

## NOTE

The transmitter is loaded for normal power input and a 400 cycle sine wave audio tone fed into the microphone input. The clipper control should be set at approximately 1/5 turn back from the full clockwise position. Advance the audio gain control (front panel) until approximately 75% modulation is obtained on an oscilloscope observing the modulated wave form. Increase the audio input 12 db. Adjust the clipper control so that just 100% modulation is reached. Repeat if necessary so 12 db increase in audio level raises modulation to just under 100%.

## SECTION 4

OPERATION

## 4.1. STARTING THE EQUIPMENT.

## 4.1.1. PROCEDURE. (Be sure PA PLATE POWER switch is in OFF position.)

- (a) Operate FILAMENT switch to ON position. (Allow 30 seconds for filaments to heat.)
- (b) Operate the EXCITER CONTROL SWITCH to REC. position.
- (c) Select the type of emission with the PHONE-CW switch.
- (d) Operate the transmitter PLATE switch to the ON position.
- (e) Proceed to control the emission with the EXCITER CONTROL SWITCH and the key.

## 4.2. STOPPING THE EQUIPMENT.

## 4.2.1. PROCEDURE.

## (a) Emergency.

1. Operate the FILAMENT switch to OFF.

2. Open station main power switch.

(b) Routine.

1. Operate the EXCITER CONTROL SWITCH to the RECEIVE position.
2. Operate the Transmitter PLATE power switch to the OFF position.
3. Operate the FILAMENT switch to the OFF position.

4.3. GENERAL.

4.3.1. FUNCTIONS OF THE EQUIPMENT.

(a) Types of Emission. - Voice or Continuous Wave.

(b) Frequency Range. - 3.5 to 4.0 mc.  
                               7.0 to 7.3 mc.  
                               14.0 to 14.4 mc.  
                               \*21.0 to 21.5 mc.  
                               28.0 to 30.0 mc.

\* This band is unauthorized at this date. (3-5-47)

(c) Power Input. - VOICE = 375 watts  
                               CW = 500 watts

(d) Frequency Control. - Stabilized master oscillator.

(e) Power Source. - 115 volts 60 cps.

(f) Power Consumption (Max). - 1270 watts.

(g) Microphone. - Any high impedance microphone. (Crystal or high impedance dynamic.)

4.3.2. OPERATING PRECAUTIONS.

(a) Operate all tube filament within  $\pm 5$  percent of published ratings.

(b) Allow 30 seconds for tubes to warm up upon turning transmitter on after any appreciable shut-down period.

(c) Do not operate power amplifier stage off resonance except in TUNE position.

(d) Always place the PLATE power switch in the OFF position when operating the PHONE-CW Control or the FILAMENT ADJUSTMENT.

4.4. ROUTINE OPERATION.

4.4.1. PANEL CONTROL.

## (a) Starting the Equipment.

1. Operate the FILAMENT switch to the ON position. (Allow 30 seconds for tube filaments to warm up.)
2. Select type of emission with the PHONE-CW switch.
3. Operate the EXCITER CONTROL SWITCH to the RECEIVE position. (Allow 30 seconds for tubes to warm up.)
4. Operate the transmitter PLATE power switch to the ON position.
5. Operate the EXCITER CONTROL SWITCH to the SEND position and close telegraph key.

## NOTE

Always place the TUNE-OPERATE switch in the TUNE position when tuning the power amplifier plate circuit to resonance. (Slight adjustments can be made in the OPERATE position. No harm will be done if the PA tube plate does not get too bright. Dull red to cherry red is proper in normal operation.)

## (b) Stopping the Equipment.

1. Operate the transmitter PLATE switch to the OFF position.
2. Operate the EXCITER CONTROL SWITCH to the OFF position.
3. Operate the transmitter FILAMENT switch to the OFF position.

## 4.4.2. Remote Control.

(a) General. - It is intended that this equipment shall be normally controlled from the receiving position which may be at a position removed from the transmitter unit. The following procedure may be followed for operating the equipment at such a position. The transmitter must be tuned and in operating condition before the following operations are performed.

## (b) Starting the Equipment.

1. Operate the transmitter FILAMENT switch to the ON position.
2. Select type of emission desired with the PHONE-CW switch.
3. Operate the PLATE power switch to the ON position.
4. Operate the EXCITER CONTROL SWITCH to the RECEIVE position. (Allow 30 seconds for the tube filaments to warm up.)

5. Operate the EXCITER CONTROL SWITCH to the SEND position to transmit and to the REC. position to receive.

(c) Stopping the Equipment.

1. Operate the EXCITER CONTROL SWITCH to the RECEIVE position.
2. Operate the PLATE power switch to the OFF position.
3. Operate the FILAMENT switch to the OFF position.

NOTE

Steps 1 and 2 are performed in the interests of safety only. Actually, the equipment can be turned off with step 3 only.

4.5. TUNING INSTRUCTIONS.

4.5.1. EXCITER UNIT.

- (a) Place the EXCITER CONTROL SWITCH in the CALIBRATE position.
- (b) Rotate the BAND switch to the band containing the desired operating frequency.
- (c) Rotate the TUNING knob until the slide rule dial indicates the first two digits (if operating in the 7.0 mc band) or the first three digits (if operating in the 3.5, 14, 21 27 or 28 mc bands). See figure 4-2.
- (d) Continue rotating the TUNING knob until the vernier tuning dial indicates the last digits of the desired frequency.
- (e) Check the frequency with a receiver to see that there has been no error in tuning the exciter. (With the EXCITER CONTROL SWITCH in the CAL position, listen to the exciter output with a receiver.)

NOTE

On the slide rule dial, each division equals 100 kc on all bands excepting the 80 meter band where each division equals 10 kc.

4.5.2. TRANSMITTER UNIT. - If the Exciter unit is tuned to frequency, the transmitter may now be tuned and adjusted. (Be sure the transmitter PLATE switch is in the OFF position and the LV-TUNE-OPERATE switch is in the LV position.)

- (a) Operate the PA GRID band switch and the PA PLATE band switch to the bands which contain the desired operating frequency.
- (b) Select the type of emission with the PHONE-CW selector switch and rotate the AUDIO GAIN control to the OFF position.

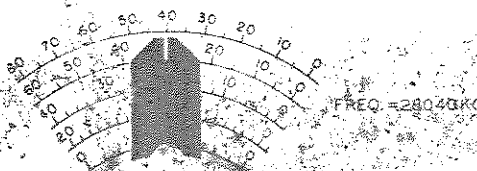
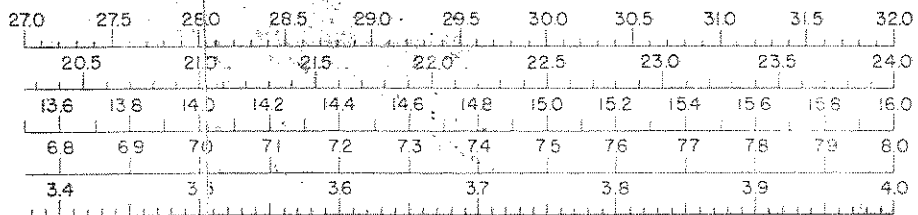
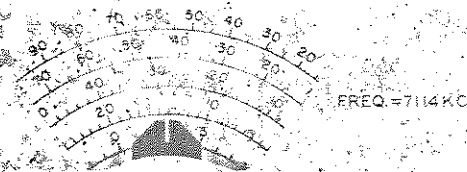
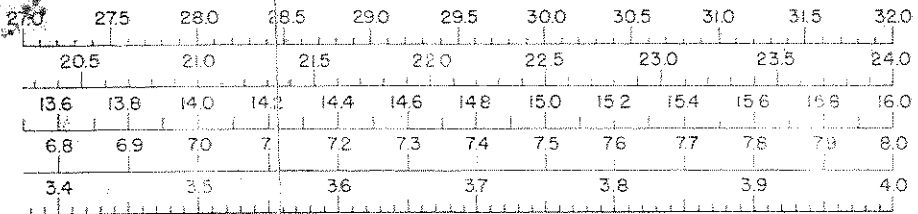
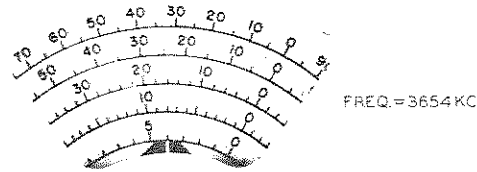
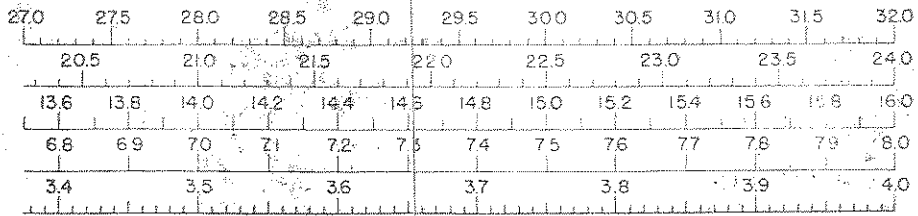


FIGURE 4-2. TYPICAL DIAL READINGS



- (c) Reduce the ANTENNA COUPLING to counterclockwise position.
- (d) Place the EXCITER CONTROL SWITCH in the SEND position.
- (e) Operate the PLATE power switch to the ON position.
- (f) Rotate the PA GRID tuning control to the point of maximum grid current as shown on the PA GRID CURRENT meter. The grid current should be 12 to 15 milliamperes.
- (g) Place the TUNE-OPERATE switch in the TUNE position and tune the PA PLATE TUNING control to resonance as indicated by minimum PA plate current.
- (h) Advance the ANTENNA COUPLING a few degrees and tune the antenna tank condenser to resonance.
- (i) Rotate the TUNE-OPERATE switch to the OPERATE position and observe the PA PLATE CURRENT. If the plate current is more than 150 ma for phone operation or 200 ma for CW operation, reduce the antenna coupling with the ANTENNA COUPLING control. If the PA PLATE CURRENT is less than these values increase the coupling until the proper loading is obtained.
- (j) After the tuning operations are completed, the audio gain control may be returned to the operating position.

#### 4.6. SPEECH CLIPPER ADJUSTMENT.

##### 4.6.1. SPEECH CLIPPER OUT.

- (a) Reduce the AUDIO gain control until at normal speaking level, the MODULATOR PLATE current peaks should be less than 150 ma.
- (b) If speech clipping is to be dispensed with entirely, remove the 6H6 Clipper tube. No harm will result other than the possibility of overmodulation.

4.6.2. SPEECH CLIPPER IN. - The point at which speech clipping occurs has been set at 100% modulation at the factory. The degree of speech clipping is raised by advancing the AUDIO GAIN Control clockwise.

#### NOTE

Advancing the AUDIO GAIN control will result in a greater amount of side-band power and higher background noise level, therefore a quiet operating position is desirable. Reducing the AUDIO GAIN will result in reduced side-band power and eventually a lower percentage of modulation. With the control set as furnished, any level of audio can be applied to the microphone without over modulating the transmitter.

#### 4.7. CW OPERATION.

To operate the transmitter with continuous wave telegraphy emission, tune

the transmitter as outlined in paragraph 4.5.2. in this section excepting that the plate current to the power amplifier may be increased to 200 ma.

For CW operation the PHONE-CW switch should be placed in the CW position and a telegraph key plugged into the KEY jack on the exciter unit front panel. Any speed of keying possible with a manually operated straight key or semi-automatic key may be employed. The tone of the CW sidetone signal can be changed to suit the operator with the PITCH Control while the audio strength of the sidetone can be controlled by the VOLUME Control.

#### 4.8. TYPICAL METER READINGS.

##### 4.8.1. CW OPERATION.

- (a) Filament - 5 v
- (b) PA Grid Current - 15 ma
- (c) PA Plate Current - 200 ma
- (d) Exciter Plate Voltage - 480
- (e) Freq. Mult. Grid Current - 1 - 3 ma
- (f) Freq. Mult. Plate Current - 10 - 50 ma
- (g) Freq. Doubler Grid Current - 4 - 5 ma
- (h) Freq. Doubler Plate Current - 20 - 70 ma

##### 4.8.2. PHONE OPERATION.

- (a) Mod. Plate Current 45 ma (Static) 150 ma (100% no clipping)
- (b) Filament - 5 v
- (c) PA Grid Current - 15 ma
- (d) PA Plate Current - 150 ma

#### NOTE

Exciter meter readings same as for CW operation.



## SECTION 5

MAINTENANCE

## 5.1. INSPECTION.

5.1.1. GENERAL. - This radio equipment has been constructed of materials considered to be the best obtainable for the purpose and has been carefully inspected and adjusted at the factory to reduce maintenance to a minimum. However, a certain amount of checking and servicing will be necessary to maintain efficient and dependable operation. The following section has been written to aid in checking the equipment.

5.1.2. ROUTINE INSPECTION. - Routine inspection schedules should be set up for periodic checks of this equipment. This inspection should include examination of the mechanical system for excessive wear or binding and of the electrical system for electrical defects and deterioration of components.

If the routine inspection of the equipment is carried out faithfully, the chances of improper operation of the equipment are greatly minimized. It is, therefore, important that this inspection be made as frequently as possible and it should be sufficiently thorough to include all major electrical circuits of the equipment as well as the mechanical portion.

(a) Cleaning. - The greatest enemy to uninterrupted service in equipment of this type is corrosion and dirt. Corrosion itself is accelerated by the presence of dust and moisture on the component parts of the assembly. It is impossible to keep moisture out of the equipment in certain localities, but foreign particles and dust can be periodically removed by means of a soft brush and a dry, oil-free jet of air. Remove the dust as often as a perceptible quantity accumulates in any part of the equipment. It is very important that rotating equipment such as variable condensers and tap switches be kept free from dust to prevent undue wear. Likewise, variable condenser plates should be kept free from dirt to avoid flashover on modulation peaks.

One of the greatest sources of trouble in equipment located in a salt atmosphere is corrosion. Corrosion resulting from salt spray or salt laden atmosphere may cause failure of the equipment for no apparent reason. In general it will be found that contacts such as tap switches, tube prongs, cable plug connectors, and relay contacts are most affected by corrosion. When it is necessary to operate the equipment in localities subject to such corrosive atmosphere, inspection of wiping contacts, cable plugs, relays etc., should be made more frequently in order to keep the equipment in good condition.

(b) Vacuum Tubes. - Make a check of emission characteristics of all tubes. After the emission check, examine the prongs on all tubes to make sure that they are free from corrosion. See that all tubes are replaced correctly and fully in their sockets, and a good electrical contact is made between the prong of the tube and the socket. Use caution in removing and replacing grid or plate caps on tubes so equipped. Before a tube is discarded, make certain that the tube is at fault and the trouble is not a loose or broken connection with the

equipment. A complete set of tested tubes of the same type specified should be kept on hand at all times. If faulty operation of the transmitter is observed and tube failure suspected, each tube may be checked by replacing it with a tube known to be in good condition. Defective tubes causing an overload in power circuits may usually be located by inspection. It will be found that excessive heating or sputtering within the vacuum tubes is a good indication of a fault in the tube circuit.

If tubes have been in use for a period of time equal to or exceeding the manufacturers tube life rating, it is suggested that they be replaced. A marked improvement in the performance of the equipment is usually noticeable after the weak tubes have been replaced.

#### 1. Precautions for Satisfactory Tube Life.

- a. Before any tube is removed from the equipment, make certain the primary power is disconnected from the equipment.
- b. Operate all tubes within  $\pm 5\%$  of rated filament voltage.
- c. Do not exceed the rated plate current of any tube during normal operation of the equipment.

#### 2. Tube Replacement Precautions.

- a. All tubes are removed by pulling straight up on them.
- b. Remove plate cap connectors, from tubes so equipped, with great care to prevent breaking the seal around the plate cap. Grid and plate cap adaptors are used on the modulator tubes. To prevent glass breakage when changing tubes, lay the tube on its side on a table, grasp the adaptor with a pair of pliers, and loosen the set screws with a Bristo wrench. When tightening the set screws on the new tube be sure and hold the adaptor with the pliers.
- c. Before a tube is inserted, make certain that the type of tube is correct for the socket into which it is being placed.

#### NOTE

Changing master oscillator tubes (V001 may cause a slight change in master oscillator calibration.

(c) Relays. - All relays should be inspected at regular intervals. Check the contacts for proper alignment, pitting and corrosion. Use a burnishing tool to clean contacts - never use sandpaper or emery cloth.

#### 5.2. TROUBLE SHOOTING.

5.2.1. GENERAL. - The most general cause of improper operation of radio equipment is tube failure. Refer to paragraph 5.1.2.(b) in this section for comments concerning vacuum tube replacement. Defective tubes causing an overload in power

Circuits may usually be located by inspection. High voltage arcs may be caused by bent condenser plates, corrosion or dust. Corrosion resulting from operating the equipment in a salt laden atmosphere may cause failure of the equipment for no apparent reason.

In general, trouble encountered in radio apparatus may be isolated by means of various tests and measurements, and the section of the transmitter determined in which the trouble is located. If this is done, the components in the associated circuit may be checked and the trouble located. Refer to the tables of meter readings in Section 4 of this book.

No one but an authorized and competent service man equipped with proper test facilities should be permitted to service this equipment.

5.2.2. FUSES.

(a) General. - This equipment is supplied with fuses of the correct rating in each position. Fuse failures should be replaced with spares only after the circuit in question has been carefully examined to make certain that no permanent fault exists. Always replace a fuse with the rating specified in the following table.

FUSE TABLE

<u>SYMBOL</u>	<u>LOCATION</u>	<u>TYPE</u>	<u>RATING</u>
F601	Exciter unit filament transformer primary.	Cartridge (3AG)	1/2 amp.
F301	Transmitter audio amplifier tubes filament transformer primary.	Cartridge (3AG)	1/2 amp.
F401	Transmitter bias supply primary.	Cartridge (3AG)	1/2 amp.
F402	Transmitter LV power supply primary.	Cartridge (3AG)	3 amp.
F403	Transmitter modulator and PA filament transformer primary.	Cartridge (3AG)	2 amp.
F501	Transmitter HV rectifier filament primary.	Cartridge (3AG)	1 amp.
F101	Transmitter power line.	Plug	15 amp.
F102	Transmitter power line.	Plug	15 amp.

5.3. ALIGNMENT.

5.3.1. GENERAL. - Should, for any reason, the Model 310A exciter unit get out of

alignment, it is recommended that the unit be realigned at once. Improper operation might result in damage to valuable equipment.

5.3.2. OSCILLATOR ALIGNMENT. - Should trouble develop in the high frequency master oscillator, the unit should be returned to the factory for servicing. However, the unit can be serviced and realigned by persons understanding such techniques providing accurate test equipment is at hand. A crystal controlled frequency standard with outputs at 1700 and 2000 kc with an accuracy of better than .015 percent must be used for setting the band edges.

(a) Procedure.

1. Apply power to the exciter unit and warm up the oscillator for approximately 30 minutes.
2. Couple a receiver to the output of the oscillator.
3. Set the vernier index to exact center of the dial window.
4. Tune receiver to output of 1700 kc frequency standard.
5. Rotate MO to vicinity of 3400 kc on the exciter dial and zero beat with the signal from the standard. Write dial reading down for use as a reference.
6. Rotate the MO dial toward 4 mc exactly 12 turns.
7. Tune the receiver to the 2000 kc output of the standard.
8. The MO should zero beat with the 2000 kc output of the standard at exactly 12 turns of the MO dial.
9. If such is the case but the dial reading is incorrect, loosen the set screw in the oscillator coupler and turn the dial to the correct reading (4000 kc) after which, tighten the set screws again. If the MO does not zero beat with the standard at 4 mc, proceed as follows:
10. Read the kc difference ( the difference of where the signal appeared from where it should have appeared after 12 turns) and multiply it by 5; add this figure to the actual beat note dial setting if the beat note was less than 12 turns or subtract it if the beat note occurred at more than 12 turns. Now set the dial to this new frequency, remove the trimmer plug from the top of the oscillator, and turn the adjustment until zero beat is again reached.

It will be found that the high and low ends are very nearly 12 turns apart. Repeat the above procedure until such is the case; remember that a new reference point will occur at the low end of the dial each time. Examples of above operations:

#1

Beat note at low end of dial	= 3402 kc
Reading at which beat note should appear after 12 turns of dial	= 4002 kc

Actual dial reading	= 4003 kc
Difference frequency (4003 - 4002)	= 1 kc
Multiplied by 5	= 5 kc
Subtracted from 4003 (since beat note occurred at more than 12 turns)	= 3998 kc

After setting dial to 3998 kc and zero beating the MO to the standard with the trimmer adjustment, the low end beat note should appear at 3398 kc.

#2

Beat note on low end of dial	= 3498 kc
Reading at which dial should appear after 12 turns	= 3998 kc
Actual dial reading	= 3996 kc
Difference frequency (3998 - 3996)	= 2 kc
Multiplied by 5	= 10 kc
Added to 3996 (since beat note occurred at less than 12 turns of the dial)	= 4006 kc

After setting the dial at 4006 and zero beating the MO to the standard with the trimmer adjustment, the low end beat note should appear at 3406 kc.

11. After the oscillator has been adjusted to cover the range 3400 to 4000 kc in exactly 12 turns, the coupler set screws can be loosened and the dial set on frequency.

## NOTE

The above method of adjustment is that which is used at the factory. This is a short cut method and proves very reliable. Actually, the object is to get the 1700 kc and the 2000 kc outputs of the oscillator exactly 12 turns apart and it can be attained by using the slower method of moving the trimmer capacitor in one direction or the other and checking the results until the desired answer is obtained. Be sure to replace the trimmer cover plug after alignment.

## 5.3.3. EXCITER ALIGNMENT.

## (a) Equipment Set-Up.

## NOTE

If any of the main tuning capacitors have slipped with respect to each other or with respect to the dial, the following five steps must be performed before proceeding with the alignment. See steps 3, 4 and 5 for positions of capacitors and dial.

1. All power disconnected.
2. Loosen set screws in coupler connecting C613 shaft to dial drive.

3. Visually synchronize C606, C613, C618 (by turning capacitors to max. capacity position). Position crank arms on push rod to C606 at about 20° counter-clockwise from the plane of the straight edges of the rotor plates.

4. Visually align C606, C613, C618 at 90° rotation from max. capacity position.

5. Set Main Tuning Control at 3870 and tighten set screws on coupler connecting C613 to dial drive.

(b) Set Controls.

1. 30K-1 Fil SW on.
2. 30K-1 plate voltage control on LV.
3. 30K-1 plate SW on.
4. 310A-3 emission SW on SEND, key closed.
5. 310A-3 Excitation control on position 7.

(c) Trimmer Adjustments.

1. The following table lists the trimmer to be adjusted in each stage, on each band, in the order given, for maximum grid current in the following stage:

<u>Set</u> <u>Band SW</u>	<u>Set</u> <u>Main Tuning</u>	<u>V602</u> <u>Plate</u> <u>2nd 6AG7</u>	<u>V603</u> <u>Plate</u> <u>1st 807</u>	<u>V604</u> <u>Plate</u> <u>2nd 807</u>
80	4,000	C636	C637	C632
	3,400	L602	L604	L610
40	7,300	----	----	C633
	7,000	----	----	L611
20	14,400	----	C638	C634
	14,000	----	L605	L612
15	21,450	----	C639	C635
	21,000	----	L606	L613
10	29,700	----	C640	C619
	27,000	----	L607	L614

2. Start with inductive trimmers approximately centered in their adjustment range and coupling coils in place on the "cold" end (nearest chassis) of the plate coils of the V604 stage.

3. Alignment will be indicated on the meter as shown below:

<u>Circuit</u>	<u>Meter Switch</u>	<u>Typical Meter Reading</u>
Plate 2nd 6AG7	1st 807 grid	1-3 MA
Plate 1st 807	2nd 807 grid	4-5 MA
Plate 2nd 807	P.A. grid current	15 MA

4. Set Band Switch at 80.
5. Set Main Tuning at the higher frequency (4,000 kc).
6. Adjust C636, then C637, then C632, keeping the Grid Tuning control on the 30K-1 in resonance when adjusting C632. Alignment will be indicated as in paragraph c.3.
7. Set the Main Tuning Control at the lower frequency (3400 kc) and adjust L602, then L604, then L610, keeping the Grid Tuning Control on the 30K-1 in resonance when adjusting L610.
8. Repeat step 6 and 7 until tracking is obtained at each end of the band.
9. Alignment of the other bands is to be done in a similar manner, following the table in c.1 above.
10. NOTE: On the 40 meter band no adjustment of the V602 and V603 stages is made.
11. NOTE: On the 20, 15 and 10 meter bands no adjustment of the V602 stage is made.
12. Check second 807 grid current and PA grid current while tuning across each amateur band for abnormal variation or unstable operation. Variations should be gradual.

#### 5.4. OSCILLATOR TUBE REMOVAL.

Replacing an oscillator tube requires the breaking of the seal around the shield and it will then become necessary to reseal the shield. If it becomes necessary to replace an oscillator tube, use a glyptal cement or a generous portion of Duco cement to reseal the shield.

#### 5.5. DESICCANT CAPSULE.

A silica-gel tube is mounted on the top of the oscillator shield. The silica-gel absorbs moisture from within the oscillator and aids in retaining the oscillator calibration. Moisture causes the color the silica-gel to change from blue to pink. The silica-gel tube is screwed into a hole in the shield and should be replaced by a new tube of silica-gel when all of the material within the tube has changed from blue to pink. New tubes of silica-gel may be ordered from the Collins Radio Company.

#### NOTE

The seal around the oscillator tube shield and the silica-gel tube is more easily broken if the parts are warm. This can be done safely with a light bulb or infra-red lamp placed close to the oscillator.





Section 6  
PARTS LIST

310A-3 EXCITER UNIT

ITEM	CIRCUIT FUNCTION	DESCRIPTION	COLLINS PART NUMBER
70E8-A	OSCILLATOR:	This unit has been dehydrated and hermetically sealed and should be returned to the Collins Radio Company if servicing is required	
C601	V601 Cathode bypass	CAPACITOR: .01 mf $\pm 20\%$ , 300 WV	935 2118 00
C602	V602 Grid coupling	CAPACITOR: 2200 mmf $\pm 20\%$ , 500 WV	935 4123 00
C603	V602 Screen bypass	CAPACITOR: 4700 mmf $\pm 20\%$ , 500 WV	935 2104 00
C604	V602 Cathode bypass	CAPACITOR: .01 mf $\pm 20\%$ , 300 WV	935 2118 00
C605	V602 Plate bypass	CAPACITOR: 4700 mmf $\pm 20\%$ , 500 WV	935 2104 00
C606	V602 Plate tuning	CAPACITOR: 6 mmf min, 50 mmf max	922 0021 00
C607	V603 Grid coupling	CAPACITOR: 1000 mmf $\pm 20\%$ , 2500 WV	936 0250 00
C608	V603 Grid bypass	CAPACITOR: 2200 mmf $\pm 20\%$ , 500 WV	935 4123 00
C609	V603 Cathode bypass	CAPACITOR: .01 mf $\pm 20\%$ , 300 WV	935 2118 00
C610	V603 Filament bypass	CAPACITOR: .01 mf $\pm 20\%$ , 300 WV	935 2118 00
C611	V603 Screen bypass	CAPACITOR: 4700 mmf $\pm 20\%$ , 500 WV	935 2104 00
C612	V603 Plate blocking	CAPACITOR: 2200 mmf $\pm 20\%$ , 500 WV	935 4123 00
C613	V603 Plate tuning	CAPACITOR: 6 mmf min, 50 mmf max	922 0021 00
C614	V604 Grid coupling	CAPACITOR: .001 mf $\pm 20\%$ , 2500 WV	936 0250 00
C615	V604 Screen bypass	CAPACITOR: .1 mf $+40 -15\%$ , 600 WV	961 4020 00
C616	V604 Filament bypass	CAPACITOR: .01 mf $\pm 20\%$ , 300 WV	935 2118 00
C617	V604 Plate Blocking	CAPACITOR: 2200 mmf $\pm 20\%$ , 500 WV	935 4123 00
C618	V604 Plate tuning	CAPACITOR: 35 mmf max, 5 mmf min	922 0022 00
C619	L614 Tuning	CAPACITOR: 25.7 mmf max, 3.9 mmf min	922 0017 00
C620	V607 Feedback	CAPACITOR: .01 mf $\pm 20\%$ , 300 WV	935 2118 00
C621	V607 Feedback	CAPACITOR: .01 mf $\pm 20\%$ , 300 WV	935 2118 00
C622	V607 Cathode bypass	CAPACITOR: .01 mf $\pm 20\%$ , 300 WV	935 2118 00
C623	V604 Cathode bypass	CAPACITOR: .01 mf $\pm 20\%$ , 300 WV	935 2118 00

Section 6  
PARTS LIST

ITEM	CIRCUIT FUNCTION	DESCRIPTION	COLLINS PART NUMBER
C624	Side-tone pitch determining	CAPACITOR: .01 mf $\pm 20\%$ , 300 WV	935 2118 00
C625	C625 A and B	CAPACITOR: 3 x 0.1 mf + 40 - 15%, 600 WV	961 4059 00
C625A	Sidetone plate bypass	CAPACITOR: Part of C625	
C625B	Sidetone plate bypass	CAPACITOR: Part of C625	
C625C	Sidetone plate bypass	CAPACITOR: Part of C625	
C626	Sidetone output coupling	CAPACITOR: 0.5 mf + 40 - 15%, 600WV	961 4077 00
C627	V601 Grid coupling	CAPACITOR: 100 mmf $\pm 10\%$ , 500 WV	916 4003 00
C628	Oscillator B+ r-f filter	CAPACITOR: 10,000 mmf $\pm 20\%$ , 350 WV	913 0106 00
C629	V601 Grid load	CAPACITOR: 10 mmf $\pm 20\%$ , 500 WV	935 0071 00
C630	V601 Grid bypass	CAPACITOR: 0.1 mf $\pm 10\%$ , 400 WV	931 3020 00
C631	V601 Screen bypass	CAPACITOR: 0.1 mf $\pm 20\%$ , 300 WV	935 2118 00
C632	L610 Trimming	CAPACITOR: 25.7 mmf max, 3.9 mmf min	922 0017 00
C633	L611 Trimming	CAPACITOR: 25.7 mmf max, 3.9 mmf min	922 0017 00
C634	L612 Trimming	CAPACITOR: 25.7 mmf max, 3.9 mmf min	922 0017 00
C635	L613 Trimming	CAPACITOR: 25.7 mmf max, 3.9 mmf min	922 0017 00
C636	L602 Trimming	CAPACITOR: 25.7 mmf max, 3.9 mmf min	922 0017 00
C637	L604 Trimming	CAPACITOR: 25.7 mmf max, 3.9 mmf min	922 0017 00
C638	L605 Trimming	CAPACITOR: 25.7 mmf max, 3.9 mmf min	922 0017 00
C639	L606 Trimming	CAPACITOR: 25.7 mmf max, 3.9 mmf min	922 0017 00
C640	L607 Trimming	CAPACITOR: 25.7 mmf max, 3.9 mmf min	922 0017 00
C641	V601 Plate bypass	CAPACITOR: .01 mf $\pm 20\%$ , 300 WV	935 2118 00
E601	V603 Grid suppressor	PARASITIC SUPPRESSOR: 47 ohm $\pm 10\%$ , 1 w resistor shunted by 8 turns #18 copper wire	571 1064 10
E602	V604 Grid suppressor	PARASITIC SUPPRESSOR: 47 ohm $\pm 10\%$ , 1 w resistor shunted by 8 turns #18 copper wire	571 1064 10

Section 6  
PARTS LIST

ITEM	CIRCUIT FUNCTION	DESCRIPTION	COLLINS PART NUMBER
E603	V603 Plate suppressor	PARASITIC SUPPRESSOR: 47 ohm $\pm$ 10%, 1 w resistor shunted by 8 turns #18 copper wire	571 1064 00
E604	V604 Plate suppressor	PARASITIC SUPPRESSOR: 47 ohm $\pm$ 10%, 1 w resistor shunted by 8 turns #18 copper wire	571 1064 00
	Power connector	STRIP: Terminal, phenolic, 8 post	367 0039 00
	Power connector	STRIP: Terminal, phenolic, 8 post	367 0039 00
F601	Fil. transformer fuse	FUSE: 1/2 amp, 250 v	264 4260 00
I101	Dial lamp	LAMP: 6 v, 0.2 amp, bulb T-1-3/4	262 0023 00
I102	Dial lamp	LAMP: 6 v, 0.2 amp, bulb T-1-3/4	262 0023 00
I103	Dial lamp	LAMP: 6 v, 0.2 amp, bulb T-1-3/4	262 0023 00
I104	Dial lamp	LAMP: 6 v, 0.2 amp, bulb T-1-3/4	262 0023 00
I105	Dial lamp	LAMP: 6 v, 0.2 amp, bulb T-1-3/4	262 0023 00
I106	Dial lamp	LAMP: 6 v, 0.2 amp, bulb T-1-3/4	262 0023 00
I107	Dial lamp	LAMP: 6 v, 0.2 amp, bulb T-1-3/4	262 0023 00
I108	Dial lamp	LAMP: 6 v, 0.2 amp, bulb T-1-3/4	262 0023 00
I109	Dial lamp	LAMP: 6 v, 0.2 amp, bulb T-1-3/4	262 0023 00
I110	Dial lamp	LAMP: 6 v, 0.2 amp, bulb T-1-3/4	262 0023 00
I111	Dial lamp	LAMP: Pilot, 6.3 v, 0.15 amp	262 3240 00
J601	Key jack	JACK: 2 conductor, closed circuit, for plug with 1/4" barrel	360 1060 00
J602	R-F Output	CONNECTOR: single conductor, pressure type contact	369 1007 00
	Interlock connector	CONNECTOR: 2 conductor convenience outlet	368 4500 00
	Filter connector	TERMINAL: Socket for banana plug (4)	304 0011 00

Section 6  
PARTS LIST

ITEM	CIRCUIT FUNCTION	DESCRIPTION	COLLINS PART NUMBER
L601	V601 Plate	COIL: Choke, 2.5 mh, 0.125 amp	240 5300 00
L602	V602 Plate coil	COIL ASSEM: 37 turns #30 wire	503 6761 003
L603	V603 Plate choke	COIL: Choke, 2.5 mh, 0.125 amp	240 5300 00
L604	V603 Plate coil	COIL ASSEM: 80 meters, Mult	503 6762 003
L605	V603 Plate coil	COIL ASSEM: 40 meters, Mult	503 6763 003
L606	V603 Plate coil	COIL ASSEM: 30 meters, Mult	503 6764 003
L607	V603 Plate coil	COIL ASSEM: 20 meters, Mult	503 6765 003
L608	V604 Grid choke	COIL: Choke, 2.5 mh, 0.125 amp, 50 ohm	240 2100 00
L609	V604 Plate choke	COIL: Choke, 1 mh $\pm 10\%$ , 0.6 amp	240 2600 00
L610	V604 Plate coil	COIL ASSEM: 80 meters, Tank	503 6766 003
L611	V604 Plate coil	COIL ASSEM: 40 meters, Tank	503 6767 003
L612	V604 Plate coil	COIL ASSEM: 20 meters, Tank	503 6768 003
L613	V604 Plate coil	COIL ASSEM: 15 meters, Tank	503 6769 003
L614	V604 Plate coil	COIL ASSEM: 10 meters, Tank	503 6770 003
L615	Pick up coil for L610	COIL: Part of L610, four turns	
L616	Pickup coil for L611	COIL: Part of L611, three turns	
L617	Pickup coil for L612	COIL: Part of L612, two turns	
L618	Pickup coil for L613	COIL: Part of L613, one turn	
L619	Pickup coil for L614	COIL: Part of L614, one turn	
L620	Osc B+ r-f filter	COIL: Choke, 2.5 mh, 0.125 amp, 50 ohm	240 2100 00

Section 6  
PARTS LIST

ITEM	CIRCUIT FUNCTION	DESCRIPTION	COLLINS PART NUMBER
M601	Grid and plate	METER: 0-5 ma DC movement, marked 0-1000, 0-100, 0-10	458 0165 00
	Output connector	CONNECTOR: plug for single conductor cable 1/4" max (2)	369 1006 00
	Interlock connector	CONNECTOR: 2 prong male plug	368 0028 00
R601	V601 grid	RESISTOR: 22,000 ohm $\pm 10\%$ , 1/2 w	745 1142 00
R602	V601 Cathode	RESISTOR: 1000 ohm $\pm 10\%$ , 1 w	745 3086 00
R603	V602 Grid	RESISTOR: 47,000 ohm $\pm 10\%$ , 1 w	745 3156 00
R604	V602 Cathode	RESISTOR: 470 ohm $\pm 10\%$ , 1 w	745 3072 00
R605	V602 Screen	RESISTOR: 33,000 ohm $\pm 10\%$ , 2 w	745 5149 00
R606	V603 Grid	RESISTOR: 22,000 ohm $\pm 10\%$ , 2 w	745 5142 00
R607	V603 Cathode	RESISTOR: 750 ohm $\pm 10\%$ , 10 w	710 1750 20
R608	V603 Cathode	RESISTOR: 4700 ohm $\pm 10\%$ , 2 w	745 5114 00
R609	V603 Cathode	RESISTOR: 3300 ohm $\pm 10\%$ , 2 w	745 5107 00
R610	V603 Cathode	RESISTOR: 3000 ohm $\pm 10\%$ , 25 w	710 3342 00
R611	V603 Screen	RESISTOR: 47 ohm $\pm 10\%$ , 1 w	745 3030 00
R612	V604 Grid	RESISTOR: 22,000 ohm $\pm 10\%$ , 2 w	745 5142 00
R613	V604 Screen suppressor	RESISTOR: 47 ohm $\pm 10\%$ , 1 w	745 3030 00
R614	Pitch control	RESISTOR: Variable; 250,000 ohm $\pm 20\%$ , 1/2 w	376 3026 00
R615	Sidetone volume control	RESISTOR: Variable; 1000 ohm, 63 ma	377 2200 00
R618	Regulator tube dropping	RESISTOR: 3000 ohm $\pm 10\%$ , 25w	710 3342 00
R619	Voltage divider	RESISTOR: 3000 ohm $\pm 10\%$ , 25 w	710 3342 00
R621	L604 Loading	RESISTOR: 47,000 ohm $\pm 10\%$ , 2 w	745 5156 00
R623	V604 Screen divider	RESISTOR: 22,000 ohm $\pm 10\%$ , 2 w	745 5142 00
R624	Output load	RESISTOR ASSEM: Nicrome wire wound on special form	503 4439 002
R624A	Part of R624	RESISTOR: Part of R624, 15	
R624B	Part of R624	RESISTOR: Part of R624, 15	

Section 6  
PARTS LIST

ITEM	CIRCUIT FUNCTION	DESCRIPTION	COLLINS PART NUMBER
R624C	Part of R624	RESISTOR: Part of R624, 8.5	
R625	V601, V602 Grid	RESISTOR: 100,000 ohm $\pm 10\%$ , 1/2 w	745 1170 00
R626	Keying load	RESISTOR: 220,000 ohm $\pm 10\%$ , 1/2 w	745 1184 00
R627	V607 Plate decoupling	RESISTOR: 10,000 ohm $\pm 10\%$ , 1/2 w	745 1128 00
R628	V607 Plate load	RESISTOR: 47,000 ohm $\pm 10\%$ , 1/2 w	745 1156 00
R629	V607 Plate load	RESISTOR: 47,000 ohm $\pm 10\%$ , 1/2 w	745 1156 00
R630	V607 Grid	RESISTOR: 10,000 ohm $\pm 10\%$ , 1/2 w	745 1128 00
R631	V607 Grid	RESISTOR: 4700 ohm $\pm 10\%$ , 1/2 w	745 1114 00
R632	Meter shunt	RESISTOR: 25 ohm $\pm 5\%$ , 1/2 w	701 0001 00
R633	Meter mult	RESISTOR: 100,000 ohm $\pm 5\%$ , 2 w	745 5169 00
R634	Meter mult	RESISTOR: 100,000 ohm $\pm 5\%$ , 2 w	745 5169 00
R635	Meter mult	RESISTOR: 100,000 ohm $\pm 5\%$ , 2 w	745 5169 00
R636	Meter mult	RESISTOR: 100,000 ohm $\pm 5\%$ , 2 w	745 5169 00
R637	Meter shunt	RESISTOR: 25 ohm $\pm 5\%$ , 1/2 w	701 0001 00
R638	Meter shunt	RESISTOR: 25 ohm $\pm 5\%$ , 1/2 w	701 0001 00
R639	Meter shunt	RESISTOR: 1.2 ohm $\pm 5\%$ , 1/2 w	707 0053 00
R640	Meter shunt	RESISTOR: 1.2 ohm $\pm 5\%$ , 1/2 w	707 0053 00
R641	Excitation control	RESISTOR: Variable; 25,000 ohm, 0.013amp	377 2280 00
R642	L605 Load	RESISTOR: 47,000 ohm $\pm 10\%$ , 2 w	745 5156 00
R643	L606 Load	RESISTOR: 47,000 ohm $\pm 10\%$ , 2 w	745 5156 00
R644	V607 Plate decoupling	RESISTOR: 47,000 ohm $\pm 10\%$ , 1/2 w	745 1156 00
R645	Regulator dropping	RESISTOR: 10,000 ohm $\pm 10\%$ , 25 w	710 3104 20
R647	V601 Screen	RESISTOR: 100,000 ohm $\pm 10\%$ , 1/2 w	745 1170 00
S601	Bond change	SWITCH: Band change, 7 circ, 5 pos, 6 deck	259 0030 00
S601A	V603 Plate coil shorting	SWITCH: Part of S601	

Section 6  
PARTS LIST

ITEM	CIRCUIT FUNCTION	DESCRIPTION	COLLINS PART NUMBER
S601B	V603 Plate coil selecting	SWITCH: Part of S601	
S601C-1	V603 Cathode bias	SWITCH: Part of S601	
S601C-2	Dial light	SWITCH: Part of S601	
S601D	V604 Plate coil shorting	SWITCH: Part of S601	
S601E	V604 Plate coil selecting	SWITCH: Part of S601	
S601F	Output link selecting	SWITCH: Part of S601	
S602	Function switch	SWITCH: Band change, 5 circ, 4 pos, 3 deck	259 0031 00
S602A	Receiver disabling	SWITCH: Part of S602	
S602B	Plate switch	SWITCH: Part of S602	
S602C	V603, V604 Cathode opening	SWITCH: Part of S602	
S602D	HV Plate control	SWITCH: Part of S602	
S602E	Filament	SWITCH: Part of S602	
S603	Interlock	SWITCH: Snap, single pole, normally open	260 0708 00
S604	Meter circuit selector	SWITCH: Band change, 2 circ, 5 pos, non-shorting	259 0045 00
S604A	Part of S604	SWITCH: Part of S604	
S604B	Part of S604	SWITCH: Part of S604	
T601	Filament transformer	TRANSFORMER: Amp fil., Pri: 115 v, 2500 TV, 19 VA, Sec: 6.3 v CT, 3 amp rms, 2500 TV, 19 VA	672 0069 00
V601	Isolation buffer	TUBE: Type 6AG7, pentode power amp	255 0039 00
V602	Frequency doubler	TUBE: Type 6AG7, pentode power amp	255 0039 00
V603	Frequency multiplier	TUBE: Type 807, beam power amp	256 0033 00
V604	Frequency doubler	TUBE: Type 807, beam power amp	256 0033 00
V605	Voltage regulator	TUBE: Type VR150	257 0001 00
V606	Voltage regulator	TUBE: Type VR105	257 5002 00
V607	Sidetone oscillator	TUBE: Type 6SL7GT, twin triode	255 0040 00
V608	Voltage regulator	TUBE: Type VR150	257 0001 00

Section 6  
PARTS LIST

ITEM	CIRCUIT FUNCTION	DESCRIPTION	COLLINS PART NUMBER
V609	Voltage regulator	TUBE: Type VR105	257 0002 00
XF601	Fuse holder	CLIP: Fuse, phosphor bronze	265 1002 00
XI111	Pilot light socket	SOCKET: Pilot light	262 1210 00
XV601 XV602	Tube socket	SOCKET: Octal	220 1005 00
XV603 XV604	Tube socket	SOCKET: 5 prong	220 5520 00
XV605 XV606 XV607 XV608 XV609	Tube Socket	SOCKET: Octal	220 1005 00
30K TRANSMITTER UNIT			
C201	PA grid tuning	CAPACITOR: 20 mmf to 67 mmf	920 0001 00
C202	PA grid blocking	CAPACITOR: .001 mf $\pm 20\%$ , 500 WV	935 4101 00
C203, C204	Filament bypass	CAPACITOR: .0047 mf $\pm 20\%$	936 1105 00
C205	Screen bypass	CAPACITOR: .0047 mf $\pm 20\%$	936 1105 00
C206	Plate blocking	CAPACITOR: 150 mmf	924 1004 00
C207	C207A and B PA plate tuning	CAPACITOR: Dual section; 13 mmf to 34.5 mmf and 20 mmf to 57 mmf	920 0002 00
C208	Antenna coil tuning	CAPACITOR: 19 mmf to 202 mmf; dual section	920 0023 00
C209	20M grid coupling	CAPACITOR: 200 mmf $\pm 5\%$ , 600 WDC	913 0132 00
C210	20M grid coupling	CAPACITOR: 250 mmf $\pm 5\%$ , 600 WDC	913 0133 00
C211	15M grid coupling	CAPACITOR: 300 mmf $\pm 5\%$ , 600 WDC	913 0134 00
C212	10M grid coupling	CAPACITOR: 250 mmf $\pm 5\%$ , 600 WDC	913 0133 00
C301	V301 cathode bypass	CAPACITOR: 20 mf $+100\%$ $-10\%$ , 100 WV	183 3310 00
C302	C302A, C302B, C302C	CAPACITOR: 3 x .1 mfd, $+40\%$ $-15\%$ , 600 WV	961 4059 00



Section 6  
PARTS LIST

ITEM	CIRCUIT FUNCTION	DESCRIPTION	COLLINS PART NUMBER
C302A	V301 Screen bypass	Part of C302	
C302B	V301 Plate	Part of C302	
C302C	Decoupling		
C304, C305	Audio coupling capacitor	CAPACITOR: .01 mf $\pm 20\%$ , 200 WV	935 2118 00
C306	Filter tuning capacitor	CAPACITOR: 180 mmf $\pm 5\%$ , 500 WV	935 0116 00
C307, C308	Audio filter	CAPACITOR: 200 mmf $\pm 5\%$ , 500 WV	935 0118 00
C309	V302 Cathode bypass	CAPACITOR: 20 mf + 100% - 10%, 100 WV	183 3310 00
C310	Audio coupling	CAPACITOR: 0.1 mf + 40% - 15%, 600 WV	961 5020 00
C311	V304 Cathode bypass	CAPACITOR: 20mf +100% - 10%, 100 WV	183 3310 00
C312, C313, C314	Plate decoupling	CAPACITOR: 4 mf +40% - 15%, 600 WV	961 3005 00
C315	Mod grid bypass	CAPACITOR: 4700 mmf $\pm 20\%$ , 500 WV	935 2104 00
C316	V301 grid bypass	CAPACITOR: 100 mmf $\pm 20\%$ , 500 Wv	935 0107 00
C317	V301 Cathode bypass	CAPACITOR: .001 mf $\pm 20\%$ , 500 WV	935 4101 00
C401, C402	Filter	CAPACITOR: 4 mf + 40% - 15%, fixed, 600 WV	961 3005 00
C403	Filter	CAPACITOR: 10 mf $\pm 10\%$ , 1000 WV	930 0038 00
C501	Reactor tuning	CAPACITOR: 0.1 mf $\pm 10\%$ , 5000 WV	930 0042 00
*C501	Reactor tuning	CAPACITOR: .15 mf $\pm 10\%$ , 5000 WV	930 0035 00
C502, C503	Filter	CAPACITOR: 2 mf $\pm 10\%$ , 4,000 WV	930 0040 00
F101, F102	Line fuse	FUSE: 15 amp, 125 v	264 1150 00
F301	T303 Primary	FUSE: 1/2 amp, 250 v, 2 ohms	264 4250 00
F401	T401 Primary	FUSE: 1/2 amp, 250 v, 2 ohms	264 4260 00

\* 50 cps equipments

Section 6  
PARTS LIST

ITEM	CIRCUIT FUNCTION	DESCRIPTION	COLLINS PART NUMBER
F402	T402 Primary	FUSE: 3 amp, 250 v	264 4080 00
F403	T403 Primary	FUSE: 2 amp, 250 v	264 4070 00
F501	T501 Primary	FUSE: 1 amp, 250 v, 0.7 ohms	264 4280 00
I101	Filament pilot	LIGHT: Candelabra base; 125 v, 0.040 amps, 6 watts	262 3320 00
I102	Plate pilot	LIGHT: Candelabra base; 125v; 0.040amps; 6 w	262 3320 00
J201	PA r-f input receptacle	CONNECTOR: Standard open circuit input; wall mounting; pressure type contact for single conductor shielded cables	369 1007 00
J301	Microphone connector receptacle	CONNECTOR: Standard open circuit input; wall mounting; pressure type contact for single conductor; shielded cables	369 1008 00
K401	Plate power control	RELAY: Single pole normally open double break; 15 amps, 112 v, 5000 ohms	405 0021 00
L201	V201 Grid	COIL: 80 meters; 48 turns #24 G.A. enam. wire	503 4441 002
L202	V201 Grid	COIL: 40 meters; 80 turns #24 G.A. magnet wire	503 4442 002
L203	V201 Grid	COIL: 20 meters; 10 turns #18 G.A. tinned copper wire	503 4443 002
L204	V201 Grid	COIL: 15 meters; 7 turns #18 G.A. tinned copper wire	503 4444 002
L205	V201 Grid	COIL: 10 meters; 5 turns #18 tinned copper wire	503 4445 002
L211	V201 Grid	CHOKER: 2.5 mh $\pm 10\%$ , 50 ohms	240 5300 00
L212	V201 Plate	CHOKER: 1.0 mh $\pm 10\%$ , 0.6 amp	240 2600 00
L213	V201 Plate	COIL: 40 & 80 meter plate tank, 24 turns #14 wire	503 3491 002
L214	V201 Plate	COIL: 15 & 20 meter plate tank, 8 turns #10 wire	503 3492 002
L215	V201 Plate	COIL: 10 meter, 4 turns #10 G.A. tinned copper wire	503 8832 002
L216	Link coil	COIL ASSEM: Plug-in; 80 - 40 meter	520 3509 00
L217	Antenna coil		
L218	Antenna coil		
L216	Link coil	COIL ASSEM: Plug in; 20-15-10 meter	520 3510 00
L217	Antenna coil		
L218	Antenna coil		
L219, L220	Static drain choke	CHOKER: 1 mh $\pm 10\%$ , 0.6 amp	240 2600 00

Section 6  
PARTS LIST

ITEM	CIRCUIT FUNCTION	DESCRIPTION	COLLINS PART NUMBER
L301	Audio filter	CHOKE: Audio reactor, 3.75 hy $\pm 0.25$ henry, 100-5000 cps	678 0077 00
L302	V301 Grid	CHOKE: 3.8 microhy, 300 ma	240 0032 00
L401	Filter	CHOKE: 12 hy 75 ma filter reactor, 120 cps	678 0075 00
L402	Filter	CHOKE: 6 hy 250 ma filter reactor 120 cps	678 0076 00
L501, L502	HV Filter	CHOKE: 12 hy 300 ma, filter reactor 120 cps	678 0081 00
M101	PA Plate current	METER: 300 ma, 30 scale divisions, 10 ma per division, DC milliammeter	450 0031 00
M102	PA Grid current	METER: 25 ma, DC milliammeter	450 0029 00
M103	Filament voltage	METER: 10 v AC	452 0006 00
M104	Modulator plate current	METER: 200 ma, 40 scale divisions, 5 milliamps per division	450 0030 00
M105, M106	Antenna current	METER: 0-3 amp RF, 30 scale divisions	451 0018 00
P301	Microphone plug	CONNECTOR: Plug connector for single conductor shielded cables	369 1006 00
R101	Series resistor for tuning	RESISTOR: 660w, heater element conical, 115 v	711 0003 00
R201	PA Grid leak	RESISTOR: 5000 ohms $\pm 10\%$ , 25 watts	710 3542 00
R202	PA Screen dropping resistor	RESISTOR: 5000 ohms $\pm 10\%$ , 50 watts	710 4542 00
R302	V301 Grid	RESISTOR: 1.0 meg $\pm 10\%$ , 1/2 watt	745 1212 00
R303	V301 Cathode	RESISTOR: 1000 ohms $\pm 10\%$ , 1/2 watt	745 1086 00
R304	V301 Screen dropping	RESISTOR: .47 meg $\pm 10\%$ , 1/2 watt	745 1198 00
R305	V301 Plate	RESISTOR: 100,000 ohms $\pm 10\%$ , 1 watt	745 3170 00
R306	V302 Grid	RESISTOR: 500,000 ohms potentiometer	376 3027 00
R307	V302 Cathode	RESISTOR: 1000 ohms $\pm 10\%$ , 1 watt	745 3086 00
R308	V302 Plate	RESISTOR: 47,000 ohms $\pm 10\%$ , 2 watt	745 5156 00
R309	Audio dropping	RESISTOR: 100,000 ohms $\pm 10\%$ , 1/2 watt	745 1170 00
R310	V302 Grid	RESISTOR: 100,000 ohms $\pm 10\%$ , 1 watt	745 3170 00

Section 6  
PARTS LIST

ITEM	CIRCUIT FUNCTION	DESCRIPTION	COLLINS PART NUMBER
R311, R312	Voltage divider and V302 cathode	RESISTOR: 620 ohms $\pm 5\%$ , 1 watt	745 3077 00
R313	Voltage divider and V302 Cathode	RESISTOR: 330 ohms $\pm 10\%$ , 1 watt	745 3065 00
R314	V302 Plate	RESISTOR: 47,000 ohms $\pm 10\%$ , 2 watt	745 5156 00
R315	Gain control	RESISTOR: 100,000 ohms potentiometer	380 3100 40
R316	V304 Bias	RESISTOR: 750 ohms $\pm 10\%$ , 10 watts	710 1750 20
R317	Plate decoupling	RESISTOR: 47,000 ohms $\pm 10\%$ , 1 watt	745 3156 00
R318	Plate decoupling	RESISTOR: 4000 ohms $\pm 10\%$ , 50 watts	710 4442 00
R319	Plate decoupling	RESISTOR: 20,000 ohms $\pm 10\%$ 10 watts	710 1204 20
R320	Plate decoupling	RESISTOR: 4,700 ohms $\pm 10\%$ , 2 watt	745 5114 00
R401	Modulator bias control	RESISTOR: 750 ohms $\pm 10\%$ , 25 watts	735 0002 00
R402	Bias voltage divider	RESISTOR: 500 ohms $\pm 10\%$ , 10 watts	710 1500 20
R403	Bias voltage divider	RESISTOR: 1000 ohms $\pm 10\%$ , 10 watts	710 1142 00
R404	Bleeder voltage divider	RESISTOR: 25,000 ohms $\pm 10\%$ , 50 watts	710 4254 20
R405	Relay voltage dropping	RESISTOR: 1250 ohm $\pm 10\%$ , 10 watts	710 0024 00
R501, R502, R503, R504	Bleeder	RESISTOR: 25,000 ohms $\pm 10\%$ , 50 watts	710 4254 20
S101	Filament adjusting	SWITCH: 3 position single circuit, 10 amp contacts in all positions	259 1180 00
S102	Tune-operate	SWITCH: 3 position single circuit, 10 amp contacts in all positions	259 1180 00
S103	Filament power	SWITCH: SPST toggle	266 3005 00
S104	Plate power	SWITCH: SPST toggle	266 3005 00
S105	Door interlock	SWITCH: Push button, 3 amps, 125 v	266 0003 00
S201	S201A, S201B, S201C, S201D	SWITCH: 4 circuits, 5 position, 4 decks; 3 decks are single circuit 5 position shorting, 1 deck shorts all except one contact together	259 0020 00

Section 6  
PARTS LIST

ITEM	CIRCUIT FUNCTION	DESCRIPTION	COLLINS PART NUMBER
S201A	Relay selector	Section of S201	
S201B	Link selector	Section of S201	
S201C	Grid coil shorting	Section of S201	
S201D	Grid coil selector	Section of S201	
S202	S202A, B, C, D	SWITCH: 5 position tap switch, 4 deck	503 3540 004
S202A	Plate coil selector	Section of S202	
S202B	Plate coil shorting	Section of S202	
S202C	Antenna selector	Section of S202	
S202D	Antenna selector	Section of S202	
S301	S301A, B	SWITCH: includes STANDOFF: (qty 2 req) ceramic, 1"x3/8"dia STANDOFF: (qty 4 req) ceramic, 2" x3/8"dia CONTACT STUD: 8-32 hex	190 0012 00 190 0021 00 305 0145 00
S301A	Mod fil switch	Section of S301	
S301B	Mod transformer shorting	Section of S301	
T101	High voltage plate	TRANSFORMER: 50/60 cps; Pri: 115 v; Sec: 5700 v CT; 300 ma	662 0015 00
T301	Modulator input	TRANSFORMER: Driver; class "B"; Pri: 60 ma unbalanced; 2500 ohms; Sec: 15 ma balanced; 15,000 ohms, CT	677 0074 00
T302	Modulation	TRANSFORMER: Modulation; Pri: 175 ma bal; 32,000 ohms CT; Sec #1: 150 ma; 16,700 ohms; Sec #2: 50 ma unbalanced; 248 v rms w/1770 v across Sec #2	677 0073 00
T303	V304 Filament	TRANSFORMER: 50/60 cps; Pri: 115 v; Sec: 6.3 v; CT; 3.0 amps	672 0069 00
T401	Bias power	TRANSFORMER: 50/60 cps; Pri: 115 v; Sec: 5.0 v; 2.0 amps; 5.0 v, 2.0 amps; 420 v, CT; 0.100 amp	672 0068 00
T402	LV Power	TRANSFORMER: 50/60 cps; Pri: 105v, 115 v, 125 v; Sec: 1320 v; CT; .177 amps	672 0080 00
T403	V202, V305, V306 Filament	TRANSFORMER: 50/60 cps; Pri: 105v, 110 v, 115 v; Sec: 5.0 v; CT; 20.0 amps	672 0072 00
T501	High voltage rectifier filament	TRANSFORMER: 50/60 cps; Pri: 105v, 110 v, 115 v; Sec: 2.5 v; 10 A	672 0079 00
V201	Power amplifier	TUBE: Type 4-125A; power tetrode	256 0068 00
V301	Audio input	TUBE: Type 6SJ7; triple grid detector amplifier	255 0030 00

Section 6  
PARTS LIST

ITEM	CIRCUIT FUNCTION	DESCRIPTION	COLLINS PART NUMBER
V302	Audio amplifier	TUBE: Type 6SN7-GT; twin triode amplifier	255 0033 00
V303	Clipper	TUBE: Type 6H6; twin diode	255 0117 00
V304	Audio driver	TUBE: Type 6B4G; power amplifier triode	255 0124 00
V305, V306	Modulator	TUBE: Type 75 TH; medium MU triode	256 0071 00
V401	Bias rectifier	TUBE: Type 5R4GY; full wave high-vacuum rectifier	257 0020 00
V402	Low voltage rectifier	TUBE: Type 5R4GY; full-wave high-vacuum rectifier	257 0020 00
V501, V502	High voltage rectifier	TUBE: Type 866A; half-wave mercury- vapor rectifier	256 0049 00
XF101, XF102	Sockets for F101, F102	MTG BLOCK: Fuse; 2 plug receptacle	265 1013 00
XF301, XF401, XF402, XF403, XF501	Holders for F301, F401, F402, F403, F501	HOLDER: Fuse; extractor post	265 1002 00
XI101, XI102	Sockets for I101, I102	SOCKET: Pilot light	262 0033 00
XR101	Socket for R101	SOCKET: Heater; std screw type	265 1010 00
XV201	Socket for V201	SOCKET: Tube socket for 5 prong tube	220 1016 00
XV301, XV302, XV303, XV304	Socket for V301, V302, V303, V304	SOCKET: Eight prong tube socket	220 1005 00
XV305, XV306	Socket for V305, V306	SOCKET: Four prong tube socket	220 5450 00
XV401, XV402	Socket for V401, V402	SOCKET: Eight prong tube socket	220 1005 00
XV501, XV502	Socket for V501, V502	SOCKET: Four prong tube socket, 9/16" x 1-11/16" x 1-49/64"	220 5450 00

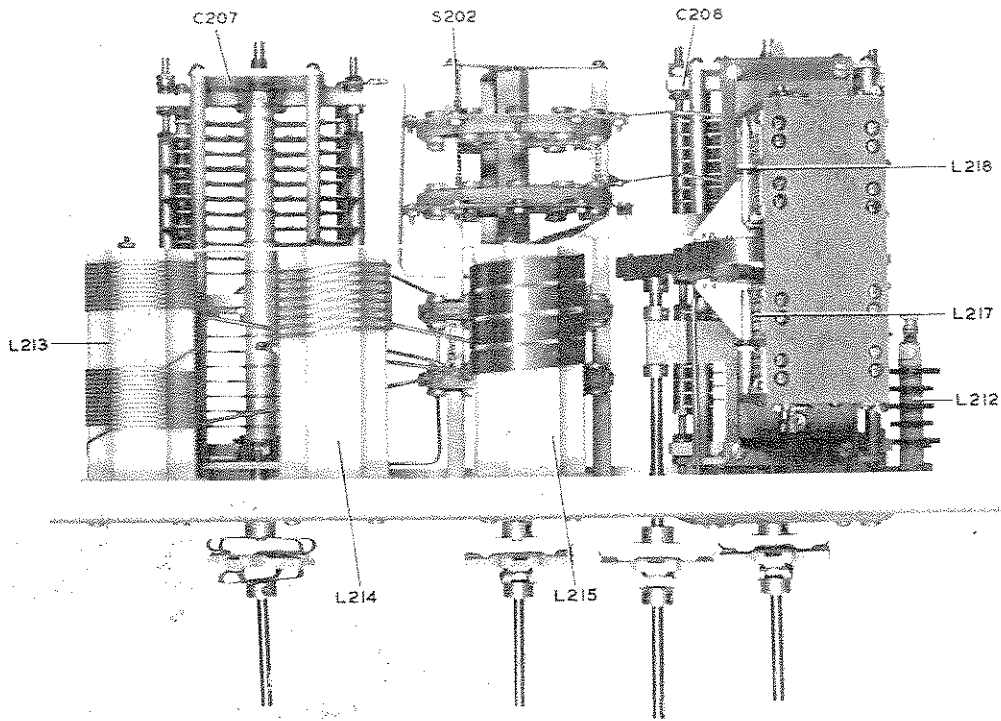


FIGURE 8-1 OUTPUT COIL & SWITCH ASSEMBLY, TOP VIEW

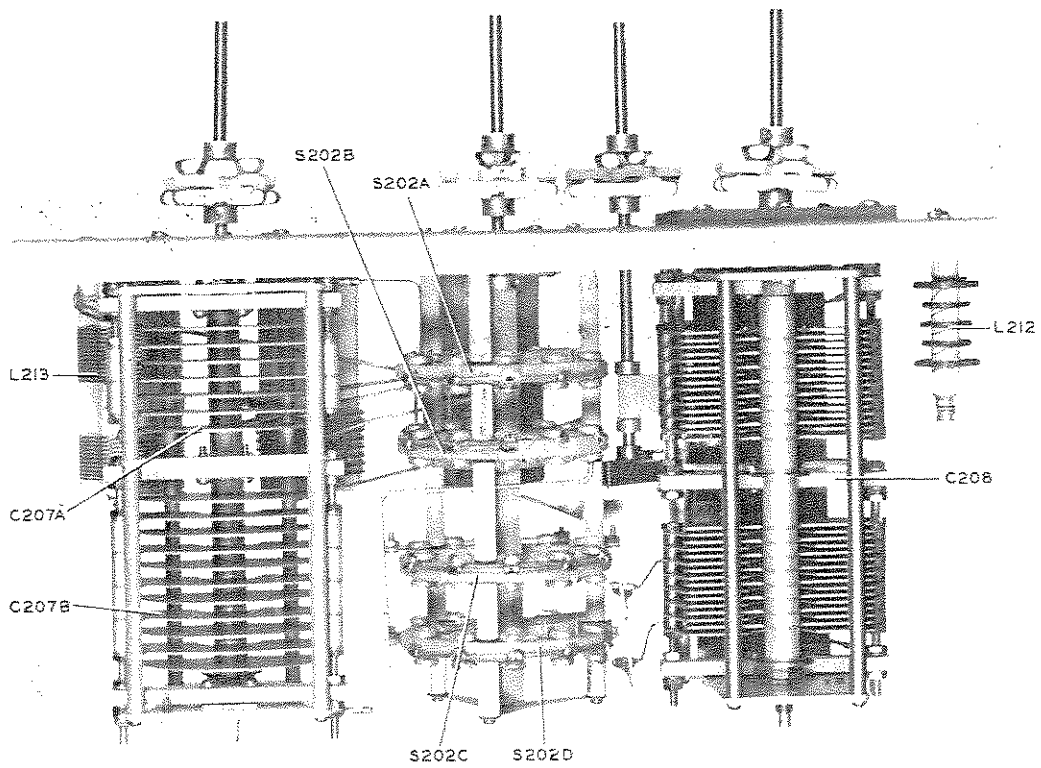


FIGURE 8-2 OUTPUT COIL & SWITCH ASSEMBLY, BOTTOM VIEW





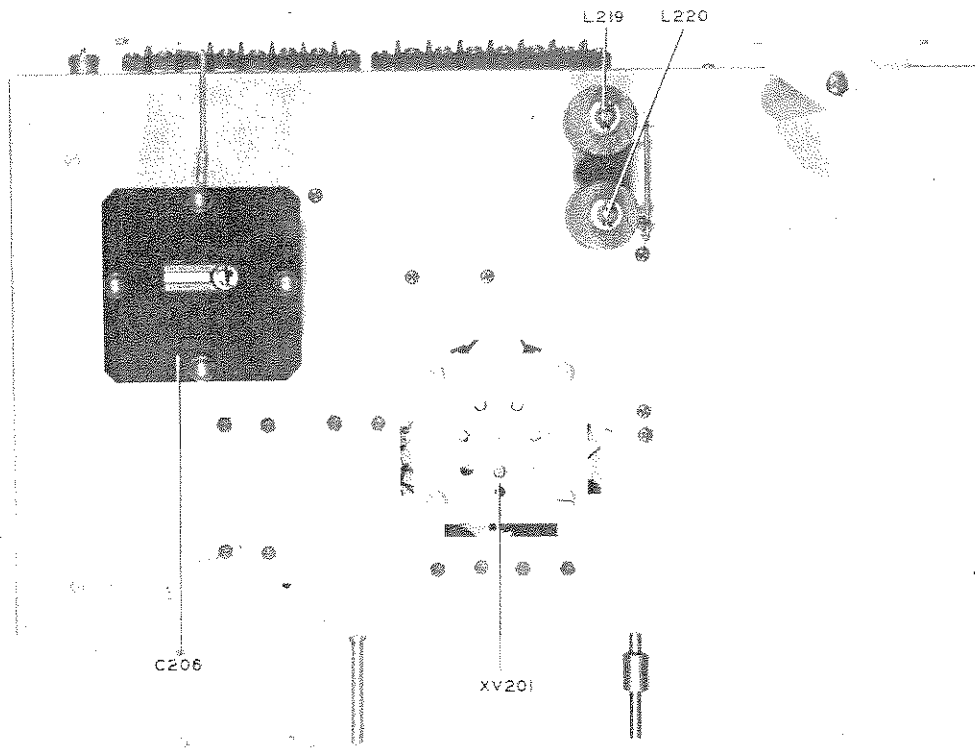


FIGURE 8-3 POWER AMPLIFIER TUBE CHASSIS, TOP VIEW

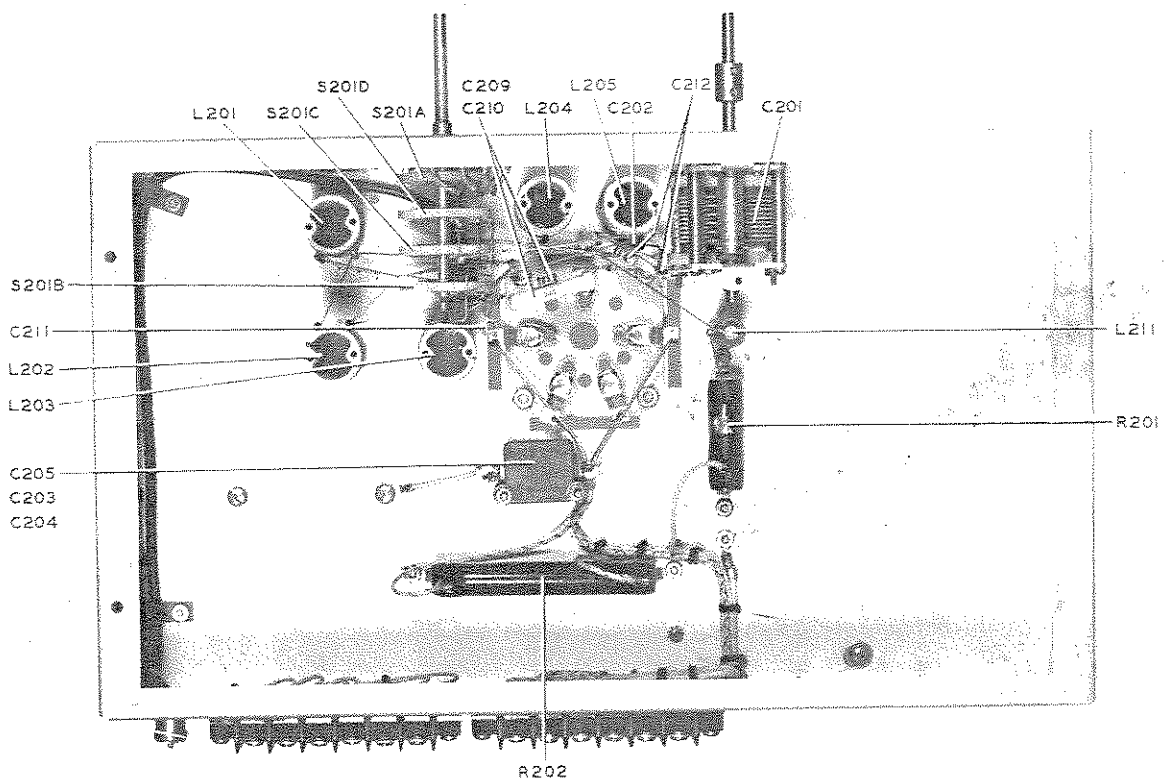


FIGURE 8-4 POWER AMPLIFIER TUBE CHASSIS, BOTTOM VIEW



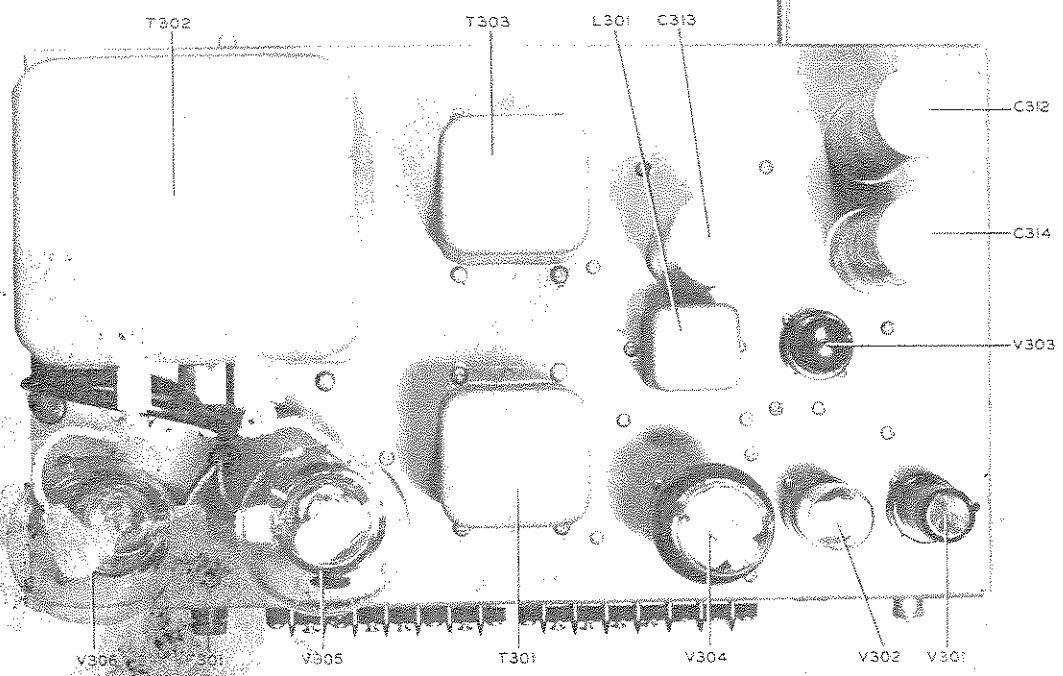


FIGURE 8-5 SPEECH AMPLIFIER AND MODULATOR, TOP VIEW

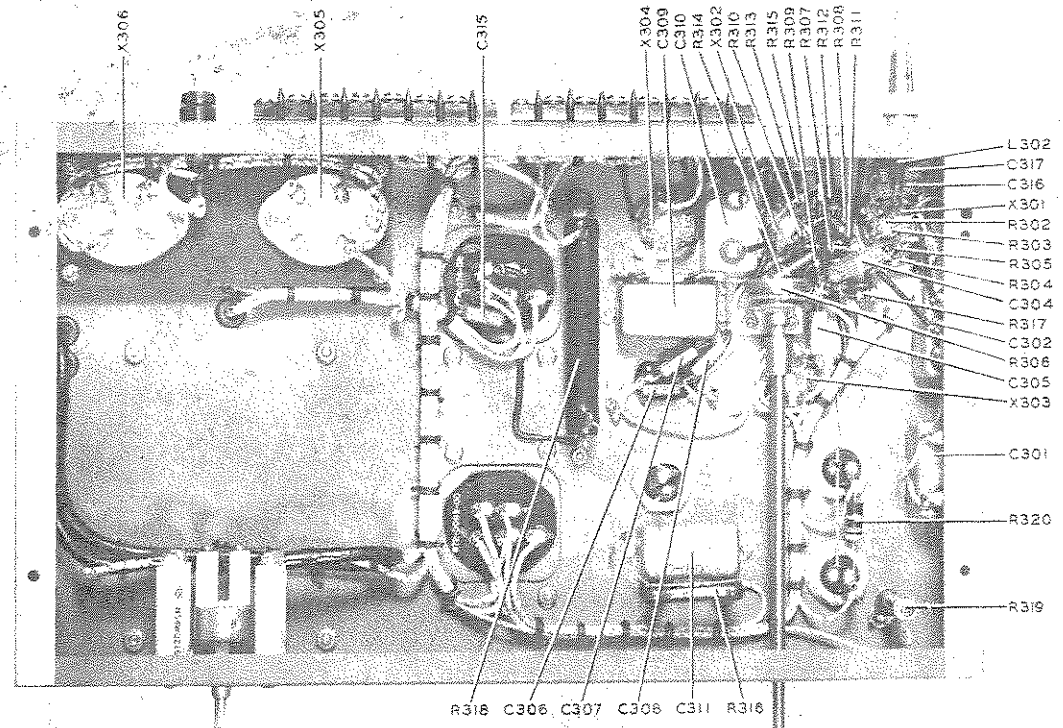


FIGURE 8-6 SPEECH AMPLIFIER AND MODULATOR, BOTTOM VIEW



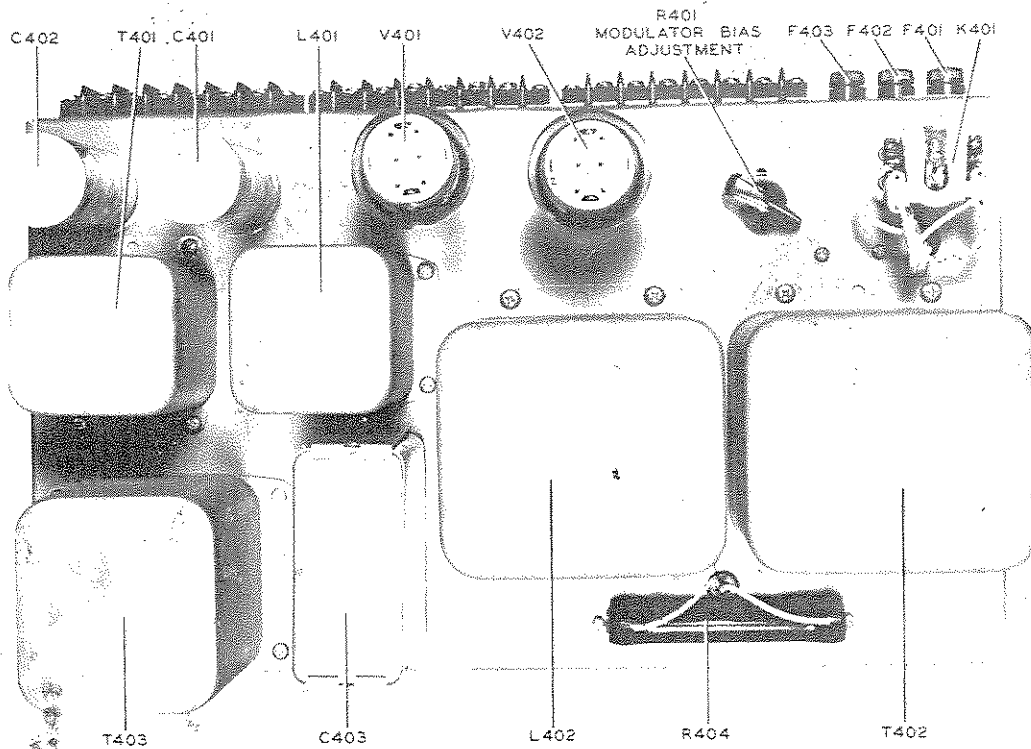


FIGURE 8-7 LOW VOLTAGE AND BIAS SUPPLY, TOP VIEW

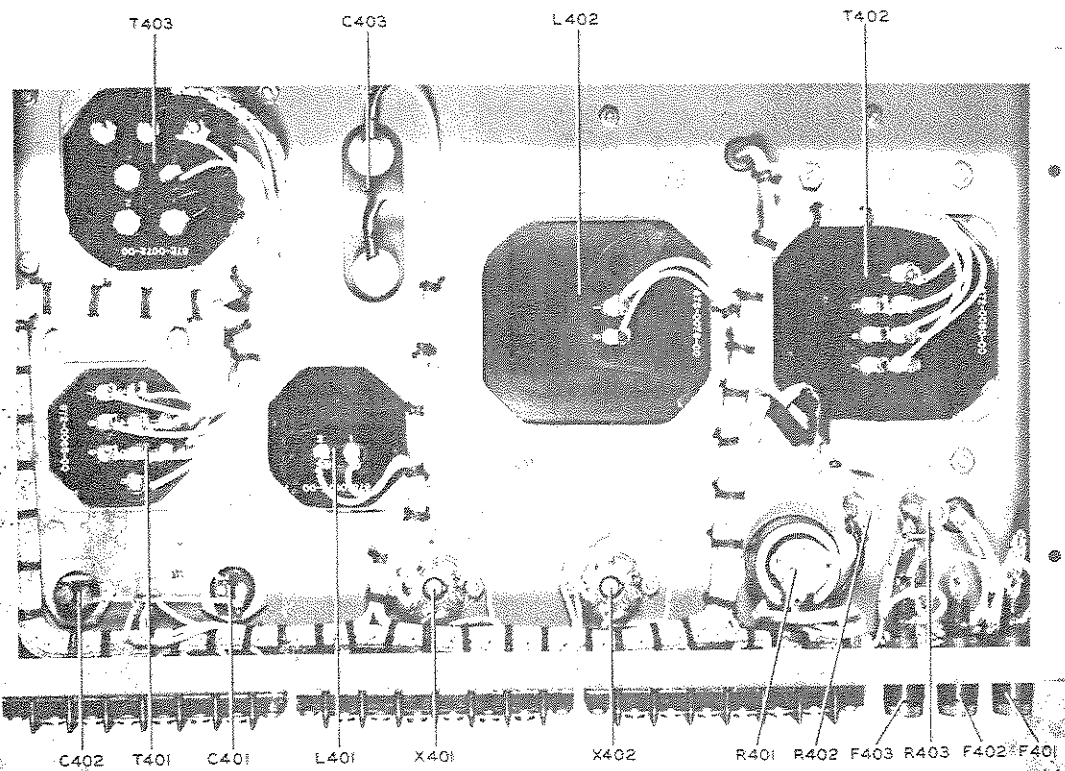


FIGURE 8-8 LOW VOLTAGE AND BIAS SUPPLY, BOTTOM VIEW



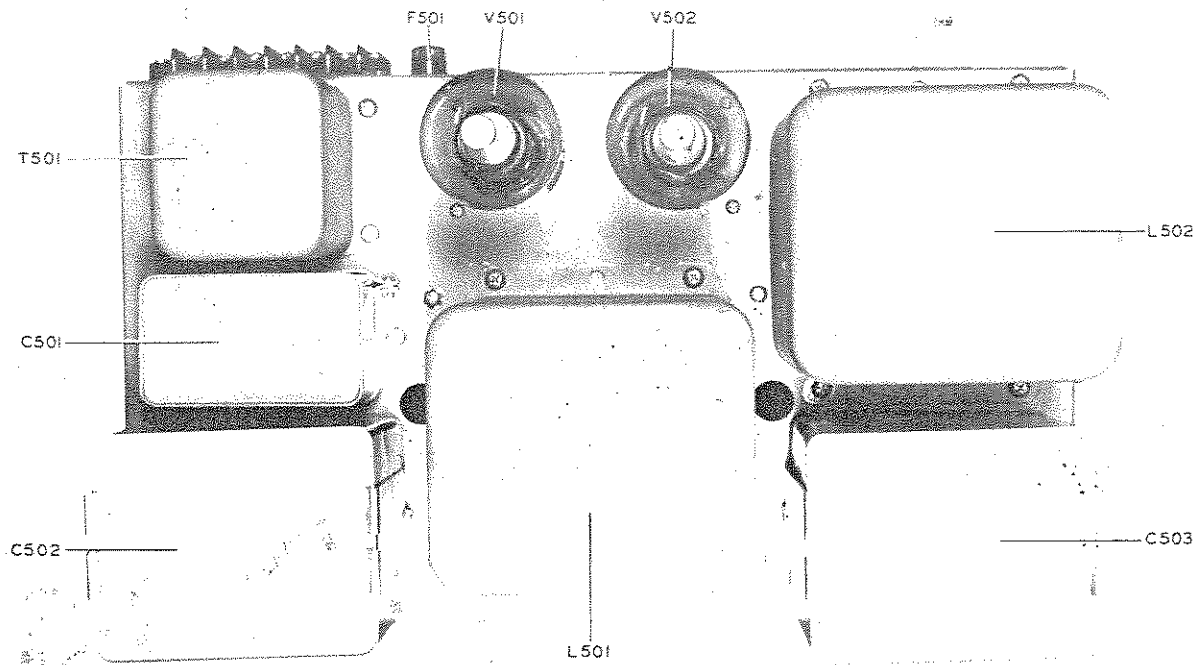


FIGURE 8-9 HIGH VOLTAGE RECTIFIER UNIT, TOP VIEW

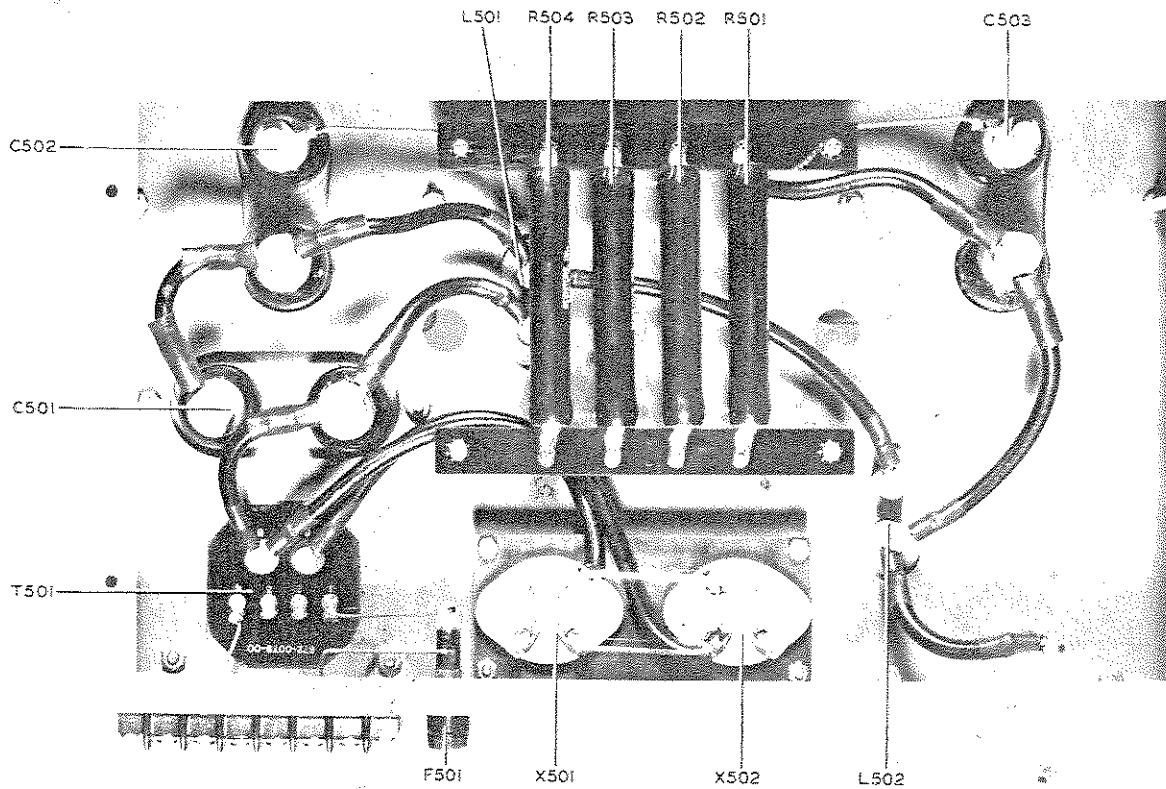


FIGURE 8-10 HIGH VOLTAGE RECTIFIER UNIT, BOTTOM VIEW





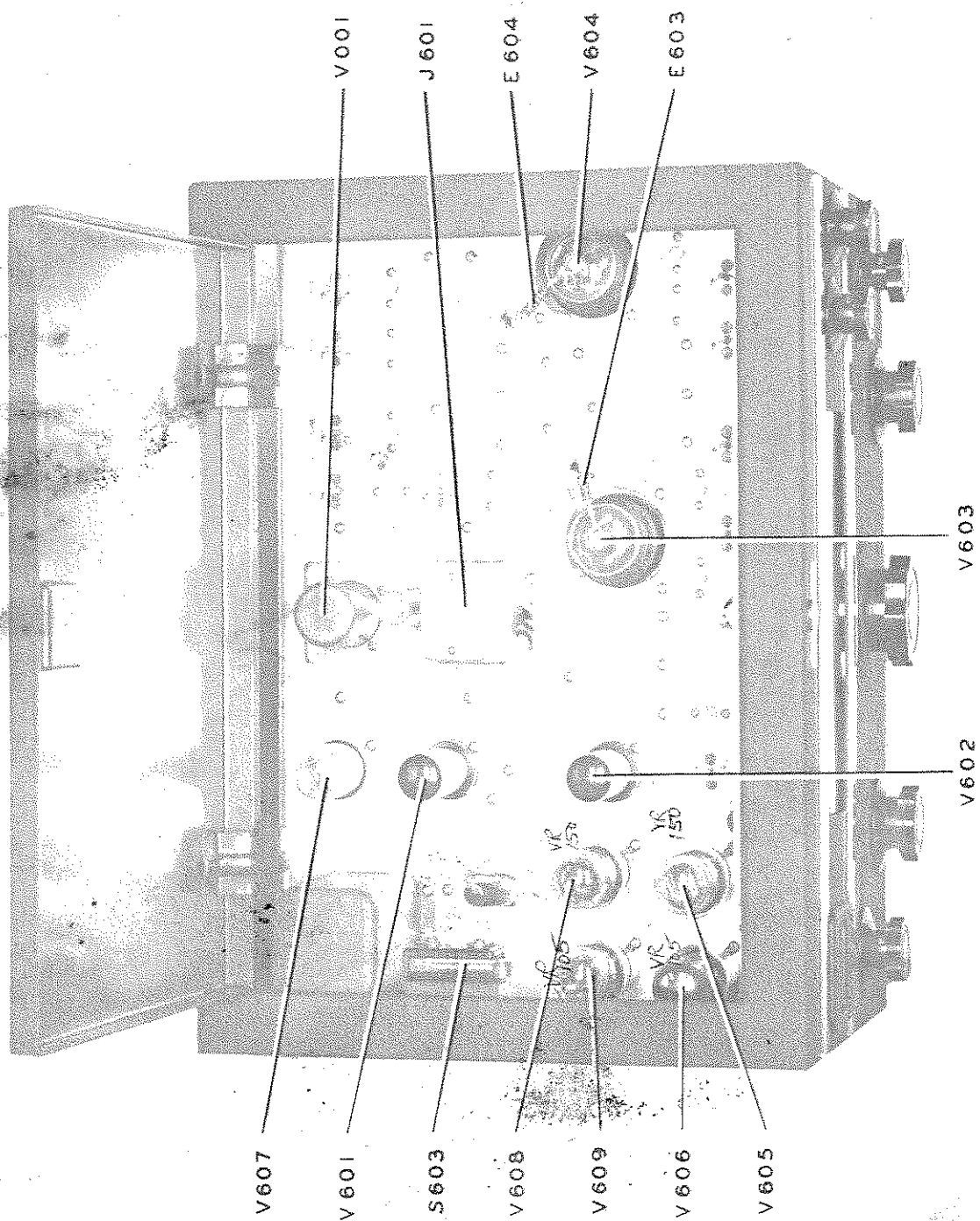


FIGURE 8-II EXCITER UNIT, TOP OPEN VIEW



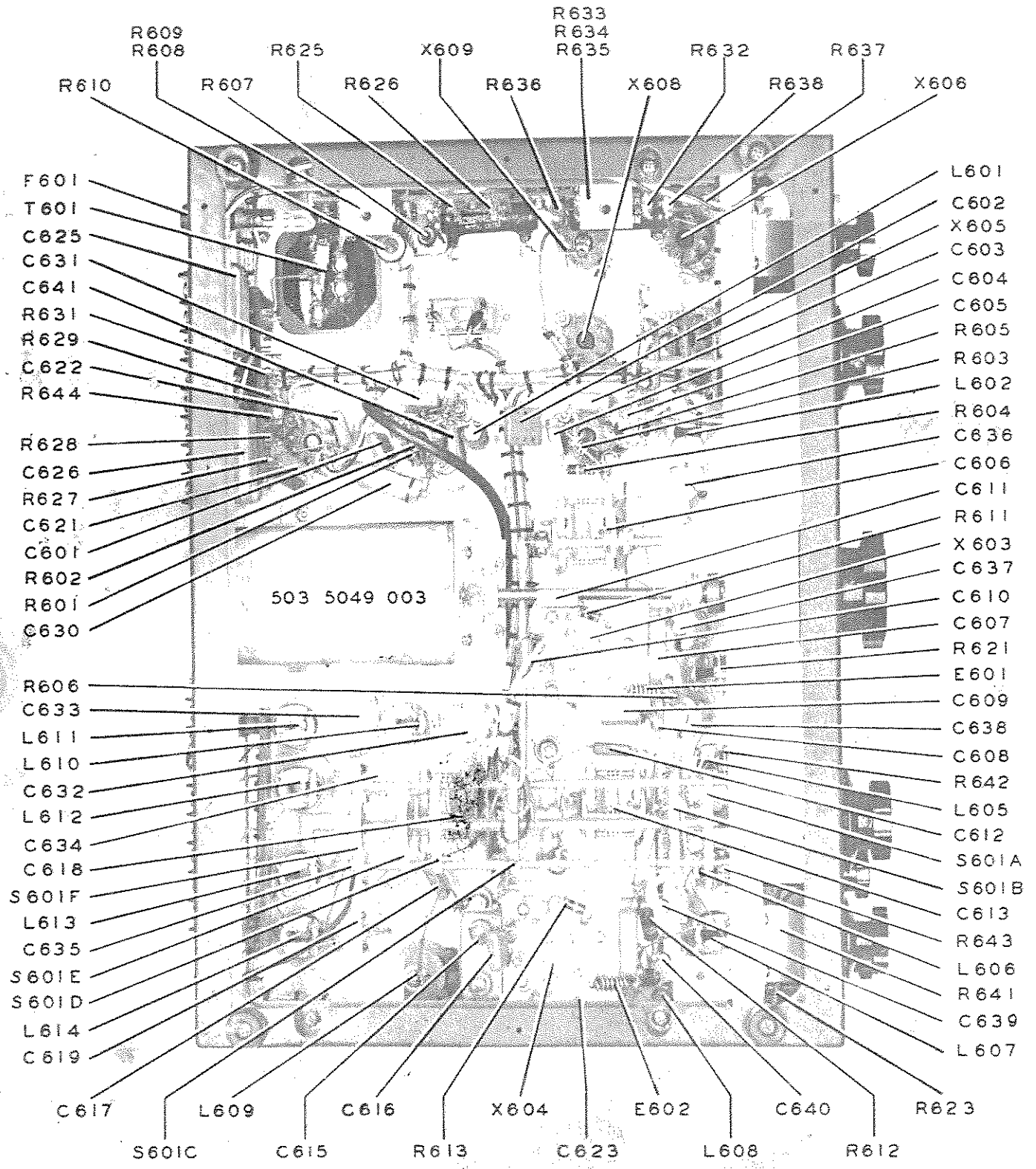


FIGURE 8-12 EXCITER UNIT, BOTTOM OPEN VIEW

