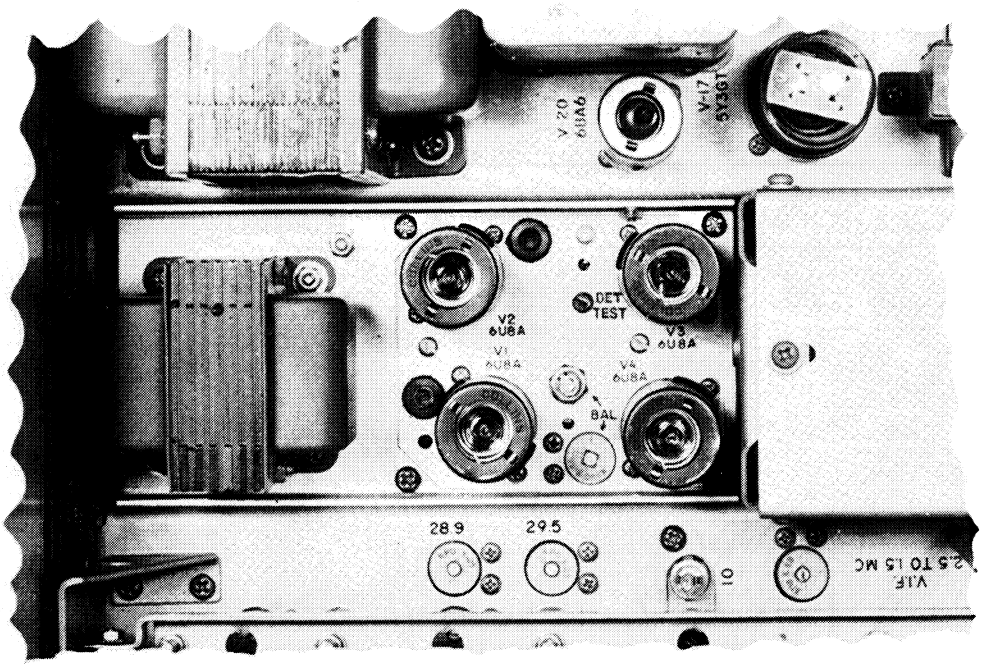
INSTRUCTION BOOK

136C-1



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INSTRUCTION BOOK

136C-1
NOISE BLANKER

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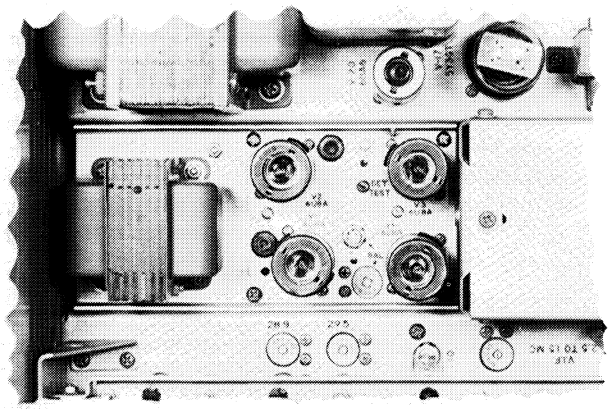


C460-03-P

Figure 1. 136C-1 Noise Blanker Installed In 75A-4 Receiver

1.1 DESCRIPTION.

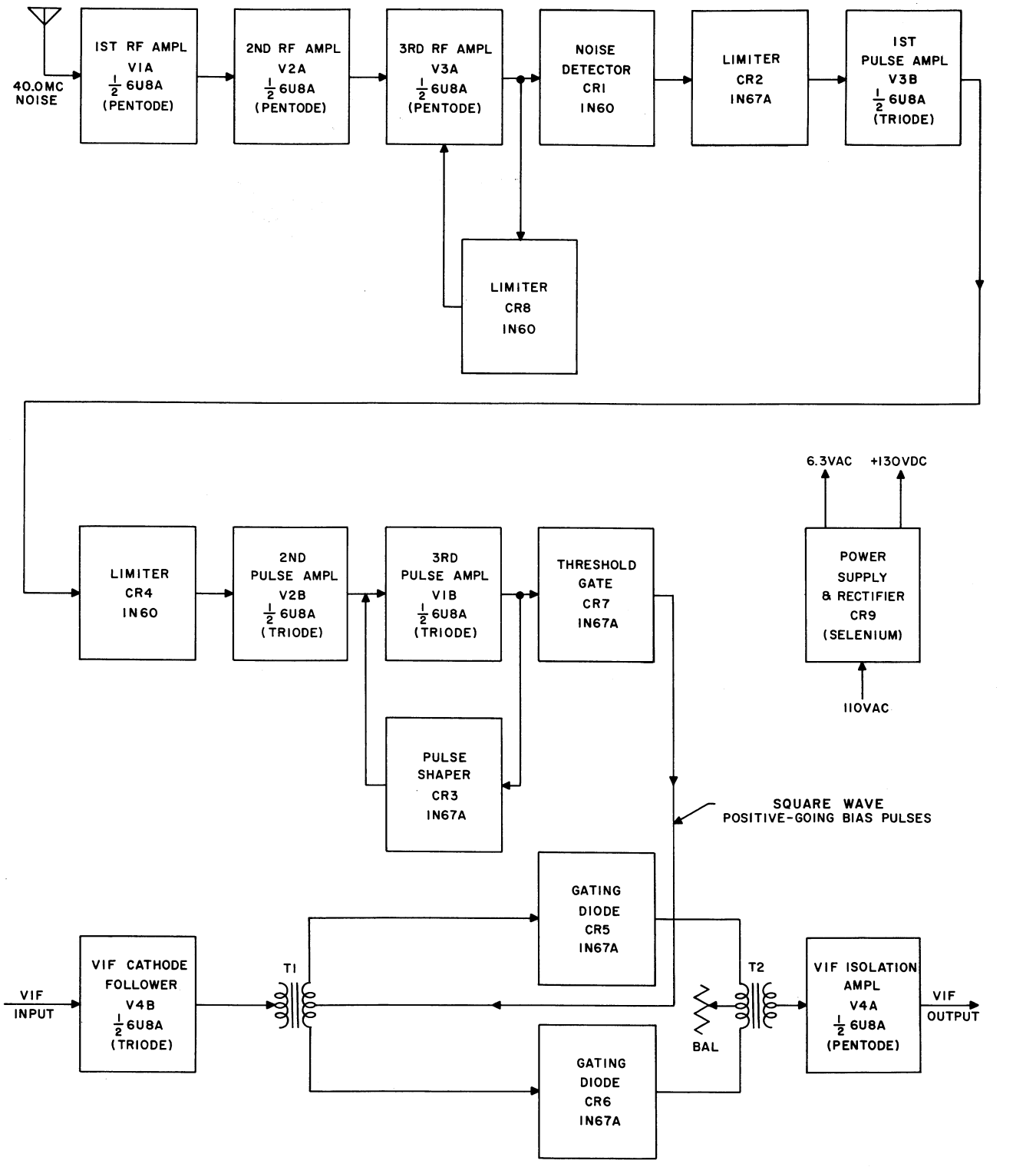
Figure 1 shows the 136C-1 installed in the 75A-4 Receiver. The 136C-1 converts noise to bias pulses for gating the receiver off during noise bursts. This minimizes receiver output noise when it is a result of radiated noise present on both the blanker and receiver antennas. The noise blanker must be provided with its own separately tuned, 40-mc antenna. The noise blanker antenna should be as good at 40 megacycles as a logical compromise allows. Attempts to use an antenna which is sharply resonant at the communication channel frequency will result in unsatisfactory operation of the noise blanker. The 40-mc performance of such an antenna is poor. A six-foot, quarter-wave, coaxial-fed whip will perform best.

The noise blanking scheme has three limitations which decrease the blanking efficiency. These are:

a. One premise upon which the noise blanker was designed is that a noise burst occurring in the high-frequency portion of the spectrum will have some energy distribution at 40.0 mc. If this 40-mc energy distribution does not occur, the blanker will not operate to gate out the interfering noise.

b. A very strong 2.955 to 3.155-mc signal in the pass band between the first and second mixers can be modulated by blanking pulses. This modulation will cause sidebands in the pass band, which result in increased noise and descreased blanking efficiency. Under adverse conditions, this effect can be bad enough to degrade the receiver signal-to-noise ratio when the blanker is turned on. This effect appears to be inherent in any gating-type system.

c. Some corona noise and static disturbances have a repetition rate in excess of one hundred thousand pulses per second. The blanking efficiency decreases as the repetition rate exceeds five thousand pulses per second.



C460-02-4

Figure 2. 136C-1 Noise Blanker, Block Diagram

2.1 INSTALLATION PROCEDURES.

2.1.1 INSTALLATION.

a. Remove bottom plate from 75A-4.

b. Remove the blank chassis plate located at the rear of the vfo. Save the mounting hardware.

c. Mount the 136C-1 Noise Blanker in this area with the power supply next to the rear wall of the cabinet. Use the mounting hardware from the discarded plate to secure the noise blanker in place.

d. Modify the connections on terminal board E1 as shown in detail B, figure 5, installation drawing.

e. Solder a bus jumper from terminal 2 of E1 to ground. Feed the antenna lead from the 136C-1 through the hole in the chassis wall as shown in the bottom view, figure 5, and solder to terminal 1 of E1. Ground the shield as shown in detail B, figure 5.

f. Remove the rubber grommet from the hole in the chassis wall next to L22. Remove the lead between C56 and R114. Feed the VIF (variable intermediate frequency) input and VIF output leads from the 136C-1 through the hole in the chassis wall. Solder the VIF output to the tie point at R114. Ground the shield to the terminal strip and connect the 47K resistor (part number 745 0809 00) from the junction of R114 and the noise blanker VIF output to ground.

g. Mount the terminal strip (part number 306 2220 00) on the chassis wall. Use the set of hardware nearest the horizontal surface of the chassis. Connect the VIF input from the 136C-1 to the terminal strip as shown in the bottom view, figure 5. Connect the 1000 mmf capacitor (part number 913 3009 00) from the VIF input to the ungrounded terminal of L22.

h. Feed the two black leads from the power transformer of the 136C-1 through the hole in the chassis wall. Solder one lead to the unfused side of the a-c power cord. Solder the other lead to the primary side of the 75A-4 power transformer. Note: the primary side of the noise blanker power transformer connects in parallel with the primary side of the 75A-4 power transformer. The black leads from the 136C-1 are the primary leads.

i. Feed the white and orange wire from the 136C-1 through the hole in the chassis wall and solder to the empty terminal near C137. Connect the .01 mfd capacitor (part number 913 3013 00) from the white and orange wire to ground. Connect the 68K resistor (part number 745 0185 00) from the junction of R97 and C137 to the junction of the white and orange wire and the .01 mfd capacitor as shown in detail A, figure 5.

j. Remove the knob from the noise limiter control R67. Disconnect the leads and components from the control and note the location of each lead. Remove the control from the front panel and install the noise blanker gain control (10K variable resistor, part number 376 7628 00) and the solder lug (part number 304 0139 00) as shown in detail C, figure 5. Use the mounting hardware and knob from the noise limiter control to mount the new control. Make the solder connections to the new control as shown in detail D, figure 5.

k. Feed the white and green wire and the two white and blue wires from the 136C-1 through the hole in the chassis wall. Dress the wires along the chassis wall to the front of the 75A-4. Feed the wires between the gear plate and the front panel of the radio to the noise blanker gain control as shown in detail D, figure 5. Connect the white and green wire to the noise blanker gain control and the white and blue wires to the switch as shown in figure 5. Either white and blue wire can be connected to either switch terminal.

l. Remove V12 (6AL5) from its socket. (Do not replace this tube.) Connect a bus jumper from pin 2 to pin 7 of tube socket XV12.

2.1.2 REALIGNMENT OF 75A-4 VARIABLE I-F CIRCUITS WITH TEST EQUIPMENT.

After installation of the noise blanker, variable i-f circuits should be peaked up. Refer to figure 5-2 in the 75A-4 Instruction Book for location of alignment adjustments. A better alignment will result if signal generator and vtvm are used. If these instruments are not available, alignment according to paragraph 2.1.3 will be satisfactory. For instrument alignment, proceed as follows:

a. Connect an amplitude modulated signal generator to the antenna input through a 100-ohm dummy antenna. Connect the vtvm to the AVC test point on the 75A-4 chassis.

b. Set AM CW-SSB switch to AM, AUDIO GAIN to maximum, and RF GAIN to maximum. Select 3 KC mechanical filter.

c. Set receiver dial and signal generator to 1.6 mc. Set signal generator for 20 microvolts output. Rock signal generator dial to produce vtvm peak indication. This centers the signal generator frequency in the mechanical filter pass band. Adjust tuning slugs L-18, L-22, and T-1 for maximum output indication on the vtvm.

d. Set receiver dial and signal generator to 2.4 mc. Rock signal generator dial to produce vtvm peak indication. This centers the signal generator frequency in the mechanical filter pass band. Adjust trimmer capacitors C-7, C-53 and C-56 for peak vtvm indication.

e. Repeat steps c and d until no further increase in output is produced.

2.1.3 REALIGNMENT OF 75A-4 VARIABLE I-F CIRCUITS WITHOUT TEST EQUIPMENT.

Refer to figure 5-2 in the 75A-4 Instruction Book for locations of alignment adjustments. If no signal generator and vtvm are available, realign the variable i-f circuits as follows:

a. Set OFF-STANDBY-ON-CAL switch to CAL position. Set BAND CHANGE switch to the 160 meter band. Set the AM CW-SSB switch to AM. Set RF GAIN control to maximum clockwise position.

b. Tune the calibrate signal to produce a maximum S-meter reading at 1.6 mc. Adjust tuning slugs L-18, L-22, and T-1 for peak S-meter indication.

c. Tune the calibrate signal to produce a maximum S-meter reading at 2.4 mc. Adjust capacitors C-7, C-53, and C-56 for peak S-meter indication.

d. Repeat steps b and c until no further increase in S-meter indication is produced.

2.1.4 TWEET TRAP ADJUSTMENT.

Whenever the variable i-f circuits of the 75A-4 are realigned, the tweet trap (L23-C140) should be retuned. A third-order tweet appears at 3.533 mc in the 80-meter band. It is caused by the 5.7-mc crystal beating with the second harmonic of the vfo at mixer V5. Refer to figure 5-2 in the 75A-4 Instruction Book for location of L23.

a. Turn the AM CW-SSB switch to CW-SSB and tune in the tweet near 3.533 mc.
b. Adjust the core of L-23 until the tweet level is minimum.

3.1 OPERATION.

Pull the noise blanker gain knob to turn on the blanker. Turn the blanker gain control clockwise until the noise level indicated on the receiver S-meter drops sharply. This is the threshold point of most efficient blanker operation. Additional blanker gain is not desirable, and may degrade performance under some operating conditions. Operation may be improved by reducing the 75A-4 r-f gain slightly. If the blanker fails to reduce the noise level, turn it off. This repetition rate of the noise pulses may be too rapid for the blanker to gate, or a strong adjacent channel carrier may be causing erratic blanking.

4.1 CIRCUIT DESCRIPTION.

Figure 2, a block diagram of the 136C-1, illustrates the noise blanking scheme, along with figure 6, schematic diagram of the 136C-1. Tube sections V1A, V2A, and V3A are connected as a three-stage, cascade, 40-mc tuned r-f amplifier. Gain of the trf amplifier is controlled by potentiometer R4 in the cathode circuit of V2A. The output of V3A is limited by the action of diode CR8 and V3A. The positive component of the signal is clamped to the cathode of V3A. The signal is detected by CR1 and filtered by C11. The combination of C11 and R34 determines the length of the blanking pulse. The audio component of the noise is limited by CR2 and applied to the grid of the first pulse amplifier V3B. Positive-going output pulses from V3B are applied to the grid of V2B. Any negative portion of the waveform is clipped by CR4. Positive-going square pulses from V1B plate are applied through CR7 to the center tap of T1. The bias of CR7 keeps it cut off and at a high impedance to the low-level pulses, but high-level pulses overcome the bias and pass into the gate circuit. Gating diodes CR5 and CR6 are biased to conduction for normal noise-free operation. However, when a high-amplitude noise burst occurs, the positive-going pulse passes through CR7 and cuts off both CR5 and CR6. This effectively disconnects the variable i-f signal for the period of the blanking pulse. The length of the blanking pulse varies from a few microseconds to a maximum of 30 microseconds. Blanking pulse length is governed by the magnitude of the noise pulse appearing at the noise blanker antenna. Lower amplitude noise bursts in the variable i-f develop shorter blanking pulses, while higher amplitude noise bursts develop longer blanking pulses. Transformers T1 and T2 and the gating diodes are arranged in a balanced modulator configuration so that any noise which results from the gating action is canceled and prevented from entering the receiver circuits. Any discontinuity of signal resulting from the gating action is compensated by tuned-circuit restoration in the following stages of the receiver. Both sections of V4 serve to isolate the noise-operated gate circuit from the receiver circuits. V4A provides only enough gain to compensate for the small loss in the gate circuit, so that over-all gain through the noise blanker is approximately unity. Filament power, B+ power, and bias voltage are provided by the power supply included with the 136C-1.

5.1 SERVICE INSTRUCTIONS.

The blanker is aligned at the factory and will not need realignment when installed in the 75A-4. Tubes may be replaced in the noise blanker without necessity of realignment or readjustment. However, if major repairs are made to the blanker, it should be realigned.

Test equipment necessary for r-f alignment and gate balance adjustments of the 136C-1 consists of a signal generator, with calibrated output, capable of 40.0- mc operation; a vacuum-tube voltmeter, with r-f probe; and a noise source. An ordinary doorbell buzzer or electric razor makes an excellent noise source for adjusting the 136C-1.

5.1.1 R-F ALIGNMENT.

a. Connect a signal generator with a 50-ohm output impedance (such as a Measurements Corporation Model 80) to the coax marked ANT (blanker r-f input). Set the generator output to 200 microvolts.
b. Set the vtvm to a low scale and zero meter. Connect it between detector test point and ground.
c. Set the signal generator output at 40.0 mc (unmodulated) and increase the generator output until a reading is obtained on the voltmeter. If a full scale deflection results with less than 200 microvolts input signal on a 0 to 1 volt scale the blanker r-f amplifier may be oscillating. The blanker receiver is designed for broadband operation; if the coils are sharply peaked, oscillation can result. If this happens, detune L3 or L4 until oscillation ceases.
d. Adjust L1 and L4 for maximum reading on the vtvm. Reduce generator output as necessary to keep the voltmeter reading between 9 and -1 volt d-c.
e. Set the signal generator to 40.3 mc and peak L3.
f. Set the signal generator to 39.7 mc and peak L2.
g. Repeat the alignment of L1, L2, L3, and L4 to assure optimum band pass. When the generator frequency is moved from 41 mc to 39 mc the detector output voltage read on the voltmeter should vary smoothly from a maximum at 40 mc to a smaller value on either side. Any peaks between 41 and 39 mc

indicate oscillation. If this occurs, repeak L2 at 39.5 mc and L3 at 40.5 mc.

5.1.2 GATE BALANCE.

a. Disconnect the 75A-4 antenna.
b. Leave the noise blanker antenna connected and the 75A-4 on. Turn the noise source on and couple loosely to the noise antenna.
c. Adjust the gate balance potentiometer R30 and variable capacitor C24 for minimum noise output from the 75A-4 speaker. These two adjustments are interactive. First adjust one and then the other until neither produces any appreciable reduction in output noise.

5.1.3 VOLTAGE AND RESISTANCE MEASUREMENTS.

a. Table 1 lists the d-c voltage and resistance measurements on all tube sockets of the 136C-1. Values are nominal.
b. All measurements were made with a vtvm with all tubes in sockets.
c. Resistances of less than one ohm are listed as zero.
d. All measurements are made from socket pin to ground.
e. Double values of resistance on pins 1 and 9 of V2 and pins 7 and 9 of V3 are caused by diodes in the circuit and the polarity of the ohmmeter used.

TABLE 1. D-C VOLTAGE AND RESISTANCE MEASUREMENTS - 136C-1

TUBE		PIN NUMBER								
		1	2	3	4	5	6	7	8	9
V1	D-C V	60	0	110	0	0	110	2.4	1.1	0
	OHMS	50K	0	25K	0	0	25K	500	500	1.0 MEG
V2	D-C V	90	0	*115 **125	0	0	*115 **125	*2.4 **15.	3.0	0
	OHMS	50K/70K	4.7K	25K	0	0	25K	*300 **35K	5K	500/200K
V3	D-C V	30	0	120	0	0	105	1.5	0	-.5
	OHMS	60K	7K	22K	0	0	25K	300/75	0	20K/35K
V4	D-C V	120	0	120	0	0	115	2.5	22	20
	OHMS	20K	0	22K	0	0	25K	500	3K	100K

*Maximum r-f gain
**Minimum r-f gain

6.1 SPECIFICATIONS.

Power source	136C-1 has a separate power supply mounted on the noise blanker chassis.
Frequency range	The blanking gate of the noise blanker passes i-f signals in the range of 1.5 to 4.0 mc in the 75A-4. The input frequency of the noise blanker is 40.0 mc with a minimum bandwidth of 1 mc and a maximum bandwidth of 2 mc.
Cross modulation	The noise blanker causes no more than 6 db deterioration in cross modulation and/or blocking characteristics of the companion receiver.

Sensitivity	A pulse signal input to the noise blanker input of 100 microvolts peak will cause a minimum of 35 db reduction of gain in the receiver signal path.
Spurious response	Internal noise and signals introduced by the noise blanker are less than 1.0 microvolt equivalent signal.
Input impedance	Noise blanker amplifier; 50-ohm nominal ±50% unbalanced.
Output impedance	Signal blanking circuit; High impedance.
Controls	Installation of a noise blanker in a 75A-4 requires the addition of a blanker r-f gain control with a push-pull on-off switch (furnished with kit).
Tube complement functions	Three r-f noise and pulse amplifiers. One input and output amplifier.
Size	3 in. x 6-1/2 in. x 4-1/2 in.
Mounting center	4-1/2 in. x 3 in.
Weight	2-3/4 lb.

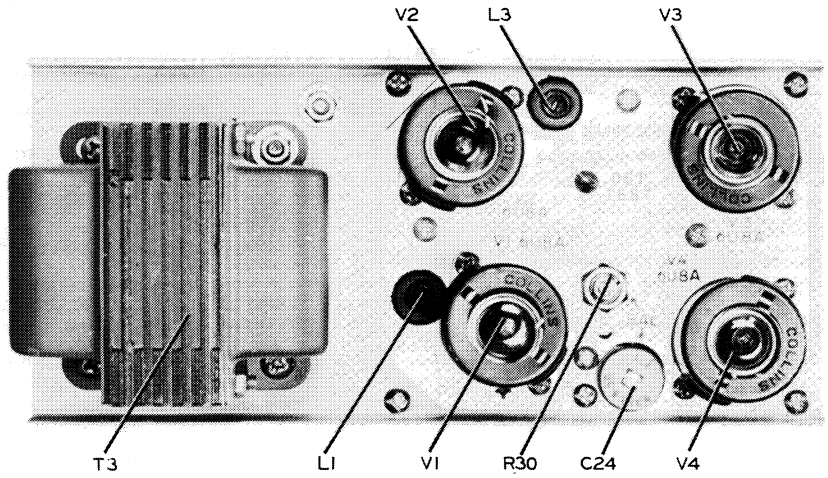
PARTS LIST

Following is the parts list for the 136C-1. Figure 3 is the top view. Figure 4 is the bottom view showing location of components.

ITEM	DESCRIPTION	COLLINS PART NUMBER
	136C-1 NOISE BLANKER	522 1584 00
C1	CAPACITOR, FIXED, MICA: 10 uuf, ±10%, 500 v dc	912 0432 00
C2	CAPACITOR, FIXED, CERAMIC: 1000 uuf, +100% -20%, 500 v dc	913 3009 00
C3 thru C10	CAPACITOR, FIXED, CERAMIC: same as C2	913 3009 00
C11	CAPACITOR, FIXED, MICA: 510 uuf, ±10%, 300 v dc	912 0546 00
C12	CAPACITOR, FIXED, CERAMIC: 22,000 uuf, +100% -20%, 500 v dc	913 3014 00
C13	CAPACITOR, FIXED, CERAMIC: same as C2	913 3009 00
C14	CAPACITOR, FIXED, MICA: 1000 uuf ±10% 500 v dc	912 3316 00
C15	CAPACITOR, FIXED, ELECTROLYTIC: aluminum, 8 uf, -15% +100%, 6 v dc	183 1167 00
C16	CAPACITOR, FIXED, CERAMIC: 10,000 uuf, +100% -20%, 500 v dc	913 3013 00
C17	CAPACITOR, FIXED, CERAMIC: same as C12	913 3014 00
C18	CAPACITOR, FIXED, CERAMIC: same as C2	913 3009 00
C19	CAPACITOR, FIXED, CERAMIC: same as C16	913 3013 00
C20	CAPACITOR, FIXED, CERAMIC: same as C2	913 3009 00
C21	CAPACITOR, FIXED, CERAMIC: same as C16	913 3013 00
C22	CAPACITOR, FIXED, CERAMIC: 4700 uuf, +100% -20%, 500 v dc	913 3012 00
C23	CAPACITOR, FIXED, FILM: 20 uuf, ±10%, 500 v dc	912 2766 00
C24	CAPACITOR, VARIABLE, CERAMIC: 8 to 75 uuf, 350 v dc	917 1075 00
C25 thru C31	CAPACITOR, FIXED, CERAMIC: same as C2	913 3009 00
C32	CAPACITOR, FIXED, CERAMIC: same as C16	913 3013 00
C33	CAPACITOR, FIXED, ELECTROLYTIC: triple section, 40 uf, -10% +100%, 150 v dc, each section	183 0711 00
C34	CAPACITOR, FIXED, ELECTROLYTIC: same as C33	183 0711 00
C35	CAPACITOR, FIXED, ELECTROLYTIC: same as C33	183 0711 00
C36	CAPACITOR, FIXED, CERAMIC: same as C2	913 3009 00
C37	CAPACITOR, FIXED, CERAMIC: same as C2	913 3009 00
CR1	SEMICONDUCTOR DEVICE, DIODE: germanium; type 1N60	353 2010 00
CR2	SEMICONDUCTOR DEVICE, DIODE: germanium; type 1N67A	353 0147 00
CR3	SEMICONDUCTOR DEVICE, DIODE: same as CR2	353 0147 00
CR4	SEMICONDUCTOR DEVICE, DIODE: same as CR1	353 2010 00
CR5	SEMICONDUCTOR DEVICE, SET: 1 matched pair diode semiconductor device, type no. 1N67A	353 0127 00
CR6	SEMICONDUCTOR DEVICE, SET: same as CR5	353 0127 00
CR7	SEMICONDUCTOR DEVICE, DIODE: same as CR2	353 0147 00
CR8	SEMICONDUCTOR DEVICE, DIODE: same as CR1	353 2010 00
CR9	RECTIFIER, METALLIC: selenium	353 0153 00
L1	TRANSFORMER, AUTO: 40.0 mc, 1 winding, 0.7 to 1.1 uh inductance, 11 turns no. 32 AWG wire, 1 tap, tapped at 1-3/4 turns, phenolic coil form	278 0291 00
L2	COIL, RADIO FREQUENCY: universal wound, 32 AWG formvar wire; 0.8 to 1.8 uh, 30 ma	240 0822 00
L3	COIL, RADIO FREQUENCY: same as L2	240 0822 00
L4	COIL, RADIO FREQUENCY: universal wound, 32 AWG formvar wire; 1.3 to 3.0 uh, 30 ma	240 0823 00
L5	COIL, RADIO FREQUENCY: single layer wound; magnet wire; 10 uh inductance	240 0164 00
R1	RESISTOR, FIXED, COMPOSITION: 4700 ohms, ±10%, 1/4 w	745 0773 00
R2	RESISTOR, FIXED, COMPOSITION: 470 ohms, ±10%, 1/4 w	745 0737 00
R3	RESISTOR, FIXED, COMPOSITION: same as R1	745 0773 00
R4	RESISTOR, VARIABLE: composition; 10,000 ohms, ±30%, 1/4 w	376 7601 00
R5	RESISTOR, FIXED, COMPOSITION: 270 ohms, ±10%, 1/4 w	745 0728 00
R6	RESISTOR, FIXED, COMPOSITION: 2700 ohms, ±10%, 1/2 w	745 1370 00
R7	RESISTOR, FIXED, COMPOSITION: 6800 ohms, ±10%, 1/4 w	745 0779 00
R8	RESISTOR, FIXED, COMPOSITION: same as R6	745 1370 00
R9	RESISTOR, FIXED, COMPOSITION: same as R5	745 0728 00

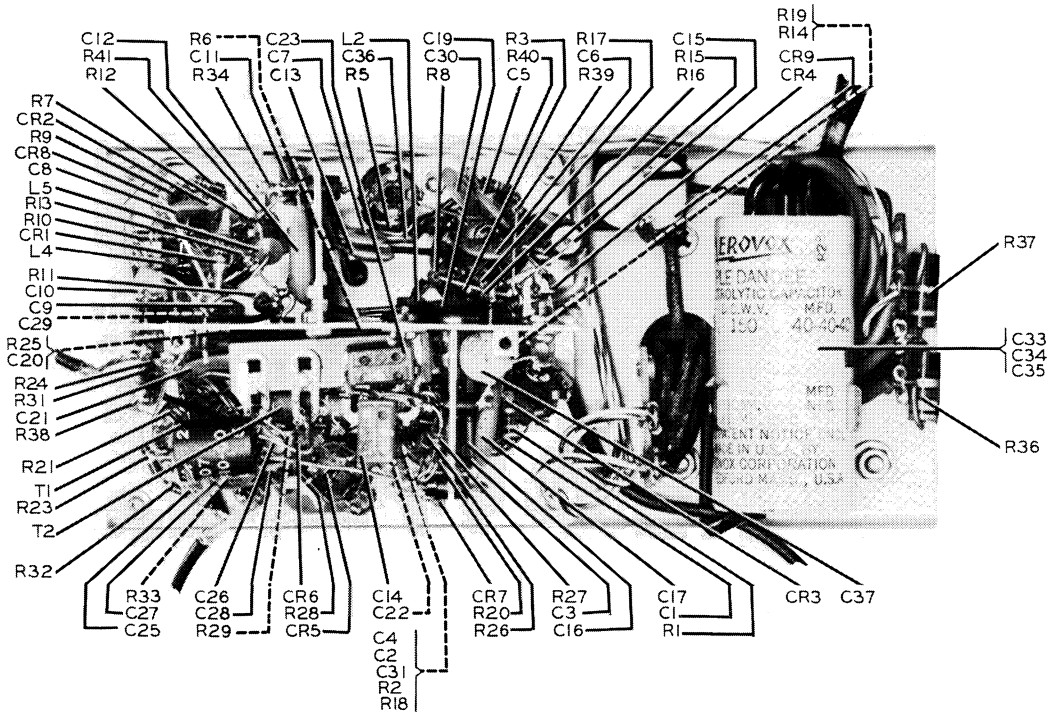
ITEM	DESCRIPTION	COLLINS PART NUMBER
R10	RESISTOR, FIXED, COMPOSITION: 10,000 ohms, ±10%, 1/4 w	745 0785 00
R11	RESISTOR, FIXED, COMPOSITION: same as R6	745 1370 00
R12	RESISTOR, FIXED, COMPOSITION: 33,000 ohms, ±10% 1/4 w	745 0803 00
R13	RESISTOR, FIXED, COMPOSITION: 39,000 ohms, ±10%, 1/4 w	745 0806 00
R14	RESISTOR, FIXED, COMPOSITION: 1 megohm, ±10%, 1/4 w	745 0857 00
R15	RESISTOR, FIXED, COMPOSITION: same as R1	745 0773 00
R16	RESISTOR, FIXED, COMPOSITION: 47,000 ohms, ±10%, 1/4 w	745 0809 00
R17	RESISTOR, FIXED, COMPOSITION: same as R16	745 0809 00
R18	RESISTOR, FIXED, COMPOSITION: same as R2	745 0737 00
R19	RESISTOR, FIXED, COMPOSITION: 27,000 ohms, ±10%, 1/2 w	745 1412 00
R20	RESISTOR, FIXED, COMPOSITION: same as R16	745 0809 00
R21	RESISTOR, FIXED, COMPOSITION: 0.47 meg-ohms, ±10%, 1/4 w	745 0845 00
R22	RESISTOR, FIXED, COMPOSITION: same as R16	745 0809 00
R23	RESISTOR, FIXED, COMPOSITION: 100,000 ohms, ±10%, 1/4 w	745 0821 00
R24	RESISTOR, FIXED, COMPOSITION: 1000 ohms, ±10%, 1/4 w	745 0749 00
R25	RESISTOR, FIXED, COMPOSITION: 3300 ohms, ±10%, 1/4 w	745 0767 00
R26	RESISTOR, FIXED, COMPOSITION: same as R14	745 0857 00
R27	RESISTOR, FIXED, COMPOSITION: 0.27 meg-ohms, ±10%, 1/4 w	745 0836 00
R28	RESISTOR, FIXED, COMPOSITION: 2200 ohms, ±10%, 1/4 w	745 0761 00
R29	RESISTOR, FIXED, COMPOSITION: same as R28	745 0761 00
R30	RESISTOR, VARIABLE: composition; 2500 ohms, ±20%, 0.2 w	380 6286 00

ITEM	DESCRIPTION	COLLINS PART NUMBER
R31	RESISTOR, FIXED, COMPOSITION: same as R24	745 0749 00
R32	RESISTOR, FIXED, COMPOSITION: same as R2	745 0737 00
R33	RESISTOR, FIXED, COMPOSITION: same as R24	745 0797 00
R34	RESISTOR, FIXED, COMPOSITION: 22,000 ohms, ±10%, 1/4 w	745 0797 00
R35	RESISTOR, FIXED, COMPOSITION: 68,000 ohms, ±10%, 1/4 w	745 0815 00
R36	RESISTOR, FIXED, COMPOSITION: 330 ohms, ±20%, 1 w	745 3331 00
R37	RESISTOR, FIXED, COMPOSITION: 270 ohms, ±10%, 1/4 w	745 0328 00
R38	RESISTOR, FIXED, COMPOSITION: 100 ohms, ±10%, 1/4 w	745 0713 00
R39	RESISTOR, FIXED, COMPOSITION: 82,000 ohms, ±10%, 1/4 w	745 0818 00
R40	RESISTOR, FIXED, COMPOSITION: same as R16	745 0809 00
R41	RESISTOR, FIXED, COMPOSITION: same as R16	745 0809 00
S1	SWITCH PUSH: spst, 3 amps at 125 v (incl R4)	376 7628 00
T1	TRANSFORMER, DISCRIMINATOR: 2.5 mc center frequency, shielded, 0.525 in. dia by 11/16 in. lg, ferrite core, 5 wire lead terminals	278 1710 00
T2	TRANSFORMER, RADIO FREQUENCY: 2 windings ferrite case, ferrite coil form, turn ratio 1.1, 4 wire terminals	278 1711 00
T3	TRANSFORMER, POWER, STEP-UP: primary winding 117 v, 60 cps, single phase, secondary no. 1, 125 v, secondary no. 2, 6.3 v, 2.0 amps	662 0431 00
V1	ELECTRON TUBE: triode-pentode; type 6U8A	255 0328 00
V2 thru V4	ELECTRON TUBE: same as V1	255 0328 00



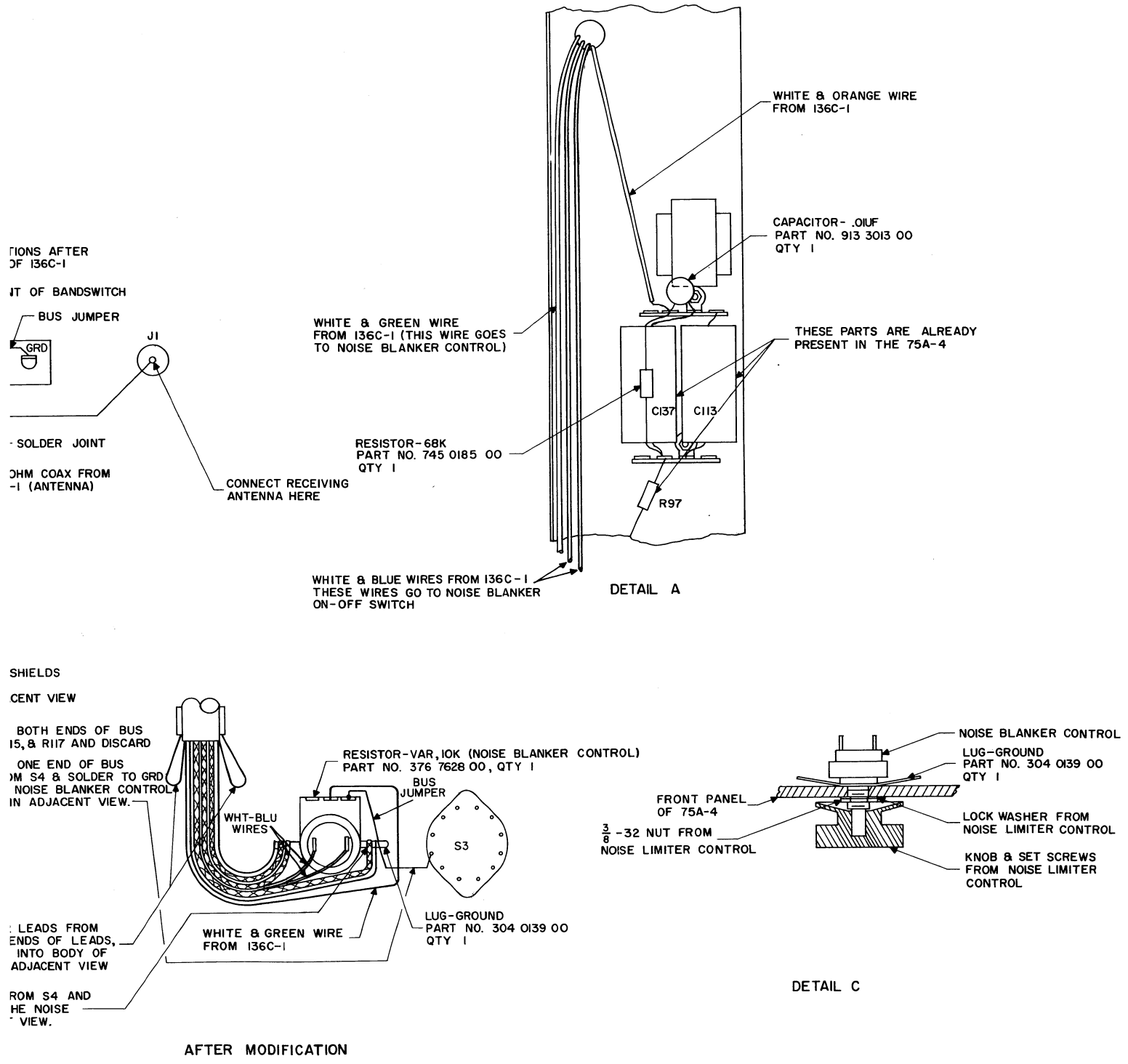
C460-04-P

Figure 3. 136C-1 Noise Blanker, Top View



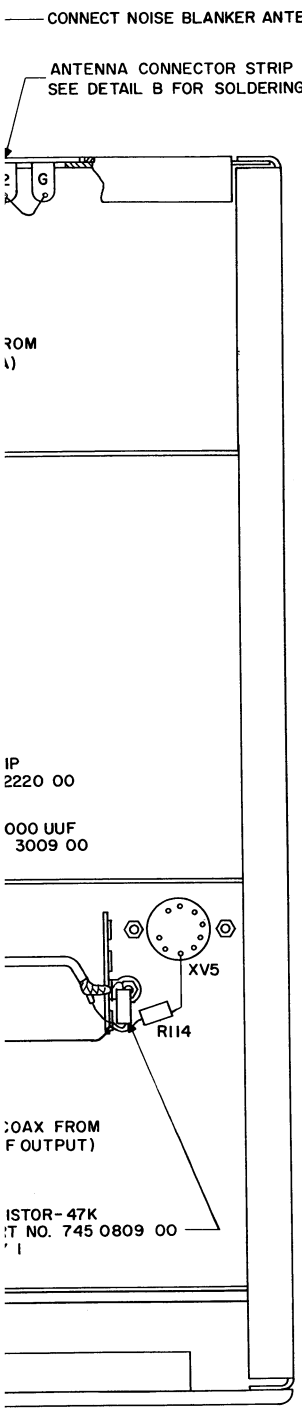
C460-05-P

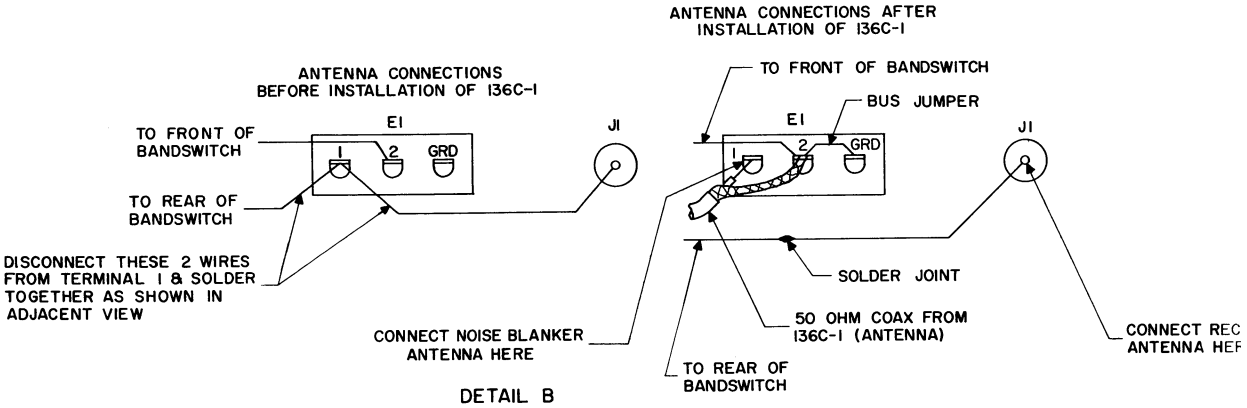
Figure 4. 136C-1 Noise Blanker, Bottom View Showing Parts Location



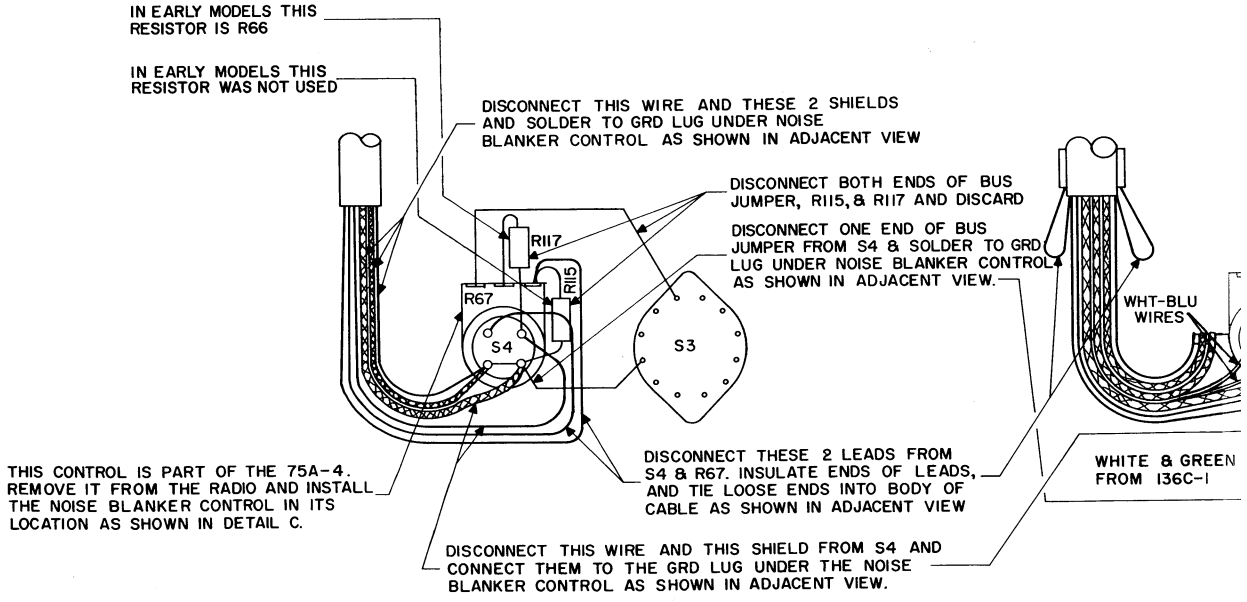
C460-06-6

Figure 5. 136C-1 Noise Blanker, Installation Diagram





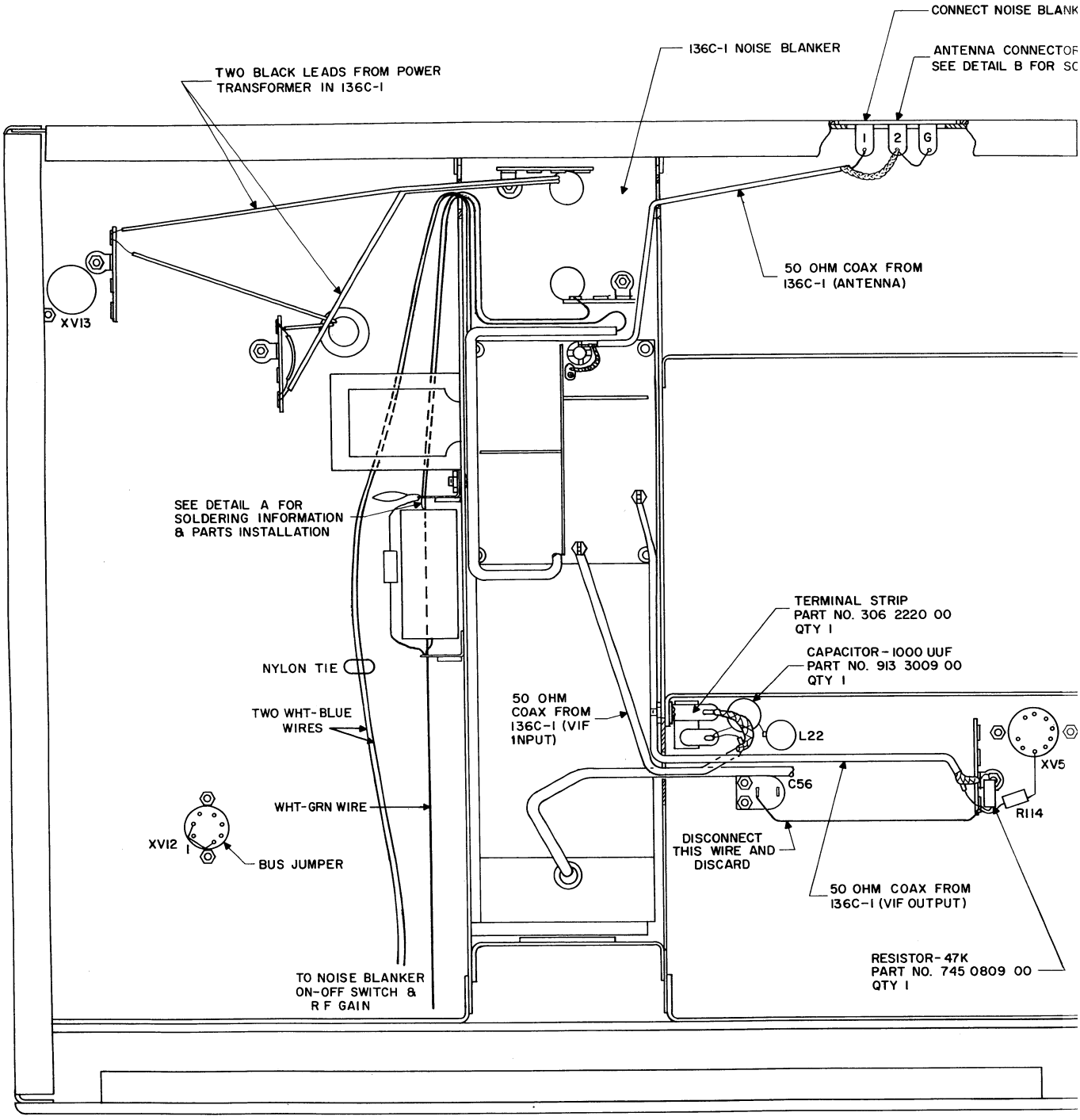
DETAIL B



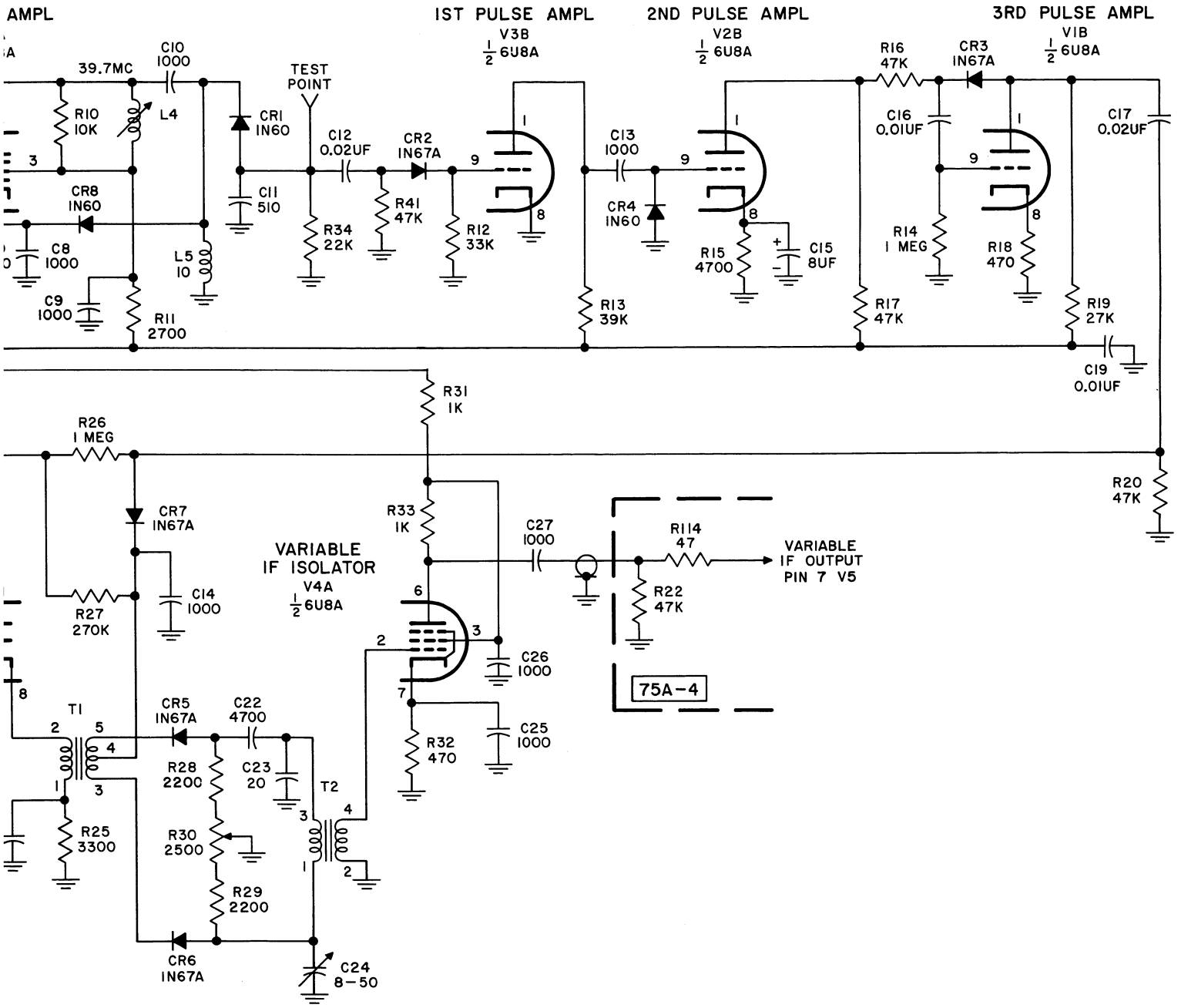
BEFORE MODIFICATION

AFTER MODIFICA

DETAIL D

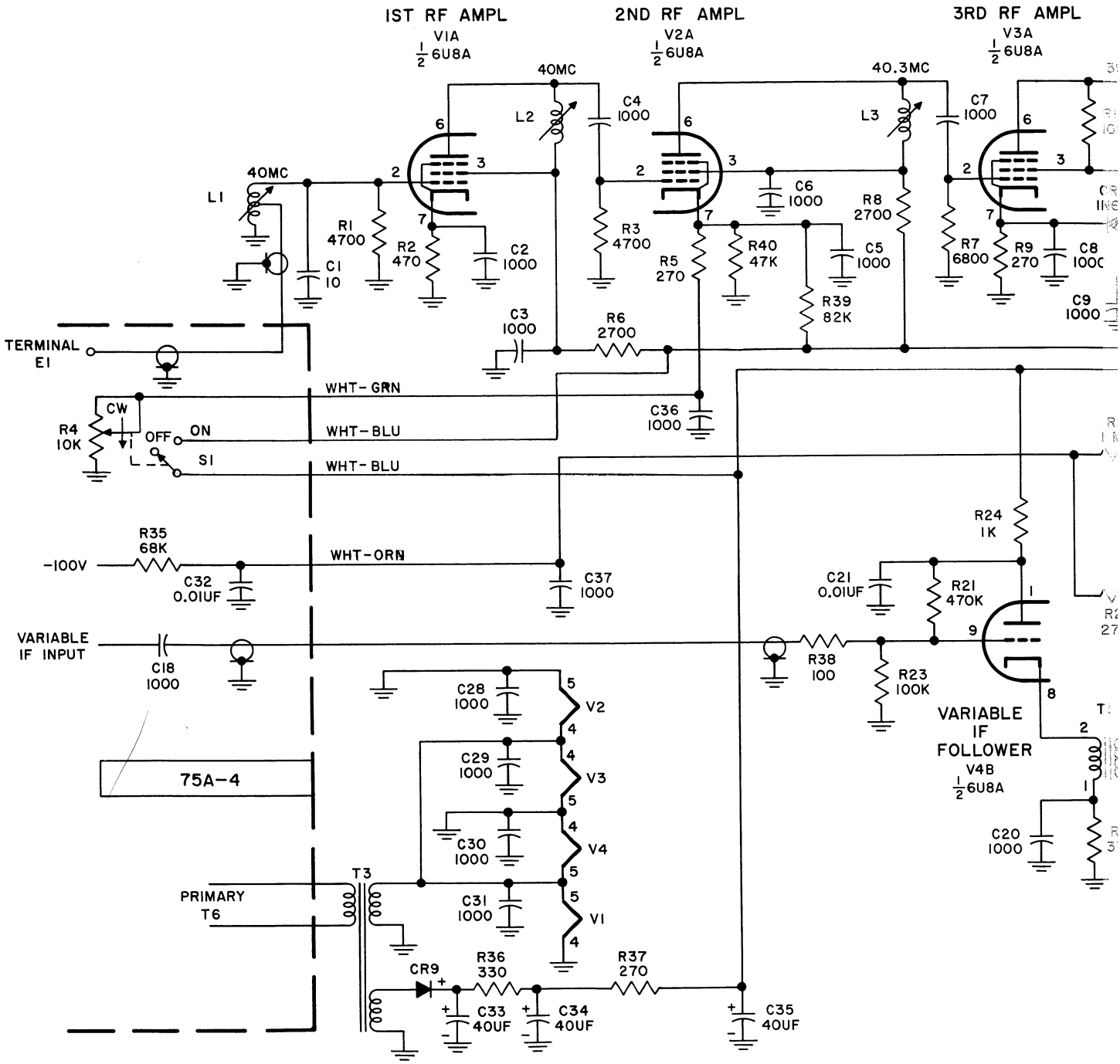


BOTTOM VIEW OF 75A-4



C460-01-5

Figure 6. 136C-1 Noise Blanker, Schematic Diagram


1ST RF AMPL
V1A
1/2 6U8A
2ND RF AMPL
V2A
1/2 6U8A
3RD RF AMPL
V3A
1/2 6U8A
40MC
40MC
40.3MC
L1
L2
L3
C1 10
R1 4700
R2 470
C2 1000
C3 1000
C4 1000
R3 4700
R5 270
C6 1000
R40 47K
R39 82K
C5 1000
R8 2700
C7 1000
R7 6800
R9 270
C8 1000
C9 1000
R6 2700
TERMINAL E1
WHT-GRN
WHT-BLU
WHT-BLU
WHT-ORN
CW
OFF
ON
R4 10K
S1
C36 1000
R35 68K
-100V
C32 0.01UF
C37 1000
R24 1K
C21 0.01UF
R21 470K
R38 100
R23 100K
VARIABLE IF INPUT
C18 1000
VARIABLE IF FOLLOWER
V4B
1/2 6U8A
C20 1000
75A-4
C28 1000
C29 1000
C30 1000
C31 1000
V2
V3
V4
V1
T3
PRIMARY T6
CR9
R36 330
R37 270
C33 40UF
C34 40UF
C35 40UF

ELECTRICAL WIRE CODE

EXAMPLES

UNSHIELDED WIRE, MIL TYPE B #22 AWG, WHITE WITH RED AND GREEN TRACERS:

D	A	9	25	—	4-1/4
Type of Wire	Size of Wire	Color of Body	Color of Tracers		Length of Wire in Inches (Includes Stripping & Tinning)

SHIELDED WIRE (SINGLE), MIL TYPE C, #15 AWG, WHITE WITH RED AND GREEN TRACERS:

R	D	S	9	25	—	4-1/4
Type of Wire	Size of Wire	Shielded	Color of Body	Color of Tracers		Length of Wire in Inches (Includes Stripping & Tinning)

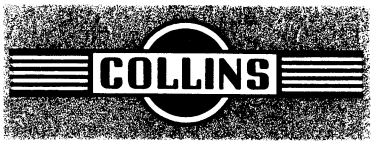
SHIELDED WIRE (MULTIPLE), MIL TYPE B, #22 AWG, WHITE, AND WHITE WITH RED TRACER:

D	A	S	(9)	(92)	—	4-1/4
Type of Wire	Size of Wire	Shielded	First Conductor	Second Conductor		Length of Wire in Inches (Includes Stripping & Tinning)

TYPE OF WIRE CODE		
LETTER	TYPE OF WIRE	FAMILY USUALLY FOUND IN
A	Cotton Braid Over Plastic (Formerly AN-J-C-48)	440 Plain 443 Shielded
B	Busbar, Round Tinned	421
C	MIL-W-16878 Type B (#20 and Larger) (600 Volts)	439
D	Miniature Wire, MIL-W-16878 Type B (#22 & Smaller)	439-7000 Series
E		
F	Extra Flexible Varnished Cambric	423
G		
H	Kel-F (Monochloro-trifluoroethylene)	422
J		
K	Neon Sign Cable (15,000 Volts)	423 0004 00
L	Silicone	425 0942 00
M		
N	Single Conductor Stranded (Not Rubber Covered)	422
P	Single Conductor Stranded (Rubber Covered)	423
Q		
R	MIL-W-16878 Type C (1000 Volts)	439 1000 Series
T	Teflon, MIL-W-16878 Type E (600 Volts)	439 4000 Series
V	MIL-W-16878 Type D (3000 Volts)	439 3000 Series
W	Teflon, MIL-W-16878 Type EE (1000 Volts)	439 0000 Series
X		
Y		
Z	Acetate Yarn Telephone Type	428

SIZE OF WIRE CODE	
LETTER	SIZE
A	#22 AWG
B	#20
C	#18
D	#16
E	#14
F	#12
G	#10
H	#8
J	#6
K	#4
L	#2
M	#1
N	#0
P	#00
Q	#000
R	#0000
T	#28
V	#26
W	#24
X	#19
Y	#30
Z	

COLOR CODE	
NUMBER OR LETTER	COLOR
0	Black
1	Brown
2	Red
3	Orange
4	Yellow
5	Green
6	Blue
7	Violet
8	Gray (Slate)
9	White
a	Clear
b	Tan
c	Pink
d	Maroon
e	Light Green
f	Light Blue



COLLINS RADIO COMPANY