.02 mf paper 400 V	911-203
C29	.02 mf paper 400 V	911-203
C30	8 mf Electrolytic 450 V	109-018A
C31	8 mf Electrolytic 450 V	109-018A
C32	20-20 mf Electrolytic 450V	109-019A
C33	20-20 mf Electrolytic 450 V	109-019A
C34	2200 mmf 10% Mica	914-222
C35	0.2 mf paper 400 V	911-204
C36	4700 mmf Mica	914-472
C37	.02 mf paper 400 V	911-203
C38	0.01 mf paper 400 V	911-103
C39	25 mf Electrolytic 25 V	109-018C
C40	0.2 mf 200 V paper	910-204
C41	5 mmf Mica 20%	914-050
C42	2200 mmf Mica 10%	914-222
C43	470 mmf 5% Mica	914-471
C44	15 mmf variable with extend shaft	109-093AE
C45	0.01 mf Mica 10%	914-103
C46	100 mmf Mica 10%	914-101
C47	0.01 mf Mica 10%	914-103

5.3 RESISTORS

Circuit Symbol	Specification	Marconi Type No.
R1	0.1 megs ½ watt composition	931-104
R2	0.1 megs ½ watt composition	931-104
R3	22,000 ohms ½ watt composition	931-223
R4	0.1 megs ½ watt composition	931-104
R5	0.1 megs ½ watt composition	931-104
R6	15 ohms, 1 watt	932-150
R7	0.1 megs ½ watt composition	931-104
R8	10,000 ohms ½ watt composition	931-103
R9	47,000 ohms ½ watt composition	931-473
R10	33,000 ohms ½ watt composition	931-333
R11	33,000 ohms ½ watt composition	931-333
R11A	0.1 megs ½ watt composition	931-104
R12	.22 megs ½ watt composition	931-224
R13	10,000 ohms ½ watt composition	931-103
R14	2.2 megs ½ watt composition	931-225
R15	3,300 ohms ½ watt composition	931-332
R16	33,000 ohms ½ watt composition	931-333
R17	1000 ohms ½ watt composition	931-102
R18	4,700 ohms ½ watt composition	931-472
R19	1 meg. ½ watt composition	931-105
R20	1.0 megs ½ watt composition	931-105
R21	0.1 megs ½ watt composition	931-104
R22	10 megs ½ watt composition	931-106
R23	2.2 megs ½ watt composition	931-225
R24	68,000 ohms 1 watt composition	932-683
R25	6,800 ohms 2 watt composition	934-682
R26	6,800 ohms 2 watt composition	934-682
R27	15,000 ohms 1 watt composition	932-153
R28	15,000 ohms 1 watt composition	932-153
R29	10,000 ohms ½ watt composition	931-103
R30	0.1 meg variable	109-028A
R31	1.0 meg ½ watt composition	931-105
R32	1.0 meg ½ watt composition	931-105
R33	0.1 meg. ½ watt composition	931-104
R34	1.0 meg. ½ watt composition	931-105
R35	1.0 meg variable	109-028C
R36	47,000 ohms ½ watt composition	931-473
R37	2.2 megs ½ watt composition	931-225
R38	1000 ohms ½ watt composition	931-102
R39	.22 megs ½ watt composition	931-224
R40	.1 megs ½ watt composition	931-104
R41	.47 megs ½ watt composition	931-474

Circuit Symbol	Specification	Marconi Type No.
R42	0.1 meg ½ watt composition	931-104
R43	15000 ohms variable	109-060B
R44	15000 ohms variable	109-060B
R45	2200 ohms ½ watt composition	931-222
R46	47000 ohms ½ watt composition	931-473
R47	10000 ohms ½ watt composition	931-103
R48	.1 meg ½ watt composition	931-104

5.4 INDUCTANCES

L1	Antenna Coil Ass'y	(1650-2500 kc)	136-632
		(2500-3750 kc)	136-635
		(3750-5600 kc)	136-638
		(5600-8400 kc)	136-641
		(8400-12,500 kc)	137-070
		(12,500-1800 kc)	137-073
L2	Signal Freq. Amp.	(1650-2500 kc)	136-633
		(2500-3750 kc)	136-636
		(3750-5600 kc)	136-639
		(5600-8400 kc)	136-642
		(8400-12,500 kc)	137-071
		(12,500-18,000 kc)	137-074
L3	Converter Coil Ass'y.	(1650-2500 Kc)	136-634
		(2500-3750 kc)	136-637
		(3750-5600 kc)	136-640
		(5600-8400 kc)	136-643
		(8400-12,500 kc)	137-072
		(12,500-18000 kc)	137-075
L4	Choke Coil		119-750
L5	BFO Coil Assembly		134-953

Circuit Symbol	Specification	Marconi Type No.

5.5 TRANSFORMERS

T1	Composite Power Transformer	130-125
T2	Audio Output Transformer	116-762
T3	Low Gain IF Transformer	134-953
T4	Low Gain IF Transformer	134-953
T5	High Gain IF Transformer	134-952
T6	B.F.O. Tuned Circuit	134-953

5.6 CONNECTORS

K1A	Flush Motor Plug Amphenol 61-M10	
K1B	Female Socket CGE 1351	
K2A	Socket 15 Pole	140G
K2B	Plug 15 Pole	141P

5.7 VACUUM TUBES

V1	RVC Type 6BA6	
V2	RVC Type 6BE6	
V3	RVC Type 6C4	
V4	RVC Type 6BA6	
V5	RVC Type 6BA6	
V6	RVC Type 6AQ6	
V7	RVC Type 6AQ6	
V8	RVC Type 6C4	
V9	RVC Type 6X4	
V10A	RVC Type 6SL7 (½)	
V10B	RVC Type 6SL7 (½)	
V11	RVC Type 6AK6	
V12	RVC Type 6BJ6	

5.8 RECTIFIERS

D1	Crystal Rectifier (IN34)	131-069A

5.9 MISCELLANEOUS

F1	Fuse, 3AG, 1A	110-089
	DPST Switch	109-032A
P1	Pilot Light 6-8 volts	109-036C
LS1	Loudspeaker 3" Permanent Magnet	115-027
B1	Grid Bias Cell (2 required) Mallory BC2	
S2	Switch	109-032B

CANADIAN Marconi COMPANY

VALVE LOCATION CHART

FIRST USED ON 112-952 RECR. ASSY. (XG 54-A,B,C,D,E,F)

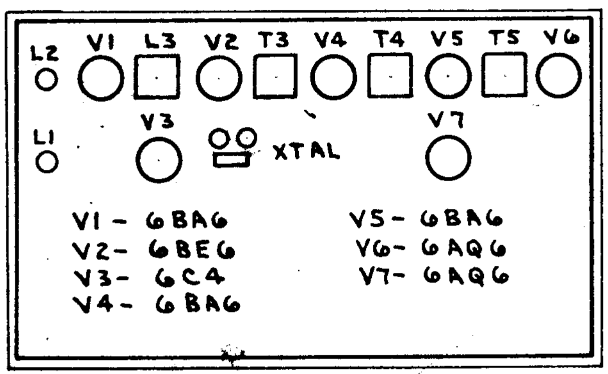
138-565

REVISIONS	ISSUE :-	ISSUE :-	ISSUE :- 2
			V13 ADDED JUNE 14/51 P.E.P.

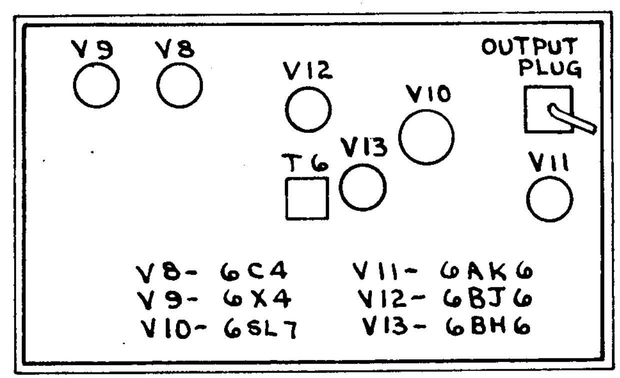
DATE	DRAWN	CHECK	APP'V'D
APR. 29/49	P.E.P.		

TOLERANCES
FRACTIONAL DIMENSIONS TO BE ±.007"
DECIMAL DIMENSIONS TO BE ±.003"
HOLE LOC. HOLE C'T'R'S
UNLESS OTHERWISE SPECIFIED

REF :



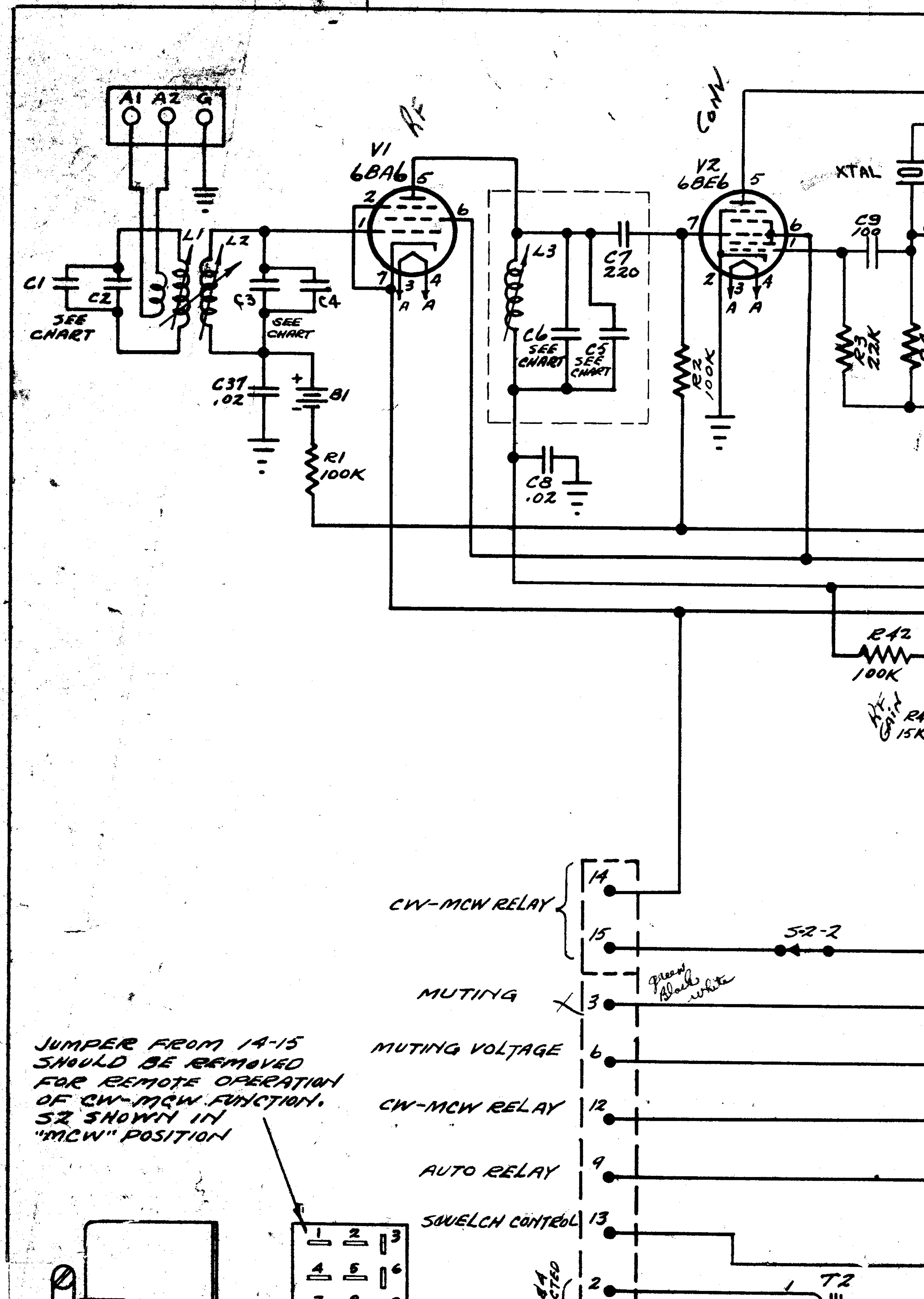
REAR VIEW OF RECEIVER SHOWING VALVE LOCATIONS ON REAR PANEL ASSY.



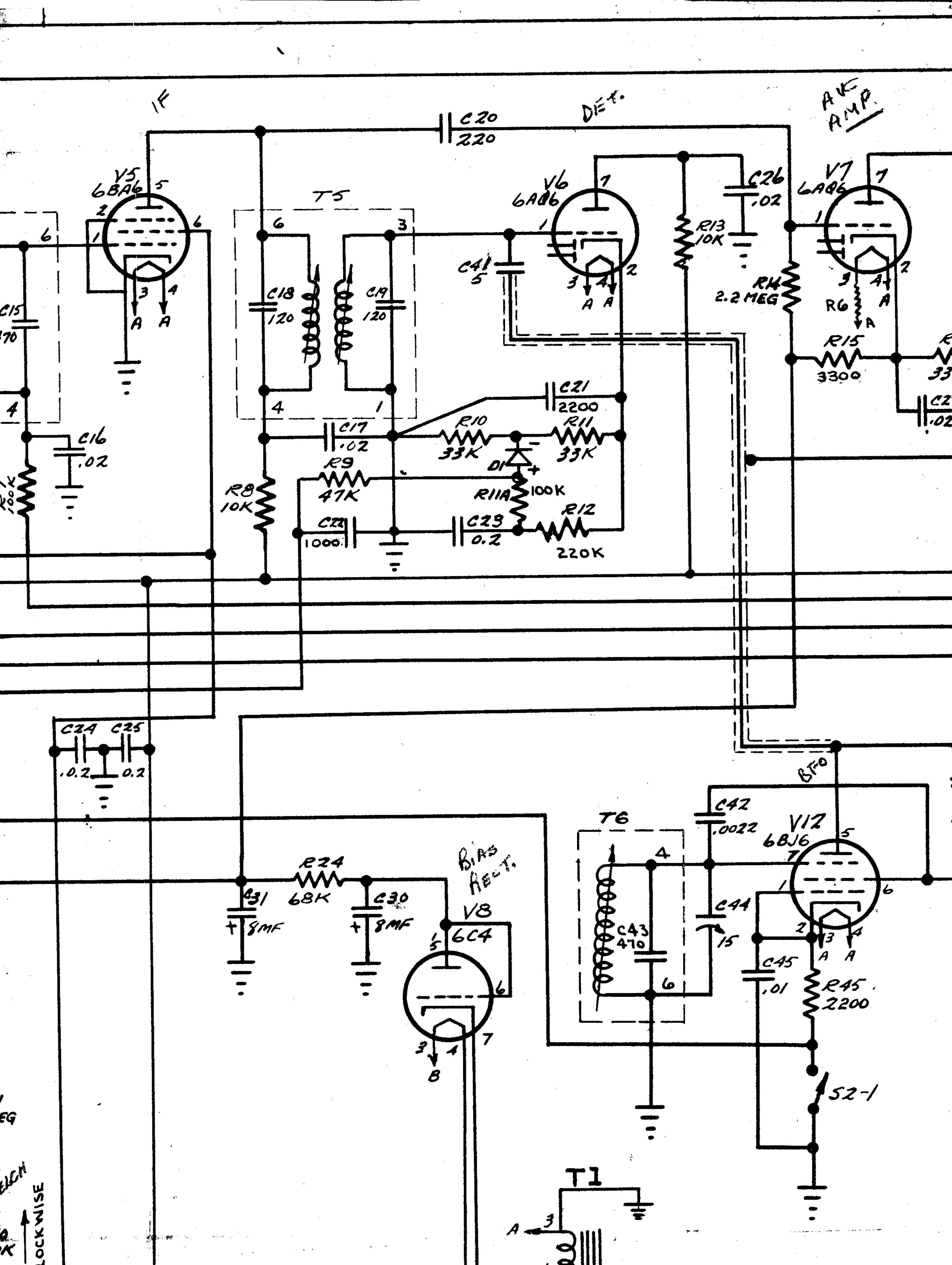
REAR VIEW OF RECEIVER, REAR PANEL ASSY SWUNG OPEN SHOWING VALVE LOCATIONS ON CENTRE PANEL ASSY.

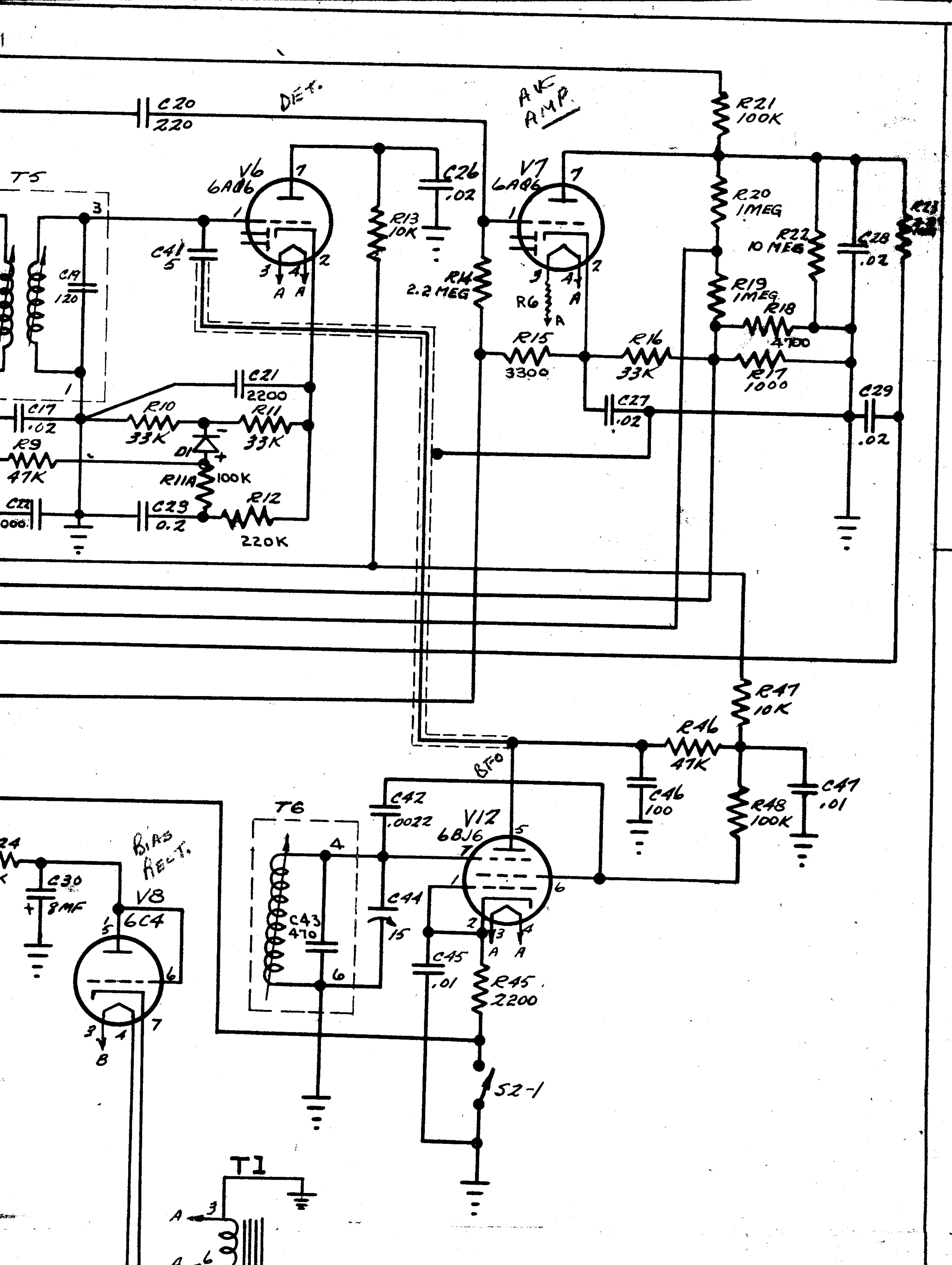
* V13 USED ON XG 54-G ONLY.

MATERIAL:-	WT. MAT'L REQ'D LB/PC	FIN	138-565

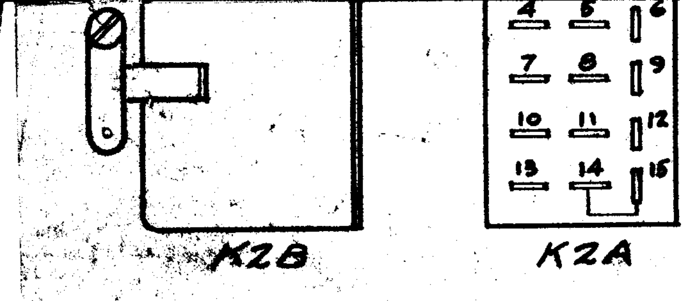


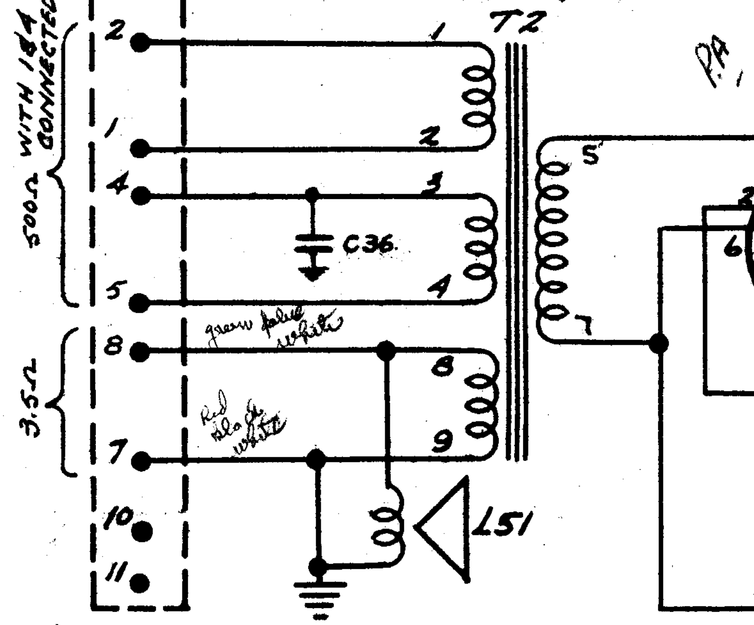
A1 A2 G
RF
V1
6BA6
L1 L2
C1 C2 SEE CHART
C3 C4 SEE CHART
C37 .02
B1
R1 100K
L3
C7 220
C6 SEE CHART
C5 SEE CHART
C8 .02
CONV
V2
6BE6
XTAL
C9 100
R2 100K
R3 22K
R42 100K
RF GAIN
CW-MCW RELAY
14
15
S2-2
MUTING
3
green Black white
MUTING VOLTAGE
6
CW-MCW RELAY
12
AUTO RELAY
9
SQUELCH CONTROL
13
2
T2
JUMPER FROM 14-15 SHOULD BE REMOVED FOR REMOTE OPERATION OF CW-MCW FUNCTION. S2 SHOWN IN "MCW" POSITION


IF
C20
220
DET.
AF
AMP.
V5
6BA6
T5
C18
120
C19
120
V6
6AQ6
C26
.02
R13
10K
V7
6AQ6
C41
5
R14
2.2 MEG
R6
R15
3300
C15
C16
.02
C21
2200
C17
.02
R10
33K
R11
33K
D1
R9
47K
R8
10K
R11A
100K
R12
220K
C22
1000
C23
0.2
C24
C25
.0.2
0.2
BFO
C42
.0022
V12
6BJ6
T6
C43
470
C44
15
C45
.01
R45
2200
S2-1
R24
68K
C31
8MF
C30
8MF
BIAS
RECT.
V8
6C4
T1
LOCKWISE

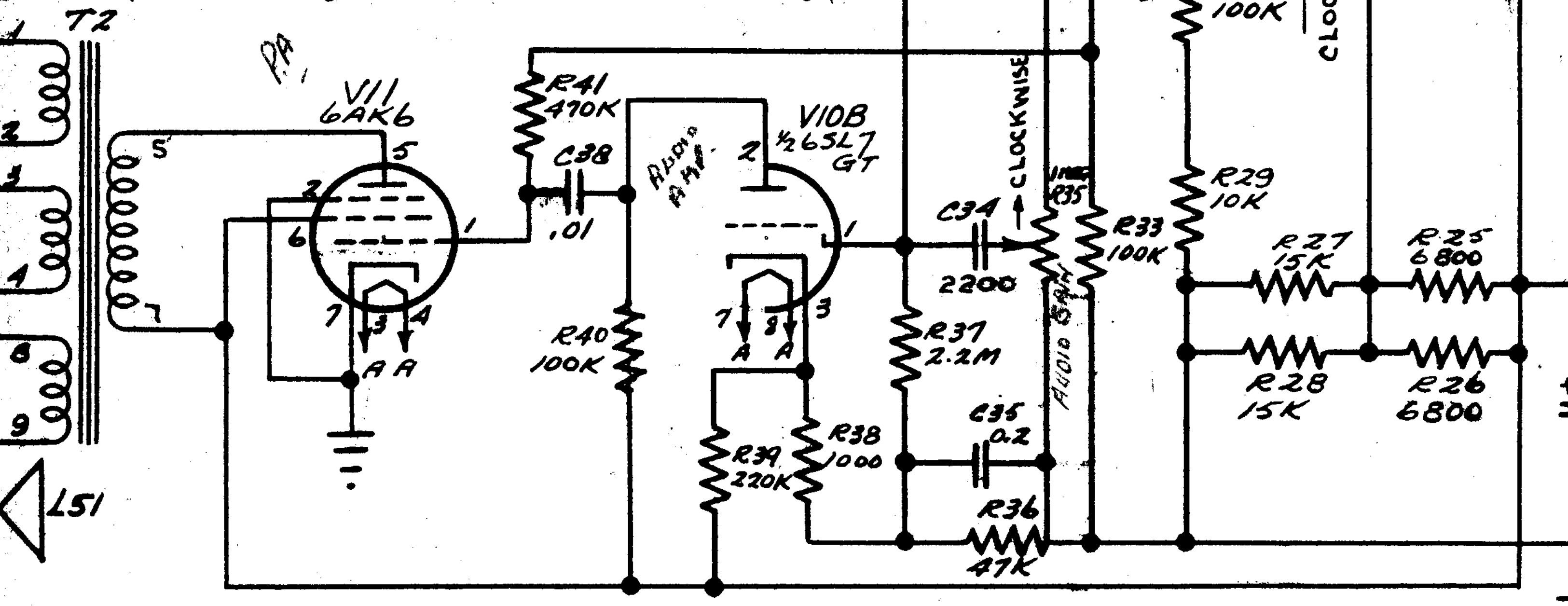


DET.
AVC AMP
C20 220
T5
V6 6AQ6
C26 .02
R13 10K
C41 5
C19 120
V7 6AQ6
R14 2.2 MEG
R6
R21 100K
R20 1MEG
R22 10 MEG
C28 .02
R19 1MEG
R18 4700
R15 3300
R16 33K
R17 1000
C27 .02
C29 .02
C21 2200
C17 .02
R10 33K
R11 33K
R9 47K
D1
R11A 100K
C23 0.2
R12 220K
R47 10K
R46 47K
BFO
C46 100
C47 .01
R48 100K
T6
C42 .0022
V12 6BJ6
C43 470
C44 15
C45 .01
R45 2200
S2-1
BIAS RECT.
C30 8MF
V8 6C4
T1





	CONDENSERS.	C39	25UF 25V ELECT	R26	6,800Ω 2W		
C1	SEE CHART	C40	0.2UF 200V PAPER	R27	15,000Ω 1W		
C2	SEE CHART	C41	5UUF MICA	R28	15,000Ω 1W		
C3	SEE CHART	C42	2200 UUF MICA	R29	10,000Ω 1/2W	F1	1A 250V
C4	SEE CHART	C43	470 UUF MICA	R30	100,000Ω VARIABLE		
C5	SEE CHART	C44	15 UUF VARIABLE	R31	1 MEG 1/2W	K1A	MOTOR PLUG A
C6	SEE CHART	C45	.01 UF MICA.	R32	1 MEG 1/2W	K1B	CONN. BOO
C7	220 UUF MICA	C46	100 UUF MICA.	R33	100,000Ω 1/2W	K2A	C.M.C. 1
C8	.02 UF 400V PAPER	C47	.01 UF MICA.	R34	1 MEG 1/2W	K2B	C.M.C. 1
C9	100 UUF MICA			R35	1 MEG VARIABLE		
C10	470 UUF MICA			R36	47,000Ω 1/2W	L1	SEE CHA
C11	470 UUF MICA			R37	2.2 MEG 1/2W	L2	SEE CHA
C12	470 UUF MICA		RESISTORS	R38	1000Ω 1/2W	L3	SEE CHA
C13	.02 UF 400V PAPER	R1	100,000Ω 1/2W	R39	220,000Ω 1/2W	L4	C.M.C. 11
C14	470 UUF MICA.	R2	100,000Ω 1/2W	R40	100,000Ω 1/2W	L51	C.M.C. 11
C15	470 UUF MICA.	R3	22,000Ω 1/2W	R41	470,000Ω 1/2W		
C16	.02 UF 400V PAPER.	R4	100,000Ω 1/2W	R42	100,000Ω 1/2W	P1	PILOT LA
C17	.02 UF 400V PAPER	R5	100,000Ω 1/2W	R43			
C18	120 UUF MICA	R6	15Ω 1W.	R44	15,000Ω VARIABLE	S1	CMC. #10
C19	120 UUF MICA	R7	100,000Ω 1/2W	R45	2,200Ω 1/2W	S2	C.M.C #1
C20	220 UUF MICA	R8	10,000Ω 1/2W	R46	47,000Ω 1/2W		
C21	2200 UUF MICA	R9	47,000Ω 1/2W	R47	10,000Ω 1/2W		VALV
C22	1000 UUF CERAMIC	R10	33,000Ω 1/2W	R48	100,000Ω 1/2W	V1	#6BA6
C23	.2 UF 200V PAPER	R11	33,000Ω 1/2W			V2	#6BE6
C24	.2 UF 400V PAPER	R11A	100,000Ω 1/2W			V3	#6C4
C25	.2 UF 400V PAPER	R12	220,000Ω 1/2W			V4	#6BA6
C26	.02 UF 400V PAPER	R13	10,000Ω 1/2W		TRANSFORMERS	V5	#6BA6
C27	.02 UF 400V PAPER	R14	2.2 MEG 1/2W	T1	C.M.C. 130-125	V6	#6AQ6
C28	.02 UF 400V PAPER	R15	3.300Ω 1/2W	T2	C.M.C. 116-762	V7	#6AQ6
C29	.02 UF 400V PAPER	R16	33,000Ω 1/2W	T3	C.M.C. 134-953	V8	#6C4
C30	8 UF 450V ELECT.	R17	1,000Ω 1/2W	T4	C.M.C. 134-953	V9	#6X4
C31	8 UF 450V ELECT.	R18	4,700Ω 1/2W	T5	C.M.C. 134-952	V10A	1/2 #6SL
C32	20 UF 450V ELECT.	R19	1 MEG. 1/2W	T6	C.M.C. 134-953	V10B	1/2 #6SL
C33	20 UF 450V ELECT.	R20	1 MEG. 1/2W			V11	#6AK
C34	2200 UUF MICA	R21	100,000Ω 1/2W			V12	#6BJ
C35	.2 UF 400V PAPER	R22	10 MEG. 1/2W		MISC.		
C36	4700 UUF MICA.	R23	2.2 MEG. 1/2W	B1	GRID BIAS CELL [illegible]		
C37	.02 UF 400V PAPER	R24	68,000Ω 1W				
C38	0.01 UF 400V PAPER	R25	6,800Ω 2W	D1	CMC. #131-0694		



/		
/		
/		
W	F1	1A 250V 3AG
ABLE		
W	K1A	MOTOR PLUG AMPHENOL #61-M10
W	K1B	CONN. BODY G.E #1351
W	K2A	C.M.C. 132-140G.
W	K2B	C.M.C. 132-141P.
ALE		
W	L1	SEE CHART
W	L2	SEE CHART
W	L3	SEE CHART
W	L4	C.M.C. 119-750
W	L51	C.M.C. 115-027
W	.	
W	P1	PILOT LAMP 6-8V.
ABLE	S1	CMC #109-032A
/	S2	C.M.C #109-032B
/		
/		VALVES
/	V1	#6BA6
	V2	#6BE6
	V3	#6C4
	V4	#6BA6
ERS	V5	#6BA6
	V6	#6AQ6
	V7	#6AQ6
	V8	#6C4
	V9	#6X4
	V10A	1/2 #6SL7GT
	V10B	1/2 #6SL7GT
	V11	#6AK6
	V12	#6BJ6

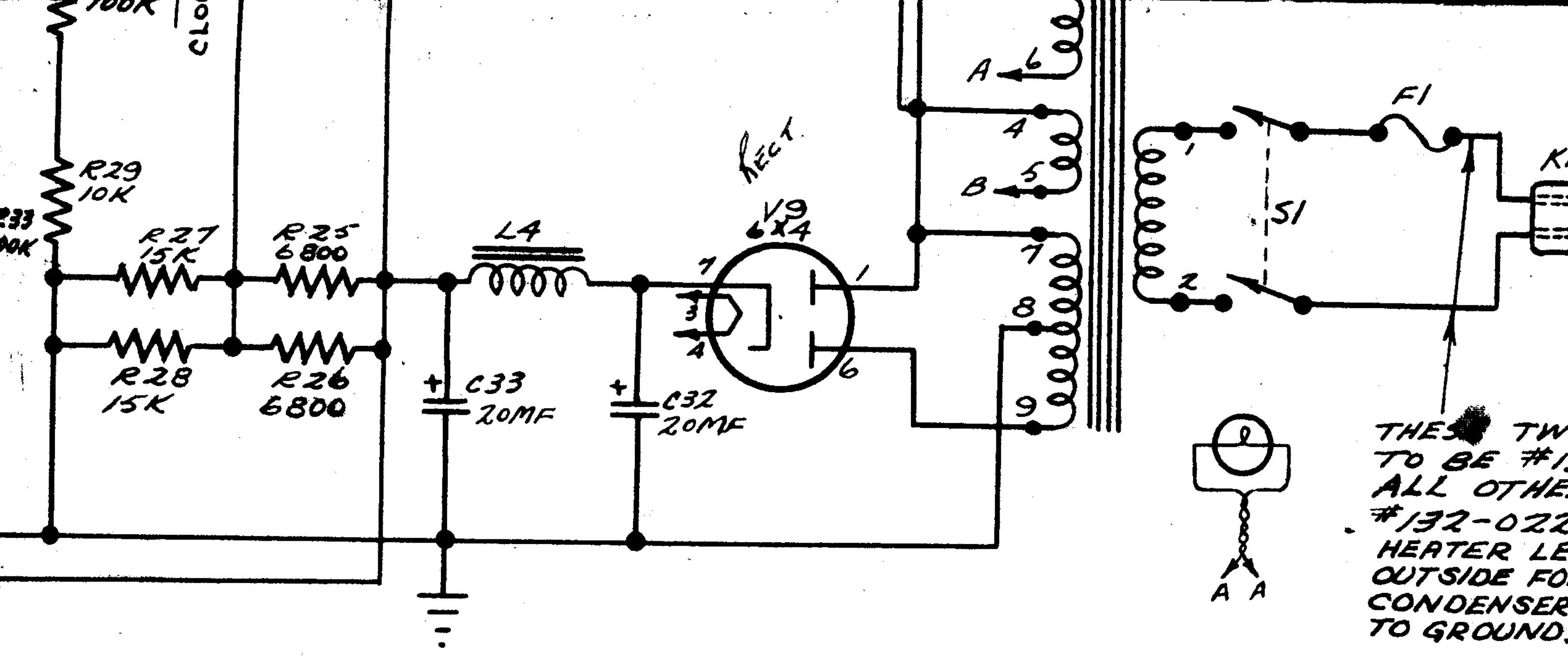
TO BE WIR
SAM

RECEIVER	TYPE	RANGE KC.	C1	
XG54A	112-952 A	1650-2500	CM20C-181J 180 μμF±5%	CM 15
XG54B	112-952 B	2500-3750	CM20C-620J 62 μμF±5%	CM 22
XG54C	112-952C	3750-5600	CM20C-331J 330 μμF±5%	CM 15
XG54D	112-952D	5600-8400	CMC #914-121 120 μμF ±5%	CM 33
XG54E	112-952E	8400-12,500	CM20C-181J 180 μμF±5%	CM 15
XG54F	112-952F	12500-18000	CM20C-620J 62 μμF ±5%	CM 33

NOTE:-
RESISTOR VALUES FOLLOWED BY "K" ARE IN THOUSANDS OF OH
RESISTOR VALUES FOLLOWED BY "MEG" ARE IN MEGOHMS.
RESISTOR VALUES WITH NO FOLLOWING LETTER ARE IN OH

CONDENSER VALUES FOLLOWED BY "MF" ARE IN MICROFARADS
CONDENSER VALUES PRECEDED BY A DECIMAL POINT ARE IN MI
CONDENSER VALUES WITH NO FOLLOWING LETTER ARE IN MIC

CANADIAN MARCONI COMPANY



TO BE WIRED AS PER APPROVED
SAMPLE IN S.O.S.D.

CO

GE KC.	C1	C2	C3	C4	C5	C6	AERIAL	S
-2500	CM20C-181J 180 ΜΜF ±5%	CMC 914-150 15 ΜΜF ±10%	CMC 914-100 10 ΜΜF ±10%	CM20C-181J 180 ΜΜF ±5%		CM20C-181J 180 ΜΜF ±5%	136-632	[illegible]
-3750	CM20C-620J 62 ΜΜF ±5%	CMC 914-220 22 ΜΜF ±10%	CMC 914-150 15 ΜΜF ±10%	CM20C-620J 62 ΜΜF ±5%	CMC 914-050 5 ΜΜF ±20%	CM20C-620J 62 ΜΜF ±5%	136-635	[illegible]
-5600	CM20C-331J 330 ΜΜF ±5%	CMC 914-150 15 ΜΜF ±10%	CMC 914-100 10 ΜΜF ±10%	CM20C-331J 330 ΜΜF ±5%		CM20C-331J 330 ΜΜF ±5%	136-638	[illegible]
-8400	CMC #914-121 120 ΜΜF ±5%	CMC 914-330 33 ΜΜF ±10%	CMC 914-330 33 ΜΜF ±10%	CMC 914-121 120 ΜΜF ±5%	CMC 914-220 22 ΜΜF ±10%	CMC #914-121 120 ΜΜF ±5%	136-641	[illegible]
-12,500	CM20C-181J 180 ΜΜF ±5%	CMC 914-150 15 ΜΜF ±10%	CMC 914-100 10 ΜΜF ±20%	CM20C-181J 180 ΜΜF ±5%		CM20C-181J 180 ΜΜF ±5%	137-070	[illegible]
-18000	CM20C-620J 62 ΜΜF ±5%	CMC 914-330 33 ΜΜF ±10%	CMC 914-330 33 ΜΜF ±10%	CM20C-620J 62 ΜΜF ±5%	CMC 914-220 22 ΜΜF ±10%	CM20C-620J 62 ΜΜF ±5%	137-073	[illegible]

ARE IN THOUSANDS OF OHMS.
EG" ARE IN MEGOHMS.
WING LETTER ARE IN OHMS.

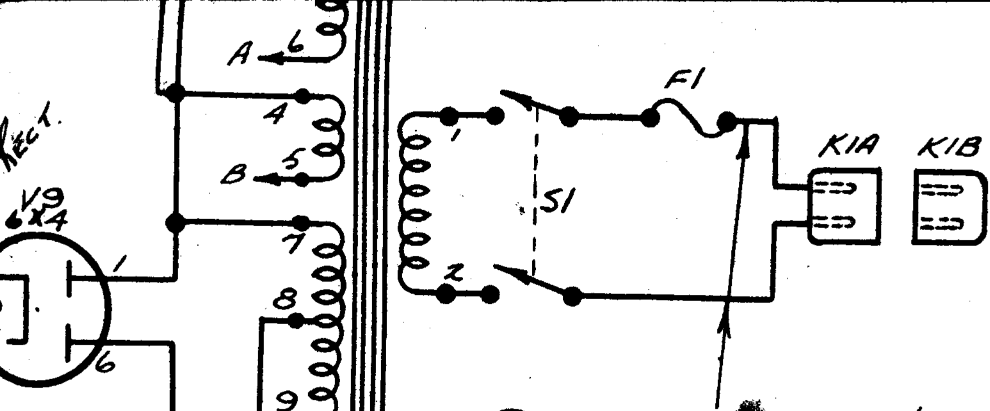
MF" ARE IN MICROFARADS.
DECIMAL POINT ARE IN MICROFARADS.
OWING LETTER ARE IN MICROMICROFARADS.

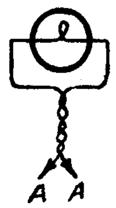
ISSUE 9:- APR.1
L5 TERMINAL NOS.
ISSUE 8:- OCT.1
SWITCH S2-1 AD
ISSUE 7
ISSUED
ISSUE 5:- APRIL
C36 ADDED.C

DIAGRAM OF CONNECTIONS
XG54A,-B,-C,-D,-E,-F RECEIVERS

COMPANY

109-





THESE TWO & FIL. WIRES
TO BE #132-020 (#20 FLEX.)
ALL OTHER WIRES TO BE
#132-022 (#22 FLEX.)
HEATER LEADS TO BE TWISTED
OUTSIDE FOIL OF ALL BYPASS
CONDENSERS TO BE CONNECTED
TO GROUND.

APPROVED
.S.D.

COIL ASS'YS.

	C4	C5	C6	AERIAL	S/F.A. GRID	CONVERTER GRID.
-100 ±10%	CM20C-181J 180 uuf ±5%		CM20C-181J 180 uuf ±5%	136-632	136-633	136-634
-150 ±10%	CM20C-620J 62 uuf ±5%	CMC 914-050 5 uuf ±20%	CM20C-620J 62 uuf ±5%	136-635	136-636	136-637
-100 ±10%	CM20C-331J 330 uuf ±5%		CM20C-331J 330 uuf ±5%	136-638	136-639	136-640
-330 ±10%	CMC 914-121 120 uuf ±5%	CMC 914-220 22 uuf ±10%	CMC #914-121 120 uuf ±5%	136-641	136-642	136-643
-100 ±20%	CM20C-181J 180 uuf ±5%		CM20C-181J 180 uuf ±5%	137-070	137-071	137-072
-330 ±10%	CM20C-620J 62 uuf ±5%	CMC 914-220 22 uuf ±10%	CM20C-620J 62 uuf ±5%	137-073	137-074	137-075

COIL ASS'YS. INCLUDE INDUCTANCES & PARALLEL CONDENSERS

ISSUE 9:- APR. 18/51 P.E.P. FHM
T5 TERMINAL NOS. INTERCHANGED
ISSUE 8:- OCT. 17/49 P.E.P.
SWITCH S2-3 ADDED
ISSUE 7 [illegible] /49 GHS
[illegible] D-2008
ISSUED [illegible] DTB
R [illegible] DTB
ISSUE 5:- [illegible] 22/49 [illegible]
C36 ADDED. C4 WAS C44.

ISSUE 4:- APR. 19/49 P.E.P. D.T.B.
C36 WAS 4700 MF.; ON T2 TERMS. 5 & 7 INTERCHANGED; R6 ADDED.
ISSUE 3:- APR. 6/49 P.E.P.
RECEIVERS TYPE NO. WERE 113-990
ISSUE 2:- 9 NOV. '48. L.G. FHM
REDRAWN. C36 ADDED. T1 SHOWN GROUNDED. NOTE AT S1 REVISED. ALT. SHEET D-1744.

CONNECTIONS
-D-E-F RECEIVERS

109-918

DRAWN BY- [illegible]
CHECKED BY- FHM
APPROVED BY-
DATE- OCT 6/48

ADDENDUM #1 TO INSTRUCTIONS #590

WIRING CHANGES REQUIRED TO EFFECT AUTOMATIC REMOVAL OF SQUELCH ON CW OPERATION IN XG54 SERIES RECEIVERS

The squelch circuit of the XG54 Series receivers can be rendered inoperative automatically, whenever the CW-MCW switch is placed in the CW position, by making certain minor modifications in the wiring of this switch. These modifications, which will provide smoother r-f gain control action and improved C.W. reception can be made without difficulty in the field, as follows:-

The CW-MCW switch is a double-pole double throw type. One section connects the cathode circuit of the B.F.O. to ground in the CW position. This section should be left as it is. The other section connects terminal #15 of the output plug to ground in the MCW position. These two leads should be interchanged, if necessary, at the switch so that the ground lead goes to the centre terminal of the switch and the lead from plug terminal #15 goes to the left hand terminal as viewed from the front of the set. A new lead is now run in from the right hand terminal of this same section of the switch to the centre terminal (arm) of the squelch control potentiometer. It will then be seen that when the switch is on MCW it shorts out the R.F. Gain Control to ground through terminals 15 and 14 of the output plug. When it is on CW the ground on the RF Gain Control is removed and the centre arm of the squelch control is grounded. This makes the squelch circuit inoperative on CW regardless of the setting of the Squelch Control.

These changes are being incorporated in all XG54 series receivers manufactured after October 17th, 1949.

After the above modifications have been carried out, certain alterations will be necessary in the text of Installing And Operating Instructions #131-651. These are as follows:

1. Page 4, Section 2.1, Paragraph 2, Sentence 2 - should now read:
   "This action removes the short which is maintained across the R.F. Gain Control by one pair of contacts on this switch in the MCW position and grounds the centre arm of the squelch control thus making the squelch circuit inoperative."

2. Page 10, Section 3.13 - should now read:
   "Remote Control of CW/MCW switching will be possible if a double pole double throw switch, or relay, is connected with one pole to terminal 15 and contacts to terminals 14 and 12 of socket K2B. In this case the

(continued)

jumper between terminals 14 and 15 on plug K2A should be removed. The other pole should be connected to terminal 15 and the contact which is closed in the CW position should connect to terminal 13."

3. Page 11, Section 4.2, sentence 3-should read:
"Since the time constant of the squelch circuit is too great to permit this circuit to function between the dots and dashes of high speed telegraph signals, the squelch circuit is switched off when receiving on C.W."

ADDENDUM NO. 2 TO INSTRUCTIONS NO. 590

INSTALLING AND GENERATING INSTRUCTIONS FOR

XG54G SERIES RECEIVERS

The XG54G Series receivers incorporate certain modifications which enable them, when used in conjunction with remote control units such as the AG15A (Diagrams of connections 148-032), to provide remote functions not found hitherto in XG54 Receivers.

These functions are:- (a) Remote control of B.F.O. note.
(b) Remote control of R.F. Gain.

The XG54G Series also incorporates an audio limiter which is intended to limit the signal level fed to the line when used as a remotely operated C.W. receiver. A panel switch is used to turn off the limiter when the receiver is used on M.C.W. operation or on local C.W. operation.

In order to accomplish the additional remote control functions, an additional tube V13 (see Drawing 112-994G) and its associated components have been added to the receiver besides certain changes to the screen resistor network associated with the R.F. and I.F. stages. In addition, a third wire must be connected between terminal 7 of the receiver and the remote control unit.

When used with an AG15A amplifier or other suitable remote control unit the text should be amended as follows:-

1. Page 3, section 1.10.
   Add: - Reactance tube (V13) RVC 6BH6

2. Page 4, section 2.1, Paragraph 2.
   Delete last sentence.
   Add: - The B.F.O. note is controlled by the reactance tube V13, the screen potential of which is controlled either by the local rheostat R54 or the rheostat incorporated in the remote control unit.

3. Page 9, section 3.8.
   Add: - When the receiver is connected for remote B.F.O. control, adjust the tuning screw on T6 for equal deviation on either side of zero beat as the remote control is turned to either extreme.

4. Page 9, section 3.9
   Delete and substitute: - The output connections of the unit are arranged so that several alternate load circuit arrangement can be used. All three windings of the output transformer are brought out to the terminals on connector K2. Terminals 8 and 4 can be used to connect an external loudspeaker to the 3.5 ohm winding. The internal loudspeaker should be disconnected in this case.

The other two output windings of the transformer are identical and have a nominal impedance of 125 ohms each. They are connected in series by a 2 mf. condenser giving a 500 ohm winding centre-tapped to ground at the No. 4 terminal. The 500 ohm output is from terminals 2 and 5. The 2 mf. condenser between the windings allows the use of the D.C. paths for remote control of two receiver functions. If control of two functions is required over a single pair of lines the ground must be lifted from terminal No. 4 and a good ground return must be present between the receiver and the remote operating point. When used with the AG15A amplifier the split 500 ohm winding is used for control of the B.F.O. note. The complete D.C. control path is obtained through both sides of the line, with the ground connections remaining on terminal No. 4.

5. Page 10, Section 3.10
Delete and substitute:-
<u>Connections for Remote B.F.O. Control</u>

Where it is intended to use the receiver with remote operation of the B.F.O., note the jumper between terminals 10 - 11 should be removed and a jumper connected between terminals 1 - 11. Terminals 2 and 5 are then connected to the line pair going to the remote unit.

6. Page 10, Section 3.13.
Delete and substitute:-
<u>Connections for Remote R.F. gain control</u>

For remote R.F. Gain control R28 should be removed and a third wire connected between terminal 7 and the R.F. gain control in the remote unit. A good ground must be provided for the remote unit and the receiver.

7. <u>Operation of Audio Limiter</u>

A diode audio limiter is incorporated in the XG54G receivers. This limiter may be turned on or off by a panel switch and is intended only for use on the reception of C.W. signals when the receiver output is being fed into a line. By means of a biased clipping action, it operates to limit the audio output to the line to a few db above a level of 3 db (e.g. - 2 mw). It is not suitable for use with the local speaker as the power output at limiting level is too low, nor is it suitable for use on M.C.W. due to the distortion introduced by the clipping action.

In use the A.F. gain control is left at or near maximum and the line level is set to about 3 db (referring to 0 db as 1 mw) on a distant or weak signal by means of the R.F. gain control. Strong signals will then produce a line level only a few db higher than this level.

8. Socket Voltages

In the table of socket voltages on page 12, delete, all readings associated with V12.

Add, under the following headings:-

Tube No.	Pin No. 1	2	3	4	5	6	7	8
	6.0	6.0	6.3m	6.3m	76	31	0	0
V13	0	0.05-0.15^{x}	6.3m	6.3m	186	0-15.8^{x}	0.05-0.15^{x}	0

x - Variation with position of B.F.O. note control.

9. Parts List

Add, to the parts list the components listed in the table below.

Circuit Symbol	Specification	Marconi Type No.
C48	Same as C10	
C49,50	Same as C9	
C51	Same as C30	
C52	0.01 uF, 120 v. Paper	910-103
C53	Same as C45	
C54	2.0 uF, 200 v.	910-204
R49	1000 k ohms 1 watt	932-104
R50	Same as R9	
R51	220 ohms ½ watt	931-221
R52	Same as R3	
R53, 56	Same as R41	
R54	Same as R44	
R55	10 ohms 1 watt	932-100
R57, 62	Same as R1	
R58, 59	Same as R17	
R60	Same as R12	
R61	1.5 megohms ½ watt	931-155
V13	6BH6	
D2, 3	Same as D1	
S3	Slide Switch D.P.D.T.	I.G.A. #1260
L6	R.F. Choke 25 mh.	110-097J
	Terminal Strips	(131-065L (131-065A

NOTE: When stacking several of these receivers in a relay rack it is recommended that a 1¾" blank panel be interposed between units to ensure adequate ventilation and to prevent B.F.O. interference.

ADDEMDUM NO. 3 TO INSTRUCTIONS 590

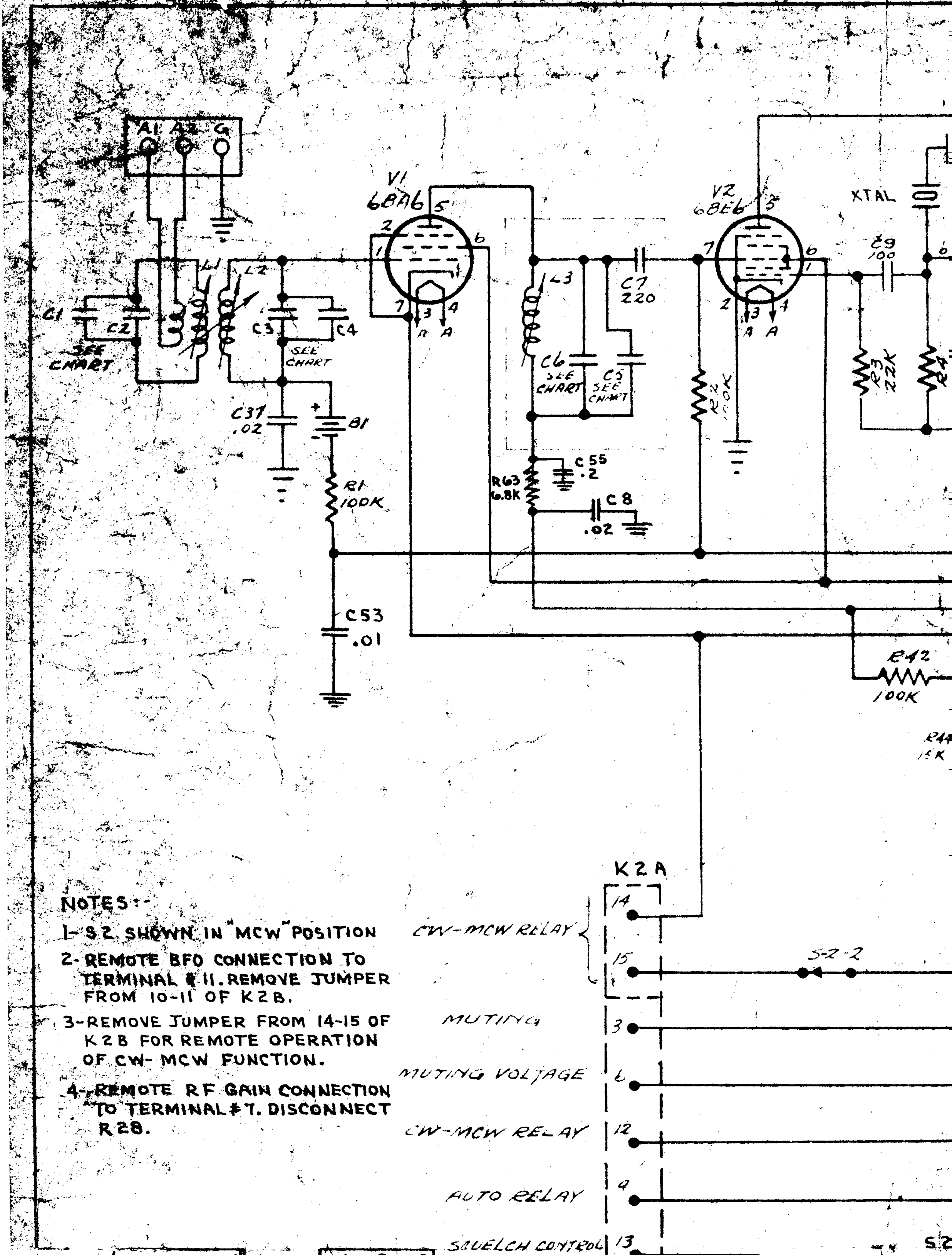
The parts list of the XG-54-G Receiver should be modified as follows:

1. Change the power rating of R27 to read 2 watts.

2. Add; Resistor R63, 6800 ohms, 1 watt, CMC No. 932-682.

3. Add; Condenser C55, 0.2 mf, 400 volts, CMC 911-204.

XG 54
SERIES



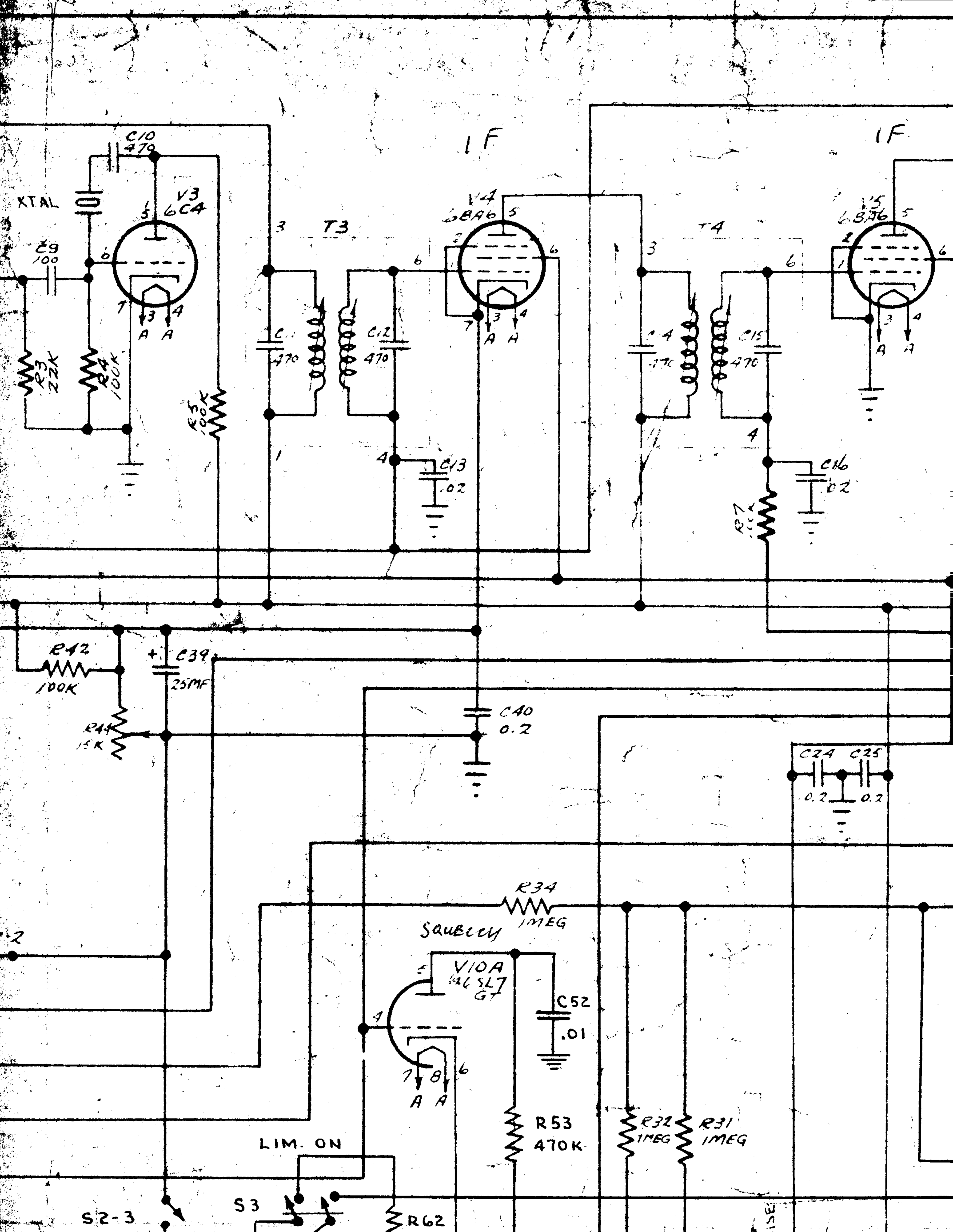
NOTES:-

1- S2 SHOWN IN "MCW" POSITION

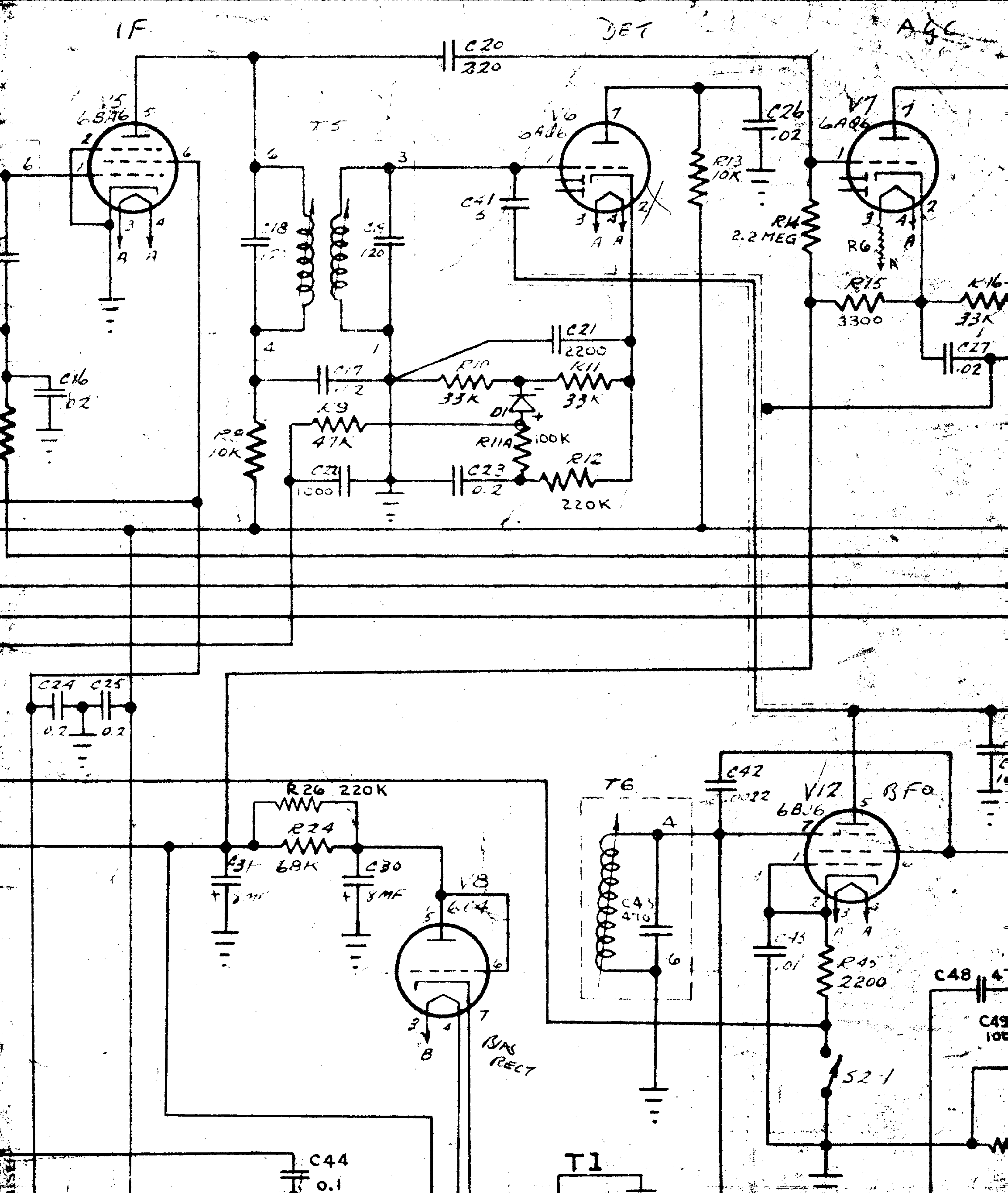
2- REMOTE BFO CONNECTION TO TERMINAL #11. REMOVE JUMPER FROM 10-11 OF K2B.

3- REMOVE JUMPER FROM 14-15 OF K2B FOR REMOTE OPERATION OF CW- MCW FUNCTION.

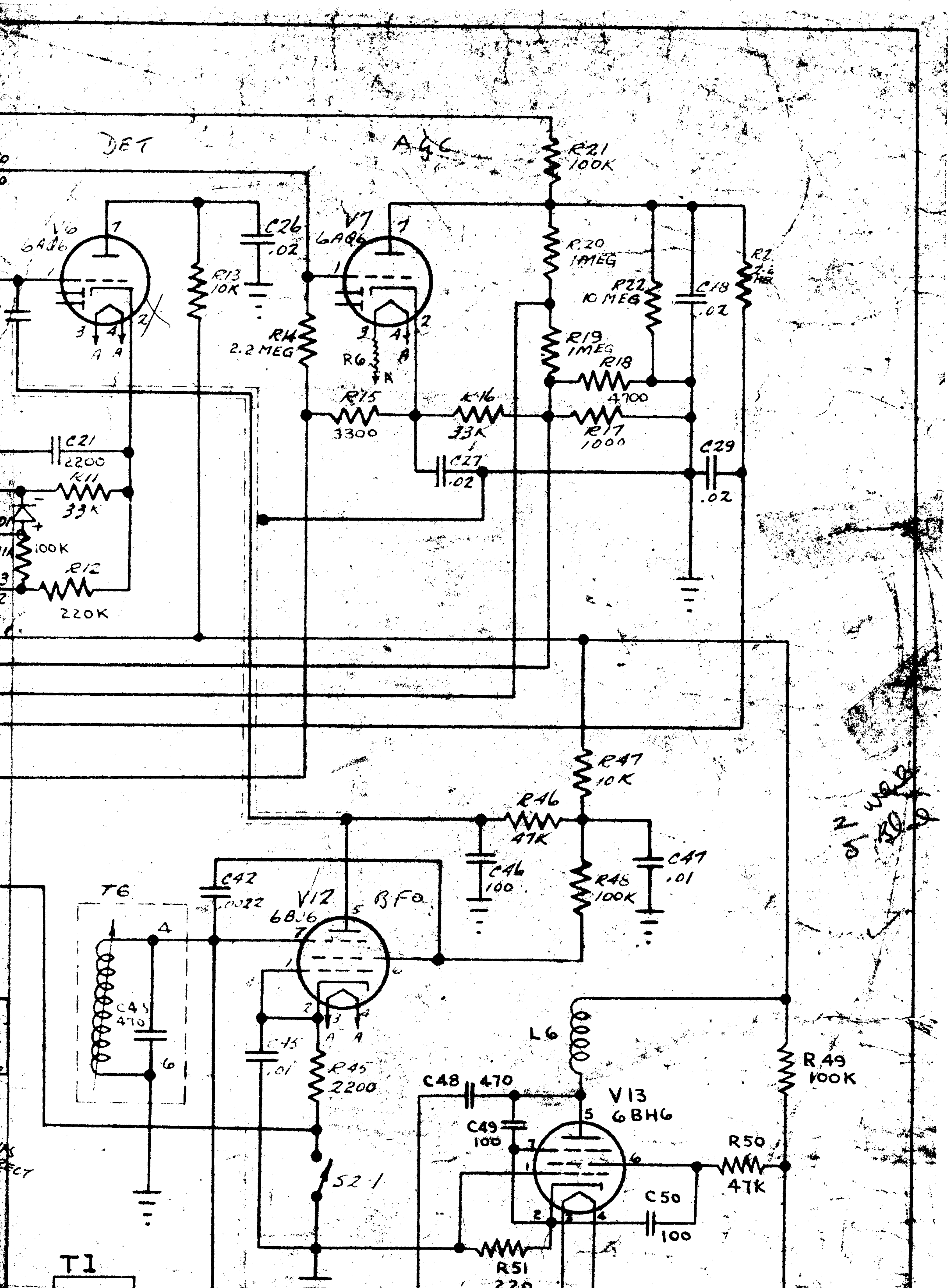
4- REMOTE RF GAIN CONNECTION TO TERMINAL #7. DISCONNECT R28.

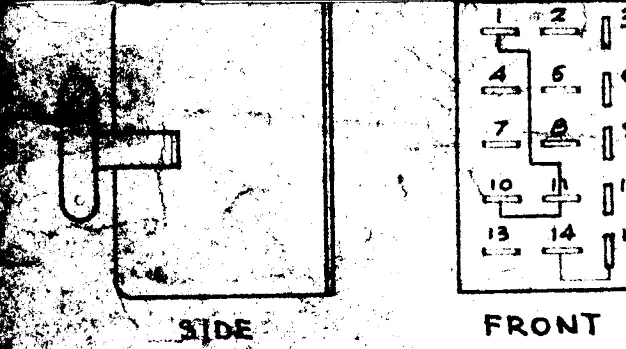


XTAL
C10
470
V3
6C4
C9
100
R3
22K
R4
100K
R5
100K
T3
IF
V4
6BA6
C11
470
C12
470
C13
.02
IF
T4
V5
6BA6
C14
470
C15
470
C16
.02
R7
R42
100K
C39
25MF
R44
15K
C40
0.2
C24
C25
0.2
0.2
R34
1MEG
SQUELCH
V10A
1/2 6SL7
GT
C52
.01
R53
470K
R32
1MEG
R31
1MEG
LIM. ON
S3
S2-3
R62

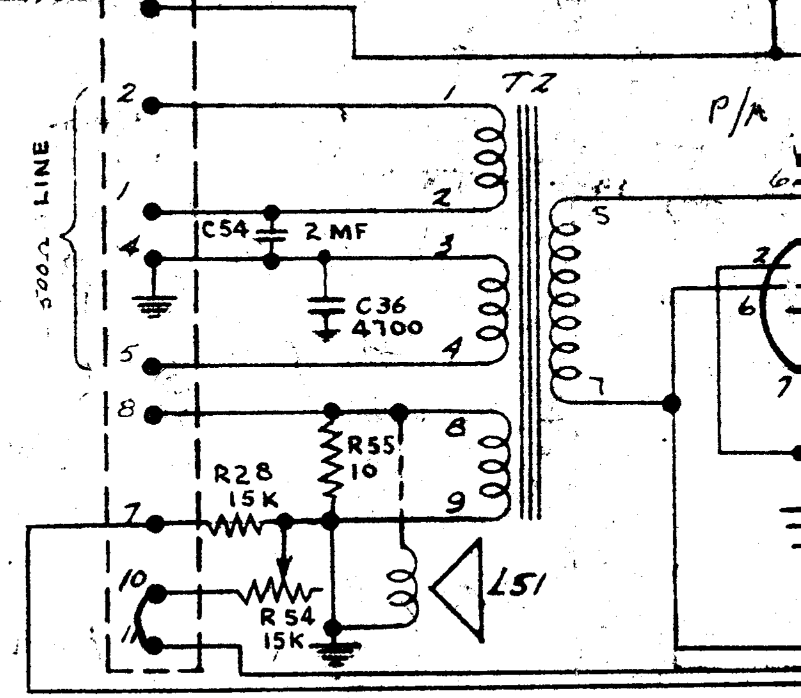


IF
DET
AGC
V5
6BA6
V6
6AQ6
V7
6AQ6
T5
C20
220
C26
.02
R13
10K
C41
5
C18
C19
120
R14
2.2 MEG
R6
R15
3300
33K
C21
2200
C27
.02
C17
R10
33K
R11
33K
D1
C16
.02
R8
10K
R9
47K
R11A
100K
C22
1000
C23
0.2
R12
220K
C24
C25
0.2
0.2
T6
C42
.0022
V12
6BJ6
BFO
R26 220K
R24
68K
C31
C30
8MF
V8
6C4
C43
470
C45
.01
R45
2200
C48
C49
BIAS RECT
S2-1
C44
0.1
T1

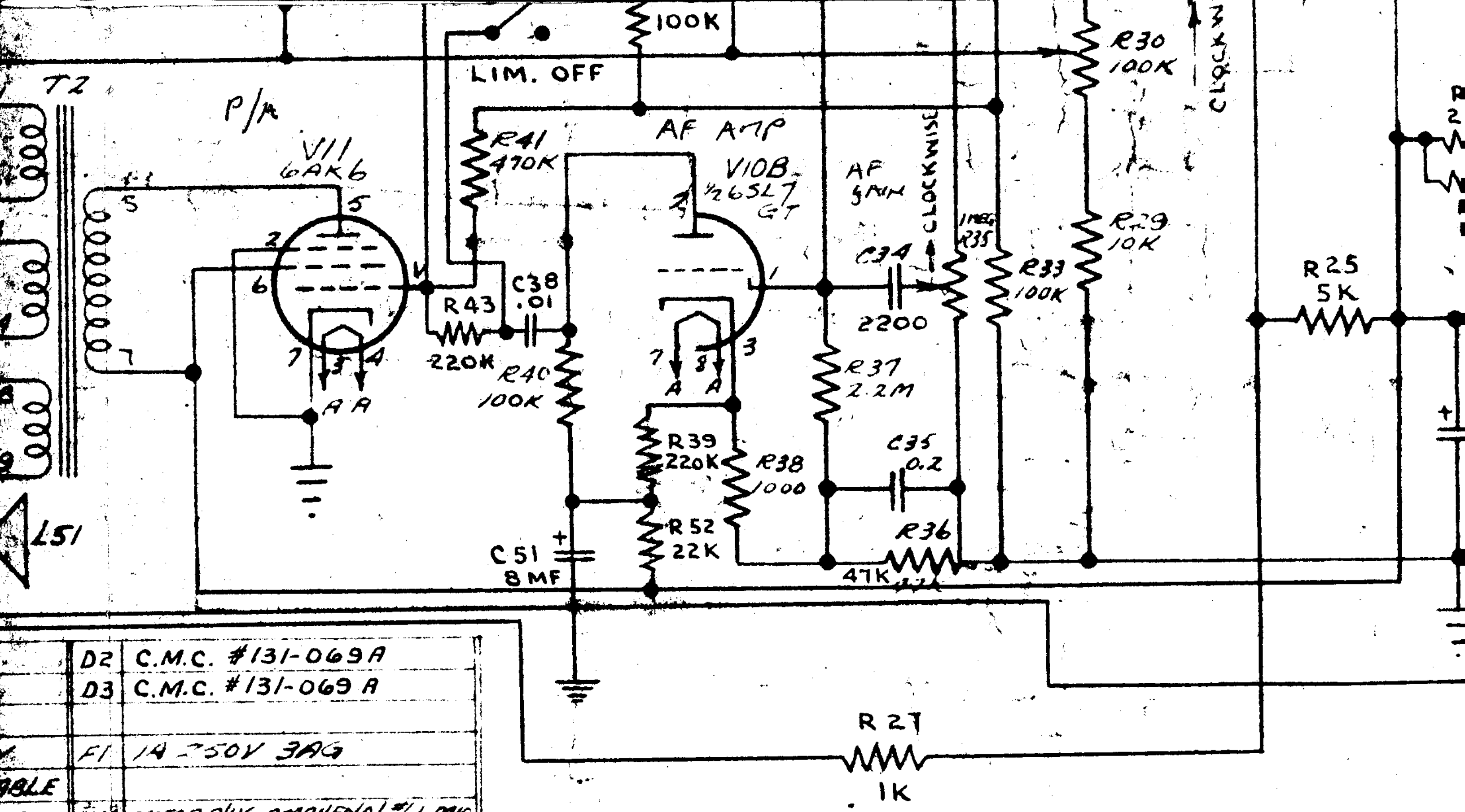

DET
AGC
R21 100K
V6 6AQ6
C26 .02
V7 6AQ6
R13 10K
R20 1MEG
R22 10 MEG
C18 .02
R14 2.2 MEG
R19 1MEG
R18 4700
R6
R15 3300
R16 33K
R17 1000
C21 2200
C27 .02
C29 .02
R11 33K
100K
R12 220K
R47 10K
R46 47K
C41 .01
C46 100
R48 100K
T6
C42 .0022
V12 6BJ6
BFO
C43 470
C45 .01
R45 2200
L6
R49 100K
C48 470
V13 6BH6
C49 100
R50 47K
S2-1
C50 100
R51 220
T1



K2B



	CONDENSERS.	C39	25 UF 25 V ELECT	R26	220,000 Ω 1W.	D2	C.M.C. #131-
C1	SEE CHART	C40	0.2 UF 200V PAPER	R27	1,000 Ω 2W	D3	C.M.C. #131-C
C2	SEE CHART	C41	5 UUF MICA	R28	15,000 Ω 1W		
C3	SEE CHART	C42	2200 UUF MICA	R29	10,000 Ω 1/2 W	F1	1A 250V 3A
C4	SEE CHART	C43	470 UUF MICA	R30	100,000 Ω VARIABLE		
C5	SEE CHART	C44	0.1 MF., 400 V., PAPER	R31	1 MEG 1/2 W	K1A	MOTOR PLUG AMP
C6	SEE CHART	C45	.01 UF MICA.	R32	1 MEG 1/2 W	K1B	CONN. BODY
C7	220 UUF MICA	C46	100 UUF MICA.	R33	100,000 Ω 1/2 W	K2A	C.M.C. 13
C8	.02 UF 400V PAPER	C47	.01 UF MICA.	R34	1 MEG 1/2 W	K2B	C.M.C. 13
C9	100 UUF MICA			R35	1 MEG VARIABLE		
C10	470 UUF MICA			R36	47,000 Ω 1/2 W	L1	SEE CHAR
C11	470 UUF MICA			R37	2.2 MEG 1/2 W	L2	SEE CHAR
C12	470 UUF MICA		RESISTORS	R38	1000 Ω 1/2 W	L3	SEE CHAR
C13	.02 UF 400V PAPER	R1	100,000 Ω 1/2 W	R39	220,000 Ω 1/2 W	L4	C.M.C. 119-
C14	470 UUF MICA.	R2	100,000 Ω 1/2 W	R40	100,000 Ω 1/2 W	L51	C.M.C. 115-
C15	470 UUF MICA.	R3	22,000 Ω 1/2 W	R41	470,000 Ω 1/2 W	L6	C.M.C. 110-
C16	.02 UF 400V PAPER.	R4	100,000 Ω 1/2 W	R42	100,000 Ω 1/2 W	P1	PILOT LAMP
C17	.02 UF 400V PAPER	R5	100,000 Ω 1/2 W	R43	220,000 Ω 1/2 W		
C18	120 UUF MICA	R6	15 Ω 1 W	R44	15,000 Ω VARIABLE	S1	CMC. #109
C19	120 UUF MICA	R7	100,000 Ω 1/2 W	R45	2,200 Ω 1/2 W	S2	C.M.C #109
C20	220 UUF MICA	R8	10,000 Ω 1/2 W	R46	47,000 Ω 1/2 W	S3	I.C.A. 126
C21	2200 UUF MICA	R9	47,000 Ω 1/2 W	R47	10,000 Ω 1/2 W		VALVE
C22	1000 UUF CERAMIC	R10	33,000 Ω 1/2 W	R48	100,000 Ω 1/2 W	V1	#6BA6
C23	.2 UF 200V PAPER	R11	33,000 Ω 1/2 W	R55	10 Ω 1W	V2	#6BE6
C24	.2 UF 400V PAPER	R11A	100,000 Ω 1/2 W			V3	#6C4
C25	.2 UF 400V PAPER	R12	220,000 Ω 1/2 W			V4	#6BA6
C26	.02 UF 400V PAPER	R13	10,000 Ω 1/2 W		TRANSFORMERS	V5	#6BA6
C27	.02 UF 400V PAPER	R14	2.2 MEG 1/2 W	T1	C.M.C 130-125	V6	#6AQ6
C28	.02 UF 400V PAPER	R15	3,300 Ω 1/2 W	T2	C.M.C 116-762	V7	#6AQ6
C29	.02 UF 400V PAPER	R16	33,000 Ω 1/2 W	T3	C.M.C 134-953	V8	#6C4
C30	8 UF 450V ELECT.	R17	1,000 Ω 1/2 W	T4	C.M.C 134-953	V9	#6X4
C31	8 UF 450V ELECT.	R18	4,700 Ω 1/2 W	T5	C.M.C 134-952	V10A	1/2 #6SL7
C32	20 UF 450V ELECT.	R19	1 MEG. 1/2 W	T6	C.M.C. 134-953	V10B	1/2 #6SL7
C33	20 UF 450V ELECT.	R20	1 MEG. 1/2 W			V11	#6AK
[illegible]	2200 UUF MICA	R21	100,000 Ω 1/2 W			V12	#6BJ6
[illegible]	[illegible] UF 400V. PAPER	R22	10 MEG. 1/2 W		MISC.	V13	#6BH6
C36	4700 UUF MICA.	R23	2.2 MEG. 1/2 W	B1	GRID BIAS CELL (MALLORY BC2)		
C37	.02 UF 400V PAPER	R24	68,000 Ω 1 W.				
C38	0.01 UF 400V PAPER	R25	5,000 Ω 10 W	D1	CMC. #131-069A		



	D2	C.M.C. #131-069A
	D3	C.M.C. #131-069 A
	F1	1A 250V 3AG
ABLE		
W	K1A	MOTOR PLUG AMPHENOL #61 M10
W	K1B	CONN. BODY G.E. #1351
W	K2A	C.M.C. 132-140G.
W	K2B	C.M.C. 132-141P.
LE		
W	L1	SEE CHART
W	L2	SEE CHART
W	L3	SEE CHART
W	L4	C.M.C. 119-750
W	L51	C.M.C. 115-027
W	L6	C.M.C. 110-097J
W	P1	PILOT LAMP 6-8V.
W		
ABLE	S1	CMC #109-032A
	S2	CMC #109-032B
	S3	I.C.A. 1260
		VALVES
	V1	#6BA6
	V2	#6BE6
	V3	#6C4
	V4	#6BA6
ER'S	V5	#6BA6
	V6	#6AQ6
	V7	#6AQ6
	V8	#6C4
	V9	#6X4
	V10A	1/2 #6SL7GT
	V10B	1/2 #6SL7GT
	V11	#6AK6
	V12	#6BJ6
	V13	#6BH6
ARY BCZ		

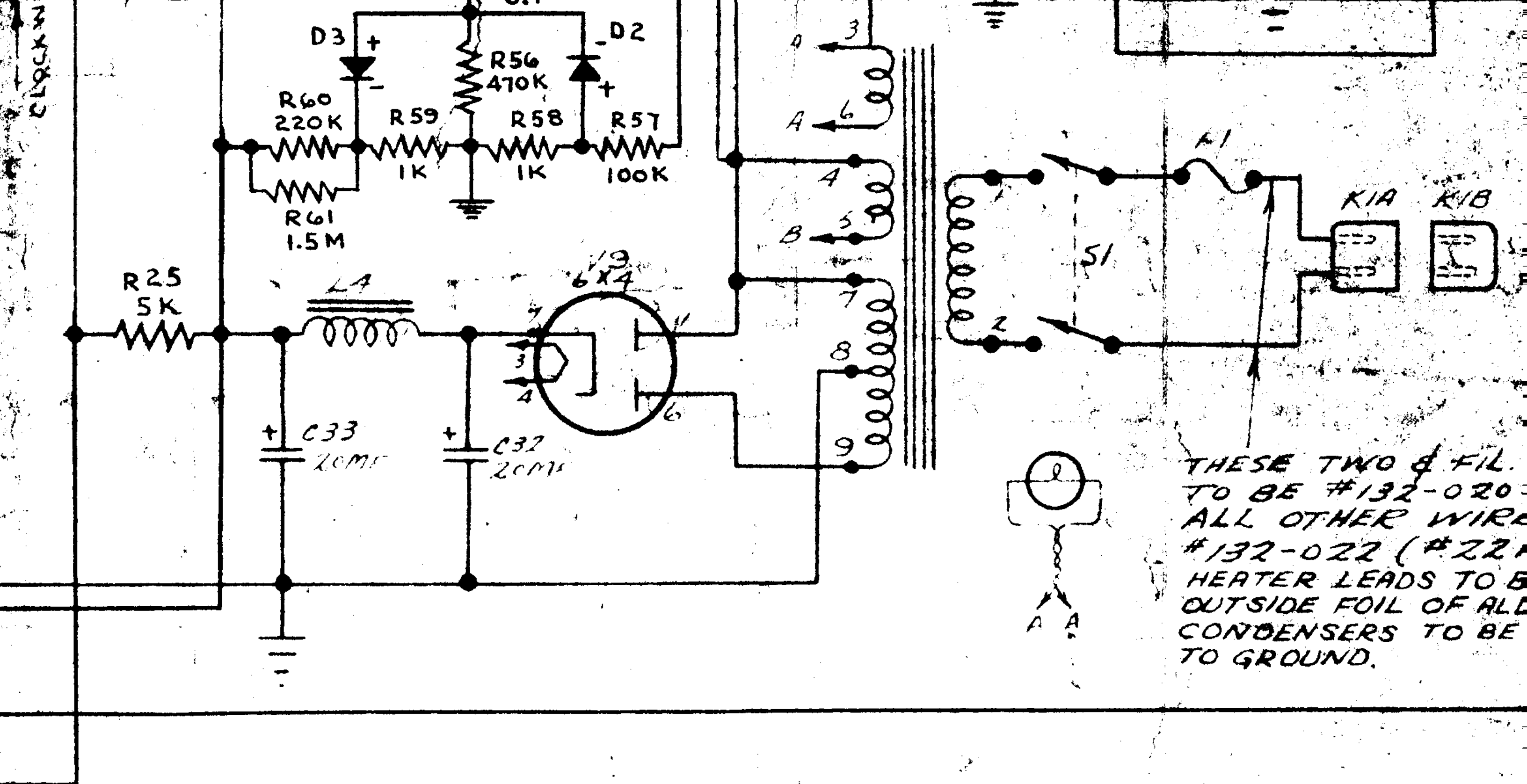
TO BE WIRE
SAM

RECEIVER	TYPE	RANGE KC.	C1	
XG 54 GA	112-952GA	1650-2500	CM20C-181J 180µµF ±5%	CMC 15
XG 54 GB	112-952GB	2500-3750	CM20C-620J 62µµF ±5%	CMC 22
XG 54 GC	112-952GC	3750-5600	CM20C-331J 330µµF ±5%	CMC 15
XG 54 GD	112-952GD	5600-8400	CMC #914-121 120µµF ±5%	CMC 33
XG 54 GE	112-952GE	8400-12,500	CM20C-181J 180µµF ±5%	CMC 15
XG 54 GF	112-952GF	12500-18000	CM20C-620J 62µµF ±5%	CMC 33

NOTE:-

RESISTOR VALUES FOLLOWED BY "K" ARE IN THOUSANDS OF OHM
RESISTOR VALUES FOLLOWED BY "MEG" ARE IN MEGOHMS.
RESISTOR VALUES WITH NO FOLLOWING LETTER ARE IN OH

CONDENSER VALUES FOLLOWED BY "MF" ARE IN MICROFARADS.
CONDENSER VALUES PRECEDED BY A DECIMAL POINT ARE IN MIC
CONDENSER VALUES WITH NO FOLLOWING LETTER ARE IN MIC



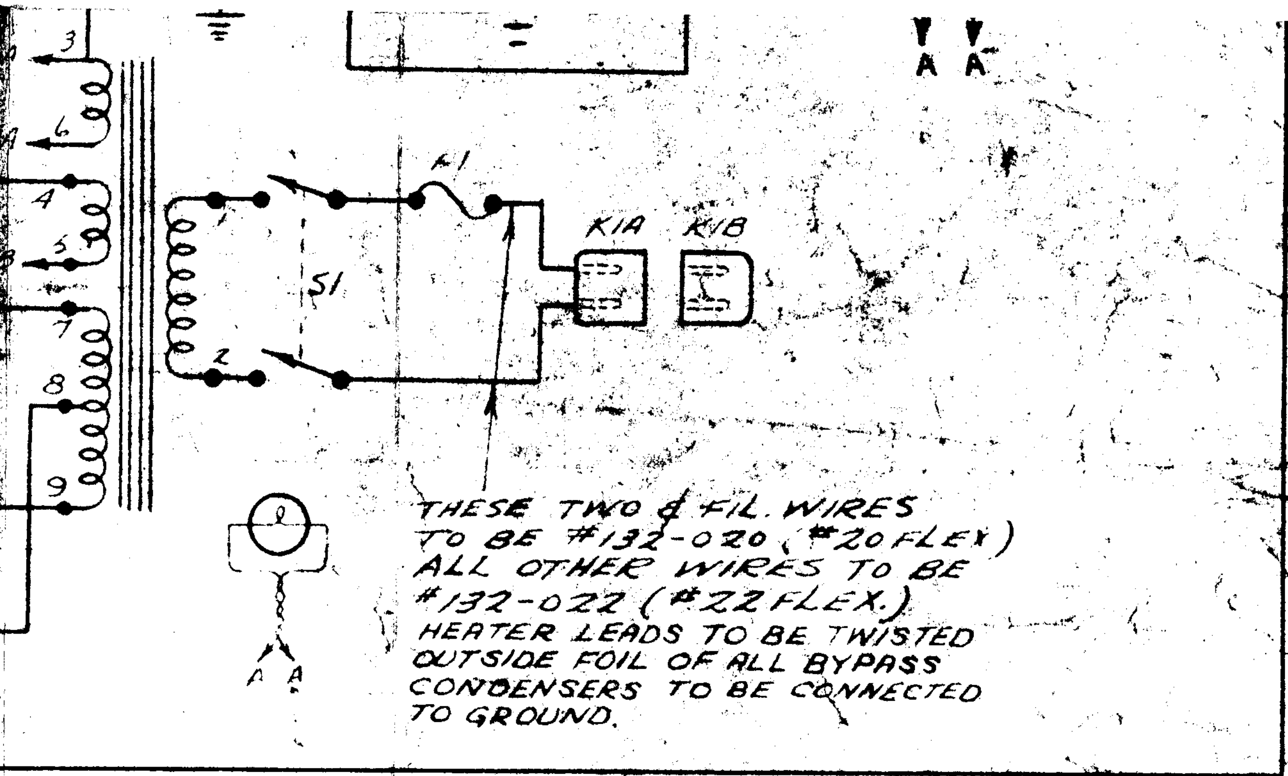
TO BE WIRED AS PER APPROVED SAMPLE IN S.O.S.D.

COIL ASS'Y

C1	C2	C3	C4	C5	C6	AERIAL	S/F.A.GRID
CM20C-181J 180uuf ±5%	CMC 914-150 15uuf ±10%	CMC 914-100 10uuf ±20%	CM20C-181J [illegible]uuf ±5%		CM20C-181J 180uuf ±5%	136-632	136-633
CM20C-620J 62uuf ±5%	CMC 914 220 22uuf ±10%	CMC 914-150 15uuf ±10%	CM2[illegible]C-[illegible]20J [illegible]2uuf ±5%	CMC 914-050 5uuf ±20%	CM20C-620J 62uuf ±5%	136-635	136-636
CM20C-331J 330uuf ±5%	CMC 914-150 15uuf ±10%	CMC 914 100 10uuf ±20%	CM20C-331J 330uuf ±5%		CM20C-331J [illegible]30uuf ±5%	136-638	136-639
CMC#914-121 120uuf ±5%	CMC 914-330 33uuf ±10%	CMC 914 330 33uuf ±10%	CMC 914-121 120uuf ±5%	CMC 914-220 22uuf ±10%	CMC #914-121 120uuf ±5%	136-641	136-642
CM20C-181J 180uuf ±5%	CMC 914-150 15uuf ±10%	CMC 914-100 10uuf ±20%	CM20C-181J 180uuf ±5%		CM20C-181J 180uuf ±5%	137-070	137-071
CM20C-620J 62uuf ±5%	CMC 914 330 33uuf ±[illegible]	CMC 914 330 33uuf ±10%	CM20C-620J 62uuf ±5%	CMC 914 220 22uuf ±10%	CM20C-620J 62uuf ±5%	137-073	137-074

THOUSANDS OF OHMS.
IN MEGOHMS.
TTER ARE IN OHMS.

IN MICROFARADS.
L POINT ARE IN MICROFARADS.
ETTER ARE IN MICROMICROFARADS.



THESE TWO FIL. WIRES TO BE #132-020 (#20 FLEX)
ALL OTHER WIRES TO BE #132-022 (#22 FLEX.)
HEATER LEADS TO BE TWISTED
OUTSIDE FOIL OF ALL BYPASS CONDENSERS TO BE CONNECTED TO GROUND.

COIL ASS'YS.

	C5	C6	AERIAL	S/F.A. GRID	CONVERTER GRID
81J 5%		CM20C-181J 180 uuf ± 5%	136-632	136-633	136-634
20J 5%	CMC 914-050 5 uuf ± 20%	CM20C-620J 62 uuf ± 5%	136-635	136-636	136-637
31J ±5%		CM20C-331J 330 uuf ± 5%	136-638	136-639	136-640
121 5%	CMC 914-220 22 uuf 10%	CMC 914-121 120 uuf ± 5%	136-641	136-642	136-643
81J 5%		CM20C-181J 180 uuf ± 5%	137-070	137-071	137-072
20J 5%	CMC 914 220 22 uuf ± 10%	CM20C-620J 62 uuf ± 5%	137-073	137-074	137-075

COIL ASS'YS INCLUDE INDUCTANCES & PARALLEL CONDENSERS

ISSUE 2:- JAN. 10/52 P.E.P. DTE

C17	.02 uF 400V PAPER	R5	100,000 Ω	1/2 W	R43	220,000 Ω 1/2 W		
C18	120 uuF MICA	R6	15 Ω	1 W	R44	15,000 Ω VARIABLE	S1	CMC. #10
C19	120 uuF MICA	R7	100,000 Ω	1/2 W	R45	2,200 Ω 1/2 W	S2	C.M.C #10
C20	220 uuF MICA	R8	10,000 Ω	1/2 W	R46	47,000 Ω 1/2 W	S3	I.C.A 12
C21	2200 uuF MICA	R9	47,000 Ω	1/2 W	R47	10,000 Ω 1/2 W		VALV
C22	1000 uuF CERAMIC	R10	33,000 Ω	1/2 W	R48	100,000 Ω 1/2 W	V1	#6BA6
C23	.2 uF 200V PAPER	R11	33,000 Ω	1/2 W	R55	10 Ω 1 W	V2	#6BE6
C24	.2 uF 400V PAPER	R11A	100,000 Ω	1/2 W			V3	#6C4
C25	.2 uF 400V PAPER	R12	220,000 Ω	1/2 W			V4	#6BA6
C26	.02 uF 400V PAPER	R13	10,000 Ω	1/2 W		TRANSFORMERS	V5	#6BA6
C27	.02 uF 400V PAPER	R14	2.2 MEG	1/2 W	T1	C.M.C 130-125	V6	#6AQ6
C28	.02 uF 400V PAPER	R15	3,300 Ω	1/2 W	T2	C.M.C 116-762	V7	#6AQ6
C29	.02 uF 400V PAPER	R16	33,000 Ω	1/2 W	T3	C.M.C 134-953	V8	#6C4
C30	8 uF 450V ELECT.	R17	1,000 Ω	1/2 W	T4	C.M.C 134-953	V9	#6X4
C31	8 uF 450V ELECT.	R18	4,700 Ω	1/2 W	T5	C.M.C 134-952	V10A	1/2 #6SL7
C32	20 uF 450V ELECT.	R19	1 MEG.	1/2 W	T6	C.M.C. 134-953	V10B	1/2 #6SL
C33	20 uF 450V ELECT.	R20	1 MEG.	1/2 W			V11	#6AK
[illegible]	2200 uuF MICA	R21	100,000 Ω	1/2 W			V12	#6BJ
[illegible]	.2 uF 400V. PAPER	R22	10 MEG.	1/2 W		MISC.	V13	#6BH6
C36	4700 uuF MICA.	R23	2.2 MEG.	1/2 W	B1	GRID BIAS CELL (MALLORY BC2)		
C37	.02 uF 400V PAPER	R24	68,000 Ω	1 W.				
C38	0.01 uF 400V PAPER	R25	5,000 Ω	10 W	D1	CMC. #131-069A		
C48	470 uuF MICA	R49	100,000 Ω	1 W	R56	470,000 Ω 1/2 W		
C49	100 uuF MICA	R50	47,000 Ω	1/2 W	R57	100,000 Ω 1/2 W		
C50	100 uuF MICA	R51	220 Ω	1/2 W	R58	1,000 Ω 1/2 W		
C51	8 uF ELECT.	R52	22,000 Ω	1/2 W	R59	1,000 Ω 1/2 W		
C52	.01 uF PAPER	R53	470,000 Ω	1/2 W	R60	220,000 Ω 1/2 W		
C53	.01 uF MICA	R54	15,000 Ω VARIABLE		R61	1.5 MEG. 1/2 W		
C54	2 uF PAPER C.M.C. 109-017E		C.M.C. 109-060B		R62	100,000 Ω 1/2 W		
C55	.2 uF. 400V. PAPER				R63	6800 Ω 1 W		

1/2 W		
RIABLE	S1	CMC #109-032A
2 W	S2	CMC #109-032B
2 W	S3	I.C.A 1260
2 W		VALVES
/2 W	V1	#6BA6
V	V2	#6BE6
	V3	#6C4
	V4	#6BA6
RMER'S	V5	#6BA6
125	V6	#6AQ6
762	V7	#6AQ6
953	V8	#6C4
953	V9	#6X4
952	V10A	1/2 #6SL7GT
953	V10B	1/2 #6SL7GT
	V11	#6AK6
	V12	#6BJ6
	V13	#6BH6
(MALLORY BC2)		
9A		
/2 W		
/2 W		
/2 W		
/2 W		
/2 W		
/2 W		
1/2 W		
W		

XG 54 GB	112-952GB	2300-3750	62 μμf ±5%
XG 54 GC	112-952GC	3750-5600	CM20C-331J 330 μμf ±5%
XG 54 GD	112-952GD	5600-8400	CMC #914-121 120 μμf ±5%
XG 54 GE	112-952GE	8400-12,500	CM20C-181J 180 μμf ±5%
XG 54 GF	112-952GF	12500-18000	CM20C-620J 62 μμf ±5%

NOTE:-

RESISTOR VALUES FOLLOWED BY K ARE IN THOUSANDS OF
RESISTOR VALUES FOLLOWED BY "MEG" ARE IN MEGOHMS.
RESISTOR VALUES WITH NO FOLLOWING LETTER ARE IN

CONDENSER VALUES FOLLOWED BY "MF" ARE IN MICROFARA
CONDENSER VALUES PRECEDED BY A DECIMAL POINT ARE IN
CONDENSER VALUES WITH NO FOLLOWING LETTER ARE IN

FOR UNITS MODIFIED BY SER
DEPT. SEE DIAG. 112-994.

0	CM20C-62.. 62uuf ±5%	CMC 914-220 22uuf ±10%	15uuf ±10%	2uuf ±5%	5uuf ±20%	62uuf ±5%	136-633	136-6..
00	CM20C-331J 330uuf ±5%	CMC 914-150 15uuf ±10%	CMC 914-100 10uuf ±20%	CM20C-331J 330uuf ±5%		CM20C-331J 330uuf ±5%	136-638	136-63..
00	CMC#914-121 120uuf ±5%	CMC 914-330 33uuf ±10%	CMC 914 330 33uuf ±10%	CMC 914-121 120uuf ±5%	CMC 914-220 22uuf ±10%	CMC 914-121 120uuf ±5%	136-641	136-6..
00	CM20C-181J 180uuf ±5%	CMC 914-150 15uuf ±10%	CMC 914-100 10uuf ±20%	CM20C-181J 180uuf ±5%		CM20C-181J 180uuf ±5%	137-070	137-0..
00	CM20C-620J 62uuf ±5%	CMC 914-330 33uuf ±10%	CMC 914 330 33uuf ±10%	CM20C-620J 62uuf ±5%	CMC 914 220 22uuf ±10%	CM20C-620J 62uuf ±5%	137-073	137-07..

..N THOUSANDS OF OHMS.
..RE IN MEGOHMS.
.. LETTER ARE IN OHMS.

..RE IN MICROFARADS.
..CIMAL POINT ARE IN MICROFARADS.
.. LETTER ARE IN MICROMICROFARADS.

..MODIFIED BY SERVICE
..IAG. 112-994.

DIAGR..
XG 54..

CAN..

112..

5%	5uuf ± 20%	62 uuf ± 5%	136-635	136-636	136-637
31J ±5%		CM20C-331J 330 uuf ± 5%	136-638	136-639	136-640
121 5%	CMC 914-220 22uuf ± 10%	CMC 914-121 120uuf ± 5%	136-641	136-642	136-643
91J 5%		CM20C-181J 180uuf ± 5%	137-070	137-071	137-072
20J 5%	CMC 914 220 22uuf ± 10%	CM20C-620J 62uuf ± 5%	137-073	137-074	137-075

CONDENSERS

ISSUE 2:- JAN. 10/52 P.E.P. DTB (ALT. D-450) REVISED AS PER MARKED PRINT	

DIAGRAM OF CONNECTIONS
XG 54 GA,-B,-C,-D,-E,-F, RECEIVERS

CANADIAN MARCONI COMPANY

112-994 G	DR. BY: P.E.P.
	CH. BY: W.D.M
	APP. BY: DTB
	DATE: JUNE 14/51