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6.2.8 STAGE GAIN CHECKS (cont'd)

C. Connect the GND side of the signal generator test cord to chassis ground. Connect the .01 uF capacitor end of the test cord to V203, Pin #1. The VTVM should read -3.2V or better with 100 mV from the signal generator.

D. If okay, move the .01 uF capacitor end of the test cord to V202, Pin #1. The VTVM should read -3 volts or better with 6.3 mV from the signal generator.

E. If okay, move the .01 uF capacitor end of the test cord to V201, Pin #1.The VTVM should read -4.8 volts or better with 320 uV from the signal generator.

F. If okay, move the .01 uF capacitor end of the test cord to the junction of R113 and T201 (at Point A). The VTVM should indicate -3.4v or better with the signal generator at 630 uV.

G. If okay, reset the signal generator for 4.415 MHz and set the channel selector to Channel 01. Move the.01 uF capacitor end of the test cord to V104, Pin 6. CAUTION: High voltage is present on Pin 6. The VTVM should read -3.5v or better with the signal generator at 200 uV. NOTE: Readjust channel selector for a peak reading on the VTVM and then make the above reading.

H. If the above reading is not okay, check V104A, the VFO stage for proper operation. A frequency counter connected to the grid of V104B (with V103 removed) will tell you if the VFO is operating and checking the voltages on V104A will check its condition. When this check is finished, be sure to reinstall V103.

I. If Item G above is okay, reset the signal generator to 26.965 MHz and connect the .01 uF capacitor end of the test cord to V102 Pin 2. CAUTION: High voltage is present on Pin 2. The VTVM should indicate -3.5v or better with the signal generator set at 100 uV.

J. If Item I above is okay, connect the signal generator directly to the antenna terminal (be sure to remove the .01 uF) .The VTVM should read -3.0 or better with the signal generator set at 0.3uV.

K. If Item I above is not okay, check the first oscillator V103A. This may be checked by connecting a frequency counter to the grid of V103B (with V102 removed).After this check, be sure to reinstall V102

6.2.9 SSB CHECKS

A. The SSB product detector and BFO circuits are combined in the V204 circuit. Whenever SSB operation is questioned, make the AM stage gain checks as in 6.2.7. If these prove to be okay, examine V204 circuitry. If the AM checks are not okay, trouble shoot AM first and then examine the SSB V204 circuits.

6.2.10 POWER SUPPLY

A. With the control plug connector, J2, shorted between Pins #7 and 9 make the following voltage checks at J2;

1. Pin #1, check for 6.3v AC to 6.7v AC
2. Pin #2, check for -9v DC
3. Pin #3, check for +330v DC
4. Pin #4, check for -40v DC to -45v DC
5. Pin #5, check for +360v DC
6. Pin #6, check for +10v DC to +11v DC
7. Pin #7, check for +210v DC
8. Pin #8, check for ground by using an ohmmeter,
9. Pin #9, check for +210v DC
10. Pin #10, check for ground by using an ohmmeter.

NOTE Above voltages given at 117v AC line voltage.

6.3 TRANSMITTER

6.3.1 TEST EQUIPMENT REQUIRED

A. Browning Golden Eagle MK-IV Receiver, for power supply.

B. 50 ohm Transmitter load with a power rating of at least 15 watts.

C. Audio Signal Generator - H.P. 200 CD or equiv.

D. RF Wattmeter -Bird 43 or equiv. with 5W $ 25W ranges.

E. Frequency Counter - Heath Schlumberger SM-128A.

F. Oscilloscope - Tektronics T932 or equiv.

G. RF Monitor Scope - Heath SB-610 or equiv.

6.3.2 TEST EQUIPMENT CONNECTIONS

A. Connect the equipment as shown in Figure 5.2. Be sure to connect the 50 ohm Dummy load.

B. Install a microphone or audio cable into the microphone connector. Place the transmitter controls for AM operation.

C. Connect the Receiver line cord to 117V AC and turn on the Power - allow two minutes for warm up.

6.3.3 PRELIMINARY TRANSMITTER CHECK

A. When the power is applied, the transmitter channel display should indicate "01." If not, switch to reset. If still not, refer to Section 6.3.4.

B. If A above is okay, key the transmitter in AM Mode and check for an RF power output of 3.5 watts minimum.

C. Apply audio and the power output should increase. While observing the RF monitor scope display, again apply audio and observe a clean modulated RF waveform.

D. If any of the above checks are not met continue with the following transmitter troubleshooting procedure. Also see Section 5 for Alignment.

6.3.4 SYNTHESIZER TROUBLESHOOTING

Loss of channel number display and no keying of the relay usually indicates the PLL is out of lock. A blinking display and chattering relay should be treated the same as no display. Before replacing any of the indicated parts, especially IC's check that it has the proper supply voltage. Also check that the part is installed correctly, although if it is backwards it may be bad anyway. Check that IC pins are not bent so that they don't make contact in the socket. When measuring voltages on IC's go directly to the pins on the IC not the socket in case there is a poor connection in the socket.

Fig-5 3 shows the connections for code lines etc. on the synthesizer cover,

Use the synthesizer coding chart to determine coding of the synthesizer. A "1" is a logical high (2.0 - 5V.) and a "0" is a logical low (0 - 1.0V.). If a number of channels are bad check for a code line common to all of them. If the "A" line is bad all channels will be 5 KHz high.

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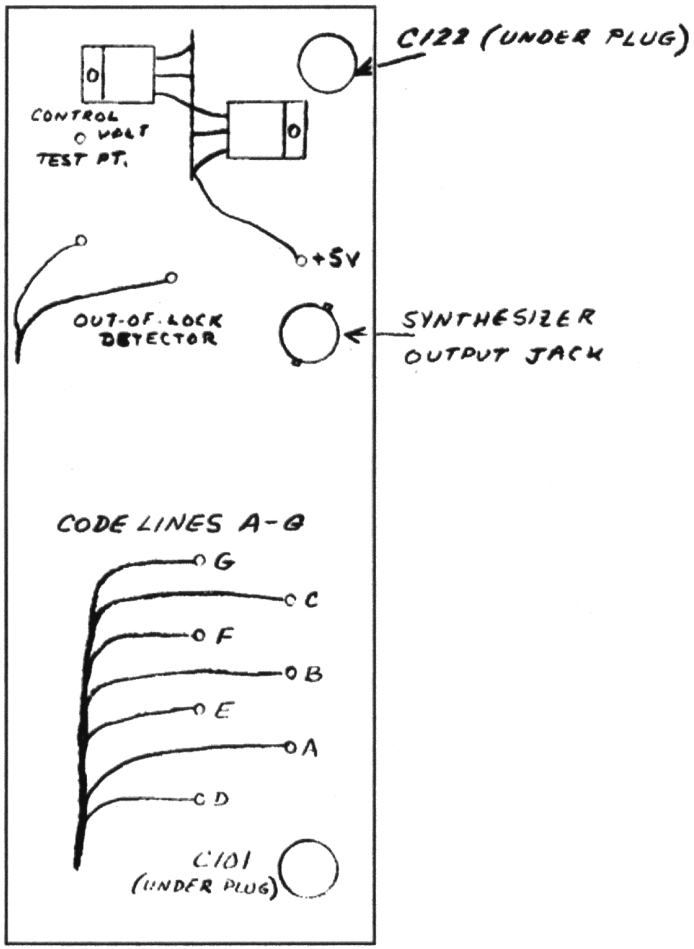
SYNTHESIZER CODING CHART

Channel Number	Code A B C D E F G	Synthesize Frequency	Channel Number	Output Frequency
1	1 0 0 1 1 0 1	21.320	1	26.965
2	1 1 1 0 1 0 1	21.350	2	26.075
3	1 0 1 0 1 0 1	21.340	3	26.985
4	1 0 0 0 1 0 1	21.360	4	27.005
5	1 1 1 1 0 0 1	21.370	5	27.015
6	1 0 1 1 0 0 1	21.380	6	27.025
7	1 1 0 1 0 0 1	21.390	7	27.035
8	1 1 1 0 0 0 1	21.410	8	27.055
9	1 0 1 0 0 0 1	21.420	9	27.065
10	1 1 0 0 0 0 1	21.450	10	27.075
11	1 0 0 0 0 0 1	21.440	11	27,085
12	1 0 1 1 1 1 0	21.460	12	27.105
13	1 1 0 1 1 1 0	21.470	13	27.115
14	1 0 0 1 1 1 0	21.480	14	27.125
15	1 1 1 0 1 1 0	21.490	15	27.135
16	1 0 0 0 1 1 0	21.510	16	27.155
17	1 0 0 0 1 1 0	21.520	17	27.165
18	1 1 1 1 0 1 0	21.550	18	27.175
19	1 0 1 1 0 1 0	21.540	19	27.185
20	1 0 0 1 0 1 0	21.560	20	27.205
21	1 1 1 0 0 1 0	21.570	21	27.215
22	1 0 1 0 0 1 0	21.580	22	27.225
23	1 1 1 1 1 0 0	21.610	23	27.255
24	1 1 0 0 0 1 0	21.590	24	27.235
25	1 0 0 0 0 1 0	21.600	25	27.245
26	1 0 1 1 1 0 0	21.620	26	27.265
27	1 1 0 1 1 0 0	21.630	27	27.275
28	1 0 0 1 1 0 0	21.640	28	27.285
29	1 1 1 0 1 0 0	21.650	29	27.295
30	1 0 1 0 1 0 0	21.660	30	27.305
31	1 1 0 0 1 0 0	21.670	31	27.315
32	1 0 0 0 1 0 0	21.680	32	27.325
33	1 1 1 1 0 0 0	21.690	33	27.335
34	1 0 1 1 0 0 0	21.700	34	27.345
35	1 1 0 1 0 0 0	21.710	35	27.355
36	1 0 0 1 0 0 0	21.720	36	27.365
37	1 1 1 0 0 0 0	21.730	37	27.375
38	1 0 1 0 0 0 0	21.740	38	27.385
39	1 1 0 0 0 0 0	21.750	39	27.395
40	1 0 0 0 0 0 0	21.760	40	27.405


C122 (UNDER PLUG)
CONTROL VOLT TEST PT.
+5V
OUT-OF-LOCK DETECTOR
SYNTHESIZER OUTPUT JACK
CODE LINES A-G
G
C
F
B
E
A
D
C101 (UNDER PLUG)

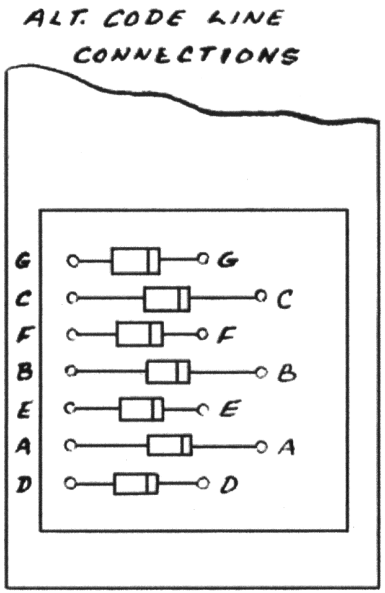

ALT. CODE LINE CONNECTIONS
G
C
F
B
E
A
D

FIGURE 6.1

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SYMPTOM	TEST	SOLUTION
1) No Channel Number display and relay will not energize after set is turned on.	Switch momentarily to reset and check for low limit light	A. If after resetting low limit comes on and display returns and unit works normally this is normal if it happens occasionally. If it happens every time check for defective C406. B. If low limit is on but no display check code lines A-G for proper binary codes for Channel 1 - See Code Chart If OK go to Step 8. If not go to Step 6 or 7. C. If low limit is not on go to Section on Readout Board problems.
2) No display above Channel 23.	Check that 1C 410 is 40 Channel I.C.	Early MK IVs were 23-channel sets and must be modified at the factory for 40-channel operation. If 1C 410 is correct go to Step 3 (if Hi limit comes on on Channel 23, Limit Decoder Board is wired for 23-channel operation).
3) No display on either High or Low channels only	Measure Control Voltage should be +1.8V. on Channel 1 rising to no more than 3.4V. on Channel 40.	A. If this occurs only when set is hot or only when set is cold see Step 11 to determine if PLL has latest modification. If it does continue this section. If not get it modified. B. If Control Voltage is incorrect note position of C122 then adjust C122 for +1.8V. on channel 1 (if no display on Channel 1 reset to obtain low limit light). If C122 will not adjust to +1.8V. return it to its original position and go to Step 4. If C122 will adjust to 1.8V on Channel 1 go to channel 40 and check for control voltage below +3.4V. If it is above 3.4 and the channel 40 display is on change D111 and repeat this Step. If this does not work check the rest of the VCO tuned circuit (L105, C118, 119, 120, 121, 122 & 123). If the display does not light on Channel 40 go to Step 4.

	SYMPTOM	TEST	SOLUTION
4)	No display on some Channels.	Check for proper binary coding for the affected Channels.	Check code lines A-G for the proper code for the channel you are on. To determine what channel you are on when the display is blank remove IC504 this will allow the display to light even when the PLL is out of lock. After determining the bad code line(s) replace IC504 and go to Step 7. If the codes are correct go to Step 8.
5)	Display goes out erratically or skips Channels while changing channels or keying the mike.	This is due to transients affecting the Readout Board logic circuits.	Repair the Readout Board.
6)	No Binary Codes to the PLL	Check IC410 Pins 16 & 24 for -9 +/-.2 and Pins 12, 13, 15, 22 & 23 for +5 +/- .2V	If not correct repair defective supply (a bad -9 or +5V supply can also destroy IC410) If OK check BCD input codes to IC 410. If O.K. change IC 410.
6)	Incorrect codes on one or more code lines	Disconnect the defective code lines where They enter the PLL Then measure code line Voltage.	If the defective code lines are still low or negative change 1C 410 after checking for continuity to the Pin on IC410 for that code line (Example: Code Line "A" to IC410 Pin 4). If the Code Line is more than 1V. negative also change IC105 for code lines A-D or IC106 for code lines E-G. as these I.C.'s may have been damaged and could cause the new IC410 to fail. If the defective code lines are correct after being disconnected check the PLL for shorted feed through caps, shorted wires from the feed through to the circuit board, shorts on the circuit board, or shorted IC105 and/or 106.

SYMPTOM	TEST	SOLUTION
8) No +5V. supply to PLL	Check for +5 +/-.2V. from IC602 with no ripple or hum (use scope)	If OK go to Step 9. If incorrect disconnect output wire from IC602. If still incorrect replace IC602. If OK check for shorted feed through cap, short on circuit board or shorted components such as filter caps transistors +IC's supplied by the +5V. line.
9) Improper control voltage	Check control voltage for between +1.5V. and +3.5V. (Normally 1.8V. for Ch. 1 and up to 3.0 - 3.4V on Channel 40). Must be clean steady D.C. voltage.	If OK go to Step 10. If not see Step 3B for adjustment. Note: If control voltage will vary with adj. of C122 but is not stable and reaches a maximum of about 2V. Check for loss of 4V. supply to Q101 (open R106). The 2V comes from rectification of the VCO by Dill. VCO frequency will also be low 19 -21 MHz instead of normal 20 - 22 MHz range.
10) No output or incorrect output from PLL.	Remove PLL output cable. Check for 21.32 MHz output on Channel 1,	If no or incorrect frequency go to Step 11. If OK check for +2.5 to 3V. on both PLL out of lock detector output lines. If OK problem is in readout or limit decoder boards. See Section on Readout Board. If not check for shorted feed-through caps on the output lines.
11) Open PLL Box.		Remove two rear mounting stud nuts and loosen two front mounting stud nuts. Lift the rear of the top cover and circuit board until they clear the rear mounting studs. Then slide to the rear until clear of the meter, when operating with the PLL removed from its case both circuit board and top cover must be grounded to the chassis with jumper leads. (If not grounded the display will come on with the PLL not in lock.) Be careful that the circuit board or top cover components don't short out.

SYMPTOM	TEST	SOLUTION
11) Open PLL box (contd)		Check for the latest PLL modifications a string of 3 diodes off the bases of Q103 & Q104. If this is not present contact the factory for information on this change. If no output frequency in Step 10 go to Step 12. If frequency is between 20 - 22MHz the PLL is out of lock and the VCO is at its high or low limit The Control voltage will also be either high or low. Go to Step 12. Frequency outside the 20 -22MHz range indicate bad components in the VCO tuned circuit (C118, 119, 120, 121, 122, 123,L105, D111) Also see Step 9 if frequency is 19-21 MHz range.
12) Low VCO Output	Check with oscilloscope for 5-7V P.P. on Q105 source (Jct. L104, C116, C118, C119). Use scope with at least 21 MHz band width or P.P. voltage will	If OK go to Step 15. If VCO goes into lock (display comes on) while taking measurement go to Step 14. If no output go to Step 13. If low voltage remove C116. If now OK check for bad Q103 D109-112 and other components in Q103 stage. If still low after removing C116 check for +4V from emitter of Q102. If low see Sect. 13B. If +4V. is OK change L104. If output still low change Q105.
13) VCO not oscillating.	Check for +4V. from the emitter of Q102.	A. If OK check Q105 (VCO) and the rest of the components in the VCO circuit. B. If +4V. is low check Q102 collector for 4.8 - 5.2V. If incorrect see Step 8. If OK and Q102 emitter is 3.5 - 3.9V change Q102. If Q102 emitter is 0- 3.5V lift Q102 emitter and check the base of Q102. If over 4.5V check for short on+4V line or bad Q102. If base is less than 4.5V. check for shorted Q106, P.C. trace between Q106 collector and Q102 base or C111. Also open Q107, R124, R125 or R121.

	SYMPTOM	TEST	SOLUTION
14)	VCO Not self starting	Place the scope probe on Q105 source,	Sometimes the VCO won't start when the set is turned on without the additional capacity of the scope probe. If this happens check: A. That R131 is 47 ohms or two 100ohms in parallel (one on the bottom of the board.) B. Check that Q102 Emitter is at least +4V. (Not 3.9 or less. Use an accurate meter.) If less than +4V see Sect. 13B. C. If Sect. A is O.K. change C118 to 20PF NPO. D. Change Q105.
15)	PLL Output Low	Check with scope for Min. 5V. PP on Emitter of Q103 with the output cable disconnected or 6V. P.P. with it connected. Check it both ways.	If OK go to Step 16. If low or Zero change: A) Q103, B) L103, C) Check for shorted or open D109-112 and L107 and other components in Q103's circuit. If low only with output cable connected also check for shorted cable or connector and components on the other end of the cable.
16)	Check Divide by N Buffer (Q103) output.	Check for between 2-3V. P.P. on the Emitter of Q-104	A) If it is O.K. go to Step 17 B) If it is too low check for +4V on Q104 collector. If low see Step 13B. If OK, check Q104, L102, D113-115 $ L108. Also check I.C. 104-108 for shorted inputs that could load down the output of Q104. C. If too high change R127 (1K ohm) to a lower value (Typ. 680 ohm) to obtain about 2.5V - 3.0V PP output from Q104.
17)	Check 5 KHz Reference frequency.	Check for 5 KHz square wave on I.C. 109 Pin 3.	A) If OK go to Step 18. B) If not check for 6 MHz on Pin 2 of IC101. If not present check CR101 (6 MHz crystal). IC101 and other components in the IC101 circuit. C) If 6 MHz is present check for 500 KHz on Pin 8 of IC102, 50 KHz on Pin 11 of 1C 103, and 5 KHz on Pin 12 of I.C. 104. If any of these are missing change the I.C. whose pin does not have the proper freq .

SYMPTOM	TEST	SOLUTION
Check Divide By N Output	Check for a 5 KHz pulse of about 4V. amplitude on Pin 15 of IC108	Set oscilloscope on 100 u Sec. C,1M Sec) per division (CM) and 1 volt per division (CM) and adjust the trigger level to obtain display. You should see a 4V. pulse every 2 divisions. The same pulse only inverted should be on Pin 11 but it can only be seen with a top quality scope due to very short duration. If the pulses are present but not exactly 2 divisions apart the Divide by N section is working but the output is not 5 KHz due to problems in another part of the PLL. Go to Step 20. If pulses not present go to Step 19.
No Divide By N Output		The Divide By N circuit (1C 105-108) is difficult to troubleshoot because problems in the latter stages can affect the output of early stages, so you cannot measure inputs and outputs of each I.C. to determine which stage is defective. The quickest way is to change all four IC's or two at a time. If this corrects the problem replace the original IC's one at a time until the bad one is found. If new IC's do not solve the problem check the feedback circuit from IC108 Pin 15 through C108 and D101 to Pin 9 of each I.C. The voltage divider R120, D101 and R123 supplies +1.5V to each Pin 9. If this voltage is wrong or anything prevents the 5KHz pulses from reaching each Pin 9 (such as open C108) will prevent Divide By N operation. The output of IC105 Pin 15 must be supplied to Pin 7 of 1C 106-108 anything such as shorted or open P.C. Board traces or 1C pins bent so they don't make contact in the socket can prevent this.

20) Phase Comparator	Check for error Pulses on base of Q101	IC101 is a digital phase comparator. It compares the output of the Divide By N to the 5 KHz reference frequency. When the PLL is in lock IC109 supplies +1V DC to the base of Q101 with +.3V pulses on top of it. When the PLL starts to go out of lock these pulses either increase or go negative depending on whether the VCO frequency starts to go low or high. When completely out of lock the output of IC109 is either 0V. or 1.2V. depending on whether the VCO frequency (measured at the PLL output connector) is above or below its proper frequency for the channel you are on. (21.320 MHz for Channel 1) Adjusting C122 so that the VCO frequency changes from above to below the proper VCO frequency, should cause the base of Q101 to change from 1.2V to 0V. If it does go to Step 21. If not IC109 is bad or C101 is shorted if Q101 base stays high or Q101 is shorted if its base stays low.
21) Loop Amplifier and Filter	Check voltage on Q101 Collector (Control Voltage)	Adjust C122 so that Q101 base goes from 1.2V to 0V. Q101 collector should go from 0 V. to 4 V. If it stays high Q101 is open if it stays low either Q101 or C106 is shorted or R106 is open. If Q101 Collector does vary properly, check that the control voltage gets through R107 and L106 to D111, if so check D111. Also an open C105 or R105 will cause poor filtering so the PLL will not lock in. This usually causes blinking display and chattering relay. Hum on the +5V. supply will also cause this.

6.3.5 DISPLAY TROUBLESHOOTING

A. The display may have a problem if the readout window is not lit- or if the channel numbers do not sequence either up or down properly or stop on Channel 01 or 40, or incorrect output from the synthesizer.

B. Check for a pulsing output from IC406 when the channel selector is activated either up or down. The pulses should stop when the channel selector switch is released.

C. If B above is okay, check for pulses (when the channel selector switch is activated) on Pin #8 of IC405. Pulsing at IC405 Pin #8 will stop when the high or low limit (Channels 40 and 01) is reached. If pulses are available at IC405 Pin #8, check for pulses at IC404 and IC403 Pins #3, 2, 6 and 7. If pulses are available, the LED readouts should be showing the channel numbers. If not, check IC401 and 402.

D. If the LED display is showing the correct channel numbers but does not stop at either the low or high limit (Channels 01 and 40), check IC503 Pin #8 and #9 (low limit) or Pins #11 and #12 (high limit) for a logic "0" (ground) on both pins. (This condition only occurs when the LED display is showing either 01 or 40.) If pins #8 and 9 or #11 and 12 are okay, check 1C 503 Pin #10 (low limit) or Pin #13 (high limit) for a logic "1" (+2.5 or greater). This condition, again, only occurs on channel 01 or 40. If okay, check the outputs of 1C 503 Pins #4 (low limit) and Pin #1 (high limit) for a logic "0". If this is available, either the Low Limit or High Limit LED should be lit, depending on which limit is reached. If the above conditions are okay and the display sequences beyond either limit without stopping check IC408 Pin #4 (low limit) or Pin #10 (high limit) for a logic "0".

DISPLAY TROUBLESHOOTING (cont'd)

D. Again, this condition only occurs when at the appropriate limit, and this Logic 0 will be a very narrow pulse from +2.5v or greater to ground. If the inputs to IC409 are okay and the display still doesn't stop at the proper limit, check IC407 and IC405.

E. If the synthesizer output is not the correct frequency, check for continuity between the synthesizer p.c. board and the display p.c. board of all encoding lines "A" through "G" If these are okay, check IC410, Pins #16 and #24, for -9v DC and Pins #12, #13, #15, #22 and #23 for +5v DC. If these are all okay and the display performs normally otherwise, replace the ROM IC410.

6.3.6 RF POWER - AM

A. If no or low RF power is available, first recheck transmitter tuning and then follow as outlined below. **CAUTION:** The scope probe may load some circuits down and greatly affect RF power with modulation.

B. Check at the cathode (Pin #8) of V201A for a frequency of 5.645 MHz at an amplitude of 1 volt peak-to-peak, minimum. This should be a nice clean sine wave.

C. If item B above is okay, check the plate of V202 (Pin #5) for 5 volts peak-to-peak, minimum, waveform. This waveform will look like a modulated sine wave.

D. If item C above is okay, check the plate of V301 (Pin #5) for a 7 volt peak-to-peak, minimum, wave form. Again, this waveform will look like a modulated sine wave and will appear quite "fuzzy."

6.3.6 RF POWER - AM

E. If D above is okay, check the plate of V302 (Pin #7) for a 14 volt pk-pk minimum waveform. This waveform will be a sinewave with "fuzz" on the positive and negative peaks.

F. If E above is okay, check the output at the Antenna terminal. Without modulation, this waveform should be a fairly clean sinewave of 42v pk-pk minimum. With modulation, this waveform will increase upwards to 82v pk-pk. RF power should be >3.5W.

6.3.7 RF POWER - SSB

A. With modulation applied at a level of 0.003v RMS at 1 KHz, make the following checks;

B. Check the cathode of V201A (Pin #3) for a frequency of 5.645 MHz and an amplitude of 4 v pk-pk. This will be a waveform like two signals mixed together and resemble a sinewave with RF "globs" placed on its rising and falling sides.

C. If B above is okay, check the plate of V202 (Pin #5) for a 3.5 v pk-pk minimum waveform. This waveform will appear as a blurred sinewave.

D. If C above is okay, check the plate of V301 (Pin #5) for a 7 v pk-pk minimum waveform. Again, this waveform will appear as a slightly blurred sinewave.

E. If D above is okay, check the plate of V302 (Pin #7) for a 5 v pk-pk minimum waveform. This waveform will appear as a sinewave varying slightly in amplitude.

F. If E above is okay, check the output at the Antenna terminal. This should be a 17 v pk-pk sinewave that is slightly fluctuating.

6.3.8 AUDIO - AM

A. With modulation applied at a level of 0.003v R.M.S. at 1 KHz, and the transmitter keyed, make the following checks;

B. Check the plate of V203A (Pin #1) for a 0.5 v pk-pk waveform.

C. Check the plate of V203B (Pin #6) for a 8.2 v pk-pk waveform.

D. Check the cathode of V204A (Pin #3) for a 2.8v pk-pk waveform.

E. Check the plate of V204B (Pin #6) for a 21 v pk-pk waveform.

F. Check the grid of V205 (Pin #2) for a 20 v pk-pk waveform.

G. Check the plate of V205 (Pin #7) for a 400 v pk-pk waveform.

6.3.9 AUDIO - SSB

A. With the same modulation level as 5.3.8.A, make the following checks;

B. Check the plate of V203A (Pin #1) for a 500 mV pk-pk waveform.

C. Check the cathode of V203B (Pin #8) for a 400 mV pk-pk waveform.

6.3.10 ALC - SSB

A. With modulation applied at 1 KHz at 0.003 v R.M.S. and the transmitter keyed in either SSB mode, make the following checks: Check for 1.8v at the junction of R325, 327 and C-325.

B. Increase the modulation to 0.1v R.M.S. and check for -4v at the junction of R325, 327 and C325.

C. If the above readings cannot be obtained check Q303, 302 and Q301, in that order.

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