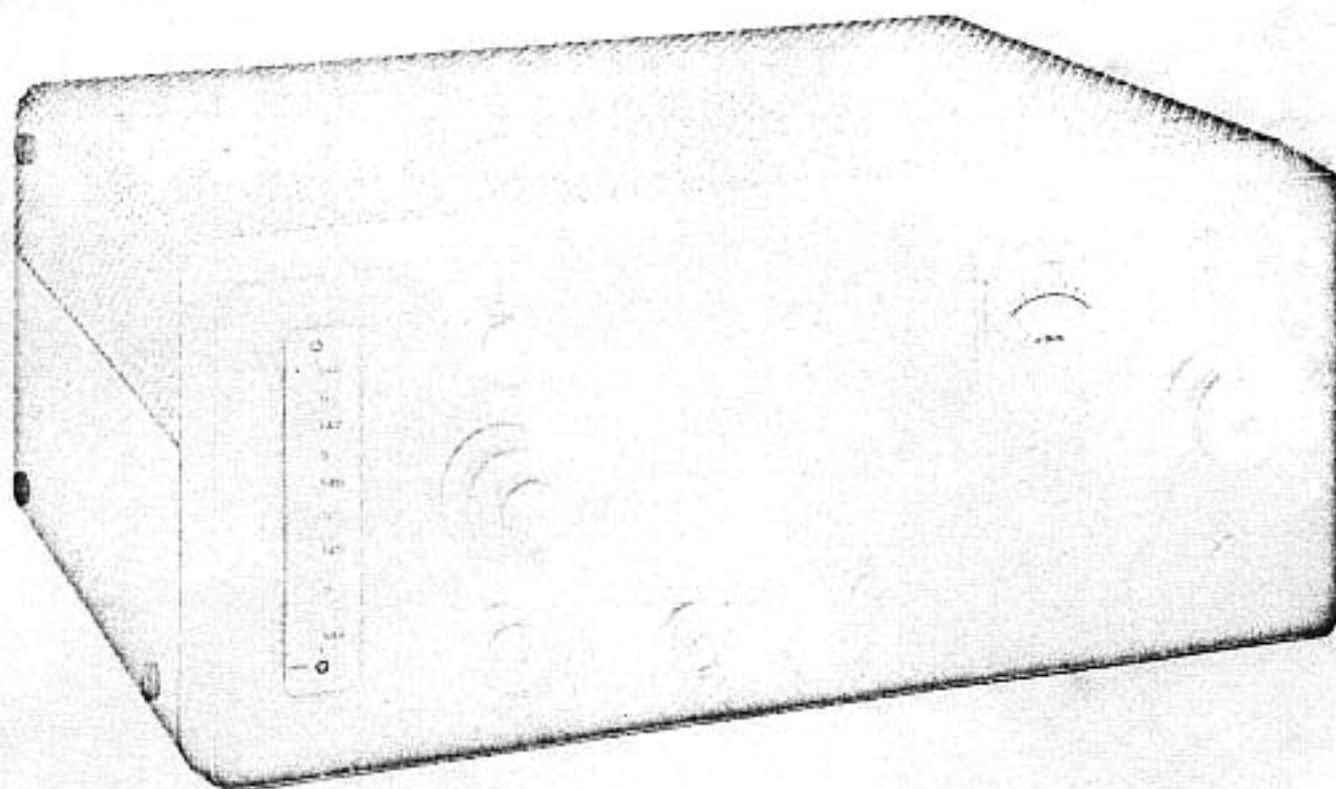


**INSTRUCTION MANUAL  
COMMUNICATOR IV (2 Meter )  
TRANSMITTER-RECEIVER  
MODEL 3341, 3341-CD, 3341-CAP**



**GONSET DIVISION  
Young Spring & Wire Corporation  
801 South Main Street  
Burbank, California**

**MADE IN U. S. A.**

*SEPT. 1962*

520-513D

## WARRANTY POLICY

The Gonset Division warrants its equipment, when properly registered, against defects in workmanship, materials, and construction under normal use and service for a period of 90 days from the date of original purchase. Under this warranty our obligation is limited to repairing or replacing any defective parts.

This warranty does not apply to any equipment which has been tampered with in anyway, or which has been misused or damaged by accident or negligence, or which has had the serial number removed, altered or effaced.

On equipment employing a vibrator, all components are covered by the warranty with the exception of the vibrator itself.

This warranty is valid only when the enclosed card is properly filled in and returned within ten days from purchase date.

The Gonset Division reserves the right to discontinue or change, at any time, specifications, design or prices without notice and without incurring obligations.

DO NOT SEND EQUIPMENT TO THE FACTORY WITHOUT FIRST SECURING AUTHORIZATION TO DO SO.

THIS WARRANTY DOES NOT INCLUDE TRANSPORTATION COSTS TO AND FROM THE FACTORY.

**GONSET DIVISION**  
**YOUNG SPRING AND WIRE CORPORATION**  
**801 SOUTH MAIN STREET, BURBANK, CALIFORNIA**

# TABLE OF CONTENTS

|                                                         | Page |
|---------------------------------------------------------|------|
| INTRODUCTION . . . . .                                  | 4    |
| SPECIFICATIONS . . . . .                                | 5    |
| TECHNICAL DESCRIPTION . . . . .                         | 7    |
| Fig. 1 - FRONT PANEL CONTROLS . . . . .                 | 9    |
| INSTALLATION AND OPERATION . . . . .                    | 10   |
| Fig. 2 - CHASSIS - REAR VIEW . . . . .                  | 13   |
| Fig. 3 - POWER CABLES . . . . .                         | 13   |
| ALIGNMENT AND TROUBLE-SHOOTING . . . . .                | 14   |
| Fig. 4 - RECEIVER SUB-CHASSIS - TOP VIEW . . . . .      | 15   |
| Fig. 5 - RECEIVER SUB-CHASSIS - BOTTOM VIEW . . . . .   | 15   |
| Fig. 6 - CHASSIS - TOP VIEW . . . . .                   | 19   |
| Fig. 7 - CHASSIS - BOTTOM VIEW . . . . .                | 19   |
| Fig. 8 - VOLTAGE CHARTS . . . . .                       | 21   |
| Fig. 9 - DIAL CORD STRINGING DIAGRAM . . . . .          | 23   |
| Fig. 10 - PL-68 TYPE MIKE PLUG . . . . .                | 24   |
| Fig. 11 - MOBILE INSTALLATION . . . . .                 | 25   |
| BLOCK DIAGRAM . . . . .                                 | 27   |
| PARTS LIST, RECEIVER . . . . .                          | 28   |
| SCHEMATIC DIAGRAM - RECEIVER . . . . .                  | 31   |
| PARTS LIST, TRANSMITTER & POWER SUPPLY . . . . .        | 32   |
| SCHEMATIC DIAGRAM, TRANSMITTER & POWER SUPPLY . . . . . | 37   |

## INTRODUCTION

The new Communicator IV is the latest addition to the Gonset Communicator line and embodies many new design concepts. The latest in engineering know-how has been integrated with established techniques to provide the ultimate in VHF reception and transmission.

This Communicator is a complete two-meter amateur radio station which can be used in mobile and fixed-station installations. Triple conversion is employed to achieve a high degree of frequency stability and selectivity. A new frame grid RF tube is employed to provide a very low noise figure, resulting in very outstanding VHF receiver sensitivity.

A transmitter power input of 20 watts to the push-pull final RF amplifier results in a clean signal of 12 to 14 watts into 50 ohms. An outstanding feature of this transmitter is the simplicity of tuning. Only two adjustments are required to tune the transmitter. A full 100% modulation capability is achieved by the use of push-pull modulation and audio shaping.

Other features include a push-to-talk mike provision; an integral transistorized two-way power supply; built-in antenna changeover relay; transmitter frequency spot switch; automatic noise limiter and adjustable squelch control.

## SPECIFICATIONS

### RECEIVER

|                           |                                                                        |
|---------------------------|------------------------------------------------------------------------|
| Frequency Range:          | 143.7 Mc. to 148.3 Mc.<br>(Special CAP frequency markers)              |
| Sensitivity:              | 0.5 $\mu$ v (for 10 db $\frac{S + N}{N}$ )                             |
| Selectivity:              | Noise figure 3-5 db<br>6 db 10.3 Kc.<br>20 db 15.5 Kc.<br>60 db 47 Kc. |
| Frequency Stability:      | Better than .05%                                                       |
| Spurious Rejection:       | 48 db down or better                                                   |
| Antenna Input:            | 50-75 ohms unbalanced (coaxial cable)                                  |
| Intermediate Frequencies: | First IF 15-19 Mc.<br>Second IF 2.3 Mc.<br>Third IF 455 Kc.            |
| Squelch Range:            | 0.1 $\mu$ v to 50 $\mu$ v                                              |
| "S" Meter:                | Relative signal strength                                               |
| Audio Output:             | 2 watts undistorted                                                    |
| Noise & Hum Level:        | More than 40 db down                                                   |

### TRANSMITTER

|                      |                                                                              |
|----------------------|------------------------------------------------------------------------------|
| Frequency Range:     | 143.7 Mc. to 148.3 Mc.                                                       |
| Crystal Frequency:   | 6.0 Mc. to 6.167 Mc.<br>8.0 Mc. to 8.222 Mc.<br>External VFO input provision |
| Power Input:         | 24 watts DC to RF power amplifier                                            |
| Spurious Emissions:  | 50 db or better                                                              |
| Output Impedance:    | 50-75 ohms unbalanced (coaxial cable)                                        |
| RF Output Indicator: | Relative output                                                              |
| RF Bandwidth:        | Less than 8 Kc.                                                              |
| Noise & Hum Level:   | 40 db below 100% modulation                                                  |

### MODULATOR

|                     |                                                                             |
|---------------------|-----------------------------------------------------------------------------|
| Power Capabilities: | 10 watts push-pull 6BQ5's<br>Class AB <sub>1</sub> Audio (plate modulation) |
| Speech:             | High level speech clipping and audio shaping                                |
| Microphone:         | High impedance microphone with push-to-talk provision                       |

## POWER SUPPLY

12.6 VDC Input

Receive 7.2 amps

Transmit 10.3 amps

117 VAC Input

Receive 87.5 watts

Transmit 110 watts

## TECHNICAL DESCRIPTION

The Communicator IV is an AM transmitter-receiver for the 2-meter amateur band, designed for use on either a 12-volt DC source for mobile/portable operation or 117 VAC for fixed-station applications.

The receiver portion employs a frame grid 6ER5 RF amplifier, resulting in a good low-noise front end. A 6J6 oscillator uses an overtone crystal operating at 64.5 Mc. and multiplying to 129 Mc. for injection into the first mixer, a 6ER5. The crystal controlled first conversion provides for excellent frequency stability. The second oscillator, a 6C4, is tunable over the frequency range 12.7 Mc. to 16.7 Mc. and combines with the first I. F. frequency of 15 Mc. to 19 Mc. in the second mixer, 6AV6, resulting in a fixed frequency output of 2.3 Mc.

The 2.3 Mc. second I. F. signal is coupled through a double-tuned bandpass transformer to the third mixer, a 6BE6, where it is heterodyned against a 2755 Kc. oscillator, to produce the 455 Kc. third I. F. signal. Two stages of amplification, using 6BA6's, are employed at 455 Kc. Six tuned circuits provide the desired selectivity. A vacuum diode (1/3 of 6AV6), is used as a detector. This same tube is used as a delayed AVC rectifier furnishing delayed AVC to the R. F. amplifier. One-half of a 6AL5 is used as a highly effective automatic noise limiter switched in or out, as desired, by a front panel control. The other half of the 6AL5 is used for squelch operation to permit muting of the background noise in the absence of a signal. The first audio amplifier is the triode section of the 6AV6. This audio is then fed into the triode section of a 7059 in the modulator and into a 6BQ5 audio amplifier. An audio output jack is provided on the rear panel for an external speaker or headphones.

The transmitter uses either 6 or 8 Mc. crystals or an external VFO as the frequency source and the plate circuit of a 12BY7 is broadbanded, operating in the 24 Mc. to 24.66 Mc. range. A second 12BY7 triples to 72 Mc. -74 Mc. and a third 12BY7 doubles to the operating frequency of 144 Mc. -148 Mc. This signal is then fed into a 6360 push-pull amplifier running 24 watts input. Only two adjustments are necessary, the plate tuning and plate loading, resulting in simplicity of operation. The modulator portion uses a pentode section of a 7059 as a speech amplifier and the triode section as a phase inverter feeding a pair of 6BQ5 tubes in push-pull, providing 10 watts of Class AB<sub>1</sub> audio to plate modulate the final amplifier. The 7059 and 6BQ5 tubes serve a dual function as receiver audio and transmitter modulator.

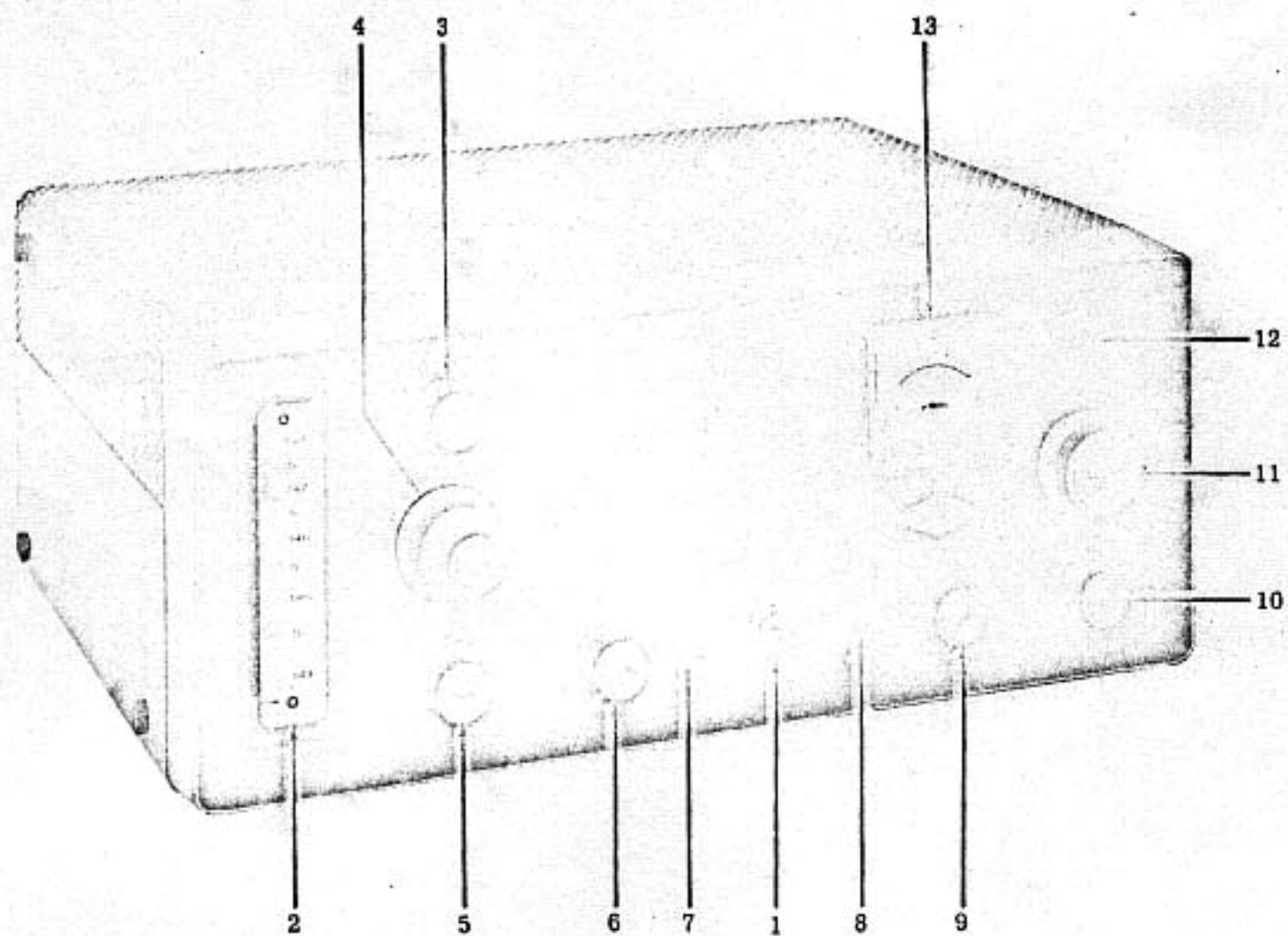
The universal power supply utilizes two 2N1554 transistors for 12 VDC operation. 117 VAC operation is possible merely by changing power cords. The two-way power transformer operates into a bridge rectifier circuit, and the output is filtered by a capacitor input filter.

A high impedance microphone with a push-to-talk switch is recommended. The push-to-talk feature operates a relay which switches:

- (1) The antenna from receive to transmit
- (2) B+ from receiver to modulator section
- (3) Ground from speaker to transmitter keying

In addition a bat handle switch on the front panel also provides transmit-receive operation in absence of a push-to-talk type mike.

An output meter reads relative output in transmit and acts as an "S" meter, giving relative readings, in the receive position.



1. MIKE JACK
2. RECEIVER TUNING DIAL
3. SQUELCH CONTROL - ANL OFF SWITCH
4. RECEIVER TUNING CONTROL
5. AUDIO GAIN CONTROL
6. POWER ON-OFF SWITCH
7. PILOT LIGHTS ON-OFF SWITCH
8. TRANSMITTER SPOT SWITCH
9. CRYSTAL SWITCH
10. PA LOAD CONTROL
11. PA TUNE CONTROL
12. T-R SWITCH
13. METER

FIG. 1, FRONT PANEL CONTROLS

## INSTALLATION & OPERATION

After unpacking the Communicator IV, check to make sure that all tubes and pilot lights are in place.

For fixed-station operation, check to see that the power switch is turned off and plug the AC cord into the receptacle on the rear of the unit. Place a crystal in one of the sockets on the rear and place the front panel crystal switch to the matching position. For VFO operation, a VFO with 6, 8 or 24 Mc. output can be employed by inserting the RF output plug into any one of the crystal sockets. A VFO jack is provided to connect to the VFO control for automatic operation.

**NOTE:** When using crystal control, the VFO must be turned off or VFO control disconnected. Otherwise, a signal from the VFO will be transmitted.

For mobile operation, change to the DC power cord supplied and connect to the .mmeter or accessory terminal.

**WARNING:** Observe negative ground polarity when connecting to the 12 VDC source. Otherwise, serious damage will result to some of the components.

The antenna circuit is designed for 50-75 ohm coaxial cable. A Gonset Telescoping Right Angle Whip Antenna (Gonset Part #621-018) will work very satisfactorily. However, to obtain the best possible performance, a good antenna is very important. Either a two-meter ground plane or a good directional array will greatly increase the range of the Communicator.

RECEIVER . . . Receiver operation is self-explanatory. The tuning meter serves as a relative carrier strength indicator and is not intended to read actual "S" units. On the rear of the unit is a potentiometer adjustment to set the "S"

meter to zero. This zero adjustment should be made without an antenna connected. To use the squelch function, turn the control counter-clockwise just to the point where the background noise disappears. This is the proper setting and is the most sensitive. A change in AVC voltage as small as 0.1 volt will gate the receiver when the threshold control is set properly. It is not necessary to turn it full clockwise. For best operation of the squelch, the noise clipper is left on at all times when the squelch is in use. A phone jack is provided on the rear for an external speaker or headphones. The internal loudspeaker is disconnected from the circuit when an output plug is inserted.

RECEIVER SELECTIVITY. . . As shipped from the factory, the bandwidth is approximately 10.3 Kc. wide at the 6 db points to conform with O. C. D. M. requirements. Reduced bandwidth to about 8.5 Kc. can be achieved by removing the top coupling capacitors on the 455 Kc. I. F. transformers T2, T3, T4. These 2 mmf QC type capacitors are connected between terminals 2 and 4 on the I. F. transformers. Clip the capacitors out with diagonal cutters. No readjustment is required after removing these capacitors.

TRANSMITTER. . . The transmitter portion of the Communicator is tuned by placing the T-R switch in the transmit position and/or the push-to-talk mike button depressed, alternately adjusting the PA load and PA tune controls for a MAXIMUM R. F. output meter indication. For determining the operating frequency, turn the SPOT switch on and tune the receiver for maximum meter indication. Turn the SPOT switch off before attempting to transmit.

A front panel switch is provided to turn off the pilot lamps when not desired. As an added feature, a handle is provided on the unit for easy portability.

For Civil Defense use the Communicator IV is supplied with a kit consisting of the following: Telescoping Antenna; Crystal Certificate; High Impedance Microphone; Yellow CD Canvas Carrying Case and appropriate CD decals.

This CD kit is Model 3363 and it is required to convert a Model 3341 to 3341-CD to qualify for O. C. D. M. matching funds.

A universal mounting kit, Model 3365, is also available for mobile installations consisting of the necessary mounting brackets and hardware for installing the Communicator IV under the dash.

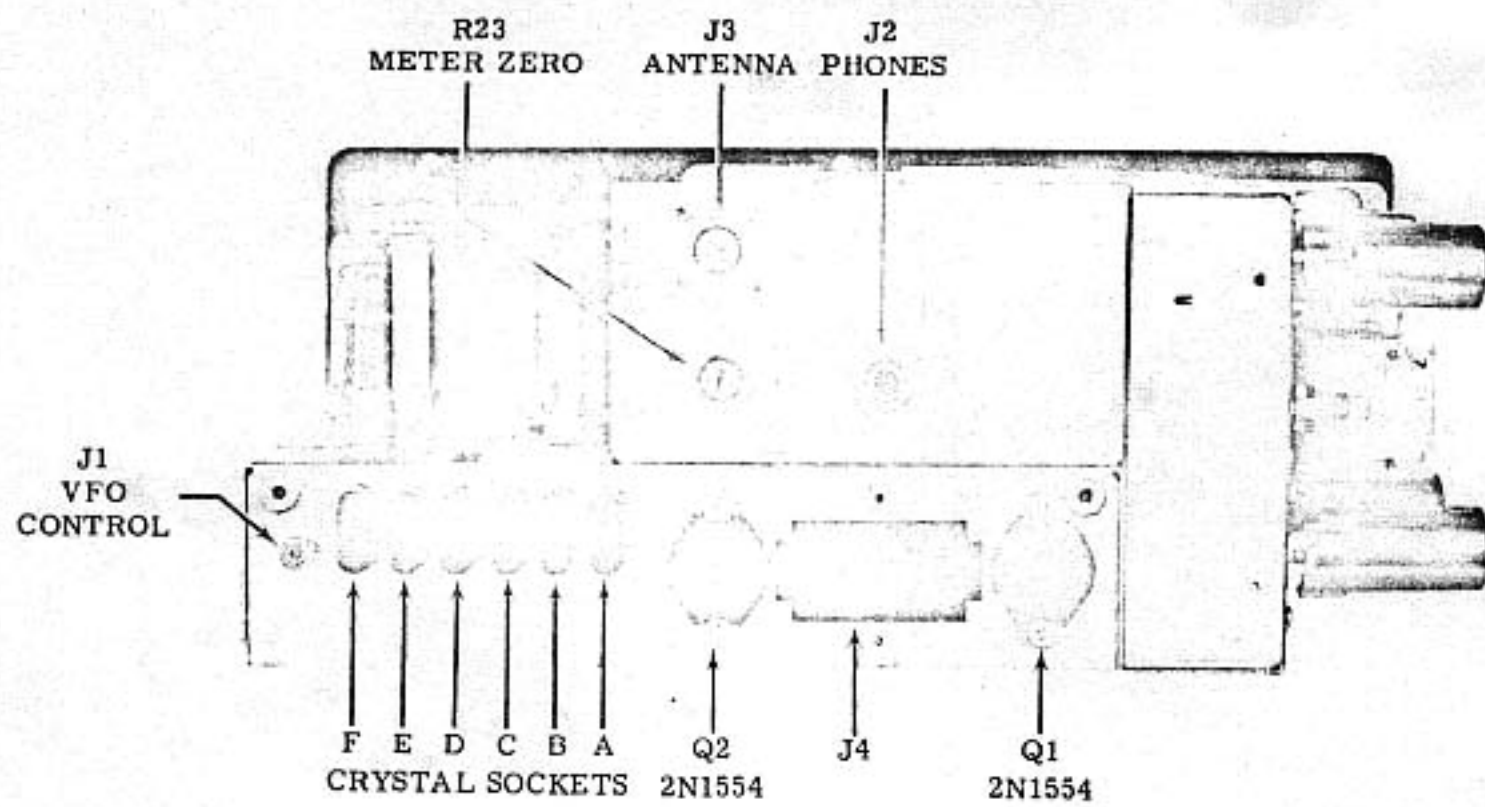


FIG. 2, CHASSIS, REAR VIEW

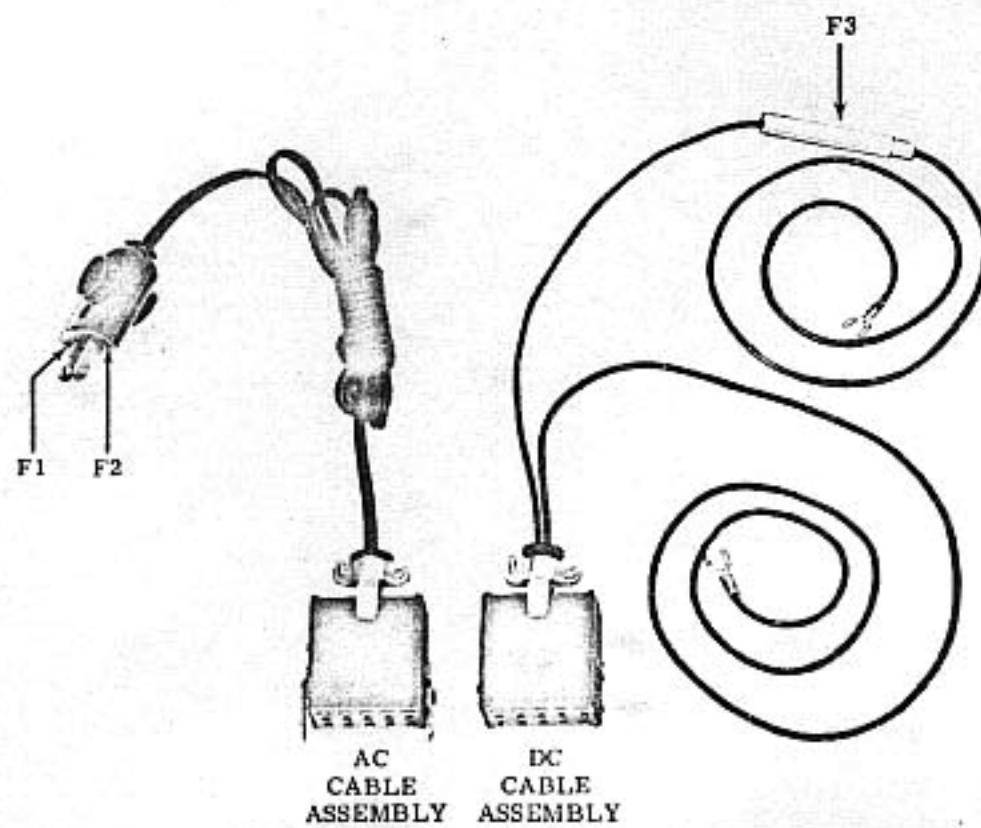


FIG. 3, POWER CABLES

# ALIGNMENT & TROUBLE-SHOOTING

## Alignment Tools Required

- (1) General Cement #5097 or equivalent.
- (2) General Cement #8606 or equivalent.
- (3) Small insulated screwdriver.

## RECEIVER ALIGNMENT

### 455 Kc. I. F. Alignment

Couple the signal generator through a .001 mfd. blocking capacitor to Pin 7 of V6, the 6BE6 third mixer and oscillator. Connect a VTVM to the AVC test point on the receiver. Align T4, T3, T2 at 455 Kc., setting the input level for an AVC voltage of -1 to -2 volts. Adjust each transformer top and bottom for maximum reading of VTVM. Repeat the procedure several times to compensate for minor interaction.

### 2.755 Mc. Oscillator Alignment

Set signal generator to 2.3 Mc. and adjust slug in L-10 for maximum reading of VTVM.

### 2.3 Mc. I. F. Alignment

Couple the signal generator through a .001 mfd. blocking capacitor to Pin 1 of V5, the 6AV6 second mixer. Set signal generator to 2.3 Mc. and adjust T1 top and bottom for maximum reading of VTVM.

### 12.7 - 16.7 Mc. Tunable Oscillator Tracking

Couple the signal generator through a .001 mfd. blocking capacitor to Pin 2 of V3, the 6ER5 first mixer. Set main tuning dial to 144 Mc. Set signal generator to

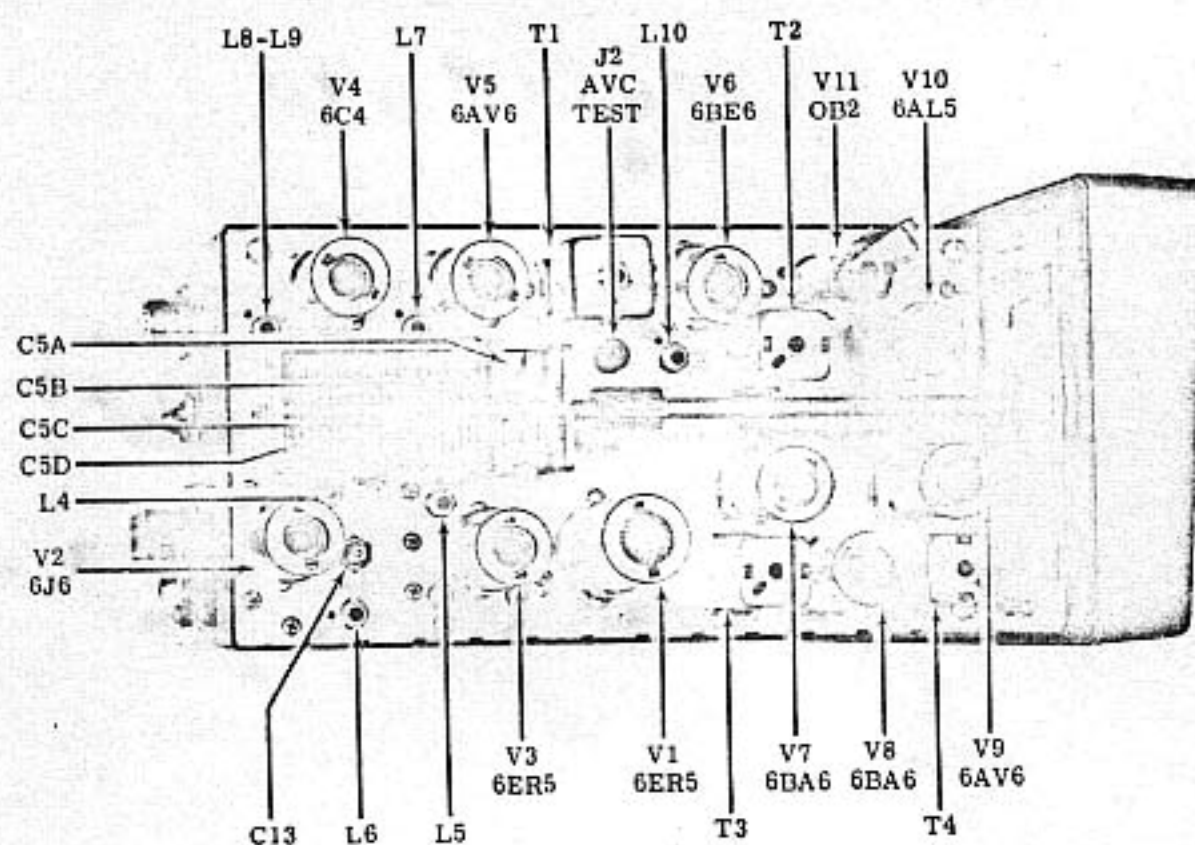


FIG. 4, RECEIVER SUB CHASSIS, TOP VIEW

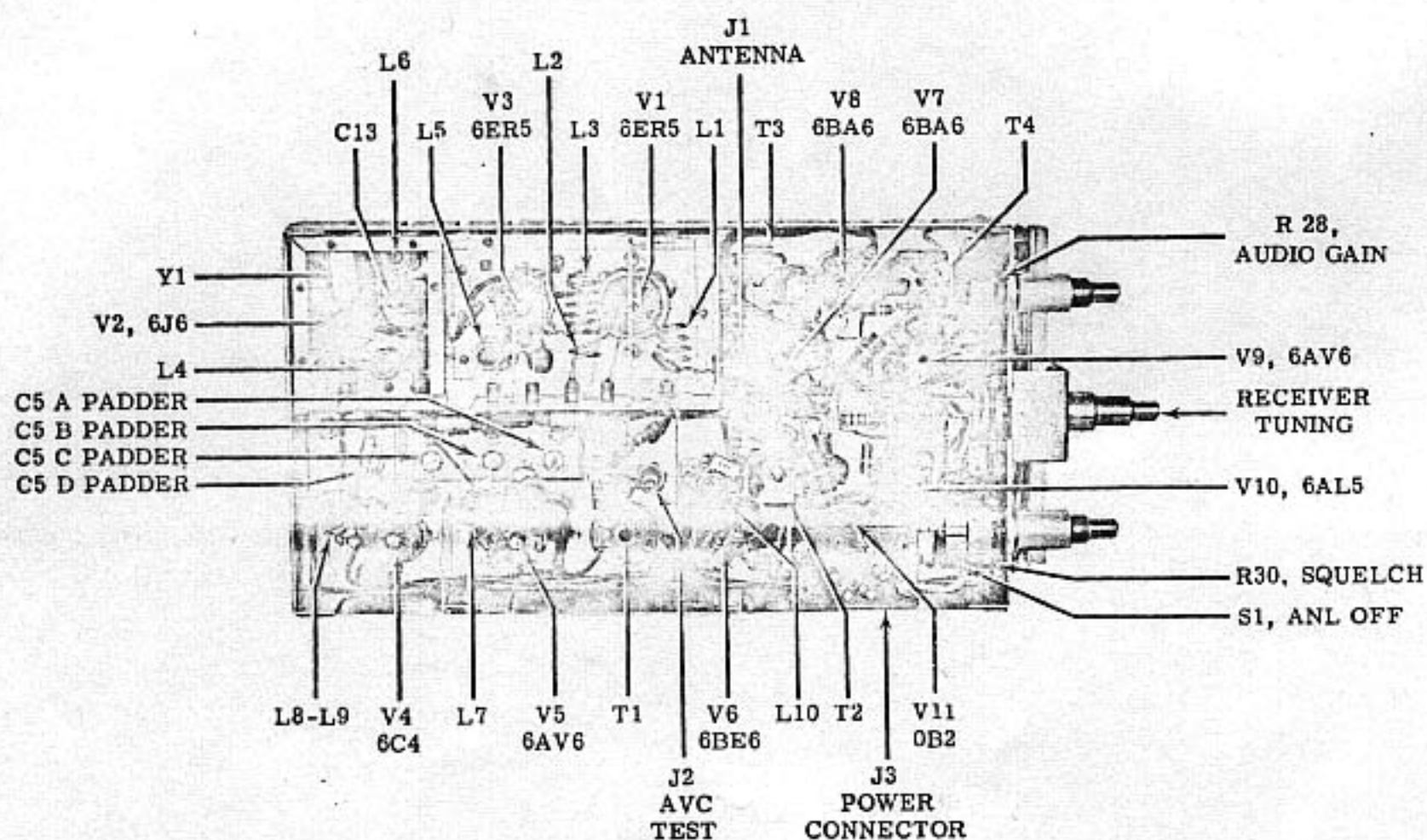


FIG. 5, RECEIVER SUB CHASSIS, BOTTOM VIEW

15.0 Mc., and adjust slug in Coils L8-L9 for maximum reading of VTVM. Turn main tuning dial to 148 Mc. and change signal to 19 Mc. Adjust slug in Coils L8-L9 for maximum reading of VTVM. If slug had to be moved away from chassis, add capacity by tightening C5D padder. If slug had to be moved toward chassis, loosen C5D padder. Return dial to 144 Mc. and injected frequency to 15 Mc. Repeat above procedure as often as necessary to achieve a reduction in VTVM reading with any further adjustment at either end of the band.

#### 15 - 19 Mc. Second Mixer Tracking

Set the main tuning dial to 144 Mc. and injected frequency to 15 Mc. Adjust slug in Coil L7 for maximum reading of VTVM. Turn main tuning dial to 148 Mc. and change injected frequency to 19 Mc. Adjust slug in Coil L7 for maximum reading of VTVM. If slug had to be moved away from chassis, add capacity by tightening C5C padder. If slug had to be moved toward chassis, loosen C5C padder. Return dial to 144 Mc. and injected frequency to 15 Mc. Repeat above procedure as often as necessary to achieve a reduction in VTVM reading with any further adjustment at either end of the band.

#### 15 - 19 Mc. First Mixer Tracking

Set the main tuning dial to 144 Mc. and injected frequency to 15 Mc. Adjust slug in Coil L5 for maximum reading of VTVM. Turn main tuning dial to 148 Mc. and change injected frequency to 19 Mc. Adjust slug in Coil L5 for maximum reading of VTVM. If slug had to be moved away from chassis, add capacity by tightening C5B padder. If slug had to be moved toward chassis, loosen C5B padder. Return dial to 144 Mc. and injected frequency to 15 Mc. Repeat above procedure

as often as necessary to achieve a reduction in VTVM reading with any further adjustment at either end of the band.

### Crystal Oscillator Adjustment

Set grid dip meter to 64.5 Mc. and use as a diode detector. Couple grid dip meter to Coil L6. Starting with C-13 fully closed, slowly rotate counter-clockwise until crystal oscillator suddenly pops on. Advance slightly clockwise past this position and leave.

Set grid dip meter to 129 Mc. and couple to ground end of Coil L3. Adjust slug of L4 for maximum output as indicated by grid dip meter.

### R.F. Amplifier Tracking

Inject 144 Mc. signal into antenna connector of receiver and adjust dial to 144 Mc. Adjust C5A padder for maximum reading of VTVM. Repeat at 148 Mc. Adjust spacing of turns of Coil L2 and distance from L3 to obtain a peak VTVM reading at the same setting of C5A padder at either 144 or 148 Mc.

## TRANSMITTER ALIGNMENT

### Crystal Oscillator Check

Insert 8.0 Mc. and 8.22 Mc. band edge crystals in crystal sockets. Connect VTVM to Pin 2 of V1, the 12BY7 oscillator. Reading should be at least 20 volts on either crystal with push-to-talk switch depressed, or T-R switch in transmit position. C1, the 5-25 mmf. trimmer Capacitor in the grid circuit is set at the factory, but can be adjusted to zero in any single crystal. A hole is provided in the rear panel to mount an additional capacitor (E. F. Johnson Type #15M-11) to be wired across one of the crystals to zero in a second crystal frequency.

### 24 Mc. Alignment

Connect VTVM to junction of Coils L2 and R3-C7. Using 8.22 Mc. crystal, adjust slug in Coils L1 and L2 for maximum VTVM reading. Using 8.0 Mc. and 8.22 Mc. crystals, keep switching from one crystal to the other and adjusting slugs in Coils L1 and L2 clockwise a small amount until VTVM reading does not change.

### 72 Mc. Alignment

Connect VTVM to junction of L4 and R5-C12. Using 8.22 Mc. crystal, adjust slug in Coils L3 and L4 for maximum VTVM reading. Using 8.0 Mc. and 8.22 Mc. crystals, keep switching from one crystal to the other and adjusting slugs in Coils L3 and L4 clockwise a small amount until VTVM reading does not change.

### 144 Mc. Alignment

Connect VTVM to center tap of Coil L6, the 6360 final grid coil. Using 8.22 Mc. crystal, adjust slug in Coils L5 and L6 for maximum VTVM reading. Switch to 8.0 Mc. crystal and adjust PA tune and PA load controls for maximum output on wattmeter. Keep switching from one crystal to the other and adjusting slugs in Coils L5 and L6 a small amount until VTVM reading does not change. Be sure to peak output into wattmeter each time you switch crystals. Switch to crystal position that has no crystal. There should be no reading of VTVM while you rotate the PA tune control 180°.

CAUTION: Make this test as short as possible, as damage to tubes can result under prolonged operation.

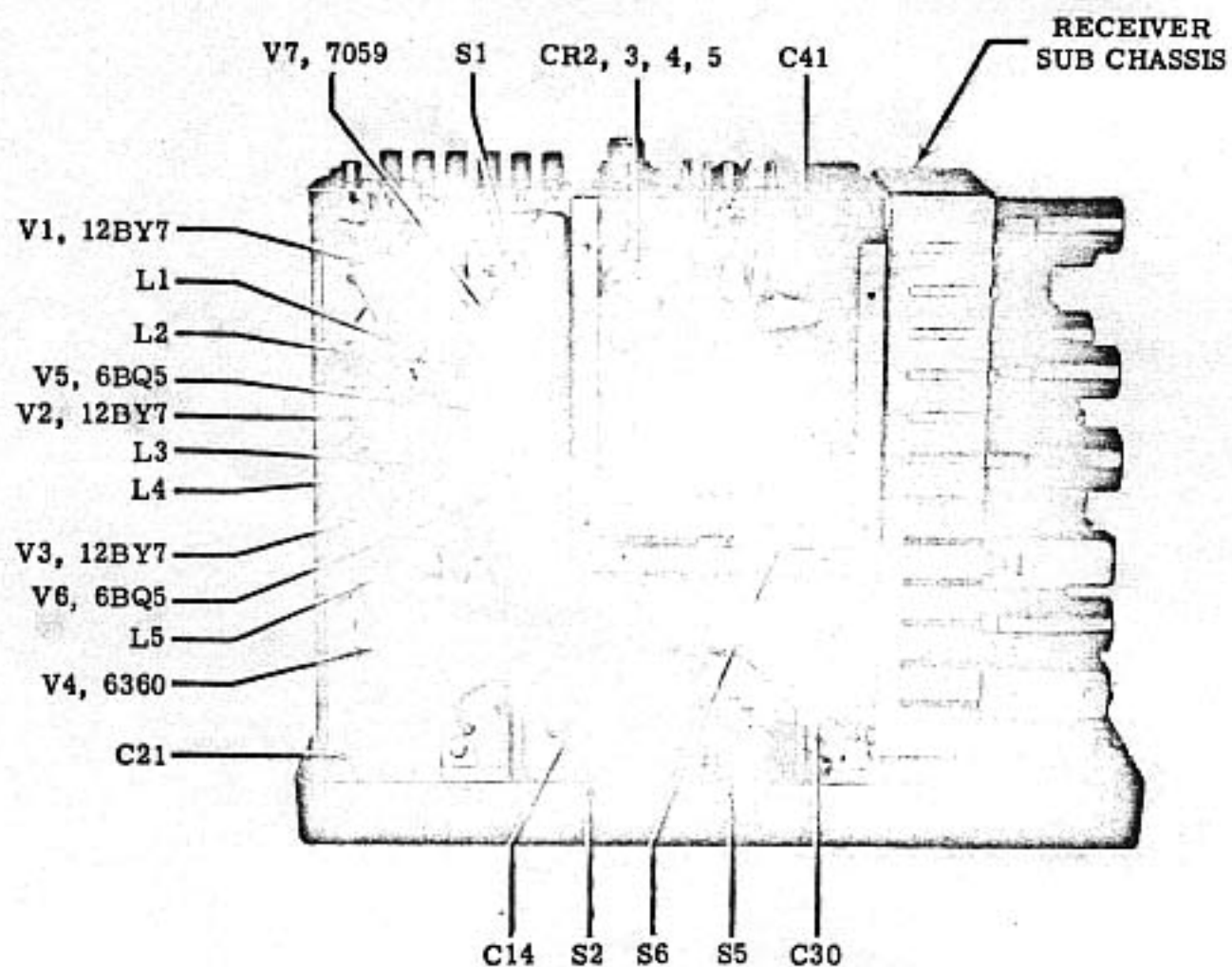


FIG. 6, CHASSIS, TOP VIEW

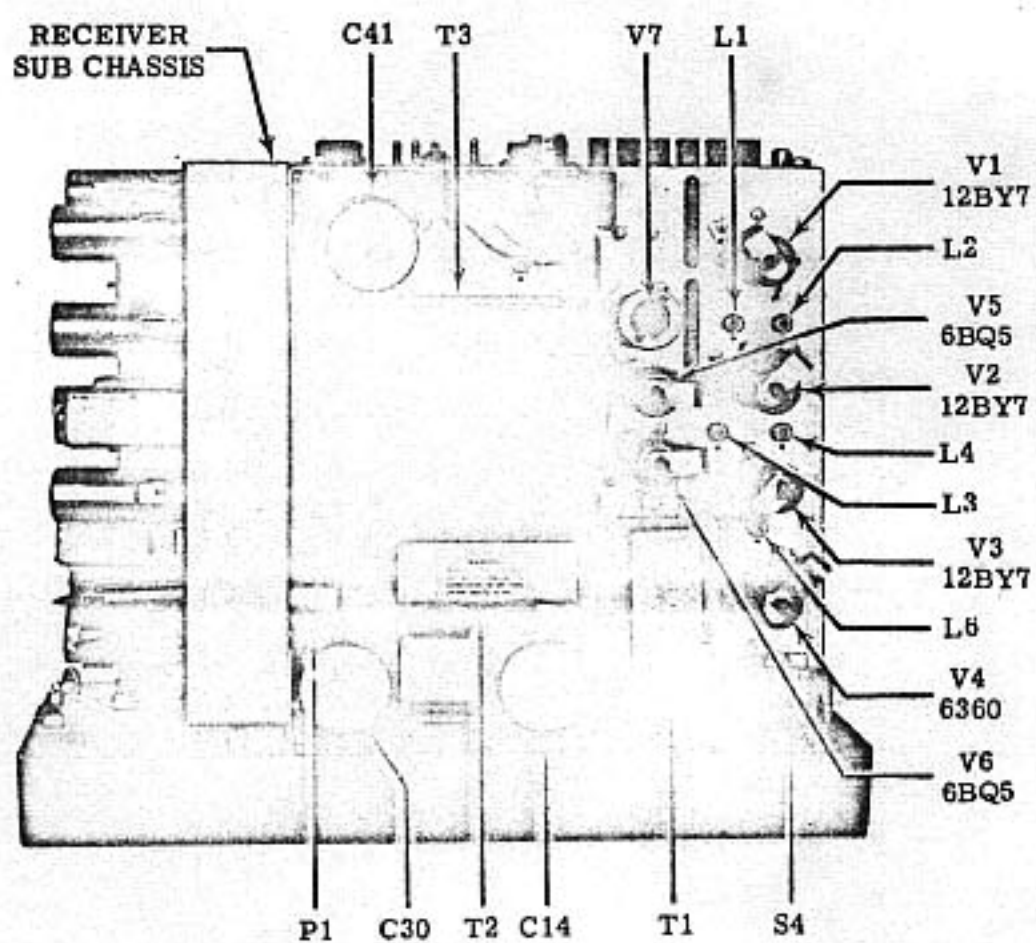


FIG. 7, CHASSIS, BOTTOM VIEW

## SPEECH AMPLIFIER AND MODULATOR

Using a diode detector with headphones, listen to modulation while speaking into microphone. Speech should be clear and free of distortion. The Communicator IV does not employ a microphone gain control.

### TROUBLE SHOOTING

When trouble develops, the first thing to look for is a defective tube, as this trouble will represent about 90 per cent of that encountered in service. If the trouble is not traced to a defective tube, then voltage measurements should be made to locate the trouble. Typical voltages are given in Figure 8 Voltage Charts and are also shown on the schematic diagram.

The push-to-talk relay ordinarily will be trouble-free for several years of normal use without need for adjustment. However, when the equipment is exposed to wind-blown dust, sand, etc., difficulty may be encountered with foreign matter lodging between contacts. Such foreign matter often can be blown out with compressed air or the contacts can be cleaned with a burnishing tool. Care should be taken not to upset the blade tension on any of the contacts. Do not use liquid contact cleaners.

| TUBE     | PIN NUMBER |         |                |          |          |     |     |     |     |
|----------|------------|---------|----------------|----------|----------|-----|-----|-----|-----|
|          | 1          | 2       | 3              | 4        | 5        | 6   | 7   | 8   | 9   |
| V1 12BY7 | 0          | -32 (2) | 0              | 0        | 12.5 VAC | -   | 230 | 130 | 0   |
| V2 12BY7 | 0          | -40*    | 0              | 0        | 12.5 VAC | -   | 260 | 60  | 0   |
| V3 12BY7 | 0          | -54*    | 0              | 0        | 12.5 VAC | -   | 250 | 145 | 0   |
| V4 6360  | -52*       | 0       | -52*           | 12.5 VAC | 0        | 250 | 200 | 250 | -   |
| V5 6BQ5  | -          | 0       | 7.3<br>6.3 (1) | 6.8 VAC  | 0        | -   | 260 | -   | 230 |
| V6 6BQ5  | -          | 0       | 7.3<br>6.3 (1) | 12.5 VAC | 6.8 VAC  | -   | 260 | -   | 230 |
| V7 7059  | 160        | -       | 38             | 0        | 12.5 VAC | 54  | 1.5 | 110 | 60  |

\* SEE SCHEMATIC VOLTAGE AT INPUT TO FILTER 275 VDC ON TRANSMIT  
 (1) ON RECEIVE  
 (2) VARIES ACCORDING TO XTAL ACTIVITY

FIG. 8, VOLTAGE CHARTS (SHEET 1 OF 2)

# VOLTAGE CHART COMMUNICATOR 4 RECEIVER (2M)

| TUBE     | PIN NUMBER        |                        |          |         |                       |          |                  |
|----------|-------------------|------------------------|----------|---------|-----------------------|----------|------------------|
|          | 1                 | 2                      | 3        | 4       | 5                     | 6        | 7                |
| V1 6ER5  | 0                 | -.71                   | 0        | 6.8 VAC | 146                   | 0        | 0                |
| V2 6J6   | 37                | 83                     | 6.8 VAC  | 0       | -10                   | -3.7 (2) | 0                |
| V3 6ER5  | -                 | 0                      | 6.5 VAC  | 0       | 146                   | 0        | 3.6              |
| V4 6C4   | -                 | -                      | 13 VAC   | 6.7 VAC | 19.2                  | -1.5     | 0                |
| V5 6AV6  | 0                 | .8                     | 13 VAC   | 6.7 VAC | -                     | -        | 56               |
| V6 6BE6  | -1.55             | 0                      | 13 VAC   | 6.7 VAC | 28.5                  | 28.5     | -.14             |
| V7 6BA6  | -1                | 0                      | 13.5 VAC | 6.9 VAC | 220                   | 58 (3)   | 0                |
| V8 6BA6  | -1                | 0                      | 13.5 VAC | 6.9 VAC | 212                   | 58 (3)   | 0                |
| V9 6AV6  | -.82              | 0                      | 0        | 6.7 VAC | -3.6                  | -.69     | 65               |
| V10 6AL5 | 29 (3)<br>140 (4) | -1.85 (3)<br>-1.85 (4) | 2.3 VAC  | 6.8 VAC | -1.85 (3)<br>-1.8 (4) | -        | 30 (3)<br>58 (4) |
| V11 0B2  | 105               | -                      | -        | -       | 105                   | -        | 0                |

(3) WITH SQUELCH OFF  
 (4) WITH SQUELCH FULL ON

VOLTAGE AT INPUT TO FILTER 290 VDC ON RECEIVE.  
 NO SIGNAL CONDITIONS.  
 ANL ON.

ALL VOLTAGES ARE APPROX., TAKEN  
 WITH VTVM AND MEASURED TO GROUND.  
 LINE VOLTAGE 117 VAC.

FIG. 8, VOLTAGE CHARTS (SHEET 2 OF 2)

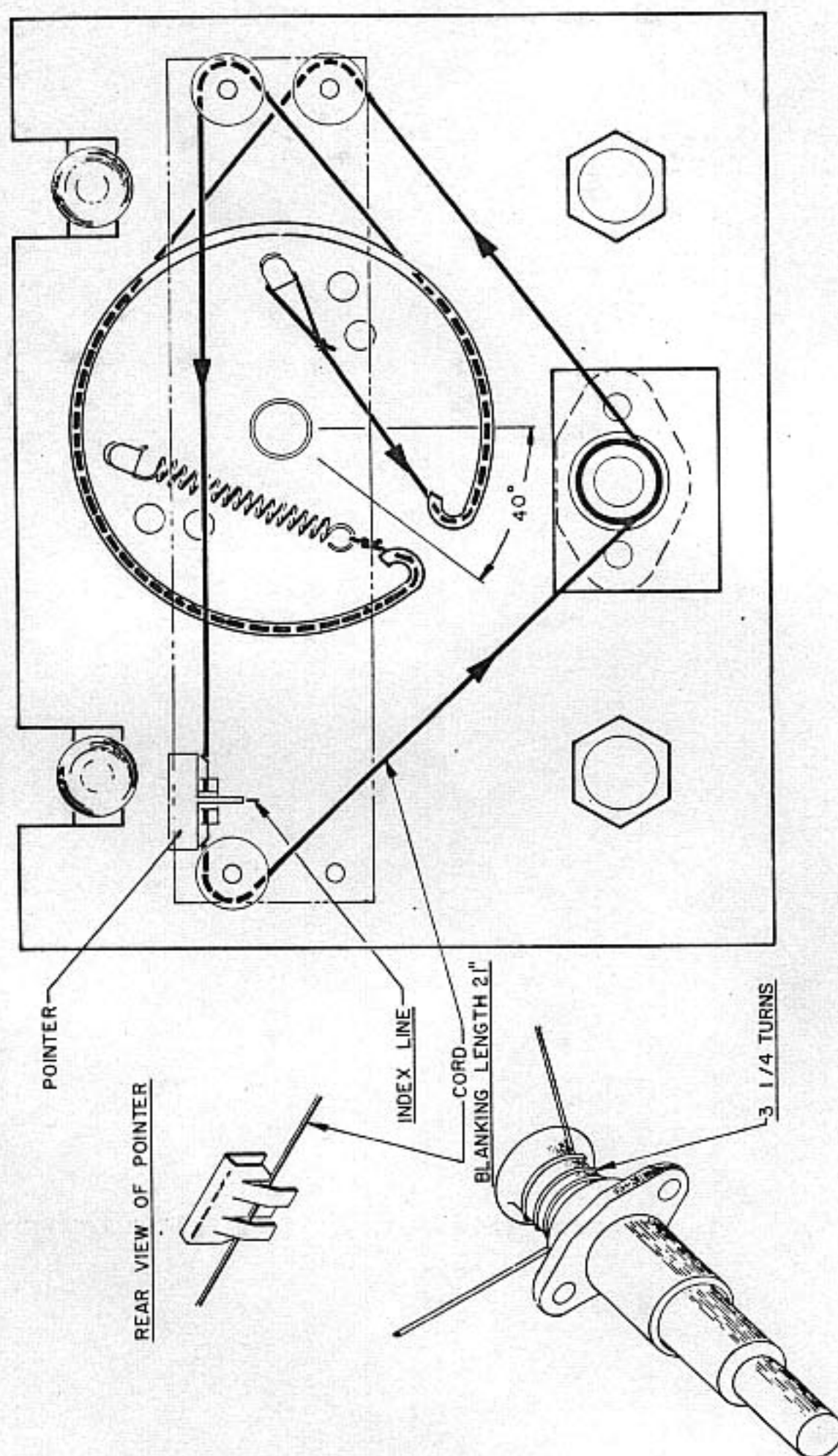


FIG. 9, DIAL CORD STRINGING DIAGRAM

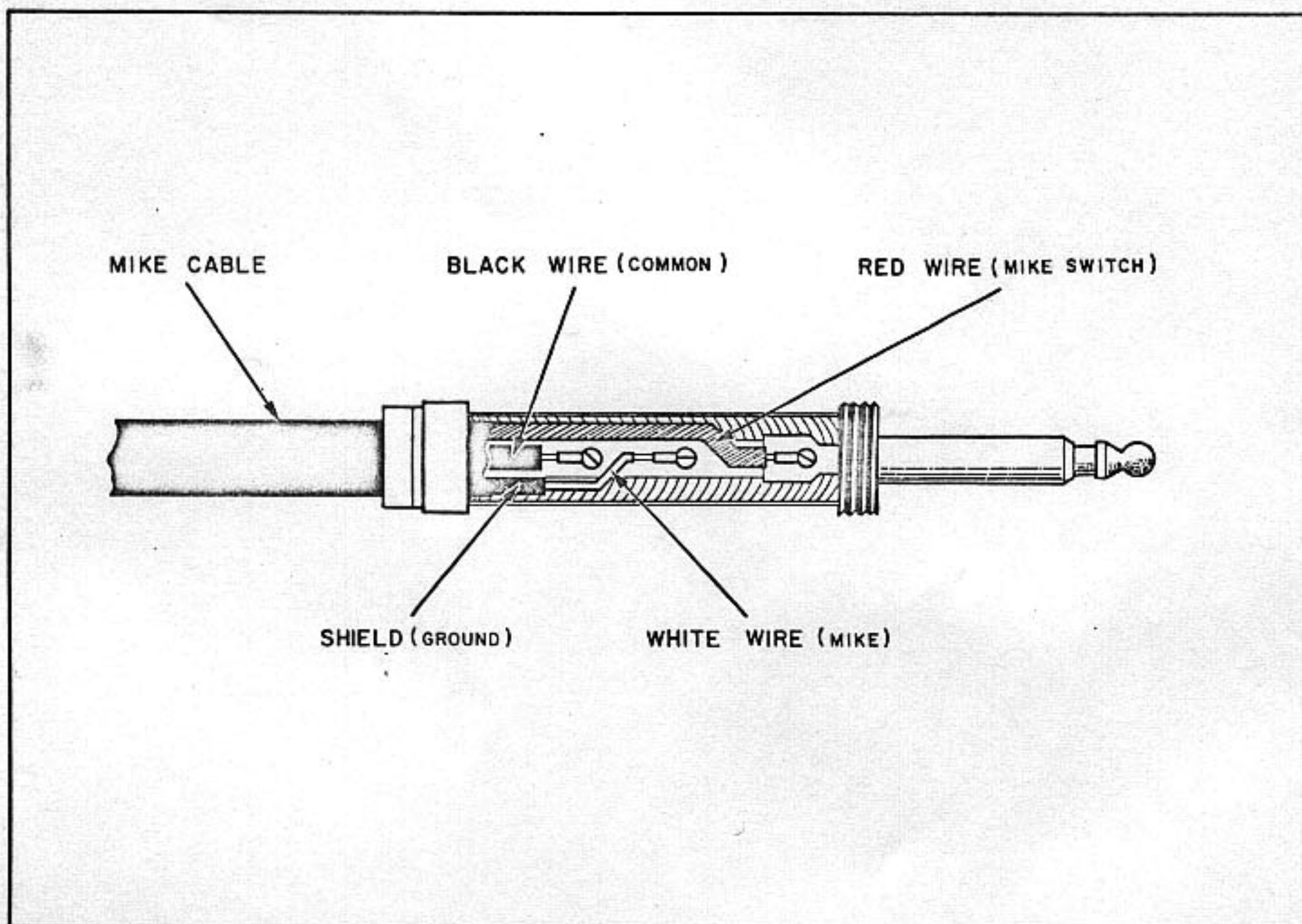
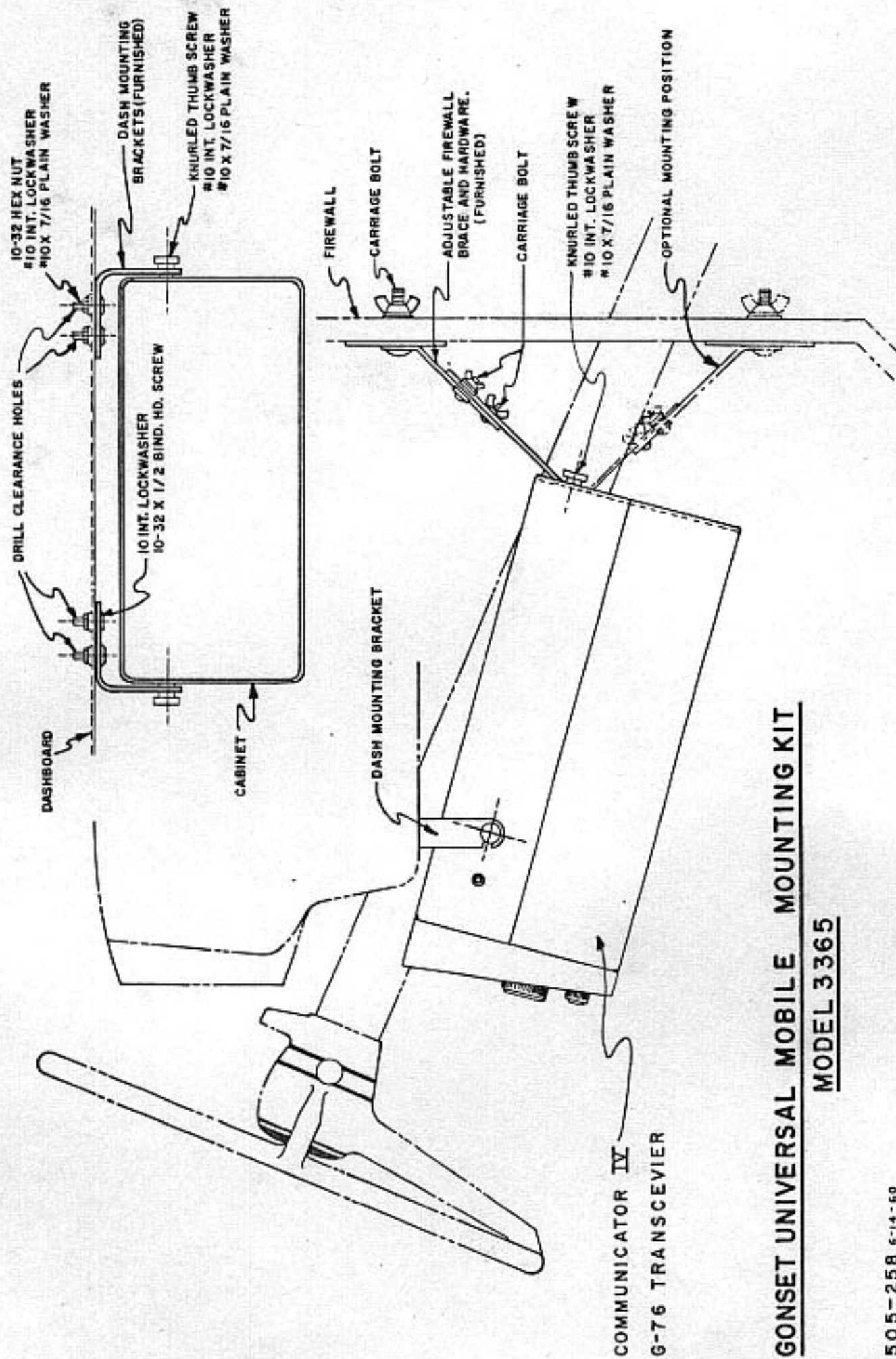


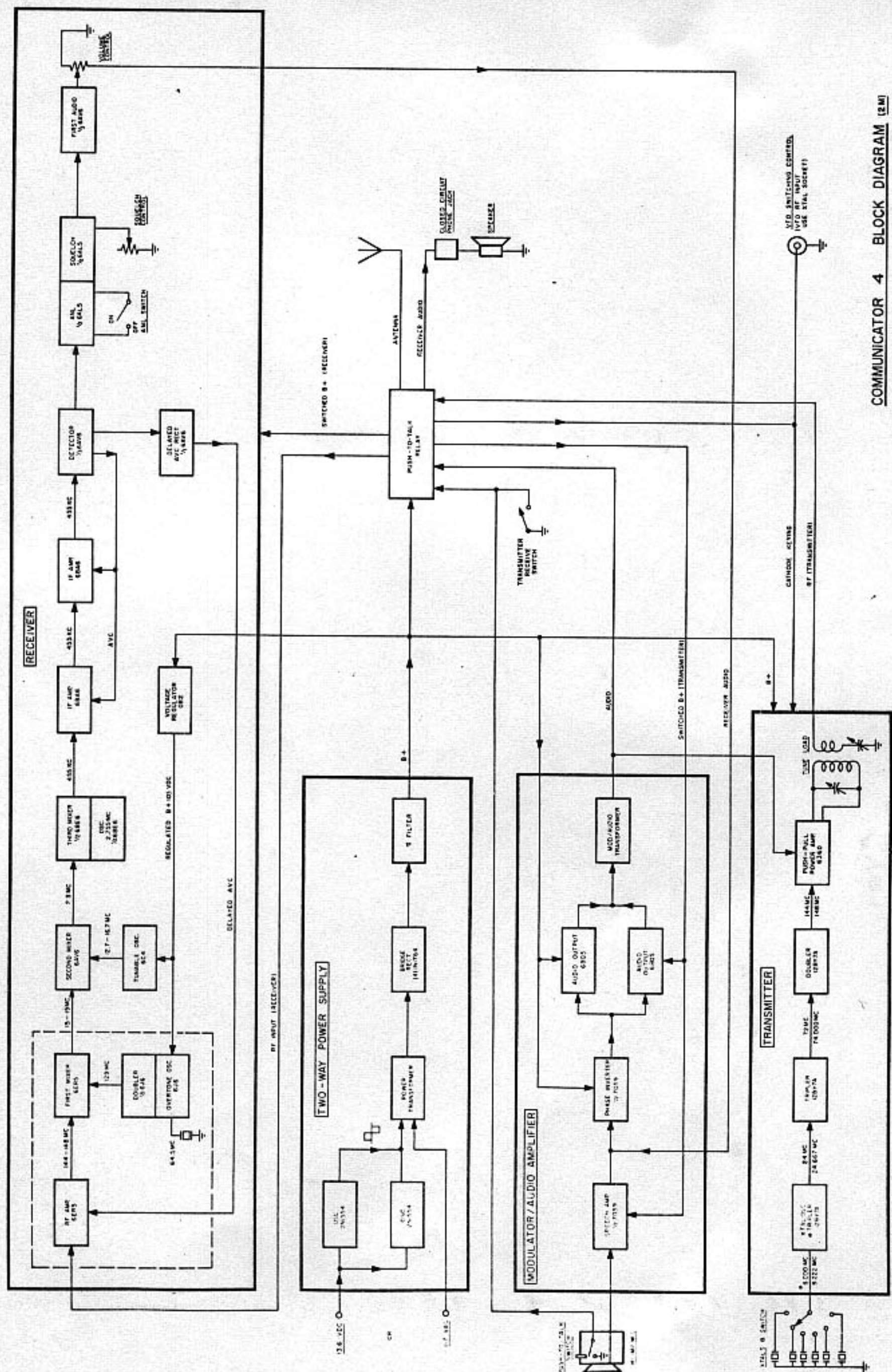
FIG. 10, PL-68 TYPE MIKE PLUG



**GONSET UNIVERSAL MOBILE MOUNTING KIT**  
**MODEL 3365**

505-258 6-14-60

FIG. 11, MOBILE INSTALLATION



### **COMMUNICATOR 4 BLOCK DIAGRAM [2M]**

# RECEIVER PARTS LIST

| Schematic<br>No. | Description                         | Gonset<br>Part No. |
|------------------|-------------------------------------|--------------------|
| C1               | 20 $\mu\mu\text{f}$ Silver Mica 5%  | 088-046            |
| C2               | 1000 $\mu\mu\text{f}$ Feed-Thru     | 077-001            |
| C3               | .01 $\mu\text{f}$ Disc 300 V        | 072-169            |
| C4               | 1000 $\mu\mu\text{f}$ Feed-Thru     | 077-001            |
| C5               | 4-Gang Tuning Capacitor             | 074-116            |
| C6               | 1000 $\mu\mu\text{f}$ Feed-Thru     | 077-001            |
| C7               | 2 $\mu\mu\text{f}$ Silver Mica      | 088-179            |
| C8               | 5 $\mu\mu\text{f}$ Silver Mica      | 088-180            |
| C9               | .001 $\mu\text{f}$ Disc             | 072-108            |
| C10              | .01 $\mu\text{f}$ Disc 300 V        | 072-169            |
| C11              | 1000 $\mu\mu\text{f}$ Feed-Thru     | 077-001            |
| C12              | .001 $\mu\text{f}$ Disc             | 072-108            |
| C13              | Variable Capacitor                  | 075-009            |
| C14              | 1000 $\mu\mu\text{f}$ Feed-Thru     | 077-001            |
| C15              | 0.68 $\mu\mu\text{f}$ Tubular 10%   | 071-020            |
| C16              | 5 $\mu\mu\text{f}$ Silver Mica      | 088-180            |
| C17              | .01 $\mu\text{f}$ Disc 300 V        | 072-169            |
| C18              | 100 $\mu\mu\text{f}$ Tubular 5%     | 084-259            |
| C19              | .01 $\mu\text{f}$ Disc 300 V        | 072-169            |
| C20              | .01 $\mu\text{f}$ Disc 300 V        | 072-169            |
| C21              | .01 $\mu\text{f}$ Disc 300 V        | 072-169            |
| C22              | 40 $\mu\mu\text{f}$ Tubular         | 084-037            |
| C23              | 130 $\mu\mu\text{f}$ Silver Mica 5% | 088-027            |
| C24              | 47 $\mu\mu\text{f}$ Disc 10%        | 084-040            |
| C25              | .01 $\mu\text{f}$ Disc 300 V        | 072-169            |
| C26              | .01 $\mu\text{f}$ Disc 300 V        | 072-169            |
| C27              | .01 $\mu\text{f}$ Disc 300 V        | 072-169            |
| C28              | .01 $\mu\text{f}$ Disc 300 V        | 072-169            |
| C29              | .01 $\mu\text{f}$ Disc 300 V        | 072-169            |
| C30              | .01 $\mu\text{f}$ Disc 300 V        | 072-169            |
| C31              | .01 $\mu\text{f}$ Disc 300 V        | 072-169            |
| C32              | .01 $\mu\text{f}$ Disc 300 V        | 072-169            |
| C33              | .01 $\mu\text{f}$ Disc 300 V        | 072-169            |
| C34              | 100 $\mu\mu\text{f}$ Silver Mica    | 088-017            |
| C35              | 1 $\mu\text{f}$ Electrolytic 150 V  | 073-126            |
| C36              | .01 $\mu\text{f}$ Disc 300 V        | 072-169            |
| C37              | 470 $\mu\mu\text{f}$ Disc           | 072-213            |
| C38              | .01 $\mu\text{f}$ Disc 300 V        | 072-169            |
| C39              | .001 $\mu\text{f}$ Disc             | 072-108            |
| C40              | .1 $\mu\text{f}$ Disc 100 V         | 072-174            |
| C41              | .001 $\mu\text{f}$ Disc             | 072-108            |

# RECEIVER PARTS LIST (CONT)

| Schematic<br>No. | Description                         | Gonset<br>Part No. |
|------------------|-------------------------------------|--------------------|
| C46              | .01 $\mu$ f Disc 300 V              | 072-169            |
| C47              | .01 $\mu$ f Disc 300 V              | 072-169            |
| C48              | 1000 $\mu$ f Feed-Thru              | 077-001            |
| C49              | 1000 $\mu$ f Feed-Thru              | 077-001            |
| C50              | 1000 $\mu$ f Feed-Thru              | 077-001            |
| C51              | .01 $\mu$ f Disc 300 V              | 072-169            |
| C52              | 2 $\mu$ f Ceramic                   |                    |
| C53              | 2 $\mu$ f Ceramic                   |                    |
| C54              | 2 $\mu$ f Ceramic                   |                    |
| C55              | .01 $\mu$ f Disc 300 V              |                    |
| C56              | .01 $\mu$ f Disc 300 V              |                    |
| C57              | 37 $\mu$ f Tubular $\pm 1\%$        |                    |
| C58              | 1.5 $\mu$ f Tubular $\pm .25 \mu$ f |                    |
| DS1              | Dial Lamp #12                       | 471-003            |
| DS2              | Dial Lamp #12                       | 471-003            |
| J1               | Antenna Receptacle                  | 344-010            |
| J2               | AVC Test Jack                       | 342-017            |
| J3               | Power Receptacle                    | 344-009            |
| L1               | Antenna Coil                        | 011-122            |
| L2               | R-F Plate Coil                      | 011-123            |
| L3               | First Mixer Grid Coil               | 011-124            |
| L4               | Crystal Oscillator Doubler Coil     | 012-446            |
| L5               | First Mixer Plate Coil              | 012-445            |
| L6               | Crystal Oscillator Plate Coil       | 012-444            |
| L7               | Second Mixer Grid Coil              | 012-443            |
| L8-9             | Tunable Oscillator Coil             | 012-442            |
| L10              | Third Oscillator Mixer Coil         | 012-448            |
| R1               | 1 Meg $\Omega$ 1/2 W 10%            |                    |
| R2               | 47K $\Omega$ 1/2 W 10%              |                    |
| R3               | 2.2 Meg $\Omega$ 1/2 W 10%          |                    |
| R4               | 10K $\Omega$ 1/2 W 10%              |                    |
| R5               | 91 Meg $\Omega$ 1/2 W 10%           |                    |
| R6               | 10K $\Omega$ 1/2 W 10%              |                    |
| R7               | 1.5K $\Omega$ 1/2 W 10%             |                    |
| R8               | 6.8K $\Omega$ 1 W 10%               |                    |
| R9               | 4.7K $\Omega$ 1 W 10%               |                    |
| R10              | 47 $\Omega$ 1/2 W 10%               |                    |
| R11              | 15K $\Omega$ 1/2 W 10%              |                    |
| R12              | 2.7K $\Omega$ 1/2 W 10%             |                    |
| R13              | 47K $\Omega$ 1 W 10%                |                    |
| R14              | 680K $\Omega$ 1/2 W 10%             |                    |

# RECEIVER PARTS LIST (CONT)

| Schematic No. | Description                  | Gonset Part No. |
|---------------|------------------------------|-----------------|
| R15           | 22K $\Omega$ 1/2 W 10%       |                 |
| R16           | 100 $\Omega$ 1/2 W 10%       |                 |
| R17           | 22K $\Omega$ 1/2 W 10%       |                 |
| R19           | 100K $\Omega$ 1 W 10%        |                 |
| R20           | 100K $\Omega$ 1/2 W 10%      |                 |
| R21           | 100K $\Omega$ 1/2 W 10%      |                 |
| R22           | 2.7K $\Omega$ 1 W 10%        |                 |
| R23           | 100K $\Omega$ 1/2 W 10%      |                 |
| R24           | 100K $\Omega$ 1/2 W 10%      |                 |
| R25           | 2.7K $\Omega$ 1 W 10%        |                 |
| R26           | 1 Meg $\Omega$ 1/2 W 10%     |                 |
| R27           | 470K $\Omega$ 1/2 W 10%      |                 |
| R28           | 1 Meg $\Omega$ Potentiometer | 052-099         |
| R29           | 270K $\Omega$ 1/2 W 5%       | 046-274         |
| R30           | 250K $\Omega$ Potentiometer  | 052-100         |
| R31           | 330K $\Omega$ 1/2 W 5%       | 046-334         |
| R32           | 2.2 Meg $\Omega$ 1/2 W 10%   |                 |
| R33           | 1 Meg $\Omega$ 1/2 W 10%     |                 |
| R34           | 10K 2 W 10%                  |                 |
| R35           | 10 $\Omega$ 1/2 W 10%        |                 |
| R36           | 22K 1/2 W 10%                |                 |
| RFC1          | RF Choke                     | 027-078         |
| RFC2          | RF Choke                     | 027-059         |
| RFC3          | RF Choke                     | 027-059         |
| RFC4          | RF Choke                     | 027-059         |
| RFC5          | RF Choke                     | 027-078         |
| T1            | 2.3 Mc. IF Transformer       | 014-014         |
| T2            | 455 Kc. IF Transformer       | 014-079         |
| T3            | 455 Kc. IF Transformer       | 014-079         |
| T4            | 455 Kc. IF Transformer       | 014-079         |
| Y1            | 64.5 Mc. Crystal             | 486-020         |
| 1             | Knob, Large Tuning           | 212-057         |
| 5             | Knobs, Medium W. Index       | 211-009         |
| 1             | Knob, Large                  | 212-004         |
| 1             | Knob, Small Tuning           | 212-056         |
| 4             | Rubber Bumper (Bottom)       | 222-001         |
| 4             | Rubber Bumper (Side)         | 222-006         |
| 1             | Handle                       | 227-007         |

# TRANSMITTER AND POWER SUPPLY PARTS LIST

| Schematic No. | Description                             | Gonset Part No.                    |
|---------------|-----------------------------------------|------------------------------------|
| C1            | 5-25 $\mu\mu\text{f}$ Variable          | 089-002                            |
| C2            | 100 $\mu\mu\text{f}$ Silver Mica 5%     | 088-017                            |
| C3            | .01 $\mu\text{f}$ Disc 300 V            | 072-169                            |
| C4            | .01 $\mu\text{f}$ Disc 500 V            | 072-173                            |
| C5            | 10 $\mu\mu\text{f}$ Silver Mica 5%      | 088-018                            |
| C6            | .01 $\mu\text{f}$ Disc 500 V            | 072-173                            |
| C7            | .01 $\mu\text{f}$ Disc 300 V            | 072-169                            |
| C8            | .01 $\mu\text{f}$ Disc 300 V            | 072-169                            |
| C9            | .01 $\mu\text{f}$ Disc 500 V            | 072-173                            |
| C10           | .01 $\mu\text{f}$ Disc 500 V            | 072-173                            |
| C11           | .01 $\mu\text{f}$ Disc 500 V            | 072-173                            |
| C12           | .01 $\mu\text{f}$ Disc 300 V            | 072-169                            |
| C13           | .01 $\mu\text{f}$ Disc 300 V            | 072-169                            |
| C14-A         | 50 $\mu\text{f}$ @450 WVDC )            | 3-Section Electro-lytic<br>073-124 |
| C14-B         | 100 $\mu\text{f}$ @25 WVDC )            |                                    |
| C14-C         | 25 $\mu\text{f}$ @ 25 WVDC )            |                                    |
| C15           | .01 $\mu\text{f}$ Disc 500 V            | 072-173                            |
| C16           | .01 $\mu\text{f}$ Disc 500 V            | 072-173                            |
| C17           | .001 $\mu\text{f}$ Disc 2KV             | 072-217                            |
| C18           | 1000 $\mu\mu\text{f}$ Feed-Thru         | 077-001                            |
| C19           | .01 $\mu\text{f}$ Disc 300 V            | 072-169                            |
| C20           | P.A. Tune Capacitor                     | 074-122                            |
| C21           | P.A. Load Capacitor                     | 074-117                            |
| C22           | .015 $\mu\text{f}$ Tubular 1.6 KV       | 085-047                            |
| C23           | .003 $\mu\text{f}$ Tubular 1.6 KV 20%   | 085-092                            |
| C24           | 25 $\mu\text{f}$ @ 25 WVDC Electrolytic | 073-127                            |
| C25           | .01 $\mu\text{f}$ Disc 300 V            | 072-169                            |
| C26           | .01 $\mu\text{f}$ Disc 300 V            | 072-169                            |
| C27           | .01 $\mu\text{f}$ Disc 300 V            | 072-169                            |
| C28           | .01 $\mu\text{f}$ Disc 300 V            | 072-169                            |
| C29           | .01 $\mu\text{f}$ Disc 500 V            | 072-173                            |
| C30-A         | 80 $\mu\text{f}$ @450 WVDC )            | 2-Section Electro-lytic<br>073-128 |
| C30-B         | 10 $\mu\text{f}$ @450 WVDC )            |                                    |
| C31           | .1 $\mu\text{f}$ Disc 100 V             | 072-174                            |
| C32           | .01 $\mu\text{f}$ Disc 300 V            | 072-169                            |
| C33           | .01 $\mu\text{f}$ Disc 300 V            | 072-169                            |
| C35           | .1 $\mu\text{f}$ Tubular 200 V 20%      | 085-002                            |
| C36           | .01 $\mu\text{f}$ Disc 300 V            | 072-169                            |
| C37           | .01 $\mu\text{f}$ Disc 500 V            | 072-173                            |
| C38           | .1 $\mu\text{f}$ Tubular 200 V 20%      | 085-002                            |
| C39           | 1000 $\mu\mu\text{f}$ Feed-Thru         | 077-001                            |
| C40           | 1000 $\mu\mu\text{f}$ Feed-Thru         | 077-001                            |

# TRANSMITTER AND POWER SUPPLY PARTS LIST (CONT)

| Schematic No. | Description                            | Gonset Part No.    |
|---------------|----------------------------------------|--------------------|
| C41-A         | 50 $\mu$ f @ 25 WVDC )                 | 073-125            |
| C41-B         | 1000 $\mu$ f @ 25 WVDC )               | 073-125            |
| C42           | .01 $\mu$ f Disc 1.5 KV                | 072-123            |
| C43           | .01 $\mu$ f Disc 1.5 KV                | 072-123            |
| C44           | .1 $\mu$ f Disc 100 V                  | 072-174            |
| C45           | .01 $\mu$ f Disc 300 V                 | 072-169            |
| C46           | .01 $\mu$ f Disc 300 V                 | 072-169            |
| C47           | .01 $\mu$ f Disc 300 V                 | 072-169            |
| C48           | .1 $\mu$ f Disc 100 V                  | 072-174            |
| C49           | 470 $\mu$ f Disc                       | 072-213            |
| C50           | .01 $\mu$ f Disc 300 V                 | 072-169            |
| CR1           | Silicon Diode                          | 474-013            |
| CR2           | Silicon Diode IN-1763                  | 474-012            |
| CR3           | Silicon Diode IN-1763                  | 474-012            |
| CR4           | Silicon Diode IN-1763                  | 474-012            |
| CR5           | Silicon Diode IN-1763                  | 474-012            |
| CR6           | Germanium Diode IN-34A                 | 475-013            |
| CR7           | Silicon Diode IN-1763                  | 474-012            |
| DS1           | Dial Lamp                              | 471-017            |
| F1            | Fuse 2A @ 125 V                        | 482-001            |
| F2            | Fuse 2A @ 125 V                        | 482-001            |
| F3            | Fuse 20A @ 32 V                        | 482-008            |
| J1            | VFO Control Jack                       | 344-010            |
| J2            | Phone Jack                             | 342-001            |
| J3            | Antenna Jack                           | 344-011            |
| J4            | Power Socket                           | 344-175            |
| J5            | Mike Jack, 2 Circuit                   | 342-002            |
| K1            | Relay 12 VDC                           | 111-089            |
| L1            | Oscillator Plate Coil                  | 012-440            |
| L2            | Tripler Grid Coil                      | 012-441            |
| L3            | Tripler Plate Coil                     | 012-439            |
| L4            | Doubler Grid Coil                      | 012-438            |
| L5-6          | Final Drive Coil                       | 012-447            |
| L7            | Final Plate Coil                       | 011-121            |
| L8            | Transmitter Link Coil                  | 011-125            |
| M1            | Meter                                  | 112-037            |
| P1            | Receiver Power Plug<br>(P1 Plug Shell) | 344-040<br>344-916 |
| P2            | Receiver Antenna Plug                  | 344-174            |
| Q1, Q2        | Transistors 2N-1554                    | 476-006            |

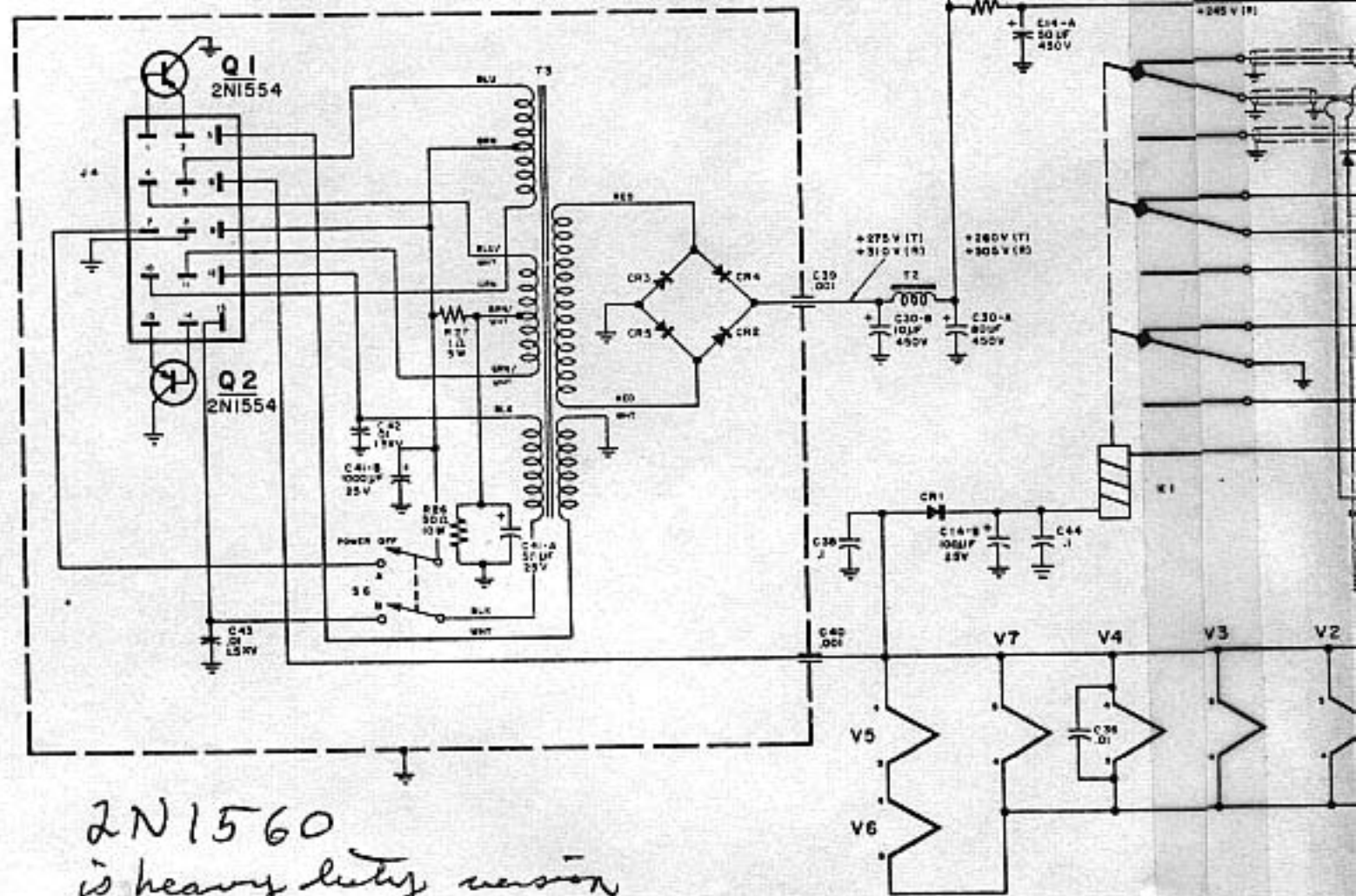
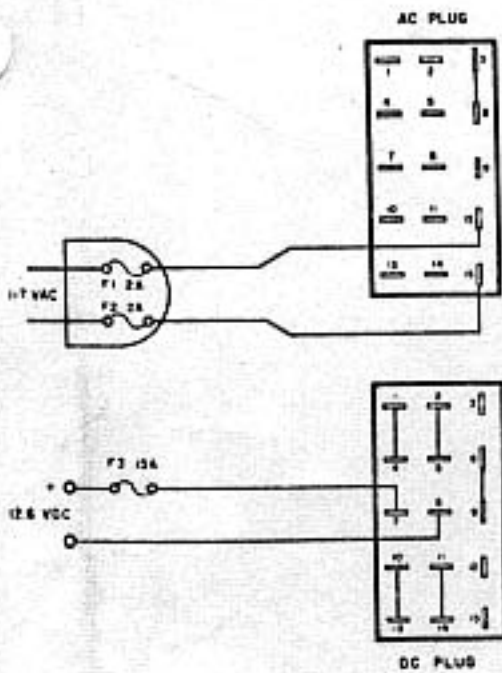
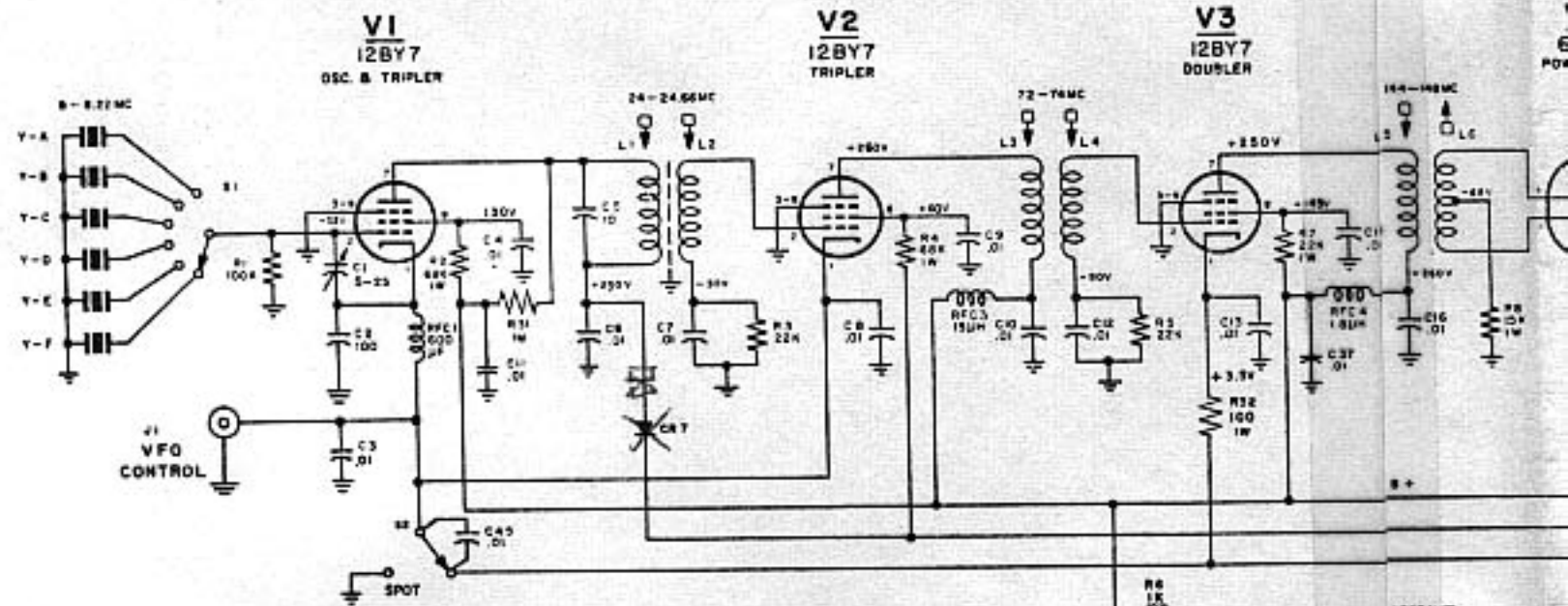
# TRANSMITTER AND POWER SUPPLY PARTS LIST (CONT)

| Schematic No. | Description                     | Gonset Part No. |
|---------------|---------------------------------|-----------------|
| R1            | 100K $\Omega$ 1/2 W 10%         |                 |
| R2            | 68K $\Omega$ 1 W 10%            |                 |
| R3            | 22K $\Omega$ 1/2 W 10%          |                 |
| R4            | 68K $\Omega$ 1 W 10%            |                 |
| R5            | 22K $\Omega$ 1/2 W 10%          |                 |
| R6            | 1K $\Omega$ 10 W 10% Wire Wound | 049-082         |
| R7            | 22K $\Omega$ 1/2 W 10%          |                 |
| R8            | 15K $\Omega$ 1 W 10%            |                 |
| R9            | 12K $\Omega$ 1 W 10%            |                 |
| R10           | 33K $\Omega$ 1 W 10%            |                 |
| R11           | 150K $\Omega$ 2 W 10%           |                 |
| R12           | 270K $\Omega$ 1/2 W 10%         |                 |
| R13           | 270K $\Omega$ 1/2 W 10%         |                 |
| R14           | 150K $\Omega$ 1/2 W 10%         |                 |
| R15           | 1 Meg $\Omega$ 1/2 W 10%        |                 |
| R16           | 2.7K $\Omega$ 1/2 W 10%         |                 |
| R17           | 150K $\Omega$ 1/2 W 10%         |                 |
| R18           | 2.7K $\Omega$ 1/2 W 10%         |                 |
| R19           | 470K $\Omega$ 1/2 W 10%         |                 |
| R20           | 1.5 Meg 1/2 W 10%               |                 |
| R21           | 470K $\Omega$ 1/2 W 10%         |                 |
| R22           | 82K $\Omega$ 1/2 W 10%          |                 |
| R23           | 25K $\Omega$ Potentiometer      | 052-097         |
| R24           | 47K $\Omega$ 1 W 10%            |                 |
| R25           | 47 $\Omega$ 1/2 W 10%           |                 |
| R26           | 50 $\Omega$ 10 W 10% Wire Wound | 049-081         |
| R27           | 1 $\Omega$ 5 W 10% Wire Wound   | 049-080         |
| R28           | 22K $\Omega$ 1 W 10%            |                 |
| R29           | 15K $\Omega$ 1 W 10%            |                 |
| R30           | 47 $\Omega$ 1 W 10%             | 043-470         |
| R31           | 1.0 Meg 1/2 W                   |                 |
| R32           | 100 $\mu$ 1 W                   |                 |
| R33           | 100 $\mu$ 1 W                   |                 |
| RFC 1         | R-F Choke 600 $\mu$ h           | 027-019         |
| RFC 2         | R-F Choke 15 $\mu$ h            | 027-080         |
| RFC 3         | R-F Choke 15 $\mu$ h            | 027-080         |
| RFC 4         | R-F Choke 1.8 $\mu$ h           | 027-078         |
| RFC 5         | R-F Choke 1.8 $\mu$ h           | 027-059         |
| RFC 6         | R-F Choke 1.8 $\mu$ h           | 027-059         |
| S1            | Crystal Switch                  | 171-104         |
| S2            | Spot Switch                     | 172-008         |

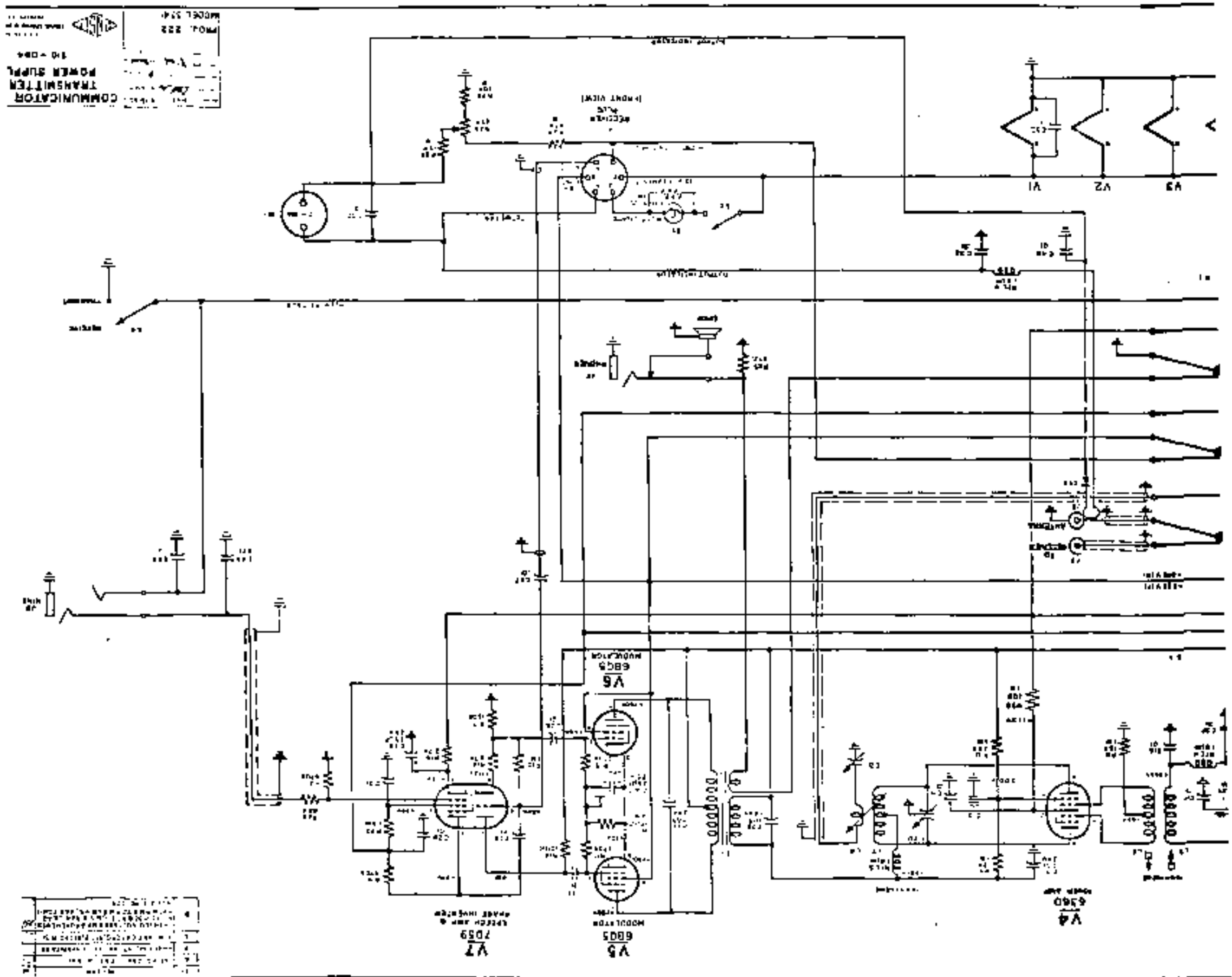
# TRANSMITTER AND POWER SUPPLY PARTS LIST (CONT)

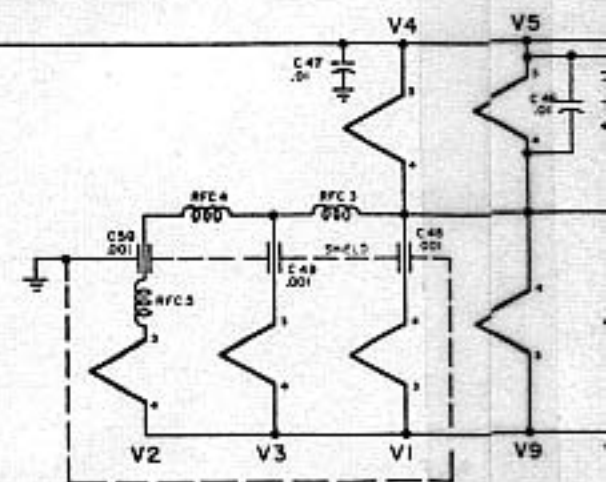
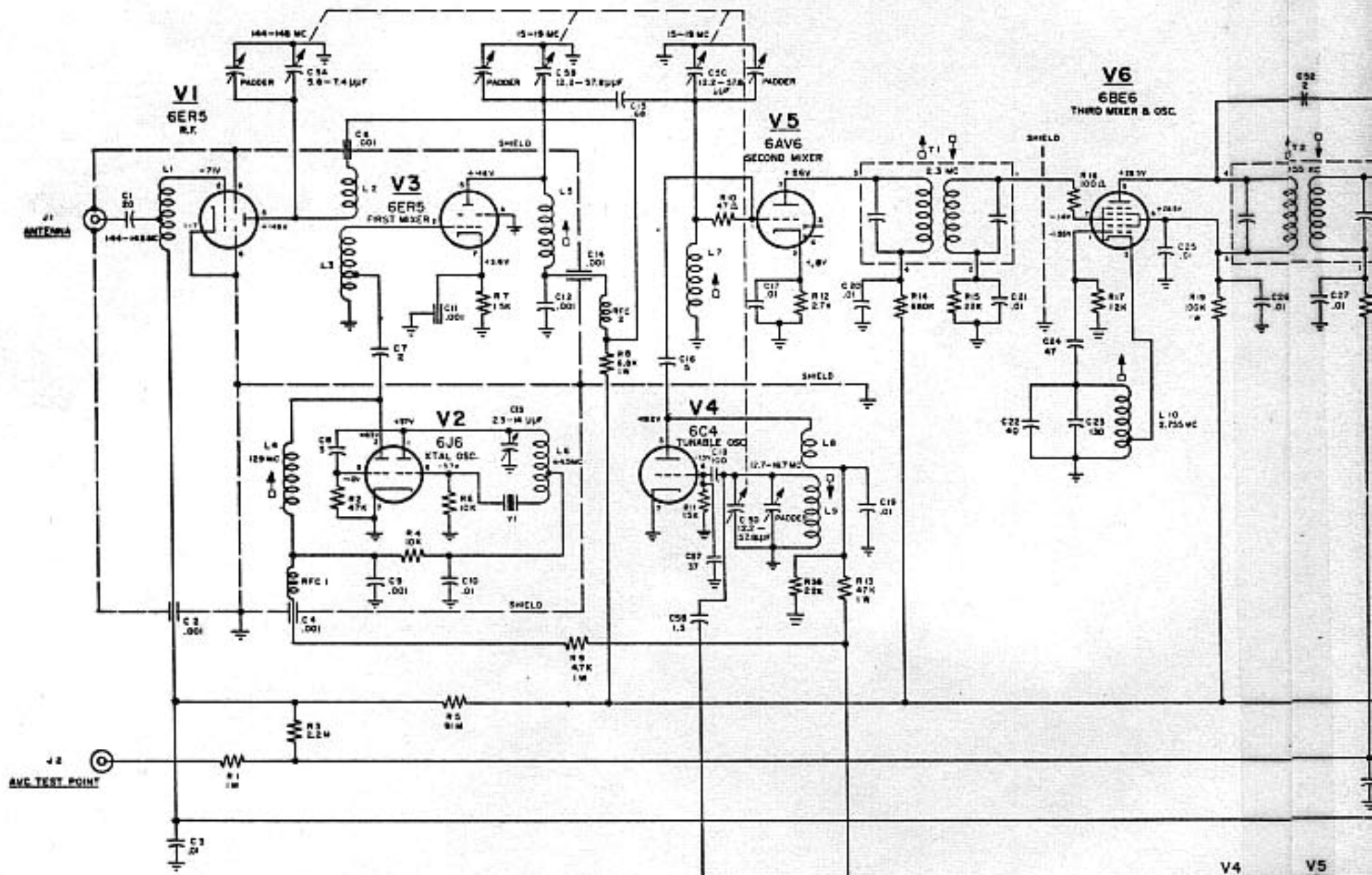
| Schematic<br>No. | Description                          | Gonset<br>Part No. |
|------------------|--------------------------------------|--------------------|
| S4               | T-R Switch                           | 172-010            |
| S5               | Lamp Switch                          | 172-001            |
| S6               | On-Off Switch                        | 174-011            |
| SPKR             | Speaker 3.2 $\Omega$ VC              | 152-017            |
| T1               | Modulation Transformer               | 273-012            |
| T2               | Filter Choke                         | 274-022            |
| T3               | Power Transformer                    | 271-080            |
|                  | Cable Assembly, D. C.                | 678-033            |
|                  | Cable Assembly, A. C.                | 678-034            |
|                  | Crystal Retainer                     | 453-441            |
|                  | Telescoping Right Angle Whip Antenna | 621-018            |

UNLESS OTHERWISE SPECIFIED, ALL RESISTORS ARE 1/2 WATT, 5% AND ALL CAPACITORS IN  $\mu\text{F}$

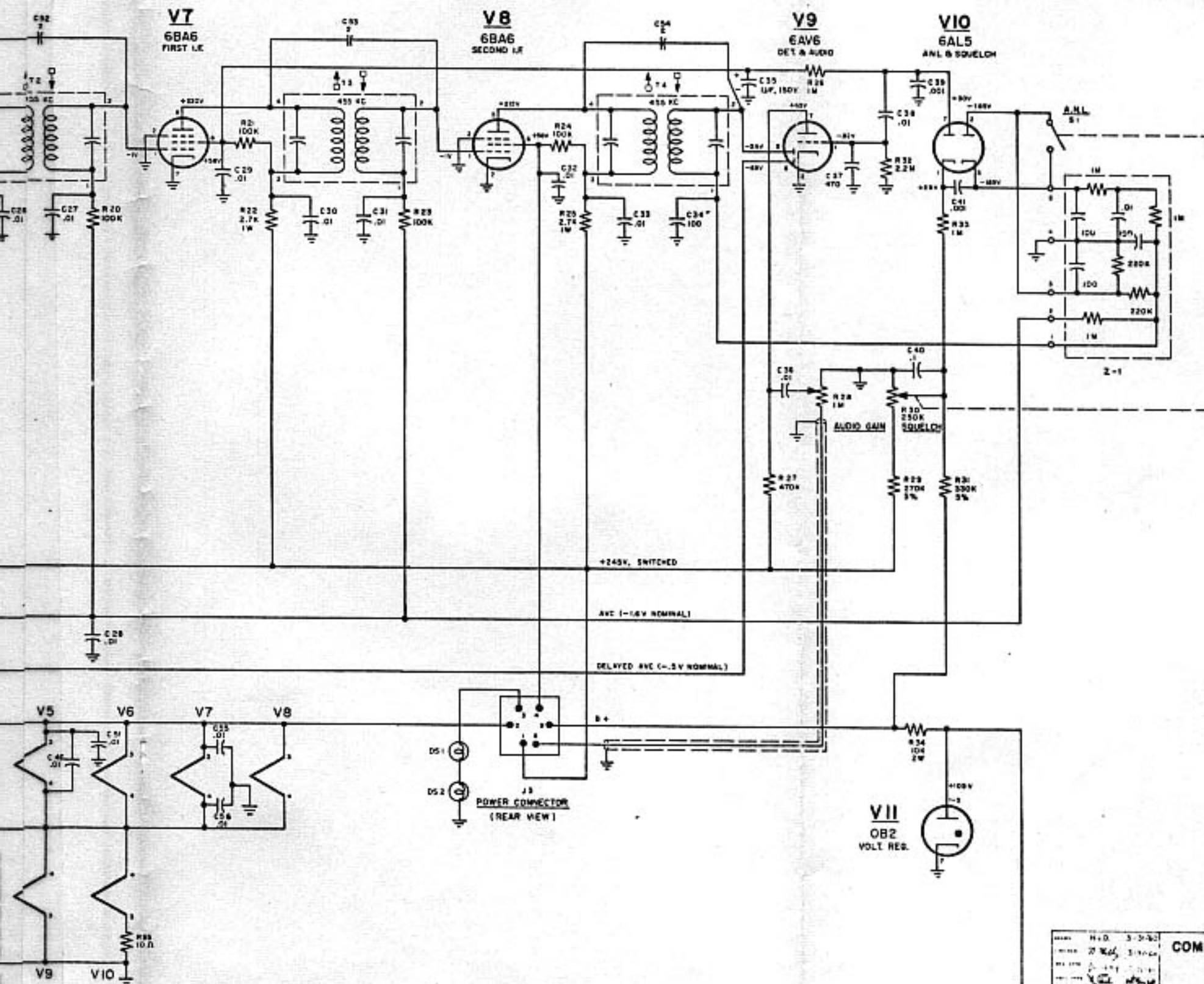


2N1560  
is heavy duty version  
of 1554





| LET | REVISION                                      | APP | DATE    |
|-----|-----------------------------------------------|-----|---------|
| A   | ADDED L55, C56, C57 & C58                     | YCB | 7-18-60 |
| B   | W17 WAS 2.2K                                  |     | 8-8-61  |
| C   | CHANGED VOLTAGE MEASUREMENTS<br>SEE EQ NO 381 |     |         |



|                         |                                                        |   |
|-------------------------|--------------------------------------------------------|---|
| PROJ. 222<br>MODEL 3341 | <b>COMMUNICATOR 4<br/>RECEIVER (2M)</b><br>510-074<br> | C |
|-------------------------|--------------------------------------------------------|---|