THIS SUPPLEMENT WILL REMAIN IN EFFECT ONLY UNTIL THE INFORMATION IS PUBLISHED IN AN OFFICIAL DEPARTMENT OF THE ARMY PUBLICATION.

SUPPLEMENT
16 JULY 1954

SUPPLEMENT TO

TM 11-851

RADIO SET SCR-244-D

AND

RADIO RECEIVERS

R-274A/FRR,

R-274C/FRR,

R-320A/FRC,

R-483/FRR,

AND

R-483A/FRR

The following information, published on Order No. 25693–Phila–53 supplements TM 11–851, October 1953. The equipment covered in this supplement is:

Name	*Serial numbers*
Radio Receiver R–620/FRR	1 thru 100

Personnel using this equipment and having custody of this technical manual will enter suitable notations beside each affected paragraph and figure in the technical manual to indicate the presence of this supplementary information.

Add, R–620/FRR, after "R–274C/FRR" in the following places in the manual:

Page 1. Title.

Page 7. Par. 3*a*. Line 7.

Page 10. Par. 5. A-c supply requirements, Line 7.

Page 7. Par. 1. Line 6. Change "and Radio Receiver R–274C/FRR" to read: Radio Receiver R–274C/FRR, and Radio Receiver R–620/FRR.

Change, "and R–274C/FRR" to read: , R–274C/FRR, and R–620/FRR, in the following places in the manual.

Page 7. Par. 3*b*. Line 4.
Page 10. Par. 5. Frequency range. Line 9.
Page 10. Par. 5. Crystals: Line 7.
Page 33. Par. 28. VFO-XTALS. Line 5.
Page 33. Par. 28. △ FREQ HIGH-LOW. Lines 4 and 5.
Page 35. Par. 29*a*.(1). Lines 1 and 2.
Page 36. Par. 29*b*. Table. Lines 13 and 14.
Page 37. Par. 30*d*. Caption.
Page 38. Par. 31*d*. Caption.
Page 45. Par. 42*b*(2). Line 8.
Page 45. Par. 42*b*(4). Line 5.
Page 45. Par. 42*b*(5). Lines 10 and 11.
Page 45. Par. 42*b*(7). Lines 6 and 7.
Page 49. Par. 52. Item 14.
Page 51. Par. 52. Item 31.
Page 52. Par. 52. Item 31.
Page 52. Par. 53. Item 32.
Page 53. Par. 53. Line 6.
Page. 53. Par. 53. Lines 3 and 4 from bottom.
Page 53. Par. 53*c*. Line 5.
Page 53. Par. 53*d*. Line 3.
Page 61. Par. 56*a*. Lines 4 and 5.
Page 63. Par. 57*a*. Line 2.
Page 65. Par. 58*c*. Line 6.
Page 78. Par. 68*e*. Line 10.
Page 87. Par. 75*c*. Line 9.
Page 91. Par. 80. Table, last column, Line 26.
Page 93. Par. 82. Line 2. Item 13.
Page 120. Par. 83. Table, column 1, Line 2.
Page 122. Par. 85*d*. Lines 7 and 8.
Page 124. Par. 87*a*. Open circuit column, Line 9.
Page 128. Par. 88*a*(1). Line 30.
Page 129. Par. 88*a*(2). Line 2.
Page 129. Par. 88*b*. Short circuit column, Line 5.
Page 135. Par. 90*b*. Line 12.
Page 137. Par. 90*d*. Line 3.
Page 141. Par. 91*a*(2). Lines 5 and 6.
Page 152. Par. 98. Control column, Line 3.
Page 160. Par. 120*f*. Lines 1 and 2.

Change "and R–274C/FRR" to read: R–274C/FRR, and R–620/FRR, in the following places in the manual.

Page 11. Par. 6*a*. Line 3.
Page 19. Par. 14. Line 3.
Page 42. Par. 42*a*(1). Lines 5 and 6.

Add, and R–620/FRR, after "1570," in the following places in the manual.

Page 69. Par. 61*b*. Line 13.
Page 74. Par. 63*b*. Lines 2 and 7.
Page 74. Par. 64*b*. Line 2.

Page 9. Par. 4*e*. Note. Line 1. Delete "cw".

Page 10. Par. 5. Number of tubes. Line 6. Add the following after line 6

Radio Receiver R–620/FRR ..... 21.

Page 10. Par. 5. Selectivity. Crystal. Change "2-kc" to .2-kc.

Page 10. Par. 5. Crystals. Line 9. Add the following "Note" after line 9.

Note. On Order No. 25693–Phila–53–36–61, 6.1200 mc, 7.4525 mc, and 10.649666 mc, Crystal Units CR–18/U are supplied as auxiliary equipment for the R–620/FRR receiver.

Page 10. Par. 5. Weight. Line 11. Add the following after line 11.

Radio Receiver R–620/FRR 69.7 pounds.

Change, "or R–274C/FRR" to read: , R–274C/FRR, or R–620/FRR in the following places in the manual.

Page 11. Par. 6*a*. Table. Equipment column, Lines 6 and 7.
Page 13. Par. 8*d*. Lines 1 and 2.
Page 135. Par. 90*c*. Line 3.

Page 11. Par. 6*a*. Line 7. After sentence ending with "14." add:

Radio Receiver R–620/FRR, supplied on Order No. 25693–Phila–53–36–61, contains the Crystal Units CR–18/U.

Page 11. Par. 6*b*. In the table listing the contents of the 18 by 34 by 23-inch case, change the data to read:

Case dimensions (in.)	Contents	Notes
18 x 34 x 23	1–Radio Receiver R–320A/FRC, R–274A/FRC, R–274C/FRR, or R–620/FRR.	Table Cabinet (Radio Receiver R–274A/FRR only) or rack mountings for all types. Tubes and indicator lamps are included, also neon lamp (Radio Receiver R–620/FRR only) and are all packed in a separate cartoned assembly.
	1–Set of running spares consisting of 2 dial lamps, 12 fuses, and 13 electron tubes in Radio Receiver R–274A/FRR and R–274C/FRR but only 12 electron tubes in Radio Receiver R–R320A/FRC; also, 13 electron tubes, 1 glow lamp, 4 dial lamps, and no fuses (excluding 4 mounted on receiver chassis), in Radio Receiver R–620/FRR.	Running spares are all cartoned and packed in a separate wooden box.
	2–Technical Manuals TM 11–851.	

Page 12. Par. 7*b*. Add paragraph 7.1 after paragraph 7*b*:

7.1. Table of Components for Radio Receiver R–620/FRR

a. The various components comprising Radio Receiver R–620/FRR are tabulated below.

Table of Components for Radio Receiver R–620/FRR (cont.)

Component	Required No.	Height (in.)	Depth (in.)	Length (in.)	Volume (cu ft)	Unit weight (lb)
Radio Receiver R–620/FRR	1	10½	16½	19	1.905	69.75
Crystal Unit CR–18/U,						
6.1200 mc	1	.765	.343	.988	.00015	.01
7.4525 mc	1	.765	.343	.988	.00015	.01
10.649666 mc	1	.765	.343	.988	.00015	.01
Technical Manual TM 11–851	2	11	1	8½	.108	2
Total					2.013	71.78

b. See paragraph 7*b*.

Page 12. Par. 8*a*. Line 3. After the sentence ending in "the receiver." add, (The front panel of Radio Receiver R–620/FRR is dark gray in color.)

Page 12. Par. 8*a*. Line 10. After sentence ending in "cover." add: (The cover for Radio Receiver R–620/FRR has no rubber channel.)

Page 12. Par. 8*a*. Last Line. After sentence ending with "(fig. 67)." add: Radio Receiver R–620/FRR does not use C151.

Page 12. Par. 8*c*. Line 23. Capitalize the word "lock".

Page 12. Par. 8*b*. Last line. Add the following to the paragraph: Radio Receiver R–620/FRR has a single scale meter and only one adjustment control on the rear of the chassis.

Page 13. Par. 8*d*. Line 9. After sentence ending with "(par. 16*b*)." add: Radio Receiver R–620/FRR on Order No. 25693–Phila–53 is supplied with three such crystals for fixed-channel reception at 27.994 mc, at 14.405 mc, and at 6.9975 mc.

Page 18. Par. 12*c*. Line 2. Change "48" to read: 486.

Page 19. Par. 13*b*. Add paragraph 13.1 after paragraph 13*b*.



Figure 10.1. Radio Receiver R–620/FRR, front view.

13.1. Description of Radio Receiver R–620/FRR

a. Radio Receiver R–620/FRR (fig. 10.1 and 10.2) is the rack mounting type (par. 8*a*). The receiver self-contained power supply is designed to operate from a 50- to 60-cps, 90- to 270-volt ac power source. The outline provided (par. 8) is fully applicable to the receiver.

b. It is of more recent design than Radio Receiver R–274C/FRR from serial No. 1570 and differs from it with regard to its top cover, side plates, carrying handles, single-scale meter, lack of a METER RF–AF switch, one meter-adjustment control, antenna input bracket J1, tube complement and arrangement, and the location of the 6 channel plastic logging chart on the front panel.

Page 19. Par. 13.1. Insert figures 10.1 and 10.2 after paragraph 13.1.

Page 20. Par. 15*b*. Add paragraph 15*c* after paragraph 15*b*.

c. Following is a list of running spares for Radio Receiver R–620/FRR.

3 tubes 6BA6
1 tube 6C4
1 tube 6BE6
2 tubes 6AL5
1 tube 12AU7
1 tube 6V6GT
1 tube 5R4GY
1 tube OB2
1 tube 6AH6
1 tube OA2
1 lamp, glow, type NE–48 (General Electric)
4 lamps, dial, type 47 (Graybar)
2 fuses, 1.6-ampere, type MDL 1.6-ampere 125V FUSETRON (Buss).

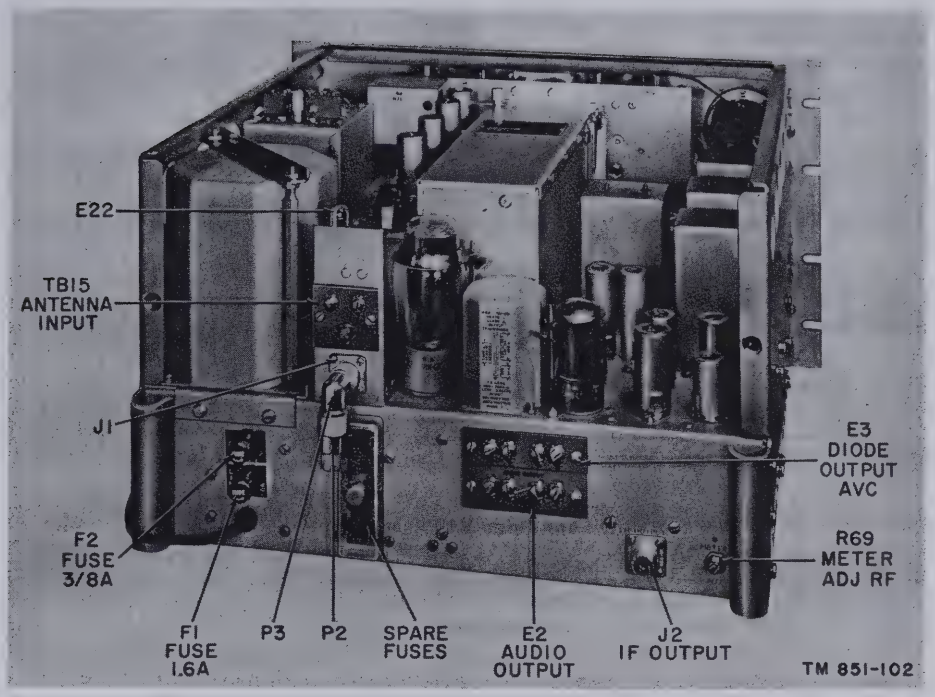


Figure 10.2. Radio Receiver R–620/FRR, chassis and panel assembly, rear view.

2 fuses, 3/8-ampere, type AGC-3/8 (Buss).

Page 20. Par. 16*b*. Heading. Change the heading to read: *Equipment Required for Radio Receivers R–274A/FRR, R–274C/FRR, R–620/FRR, and R–320A/FRC.*

Page 20. Par. 16*b*(4). Change "(for Radio Receiver R–274A/FRR or R–274C/FRR only)." to read: (for Radio Receiver R–274A/FRR, R–274C/FRR, or R–620/FRR only); but on Order No. 25693–Phila–53 three crystal units are supplied for reception at 6,997.5 kc, at 14,405 kc, and at 27,994 kc.

Page 23. Par. 20*b*. Add paragraph 20.1 after paragraph 20*b*.

20.1. Differences between Radio Receivers R–620/FRR and R–274C/FRR from Serial No. 1570.

a. The external appearance of Radio Receiver R–274C/FRR is described in paragraph 12 and that of Radio Receiver R–620/FRR in paragraph 13.1. The external appearances are essentially the same except for a few minor changes (the R–620 is a JAN version of the R–274C). The latter, however, has design changes to improve operational features. The design differences are listed in the table below:

Item	Radio Receiver R–274C/FRR SERIAL NOS. 1570 AND ABOVE	Radio Receiver R–620/FRR
If. rejection ratios.	Isolating capacitors C24, C44, and C74 (fig. 86) are each .01 uf. C8 (fig. 76), C32, and C52 (fig. 77) are each 2400 uuf. The primary of L9 and L16 (fig. 77) each has 3¼ turns.	C24, C44, and C74 (fig. 86.1) are each 1,000 uuf. C8 (fig. 86.1), C32, and C52 (fig. 77.1), are each 2300 uuf. The primary of L9 and L16 (fig. 77.1) each has 2¼ turns. Also, coupling capacitors C191 through C198 (fig. 77.1) have been added. Changes made reduce the preselective off-resonant impedances for bands 1, 2, 3, and 4, whereby the if. rejection ratios become uniform

Item	Radio Receiver R–274C/FRR SERIAL NOS. 1570 AND ABOVE	Radio Receiver R–620/FRR
		for the full frequency range of the receiver.
If. crystal filter.	R45, R46, and R47 (fig. 87) are respectively, 240, 1100, and 18K. Y8 is the solder-in type.	R45, R46, and R47 are respectively, 200, 820, and 3300 ohms, R131 (fig. 80.1) is added across T3 primary. Y8 is the socket-mounted type.
Gain, of two-stage if. amplifier and if. driver; V9, V10, and V11.	High in each if. stage compared to that of if. driver. Capacitors C119 and C125 are each 300 uuf and C120 and C126 are each 1300 uuf (fig. 81).	C119, C120, C125, and C126 (fig. 81.1) are respectively 260, 6200, 510, and 510 uuf. Due to T9 if. driver stage gain is doubled, so that for high level signals, driver is linear.
V13 bfo circuit.	Uses a type 6C4 tube in a Colpitts-type oscillator. The bfo buffer amplifier V12 uses a type 6BA6 tube.	Uses a type 6BA6 tube in a stable electron-coupled oscillator. There is no bfo buffer amplifier.
Avc circuit.	Derives input from both V11 if. driver and V12 bfo buffer amplifier (when bfo V13 is in use). R48, R115, and R116 (fig. 68) enable the avc bias to V1 and V2 to be tapped down. V9 grid-isolating resistor R43 (fig. 70) is 100K; AVC cathode bypass capacitor C162 and C169 (fig. 68) are, respectively, .022 and .01 uf. The avc time constant is determined by the filter sections comprising R60 (fig. 69) at 1 meg and C140 (fig. 70) at 430 uuf, and R111 at 100K and C164 (fig. 68) at 430 uuf.	The output from the bfo V13 has no effect on the avc bias developed; V12 is the avc amplifier. R48, R115, and R116 are not used. R43 is 470K; C162 (on TB8) (fig. 70.1) is .01 uf. R60 and C169 (on TB10) (fig. 70.1) are in avc line at S8 dc load for V15A is R66 at 3300 ohms, R94 at 1100 ohms (on TB10) (fig. 70.1), R93 RF GAIN potentiometer (50K) (fig. 67), and R97 (fig. 67) at 68K.
	R61 and R66 (fig. 70) in series are the dc load for V14B, and are, respectively, 1 meg and 18K.	R68 (on TB7) is 15K and C140 (on TB4) (fig. 70.1) is .01 uf. R111 (on TB4) is 10K and C164 (on TB4) is .01 uf.
	Also, the voltage divider resistor R68 (fig. 70) is 100K and the isolating resistor R97 (fig. 67) is 3.3 MEG.	
Rf meter, M1.	Shows a reading when bfo V13 is in use, with no rf signal input to receiver, since M1 is part of the V14A detector dc load.	M1 is isolated from the bfo V13 and from the V14A detector, by the avc amplifier V12.
Noise limiter.	V15A is the shunt type.	V14B is the series type.
Hf crystal oscillator V3.	Uses a type 6AC7 tube. Its output falls off at the high frequency bands to reduce the receiver sensitivity.	Uses a type 6AH6 tube. On bands 4, 5, and 6, its output is increased by permitting the vfo V4 to operate at the same time. This eliminates the decrease in receiver sensitivity at the higher frequencies.
3.5-mc crystal oscillator, V8.	Oscillator feedback provided by plate-to-grid interelectrode capacitance. Y7 (fig. 83) is the solder-in type.	Is the Pierce type. Y7 (fig. 83.1) is the socket-mounted type.
Screen supply for V9 and V10.	Derived at junction of B+ bleeder network resistors R72 and R73 (fig. 68).	Derived at pins 1, 5 of voltage regulator V21.

Item	Radio Receiver R–274C/FRR SERIAL NOS. 1570 AND ABOVE	Radio Receiver R–620/FRR
Screen supply for V6, and V7, and plate supply for V8.	Derived at junction of B+ filter L52, C161C, and R85. V6 screen dropping resistor R40 (fig. 83) is 20K.	Derived at pins 1 and 5 of V21. R40 is now 1K.
Plate supply for V4.	Derived at pins 1, 5 of V18.	Pins 1, 5 of V18 for VFO operation. Pins 1, 5 of V21 for XTAL operation (bands 4, 5, and 6).
Voltage for voltage divider network R66 and R68.	Obtained at pins 1, 5 of V18.	Obtained at pins 1, 5 of V21.
Filter in B+ supply to V1 and V2.	C163 is .25 uf.	C163 and C176 are each .01 uf and L57 is 192 uh.
455-kc if. gate, V7.	Cathode resistor R112 is 390 ohms and plate dropping resistor R39 is 33K. R32 and R33 are a voltage divider network at the input to V7.	R112 is 820 ohms and R39 is 10K. R32 is not used, but R33 at 2200 ohms is across secondary of L32.
Rf choke in plate supply to V4.	L24 is 192 uh ±5%.	L24 is 2.5 mh, ±5%.
Cathode resistor for first mixer, V5.	R27 is 150 ohms.	R27 is 680 ohms.
Two-stage af amplifier, V16B and V17.	For V16B, cathode resistor R83 is 1K and coupling capacitor C149 is 5100 uuf.	R83 is 1500 ohms, C149 is .01 uf.
	For V17, grid resistor R98 is 470K; cathode bias resistor is R99 and bypass capacitor is C151, R82, and C148 are a plate decoupling network. C150 is across primary of T7.	R98 is 100K. R82, C148, R99, and C151 are not used. R98 with R133 is a voltage divider network which supplies grid bias. C186 and C187 in series, are across primary of T7.
Cathode follower, V16A.	Grid resistor R78 is 470K. Coupling capacitor C147 is 5100 uuf, C146 is .022 uf, C145 is 15 uuf.	R78 is ~~5100~~ 10K ohms, C146 and C145 are each .01 uf, C147 is deleted. R124 is in series with C145, and R79. L53 is connected directly to cathode.
Bias rectifier V 20 filter resistor.	R90 is 10K.	R90 is 56K.
Capacitor C97, in T2.	65 uuf.	68 uuf.
Crystal filter Y8.	Y8, the solder-in type.	Y8, the socket-mounted type.
3.5-mc crystal oscillator, crystal unit, Y7.	Y7, the solder-in type.	Y7, the socket-mounted type.
Crystal Unit CR–18/U, for fixed-channel reception.	Not supplied.	One each supplied for reception at 6,997.5 kc, 14,405.0 kc, and 27,994.0 kc.
R69	33K	35K

b. Radio Receivers R–274C/FRR and R–620/FRR are interchangeable.

Page 26. Par. 22*b*(12). Line 3. Add the following after "box": (par. 6).

Page 26. Par. 23*a*. Add a period to end of sentence.

Page 28. Par. 24*b*. Line 4. Change "(fig. 13 and 14)" to read: (fig. 13, 14, and 14.1).

Page 30. Fig. 14. Insert figure 14.1 after figure 14.

Page 32. Par. 28. Delete the function of LIMITER-OFF switch S6 and substitute

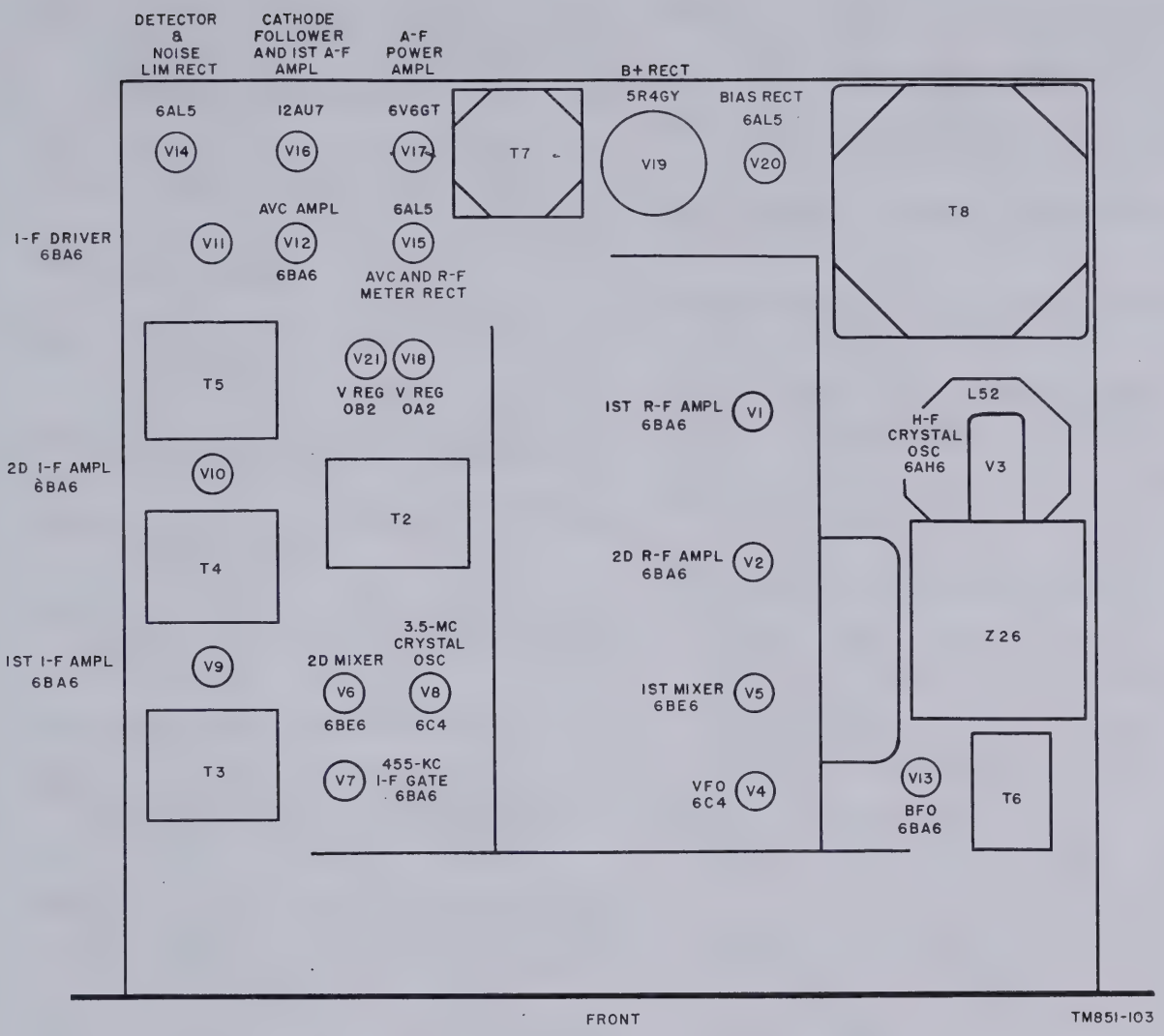


Figure 14.1. Radio Receiver R–620/FRR, tube location.

the following:

In LIMITER position, for Radio Receiver R–620/FRR only, switches V14B series noise limiter rectifier into the circuit; for all other receiver types, switches *in* a capacitor to the plate of the shunt noise limiter rectifier. Either circuit eliminates noise from the audio output of the receiver. In OFF position the noise limiter is inoperative.

Page 35. Par. 29*a*(2). Footnote. Change "The third harmonic mode of operation of crystals is used" to: The crystal controls the fundamental frequency of the oscillator whose third harmonic is used.

Add: (In all radio receivers, except the R–620/FRR) after the reference symbol designating the control in the following places in the manual.

Page 32. Par. 28. (S11)
Page 33. Par. 28. (J5)
Page 33. Par. 28. (R74)
Page 33. Par. 28 (R101)

Page 33. Par. 28. DIODE OUTPUT–AVC. Change, "and R–483A/FRR" to read: R–483A/FRR, and R–620/FRR.

Page 34. Fig. 17. Add the following note:
RADIO RECEIVER R–620/FRR HAS NO METER RF–AF SWITCH AND FREQ CONTROL IS CHANGED TO READ HFO.

Page 35. Par. 29*a*(1). Line 8. Change "(fig. 63 or 64)" to: (fig. 63, 64, or 66.1).

Page 38. Par. 31*d*(6). Line 3. Change "clocked" to read: blocked.

Page 45. Par. 42*a*(11). Line 3. After "F2" add: , when applicable.

Page 45. Par. 42*b*(6). Line 4. After "R73" add: (R128 in Radio Receiver R–620/FRR).

Page 45. Par. 42*b*(7). Line 5. After "S11" add: , when applicable.

Page 46. Par. 42*b*(12). Line 4. After "damaged" add: (as evident by use of ultraviolet light).

Page 47. Par. 46*a*. Line 9. Delete "and".

Page 47. Par. 49*a*(8). Add the following after paragraph 49*a*(8). (9) Defective neon lamp (in Radio Receiver R–620/FRR only).

Page 48. Par. 50*d*. Line 5. After sentence ending with "J1" add: In Radio Receiver R–620/FRR, terminal board TB15 is available to make the connection.

Page 49. Par. 52. Item No. 2. Change "PHONE" to read: PHONES.

Page 50. Par. 52. Item No. 18. Corrective measures. Line 11. After line 11, add "signals are not heard".
Also change period after V17 in line 12 to a comma and change comma at end of sentence to a period.

Page 51. Par. 52. Item No. 28. Change the "Corrective measures" column to read:

	Corrective measures
	Replace tubes V12 and V13, in turn, but only V13 in Radio Receiver R–620/FRR.

Page 51. Par. 52. Item No. 30. "Item" column. After "return switch" add: (in all radio receivers, except the R–620/FRR).

Page 53. Par. 53. Heading. Change to read: Block Diagrams (fig. 22 and 22.1).

Page 53. Par. 53. Line 16. Change "from" to read: form.

Page 53. Par. 53. Line 16. Change "Figure 22" to read: Figure 22 or 22.1.

Page 53. Par. 53. Line 5 from bottom in left-hand column: Change "figs. 99" to: fig. 97.

Page 54. Fig. 22. Caption. Change "receivers" to read: receiver.

Page 54. Fig. 22. Insert figure 22.1 after figure 22.
Change "(figs. 99 through 102)" to (fig. 97 through 102.1) in the following places in the manual.
Page 53. Par. 53 Line 4 from bottom.
Page 61. Par. 55*e*. Lines 1 and 2.

Page 55. Par. 53*e*. Line 2. Change "vfo input from V4 or V3 as applicable." to read: local oscillator input from V4 or V3, as applicable. In Radio Receiver R–620/FRR, with V3 hf crystal oscillator in use, V4 vfo also operates in phase with and on the same frequency as V3 for bands 4, 5, and 6. Add, "except R–620/FRR" after "all types" in the following places in the manual.

Page 54. Fig. 22. Caption.

Page 68. Fig. 32. Caption.

Page 69. Fig. 33. Caption.

Page 75. Fig. 37. Caption.

Page 76. Fig. 38. Caption.

Page 79. Fig. 42. Caption.

Page 83. Fig. 46. Caption.

Page 84. Fig. 48. Caption.

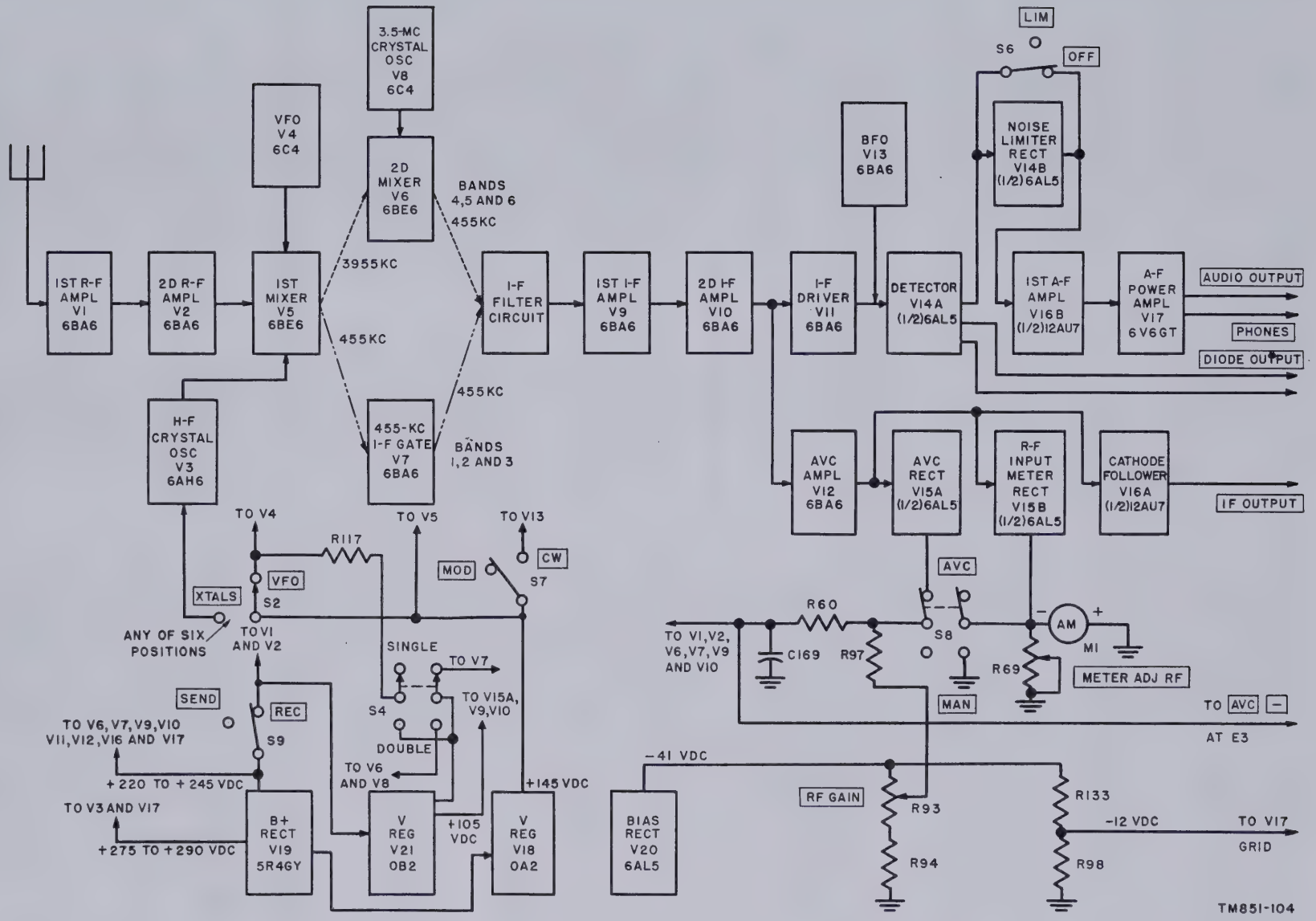


Figure 22.1. Radio Receiver R–620/FRR, block diagram.

Page 85. Fig. 49. Caption.

Page 86. Fig. 50. Caption.

Page 55. Par. 53*k*. Line 8. After "V16A", add: (fig. 22).

Page 55. Par. 53*k*. Line 9. To sentence ending in "R–274C/FRR", add: and to avc amplifier V12 (fig. 22.1) in Radio Receiver R–620/FRR.

Page 55. Par. 53*l*. Line 4. After "V14B", add: (fig. 22).

Page 55. Par. 53*m*. Line 9. To sentence ending in "stage V12", add: (fig. 22). In Radio Receiver R–620/FRR, bfo output is fed directly to plate of if. driver stage V11.

Page 55. Par. 53*n*. Heading. Add: (fig. 22).

Page 55. Par. 53*n*. Insert the following after paragraph 53*n*.

n.l. Avc Amplifier (fig. 22.1). Avc amplifier V12 amplifies the 455-kc if. input fed to it from second if. amplifier V10. This stage provides input to avc rectifier V15A and V15B to cathode follower V16A.

Page 55. Par. 53*o*. Line 8. To sentence ending in "V15A", add: (fig. 22) and a positive bias for noise limiter rectifier V14B (fig. 22.1).

Page 55. Par. 53*o*. Line 11. After "meter M1", add: (fig. 22).

Page 55. Par. 53*o*. Line 14. After "V12", add: (fig. 22) or bfo V13 (fig. 22.1).

Page 56. Par. 53*p*. Line 7. To sentence ending in "R–274C/FRR", add: and from avc amplifier V12 (fig. 22.1) in Radio Receiver R–620/FRR.

Page 56. Par. 53*q*. Line 1. After "V14B", add: (fig. 22).

Page 56. Par. 53*q*. Line 3. To sentence ending in "V11", add: (fig. 22).

Page 56. Par. 53*q*. Add the following to the paragraph: In figure 22.1, avc rectifier V15A derives input from avc amplifier V12. The avc bias voltage developed by V15A is applied to the grids of V1, V2, V6, V7, V9, and V10.

Page 56. Par. 53*r*. Line 2. After "V15A", add: (fig. 22), and V14B (fig. 22.1).

Page 56. Par. 53*r*. Add the following to the paragraph: V14B (fig. 22.1) derives positive bias from V14A, so that it conducts until the noise voltage causes it to be cut off, to provide for its noise limiter function.

Page 56. Par. 53*s*. Line 2. To sentence ending in "detector", add: (in the R–620/FRR, the first af amplifier obtains its input through noise limiter rectifier V14B (fig. 22.1), when operative).

Page 56. Par. 53*u*. Heading. Add: (fig. 22).

Page 56. Par. 53*u*. Insert the following after paragraph 53*u*.

u.l. Rf Input Meter Rectifier (fig. 22.1). Rf input meter rectifier V15B provides for meter M1 to indicate the level of the rf input signal to the receiver when the AVC–MAN switch is in the AVC position. In the MAN position, M1 is shorted to ground.

Page 56. Par. 53*v*(1). Line 3. To sentence ending in "V18", add: ; also voltage regulator V21 (fig. 22.1) in Radio Receiver R–620/FRR.

Page 56. Par. 53*v*(1). Line 6. After "+265", add: (+220 to +245 in R–620/FRR).

Page 56. Par. 53*v*(1). Line 7. After "+305", add: (+275 to +290 in R–620/FRR).

Page 56. Par. 53*v*(1). Line 5. To sentence ending in "fier", add: (+145 volts in R–620/FRR).

Page 56. Par. 53*v*(1). Line 12. After sentence ending with "487.", add: In figure 22.1, the voltage regulator V21 stabilizes the +105 dc volt supply.

Page 56. Par. 53*v*(2). Line 2. Change "It", to read: In figure 22, V20.

Page 56. Par. 53*v*(2). Line 5. After "–51", add: (to –41 in R–620/FRR).

Page 56. Par. 54. Heading. Change "(figs. 23, 24, and 25)" to read: (fig. 23, 24, 25, and 25.1).

Page 56. Par. 54*a*. Line 5. Change "L1 and L8" to read: Z1 and Z7.

Page 56. Par. 54*a*. Line 12. After sentence ending with "chassis.)" add: Radio Receiver R–620/FRR has terminal board TB15 (fig. 25.1); also, neon glow lamp E22 which protects L1 from burnout, in the presence of a high rf field.

Page 57. Par. 54*a*. Line 17. After sentence ending with "band." add: Coupling capacitor C191 (fig. 25.1), increases the selectivity of the receiver.

Page 57. Par. 54*b*. Line 19. After sentence ending with "included." add: In figure 25.1, the screen and plate voltages of V1 and V2 in the R–620/FRR receiver are applied as outlined in figure 23, however a decoupling filter (rf choke L57 and capacitor C167) has been added, and C163 has been changed to .01 uf.

Page 57. Par. 54*b*. Line 21. After sentence ending with "circuit." add: C24 is .01 uf, but for Radio Receiver R–620/FRR it is 1000 uuf (fig. 25.1).

Page 57. Par. 54*b*. Line 23. To sentence ending in "and R1" add: (in the R–620/FRR model, avc filter resistor R60 and capacitor C169 has been added).

Page 57. Par. 54*b*. Line 39. After sentence ending with "receiver." add: In figure 25.1, the full avc negative bias developed at the junction of R60 and C169 is applied to the grids of V1 and V2 through R1 and R2.

Page 57. Par. 54*b*. Line 44. To sentence ending in "circuit." add: , but in R–620/FRR, R97 is part of the dc load of avc rectifier V15A.

Page 57. Par. 54*e*. Line 1. Change "(figs. 97 through 102)" to read: (fig. 97 through 102.1).

Page 57. Par. 54*e*. Lines 4 and 5. Change "(figs. 97, 98, or 99 and 100, 101, or 102)" to read: (fig. 97, 98, or 99 and 100, 101, 102, or 102.1).

Page 57. Par. 54*e*. Line 5. Change "L10" to read: Z9.

Page 57. Par. 54*e*. Line 6. Change "L11" to read: Z10.

Page 57. Par. 54*e*. Line 9. After sentence ending with "bands." add: C8 and C32 on band 3 are each 2400 uuf, but for Radio Receiver R–620/FRR each is 2300 uuf (fig. 25).

Page 57. Par. 54*e*. Line 9. Change "L5" to read: Z5.

Page 57. Par. 54*e*. Line 9. Change "L6" to read: Z6.

Page 57. Par. 54*e*. Line 10. Change "L1" to read: Z1.
Change "L12" to read: Z11 in the following places in the manual.
Page 57. Par. 54*e*. Line 12.
Page 57. Par. 54*e*. Line 14.
Page 61. Par. 54*e*. Line 1.
Change "L13" to read: Z12 in the following places in the manual.

Page 57. Par. 54*e*. Line 12.
Page 57. Par. 54*e*. Line 14.
Page 61. Par. 54*e*. Line 1.

Page 58. Fig. 23. Caption. After "487" add: and R–620/FRR.

Page 60. Fig. 25. Insert figure 25.1 after figure 25.

Page 61. Par. 55. Heading. Change "(figs. 23, 24, and 25)" to read: (fig. 23, 24, 25, and

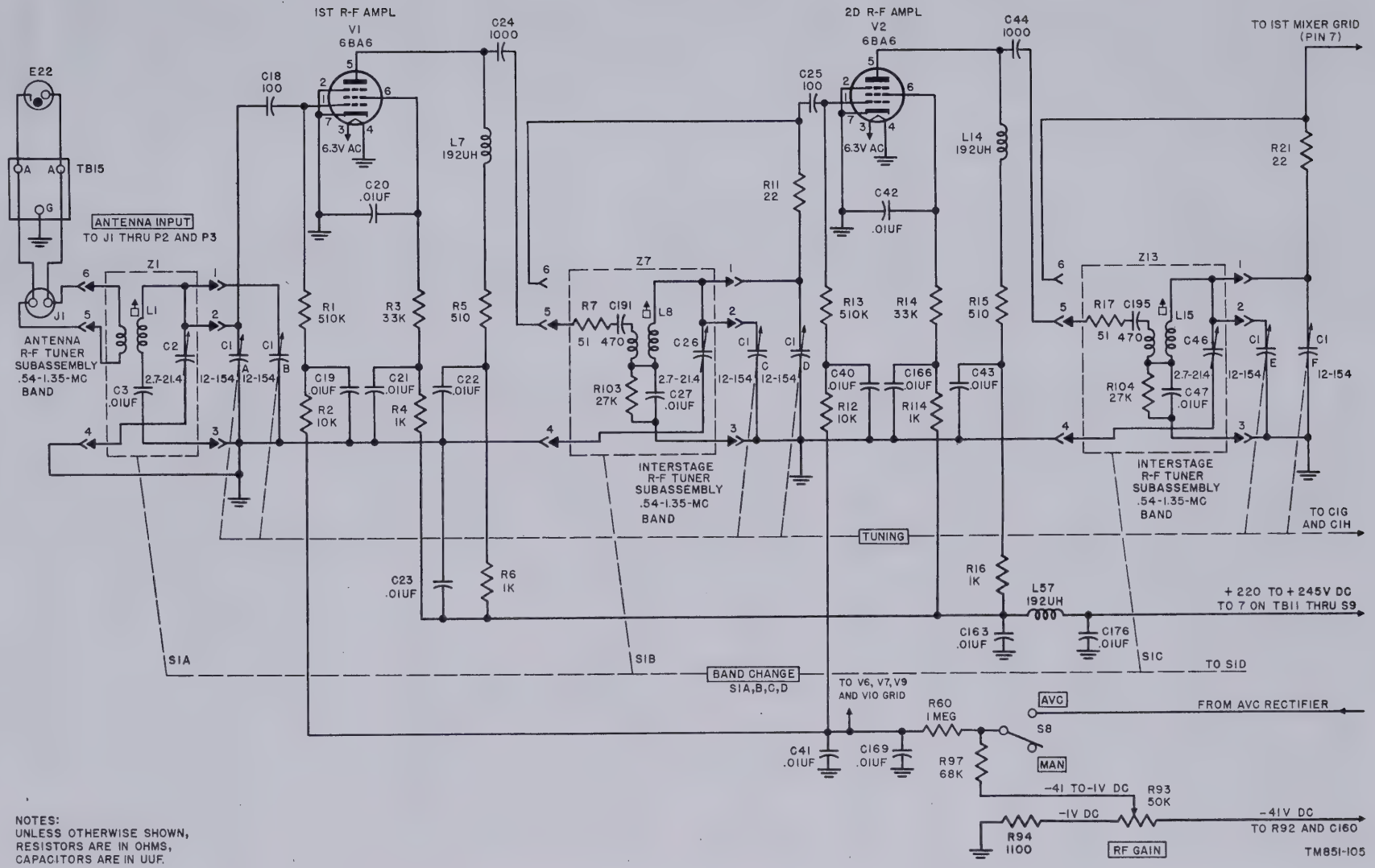


Figure 25.1. Radio Receiver R-620/FRR, schematic diagram of two-stage rf amplifier shown for band 1.

25.1).

Add "or Z13, as applicable," after "L15" in the following places in the manual.

Page 61. Par. 55*a*. Line 4.
Page 61. Par. 55*e*. Line 2.
Page 61. Par. 55*a*. Line 8 (twice).

Add "or Z7, as applicable," after "L8" in the following places in the manual.

Page 61. Par. 55*a*. Line 9.
Page 61. Par. 55*e*. Line 2.

Page 61. Par. 55*a*. Line 9. Change "to" to "and".

Page 61. Par. 55*a*. Add the following to the paragraph: C195 (fig. 25.1) increases the selectivity of Z13.

Page 61. Par. 55*b*. Lines 15 and 16. Change "In figure 25" to read: In figures 25 and 25.1.

Page 61. Par. 55*b*. Line 18. After "included;" add: but, in figure 25.1, decoupling filter (rf choke L57 and capacitor C176) have been added.

Page 61. Par. 55*b*. Line 23. To sentence ending in "circuit" add: (in Radio Receiver R–620/FRR, C44 has been changed to 1000 uuf) (fig. 25.1).

Page 61. Par. 55*b*. Line 27. After sentence ending with "(par. 54*b*)." add: In the R–620/FRR model the bias voltage is developed at the junction of resistor R60 and capacitor C169.

Page 61. Par. 55*c*. Line 7. Change "24 and 25" to read: 24, 25, and 25.1.

Page 61. Par. 55*e*. Line 4. Change "L9, L16; L10, L17; L11, L18; L12, L19; and L13, L20" to read: Z8, Z14; Z9, Z15; Z10, Z16; Z11, Z17; Z12, and Z18.

Change "L25" to read Z19 in the following places in the manual:

Page 61. Par. 56*a*. Line 8.
Page 63. Par. 56*d*. Line 3.

Page 62. Fig. 26. Delete figure 26 and substitute the new figure 26.

Page 62. Par. 56*b*. Line 2. After "2" add: or 3.

Page 62. Par. 56*b*. Line 5. After sentence ending with "L24." add: L24 is 192 uh, but in Radio Receiver R–620/FRR it is 2.5 mh; also, B+ decoupling circuit (R120 and C101) is in series with S2. When V3 and V4 are both operative (par. 56*e*), the junction of R30 and C72 is provided with regulated B+ voltage (105 volts) through R117 and S4 in its double conversion position.

Page 63. Par. 56*d*. Line 2. Change "102) L26 and L27" to read: 102.1) Z20 and Z21,

Change "L26" to read: Z20 in the following places:

Page 63. Par. 56*d*. Line 5.
Page 63. Par. 57*a*. Line 6.
Page 64. Par. 57*d*. Line 8.

Page 63. Par. 56*d*. Line 6. Change "L27" to read: Z21.

Page 63. Par. 56*d*. Lines 8 and 9. Change "L28, L29, and L30" to read: Z22, Z23, and Z24.

Page 63. Par. 56*d*. Add paragraph 56*e* after paragraph 56*d*.

56*e*. In Radio Receiver R–620/FRR, the vfo stage operates separately from the hf crystal oscillator for variable frequency operation. However, during crystal controlled operation on bands 4 and 5, the vfo stage V4 is allowed to operate at the same time as the hf crystal oscillator V3. When this happens, the output of the vfo is at the same frequency and in phase with the output of the hf crystal oscillator. This provides greater total oscillator output to the first mixer, resulting in a greater conversion gain.

Page 63. Par. 57. Heading. Change "(fig. 27)" to read: (fig. 27 and 27.1).

Page 64. Par. 57*a*. Add the following to the paragraph: V3 is a 6AC7 tube but in Radio Receiver R–620/FRR, it is a 6AH6 tube.

Page 63. Fig. 27. Insert figure 27.1 after figure 27.

Page 64. Par. 57*b*. Line 2. After "E13", add: or TB11, in the R–620/FRR.

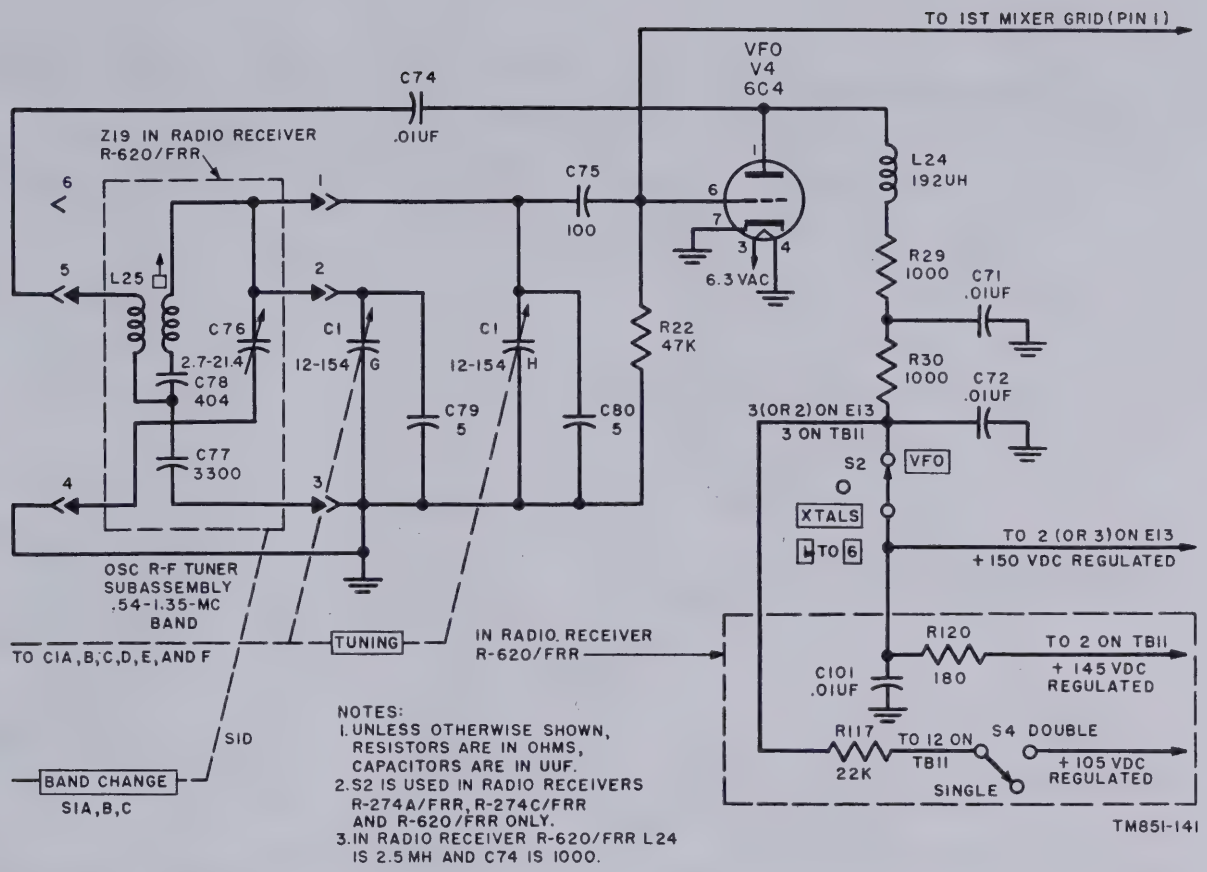


Figure 26. Radio receiver, all types, schematic diagram of variable-frequency oscillator.

Page 64. Par. 57*b*. Line 6. After "E6" add: or TB12, in the R–620/FRR.

Page 64. Par. 57*b*. Line 9. To sentence ending in "L21", add: or just L21, in Radio Receiver R–620/FRR.

Page 64. Par. 57*c*. Line 4. Change "Figure 27 shows" to read: Figures 27 and 27.1 show.

Page 64. Par. 57*c*. Line 28. After sentence ending with "range." add: In figure 27.1, bandpass filter network (C175, rf coils L54 and L55, and R119) does likewise, the oscillator output being fed to first mixer V5 through R71.

Page 64. Par. 57*c*. Line 29. Change "circuit" to read: circuits.

Page 64. Par. 57*d*. Lines 2 and 3. Change "L26 and L27" to read: Z20 and Z21, respectively (fig. 102.1).

Page 64. Par. 57*d*. Line 4. Change "L25" to read: Z19.

Page 64. Par. 57*d*. Line 4. Change "L27" to read: Z21.

Page 64. Par. 57*d*. Line 5. Change "L26" to read: Z20.

Page 64: Par. 57*d*. Lines 6 and 10. Change "L28 and L29" to read: Z22 and Z23.

Page 64. Par. 57*d*. Line 6. Change "(fig. 97)" to read: (fig. 97 and 102.1).

Page 64. Par. 57*e*. Line 1. Change "(fig. 99)" to read: (fig. 99 and 102.1).

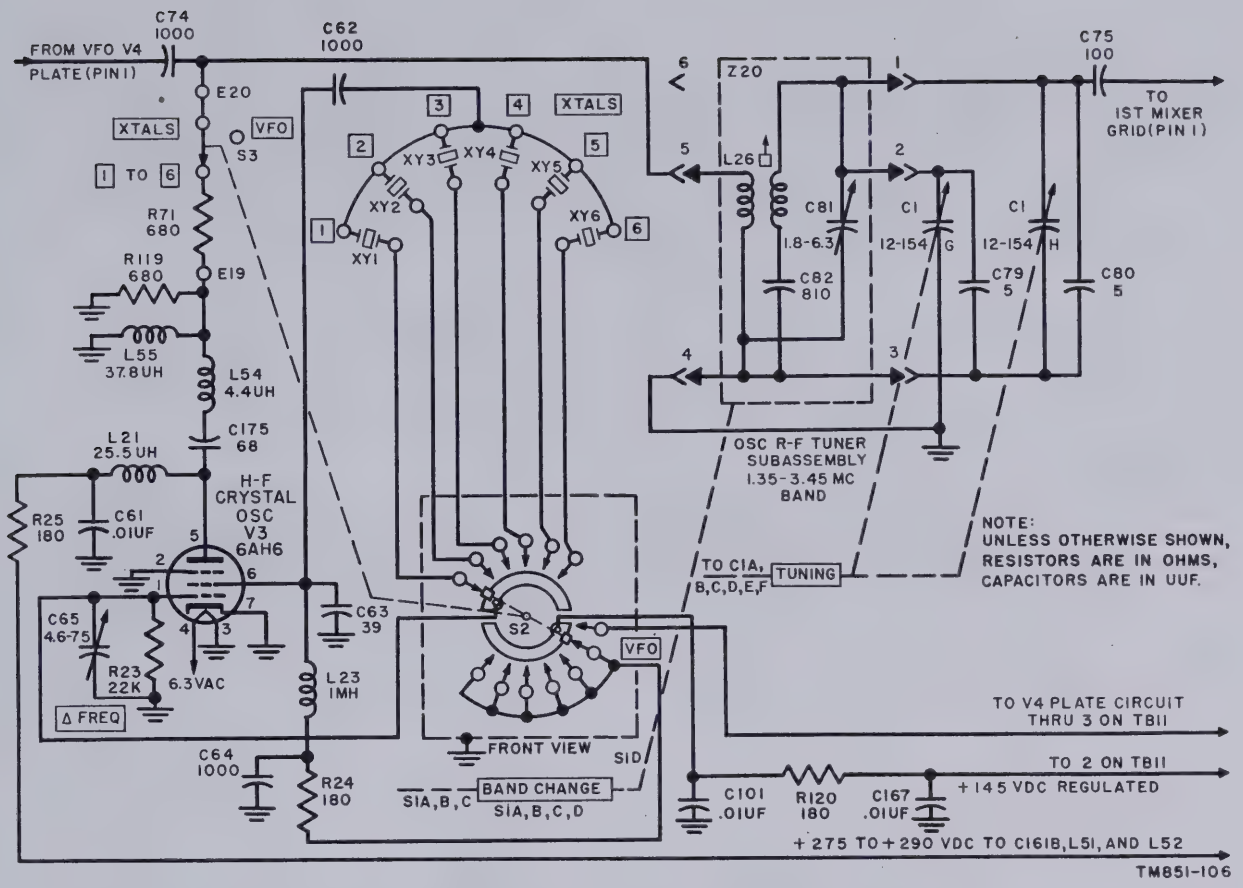


Figure 27.1. Radio Receiver R–620/FRR, schematic diagram of hf crystal oscillator shown for band 2 (1.35 to 3.45 mc).

Page 65. Fig. 28. Delete figure 28 and substitute the new figure 28.

Page 65. Par. 58*b*. Line 2. After "E13" add: or TB11, as applicable,

Page 65, Par. 58*c*. Add the following to the paragraph: In Radio Receiver R–620/FRR, R32 is not used and resistor R33 at 2200 ohms is across the secondary of L32.

Page 66. Par. 59*b*. Line 7. After sentence ending with "C105)." add: In figure 31.1, screen voltage is applied through the single conversion position of switch S4 and screen grid resistor R39. R128 is the current limiter resistor for voltage regulator tube V21.

Page 66. Par. 59*b*. Line 8. After "E17)" add: In Radio Receiver R–620/FRR, plate voltage for V7 is obtained from junction of capacitor C161C, L52, and R85 in B+ supply.

Page 66. Par. 59*b*. Line 13. Change "30 and 31" to read: 30, 31, and 31.1.

Page 67. Fig. 31. Insert figure 31.1 after figure 31.

Page 68. Par. 59*b*. Add the following to the paragraph: In figure 31.1, fixed bias from R93 is applied to the grid of V7 through resistors R97, R60, R53, and L32 which is connected across R33. When S8 is in the AVC position, the avc bias voltage from the avc rectifier is applied to the grid of V7 through S8, R60, R53, and L32. R93,

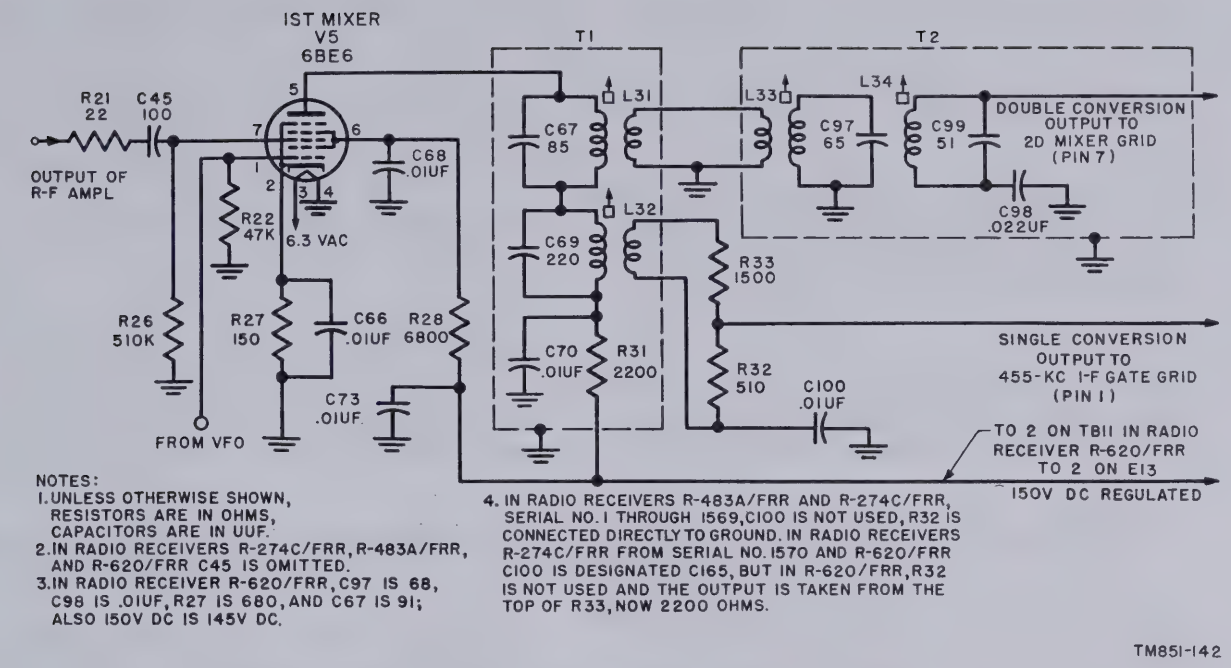


Figure 28. *Radio receiver, all types, schematic diagram of first mixer stage.*

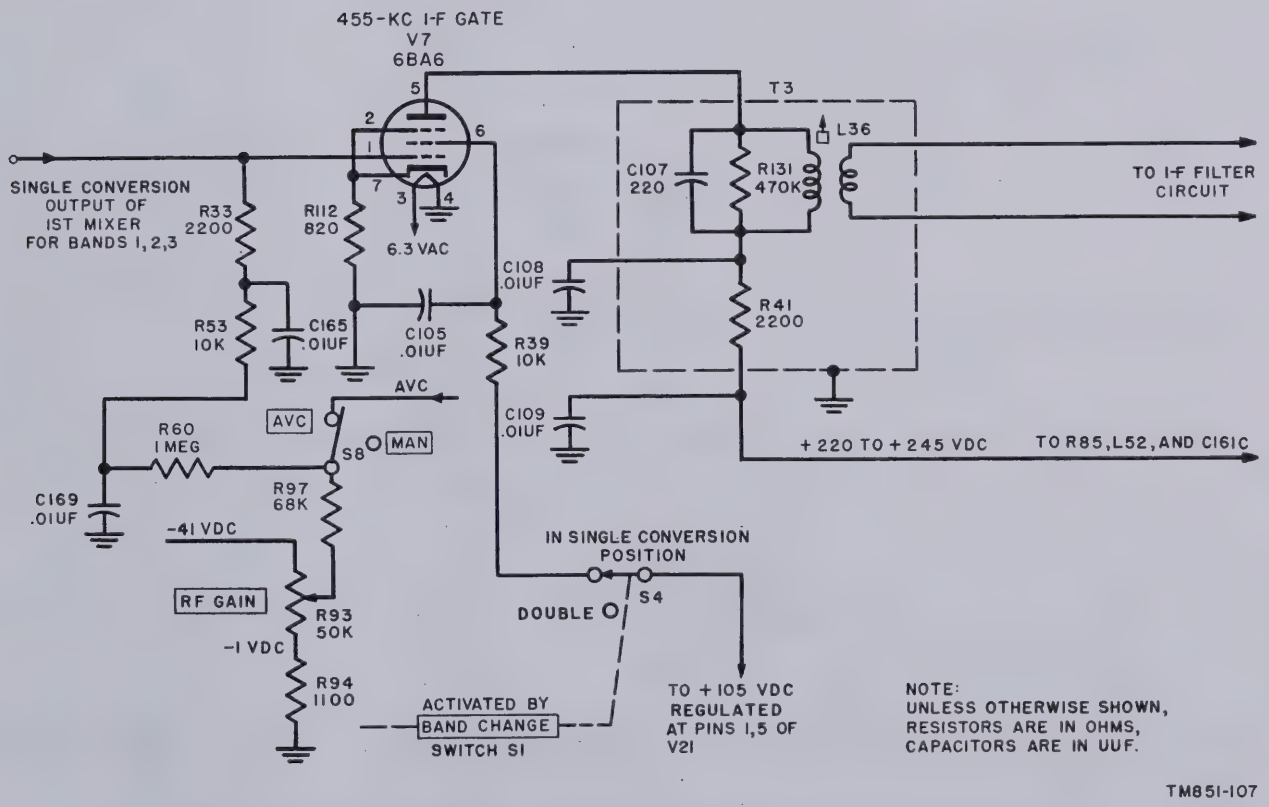


Figure 31.1. Radio Receiver R–620/FRR, schematic diagram of the 455-kc if. gate.

R94, and R97 are all part of the avc rectifier V15A load.

Page 68. Par. 59*c*. Line 6. After sentence ending with "31." add: In figure 31.1, the input signal is across R33 in the grid circuit.

Page 68. Par. 59*c*. Lines 6 and 7. Change "In figure 31" to read: In figures 31 and 31.1.

Page 68. Par. 59*c*. Add the following to the paragraph: In figure 31.1, R131 is across the parallel resonant circuit (L36 and C107) so that the 8- and 13-kc frequency response curves to the 455-kc signal are relatively flat.

Page 68. Par. 60*a*. Caption. Change "(fig. 32)" to read: (fig. 32 and 32.1).

Page 68. Par. 60*a*. Line 3. After "capacitance" add: (In figure 32.1 the oscillator grid to plate capacitance is in parallel with the capacitance of C170 and that of the crystal holder.)

Page 68. Fig. 32. Insert figure 32.1 after figure 32.

Page 68. Par. 60*b*. Line 7. After sentence ending with "L35." add: (In figure 32.1, plate voltage is applied to V8 from V21 through S4 (on bands 4, 5, and 6), R37, R38, and R118.)

Page 68. Par. 60*b*. Add the following to the paragraph: In figure 32.1, capacitor C171 is the grid-leak capacitor.

Page 69. Par. 60*c*. Line 6. After "capacitance" add: (fig. 32) and through C171 (fig. 32.1).

Page 69. Par. 60*c*. Add the following to the paragraph: In figure 32.1, C177 provides capacitive loading. The capacitor C170 across Y7 controls the frequency of the

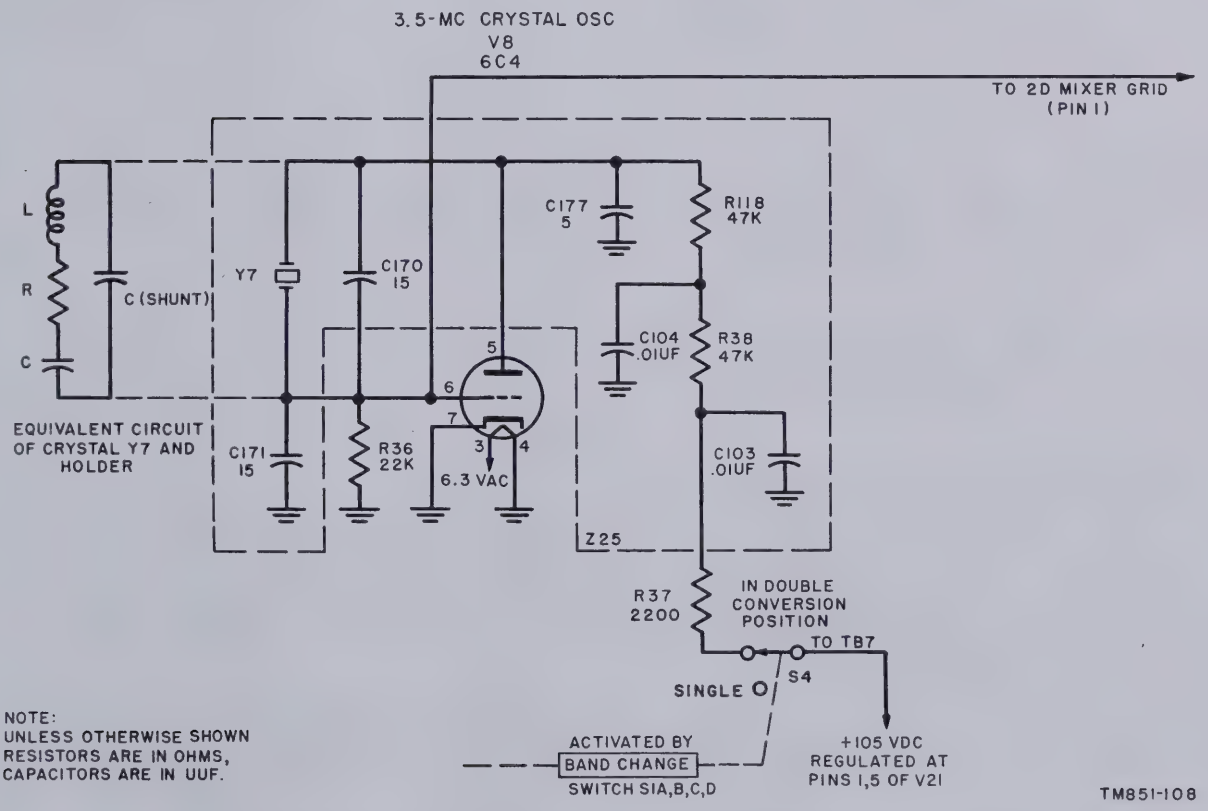


Figure 32.1. Radio Receiver R–620/FRR, schematic diagram of 3.5-mc crystal oscillator.

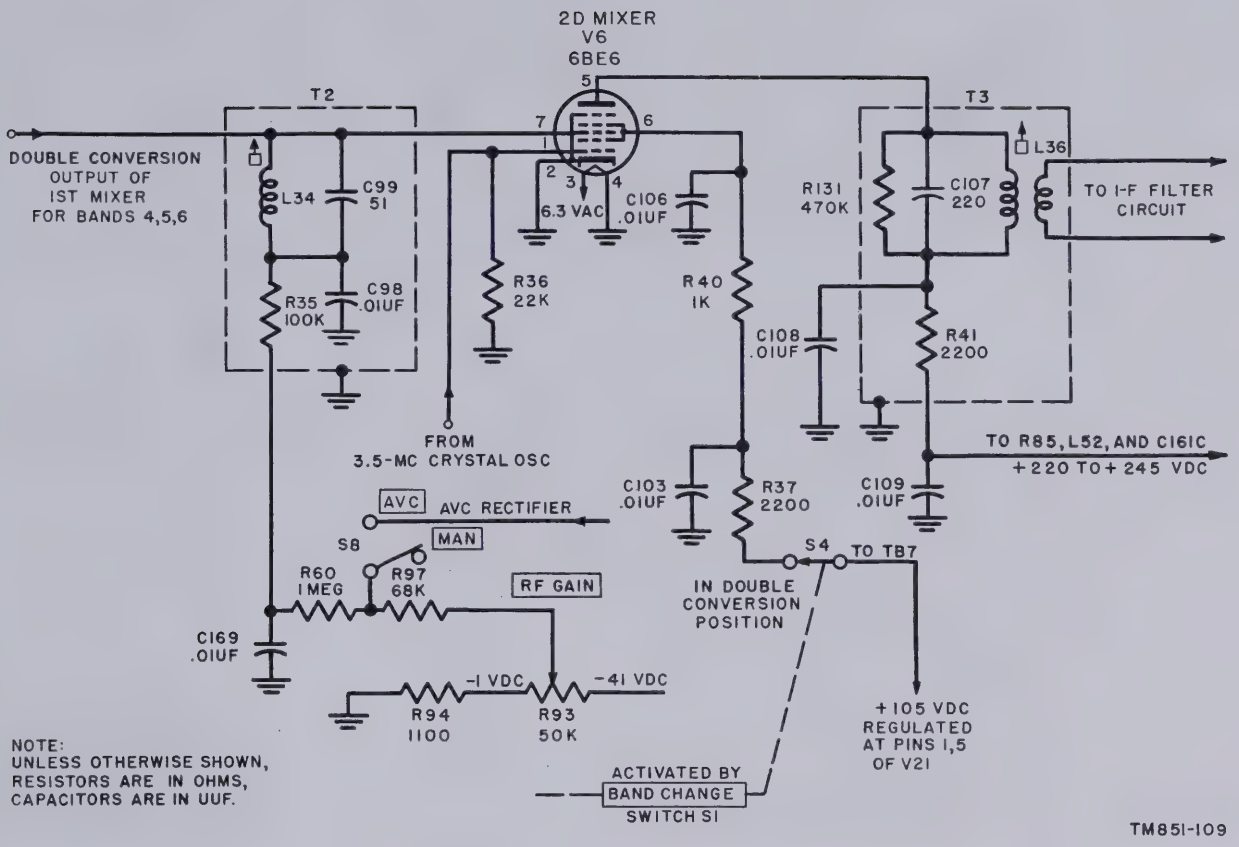


Figure 33.1. Radio Receiver R–620/FRR, schematic diagram of second mixer.

crystal to within the +175 cps frequency tolerance specification of the 3.5-mc crystal. The oscillator 3.5 mc output is fed directly to pin 1 of second mixer V6.

Page 69. Fig. 33. Insert figure 33.1 after figure 33.

Page 69. Par. 61*b*. Line 1. After "voltage" add: (fig. 33).

Page 69. Par. 61*b*. Line 7. After sentence ending with "C106)." add: In figure 33.1, screen grid voltage for V6 is obtained from V21 through S4 (on bands 4, 5, and 6), R37 and R40.

Page 69. Par. 61*b*. Line 8. After "E17", add: and from the B+ filter at the junction of C161B, L52, and R85 in Radio Receiver R–620/FRR.

Page 69. Par. 61*b*. Line 19. To sentence ending in "switch S8" add: ; (in Radio Receiver R–620/FRR, avc bias to the second mixer grid is applied through S8 and the junction of R60 and C169).

Page 69. Par. 61*b*. Line 22. To sentence ending in "to S8" add: (in Radio Receiver R–620/FRR through R60).

Page 70. Par. 61*b*. Line 4. To sentence ending in "L34" add: in Radio Receiver R–620/FRR from the junction of R60 and C169.

Page 70. Par. 62*a*. Line 35. After sentence ending with "L37." add: (In Radio Receiver R–620/FRR, R45, R46, and R47, respectively, are 200, 820, and 3300 ohms).

Page 70. Par. 62*b*. Line 15. Change "C11" to C111.

Page 71. Fig. 34. Delete figure 34 and substitute new figure 34.

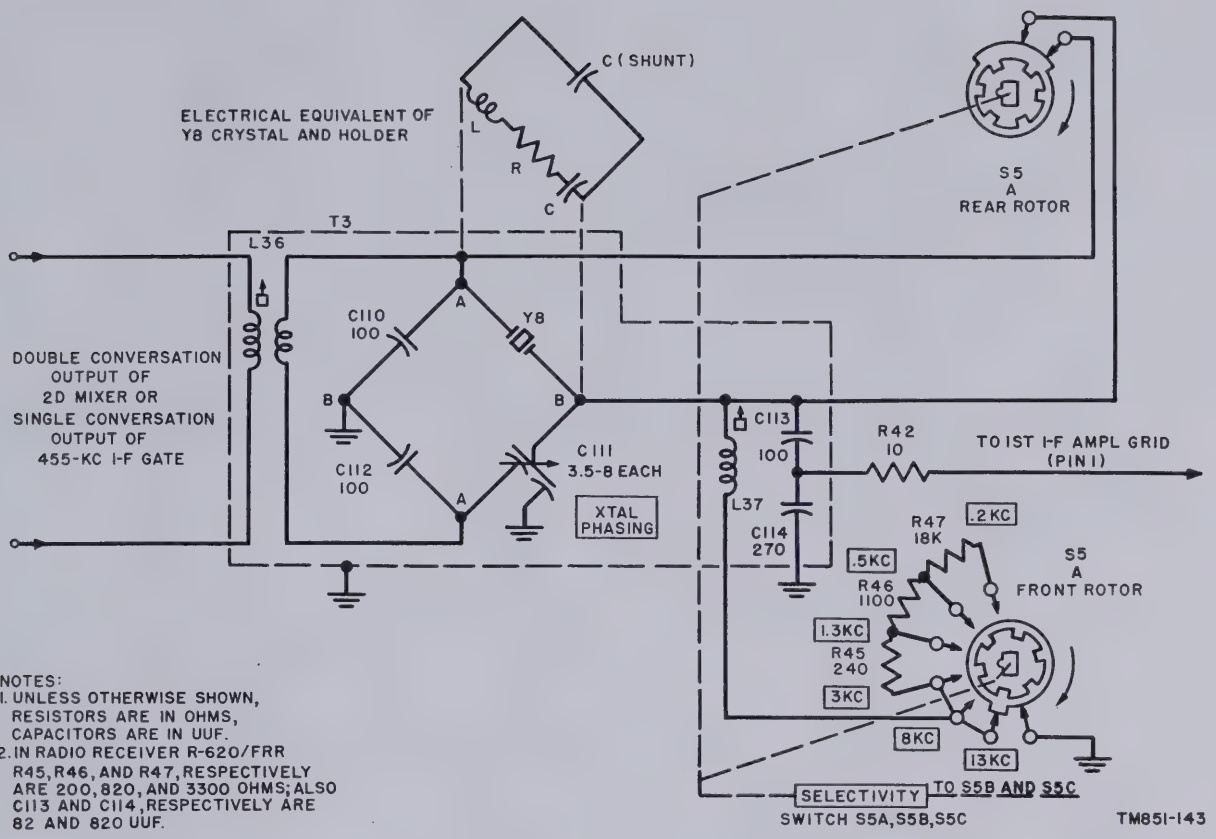


Figure 34. Radio receiver, all types, schematic diagram of if. filter circuit.

Page 71. Par. 63. Caption. Change "(figs. 35 and 36)" to read: (fig. 35, 36, and 36.1).

Page 72. Fig. 35. Caption. After "R–320A/FRC", add: and R–620/FRR.

Page 73. Fig. 36. Caption. Change "receiver" to read: Receiver.

Page 73. Fig. 36. Add figure 36.1 after 36.

Page 74. Par. 63*b*. Line 10. After "E16" add: (in Radio Receiver R–620/FRR, at the junction of C161C, L52 and R85).

Page 74. Par. 63*b*. Line 14. To sentence ending with "R43" add: (in Radio Receiver R–620/FRR through R44 and R43 from the junction of R60 and C169).

Page 74. Par. 63*b*. Line 17. To sentence ending with "S8" add: (in Radio Receiver R–620/FRR through R60).

Page 74. Par. 63*b*. Line 21. To sentence ending with "R43" add: (in Radio Receiver R–620/FRR from the junction of R60 and C169 and then through R44 and R43).

Page 74. Par. 63*b*. Line 24. To sentence ending with "circuit" add: (in Radio Receiver R–620/FRR, R97 is part of the dc load for V15A).

Page 74. Par. 64. Heading. Change "(figs. 35 and 36)" to read: (fig. 35, 36, and 36.1).

Page 74. Par. 64*b*. Line 10. After "E16" add: (in Radio Receiver R–620/FRR, from the junction of L52, C161C, and R85).

Page 74. Par. 64*b*. Line 14. To sentence ending with "R51" add: (from the junction of R60 and C169 in figure 36.1).

Page 74. Par. 64*c*. Add the following to the paragraph: In Radio Receiver R–620/FRR

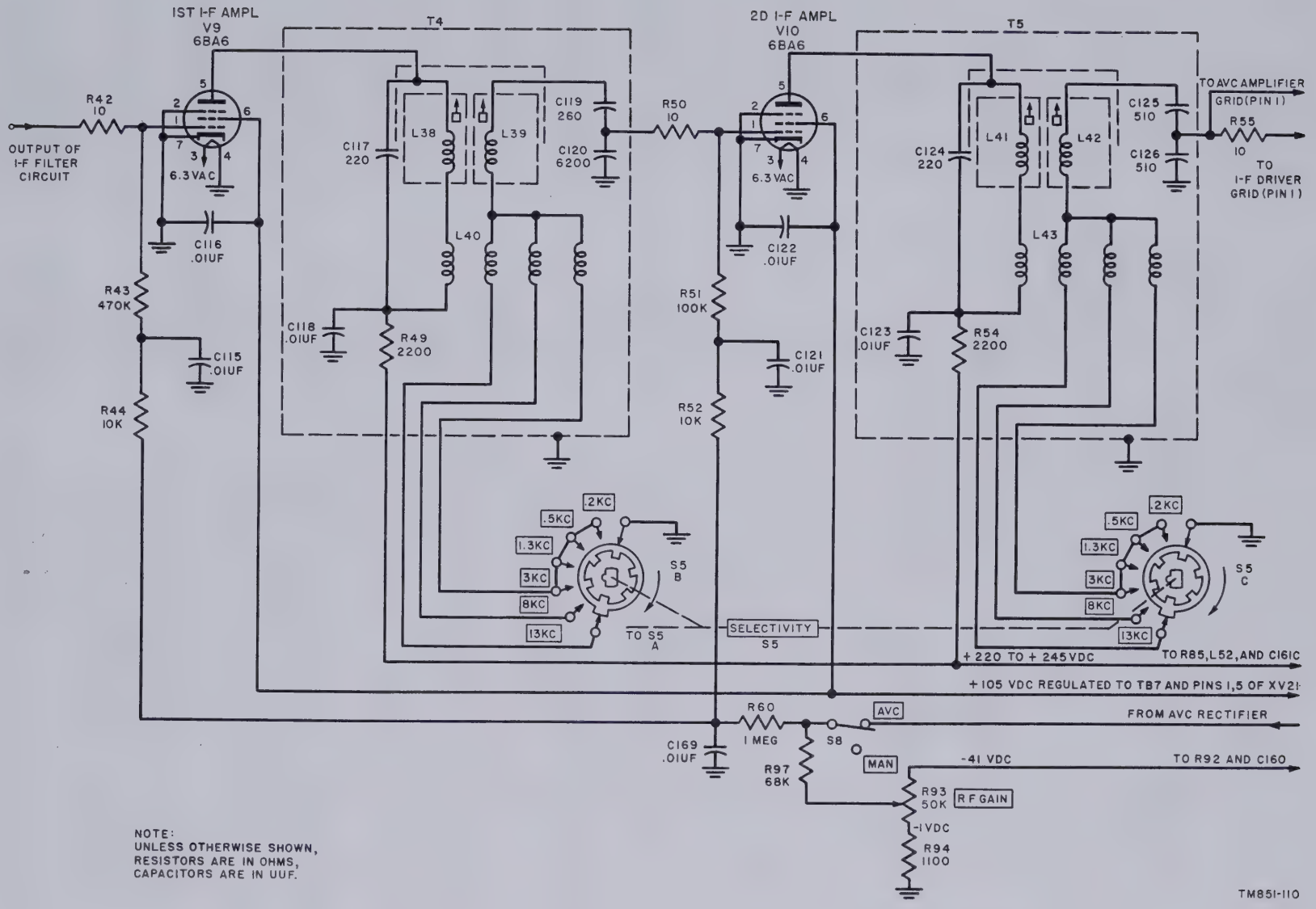


Figure 36.1. Radio Receiver R–620/FRR, schematic diagram of two-stage if. amplifier.

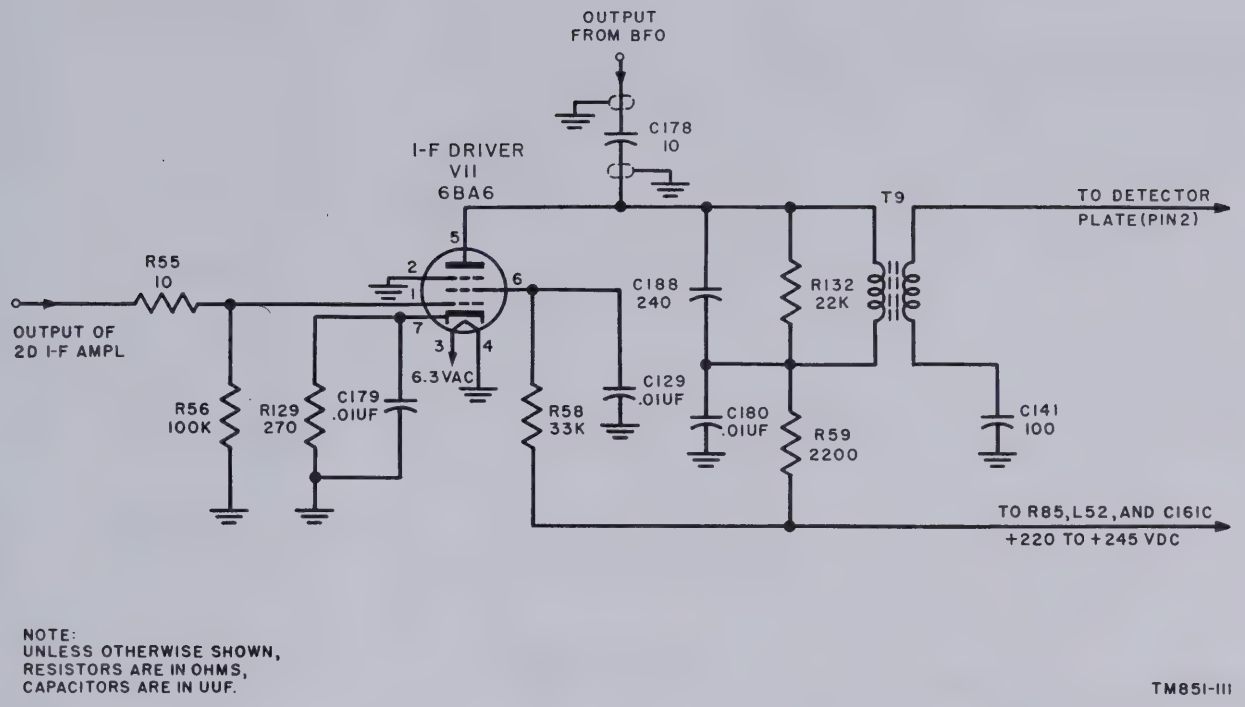


Figure 37.1. Radio Receiver R–620/FRR, schematic diagram of if. driver.

the second if. amplifier output is also fed directly to the grid of avc amplifier V12.

Page 75. Par. 65. Heading. Change "(fig. 37)" to read: (fig. 37 and 37.1).

Page 75. Par. 65*a*. Line 3. After "V14B" add: (in all receivers except the R–620/FRR).

Page 75. Fig. 37. Add figure 37.1 after figure 37.

Page 75. Par. 65*b*. Line 1. Delete "and".

Page 75. Par. 65*b*. Line 2. After "E15" add: (or from junction of C161C, L52, and R85, in the R–620/FRR receiver).

Page 75. Par. 65*b*. Line 4. After "C128A" add: or C129 in the R–620/FRR receiver).

Page 75. Par. 65*b*. Line 4. After "voltage" add: (fig. 37).

Page 75. Par. 65*b*. Line 5. After "E16" add: or the junction of C161C, L52, and R85, in the R–620/FRR receiver.

Page 75. Par. 65*b*. Line 7. After "C129B" add: or C180 in the R–620/FRR receiver.

Page 75. Par. 65*b*. Line 7. To sentence ending in "L47" add: or primary of T9, in the R–620/FRR receiver.

Page 75. Par. 65*b*. Line 9. To sentence ending in "load" add: (fig. 37).

Page 75. Par. 65*b*. Line 17. After "line" add: (fig. 37).

Page 75. Par. 65*b*. Add the following to the paragraph: In Radio Receiver R–620/FRR, bias voltage is developed by cathode resistor R129 which is bypassed by capacitor C179.

Page 75. Par. 65*c*. Lines 8 and 9. To sentence ending in "respectively" add: (in Radio Receiver R–620/FRR, the if. output is fed only to the V14A detector through transformer T9).

Page 75. Par. 65*c*. Add the following to the paragraph: In Radio Receiver R–620/FRR,

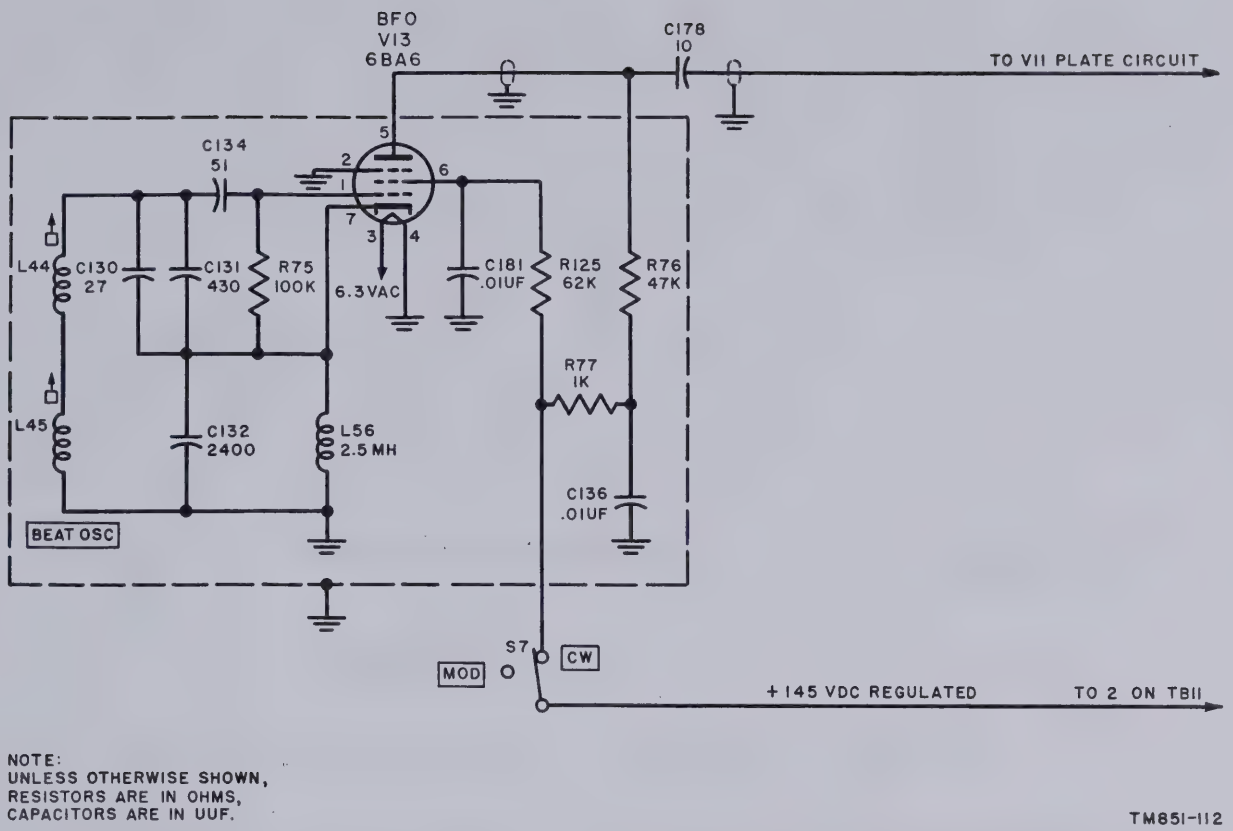


Figure 38.1. Radio Receiver R–620/FRR, schematic diagram of beat-frequency oscillator.

R56 completes the grid circuit to ground and capacitor C141 provides a low impedance path to ground for the if. output across the secondary of T9. Capacitor C178 tunes the primary of T9 to 455 kc, R32 lowers the Q of the circuit. The oscillations developed by bfo V13 are coupled to the plate of V11 through coupling capacitor C178.

Page 75. Par. 66. Heading. Change "(fig. 38)" to read: (fig. 38 and 38.1).

Page 75. Par. 66*a*. Line 1. To sentence ending in "oscillator" add: (the R–620/FRR receiver contains an electron-coupled oscillator as shown in figure 38.1).

Page 76. Fig. 38. Add figure 38.1 after figure 38.

Page 76. Fig. 39. Caption. Change "functional" to schematic.

Page 77. Par. 66*b*. Line 1. After "C133" add: (fig. 38).

Page 77. Par. 66*b*. Line 2. In Radio Receiver R–620/FRR, 145 v dc regulated voltage is applied to the screen grid (oscillator plate) (fig. 38.1) through S7 and screen voltage dropping resistor R125.

Page 77. Par. 66*c*. Line 5. After "tube" add: or to the screen grid (oscillator plate) of the 6BA6 tube, in the R–620/FRR receiver.

Page 77. Par. 66*c*. Line 13. After "6C4" add: (fig. 38).

Page 77. Par. 66*c*. Line 16. After sentence ending with "sustained." add: In figure 38.1, the feedback path is from the screen grid through C181 to ground, that is, to the grounded end of the tank circuit.

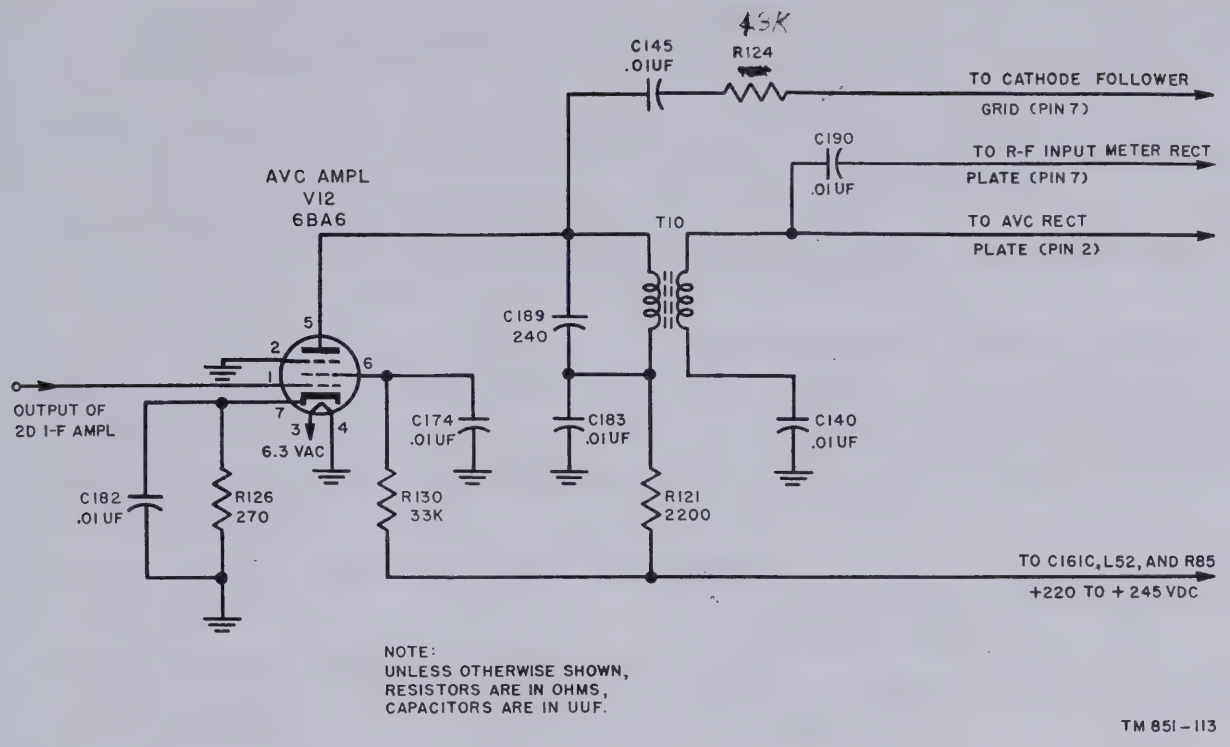


Figure 39.1. Radio Receiver R–620/FRR, schematic diagram of avc amplifier.

Page 77. Par. 66*c*. Line 18. To sentence ending with "circuit" add: (fig. 38) ;-in figure 38.1, rf choke L56 prevents an rf short across C132.

Page 77. Par. 66*c*. Line 19. Change "V13" to "V12".

Page 77. Par. 66*c*. Add the following to the paragraph: In figure 38.1, the bfo output is fed to the plate of the if. driver V11 through coupling capacitor C178.

Page 77. Par. 67*c*. Add paragraph 67.1 after paragraph 67*c*.

67.1. Avc Amplifier Stage V12
(fig. 39.1)

a. The stage isolates the V15A avc rectifier, the V15B rf input meter rectifier, and the V16A cathode follower from loading detector V14A.

b. Screen voltage is obtained from junction of C161C, L52, and R85 through R130. Plate voltage is obtained from junction of C161C, L52, and R85 through R121 and primary of T10. Coupling capacitor C145 blocks the plate voltage from the V16A cathode follower grid. Cathode resistor bias is developed by resistor R126, suitably bypassed by capacitor C182.

c. The if. output from the second if. amplifier stage V10, is fed to the control grid of the 6BA6 avc amplifier. The stage feeds the amplified 455-kc signal through C145 and R124 to drive cathode follower V16A. It also feeds both the avc rectifier V15A through the secondary of T10, and rf input meter rectifier V15B through coupling capacitor C190. Capacitor C140 provides a low impedance ground return.

Page 77. Par. 68. Heading. Change "(figs. 40 and 41)" to read: (fig. 40, 41, and 41.1).

Page 77. Par. 68*a*. Line 6. After "R62", add: (fig. 40 and 41).

Page 77. Par. 68*a*. Line 6. After "R63", add: (fig. 40 and 41).

Page 77. Par. 68*a*. Line 7. After "R69", add: (fig. 40 and 41).

Page 77. Par. 68*a*. Line 7. After sentence ending

with "(fig. 40)." add: In figure 41.1, both R102 and R69 are omitted.

Page 77. Par. 68*a*. Line 10. After "M1" add: (fig. 40 and 41).

Page 77. Par. 68*a*. Line 12. After sentence ending with "load." add: In figure 41.1, R64 and R65 alone in series is the dc load for the detector.

Page 77. Par. 68*a*. Line 22. After "R69", add: (fig. 40 and 41).

Page 77. Par. 68*b*. Line 4. After "C139" add: (fig. 40 and 41).

Page 77. Par. 68*b*. Line 5. After "R63" add: as applicable.

Page 77. Par. 68*b*. Line 5. To sentence ending in "R62." add: or across the secondary of T9 in figure 41.1.

Page 77. Par. 68*b*. Line 7. To sentence ending in "R62." add: or the secondary of T9, as applicable.

Page 77. Par. 68*b*. Line 8. After "R62", add: or T9 in the R–620/FRR.

Page 78. Par. 68*c*. Line 1. After "R63", add: (fig. 40 and 41).

Page 78. Par. 68*c*. Add the following to the paragraph: In figure 41.1, the dc current flow in R64 provides a positive bias for noise limiter rectifier V14B plate connected across it. V14B is shorted out by S6 in the OFF position.

Page 78. Par. 68*d*. Line 3. After "V12", add: (fig. 40 and 41) or bfo V13 (fig. 41.1), in the R–620/FRR.

Page 78. Par. 68*d*. Line 5. After "buffer" add: or bfo.

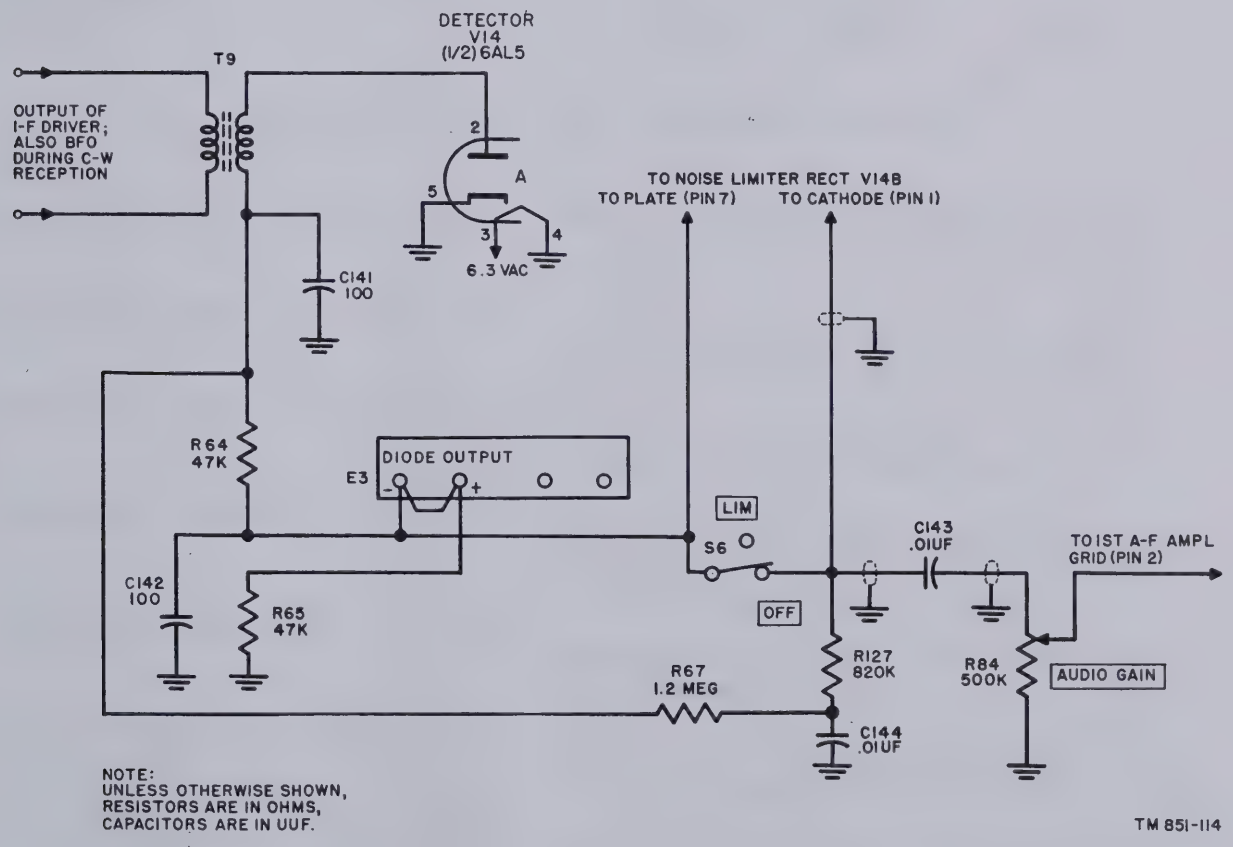


Figure 41.1. Radio Receiver R–620/FRR, schematic diagram of detector.

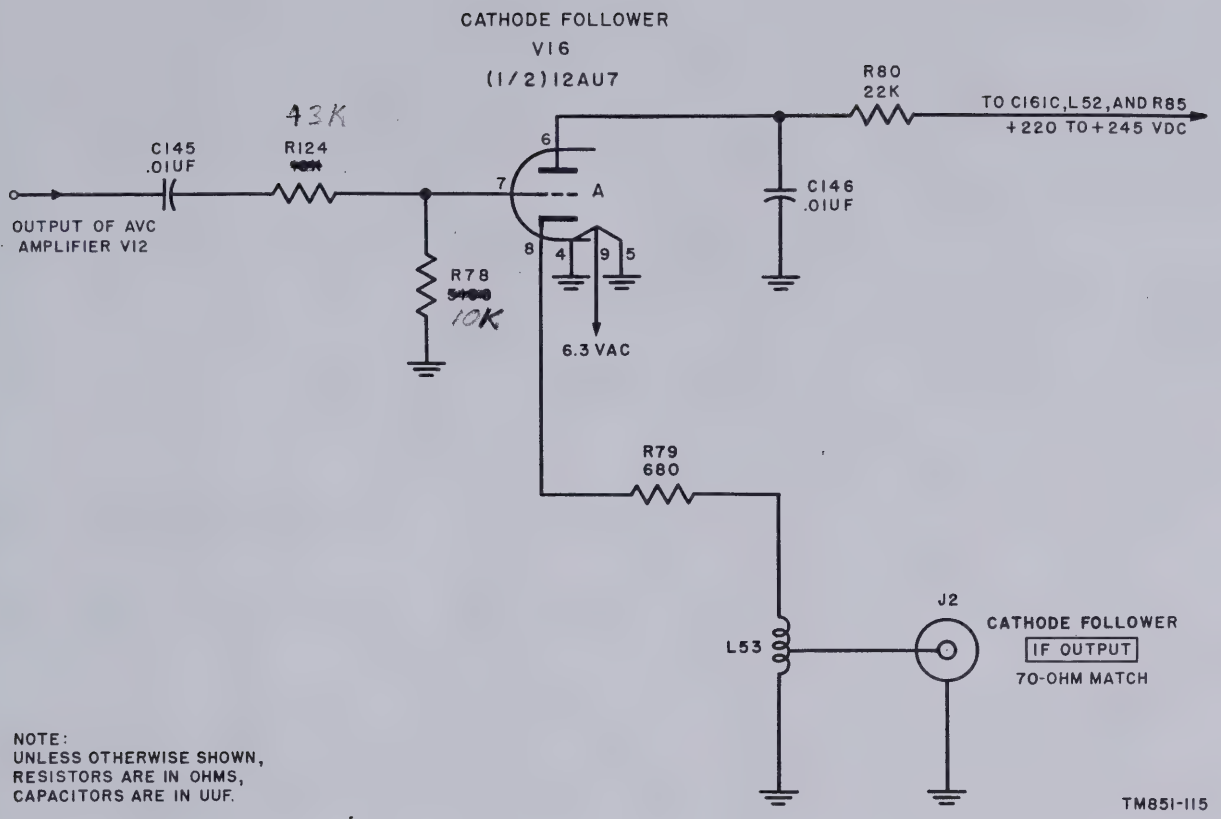


Figure 42.1. Radio Receiver R–620/FRR, schematic diagram of cathode follower.

Page 78. Par. 68*e*. Line 2. Change "(fig. 41)" to read: (fig. 41 and 41.1).

Page 78. Par. 69. Heading. Change "(fig. 42)" to read: (fig. 42 and 42.1).

Page 79. Figure 41. Add figure 41.1 after figure 41.

Page 79. Figure 42. Add figure 42.1 after figure 42.

Page 80. Par. 69*a*. Line 2. After "C147" add: (fig. 42).

Page 80. Par. 69*a*. Add the following to the paragraph: In figure 42.1, C147 is not used; but since the tap-to-ground resistance of L53 is low compared to the 70-ohm loading used, the dc cathode current flow to the load is insignificant.

Page 80. Par. 69*b*. Line 2. After "E16" add: or from C161C, L52, and R85 in the R–620/FRR.

Page 80. Par. 69*c*. Line 2. After "applicable," add: or from avc amplifier V12 (fig. 42.1).

Page 80. Par. 69*c*. Line 6. After "C145" add: (and resistor R124 figure 42.1).

Page 80. Par. 70. Heading. Change to read, Avc Rectifiers V14B (fig. 43, 44, and 45) and V15A (fig. 45.1).

Page 80. Par. 70*a*. Line 1. After "V14B" add: , or V15A (fig. 45.1).

Page 80. Par. 70*a*. Line 5. After "V11" add: , or avc amplifier V12 (fig. 45.1).

Page 80. Par. 70*a*. Line 25. After sentence ending with "E3" add: In figure 45.1, the dc

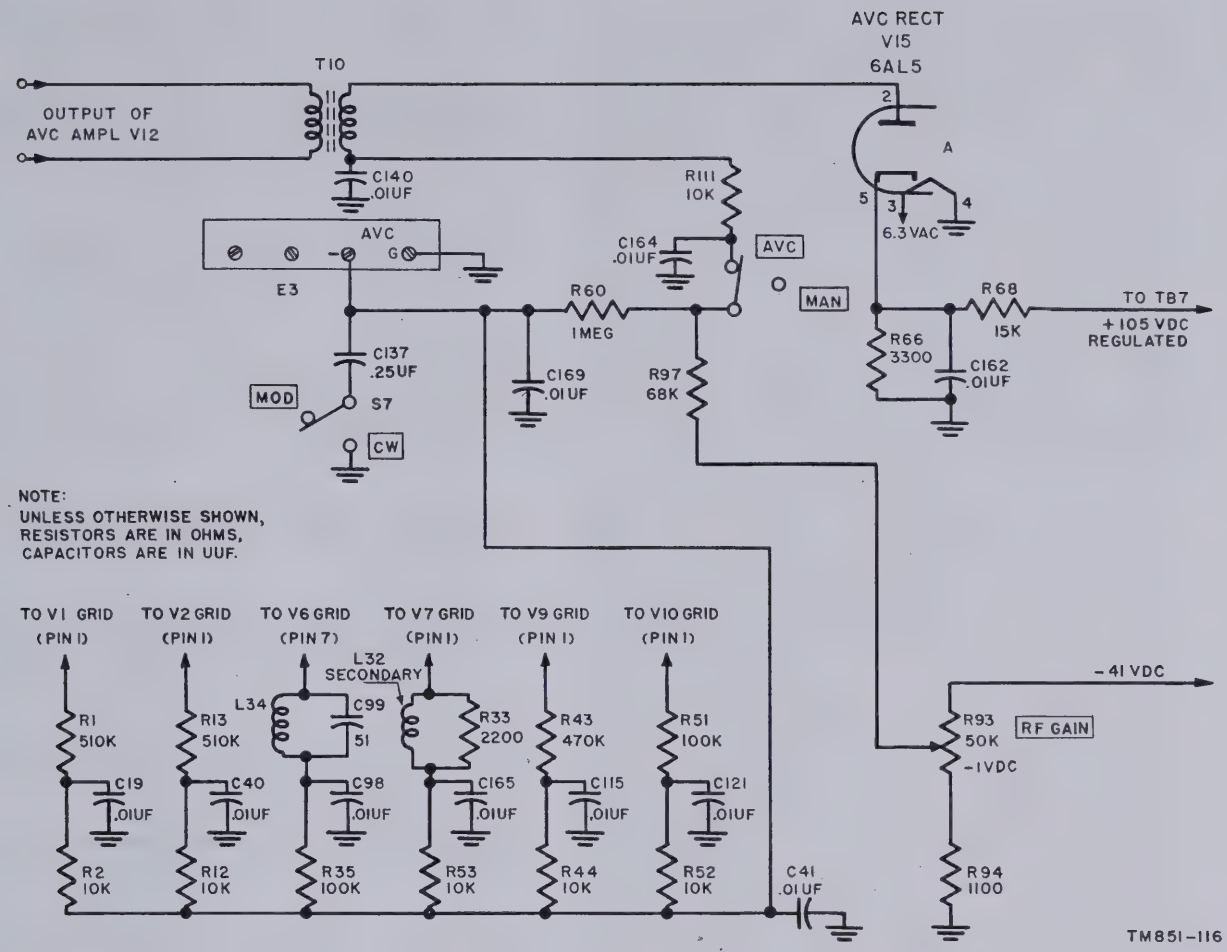


Figure 45.1. Radio Receiver R–620/FRR, schematic diagram of avc rectifier.

load of V15A (with AVC–MAN switch S8 in the AVC position) consists of the secondary of T10, R111, R97, RF GAIN control R93, R94, and R66. The ac loading of V15A consists of R60 and C169 to smooth out avc negative bias, and of R111, C164, and C140 to filter the if. signal variations.

Page 80. Par. 70*a*. Line 27. Change "or C164 (fig. 44)" to read: , C164 (fig. 44), or C169 (fig. 45.1).

Page 80. Par. 70*a*. Line 32. After "R61", add: (fig. 43, 44, and 45).

Page 80. Par. 70*a*. Line 33. After sentence ending with "receiver." add: In figure 45.1, the negative avc bias developed is at the junction of R60 and C169.

Page 81. Figure 45. Add figure 45.1 after figure 45.

Page 82. Par. 70*a*. Line 4. Change "(fig. 44)" to read: (fig. 44 and 45.1).

Page 82. Par. 70*a*. Line 6. After "No. 1570" add: and for R–620/FRR.

Page 82. Par. 70*a*. Line 8. After "R32" add: , or R33 (fig. 45.1).

Page 82. Par. 70*b*. Line 5. Change "+27 volts dc" to read: +23.0 volts dc.

Page 82. Par. 70*b*. Line 6. After sentence ending with "ground." add: In figure 45.1, the delay bias (18.0 volts dc) is obtained from R66 and R68 voltage divider.

Page 82. Par. 70*b*. Line 6. After "C138", add: (fig. 43, 44, and 45).

Page 82. Par. 70*b*. Line 7. After sentence ending with "V14B.", add: In figure 45.1, T10 provides for signal coupling.

Page 82. Par. 70*c*. Line 2. After "(V11)", add: or from the avc amplifier V12, in the R–620/FRR receiver.

Page 82. Par. 70*c*. Line 5. After sentence ending with "R61." add: In figure 45.1, the signal available to V15A is that across the secondary of T10.

Page 82. Par. 70*c*. Line 7. After "V14B", add: (or V15A, in the R–620/FRR receiver).

Page 82. Par. 70*c*. Line 9. After "R61", add: (or R111, R97, the tapped part of R93, and R94 (fig. 45.1)).

Page 82. Par. 70*c*. Line 13. Change "(fig. 45)" to read: (fig. 45 and 45.1).

Page 82. Par. 70*d*. Line 1. After "V14B" add: (fig. 43, 44, and 45).

Page 82. Par. 70*e*. Line 1. Change "and 45" to read: 45, and 45.1.

Page 82. Par. 71. Heading. Change to read, Noise Limiter Rectifiers V15A (fig. 46) and V14B (fig. 46.1).

Page 82. Par. 71*a*. Line 1. After "V15A" add: (fig. 46).

Page 82. Par. 71*a*. Add the following to the paragraph: In figure 46.1, when S6 is in the LIM position, V14B (series noise limiter) normally conducts. When it stops conducting, it opens the af signal path to C143 and the following stage. The af signal voltage is across R64 and R65.

Page 82. Par. 71*b*. Line 1. After "V14A" add: (fig. 46).

Page 82. Par. 71*b*. Add paragraph 71b.1 after paragraph 71*b*.

b.1. In figure 46.1, R64 and R65 are the diode load resistors for the V14A diode detector. The operation of the series noise limiter is as follows: With the S6 LIM–OFF switch in the OFF position, the noise limiter rectifier tube is shorted out. Hence, the audio voltage across R65 is parallel connected across R127 in the cathode leg of V14B through the S6 switch. The audio voltage across R127 is coupled to the grids of the first af amplifier through C143. With S6 in the LIM position, the plate of V14B is connected to junction of R64 and R65. This places a less negative bias voltage on the plate of V14B than exists at the cathode since the bias on the cathode is the full voltage drop obtained across R64 and R65. For example, suppose that the voltage between R64 and ground is –10 volts, this places the cathode at –10 volts with respect to ground and the plate at –5 volts, since this voltage is taken at the junction of R64 and R65. Since the plate of V14B is less negative (or positive) with respect to the cathode, the tube will conduct, its resistance being low compared to other resistance values in the circuit. This effectively connects R127 through the conducting diode to the junction of R64 and R65. Thus, the audio voltage across R65 is passed on through C143 to the grid of the first af amplifier. This audio output is about 45 percent of what it would be without the limiter (due to R64 and R65 voltage divider) but this reduction is of little significance, since it affects only the receiver gain and not the sensitivity. Under the above conditions, C144 becomes charged (the grounded side being positive) through 1.2 megohm resistor R67 which has a relatively large time constant. Any change in potential across C144 would require a considerable amount of time in relation to a change in potential at the plate of V14B. Therefore, if a noise potential of approximately 100 volts suddenly appears across R64 and R65 and brings the plate of the limiter to minus 50 volts with respect to ground, the tube will stop conducting since the cathode cannot follow this instantaneous voltage variation. This in effect, disconnects output capacitor C143 from the junction of R64 and R65 and the af amplifier has no input for the duration of the noise pulse. When the noise pulse has decayed, the original circuit

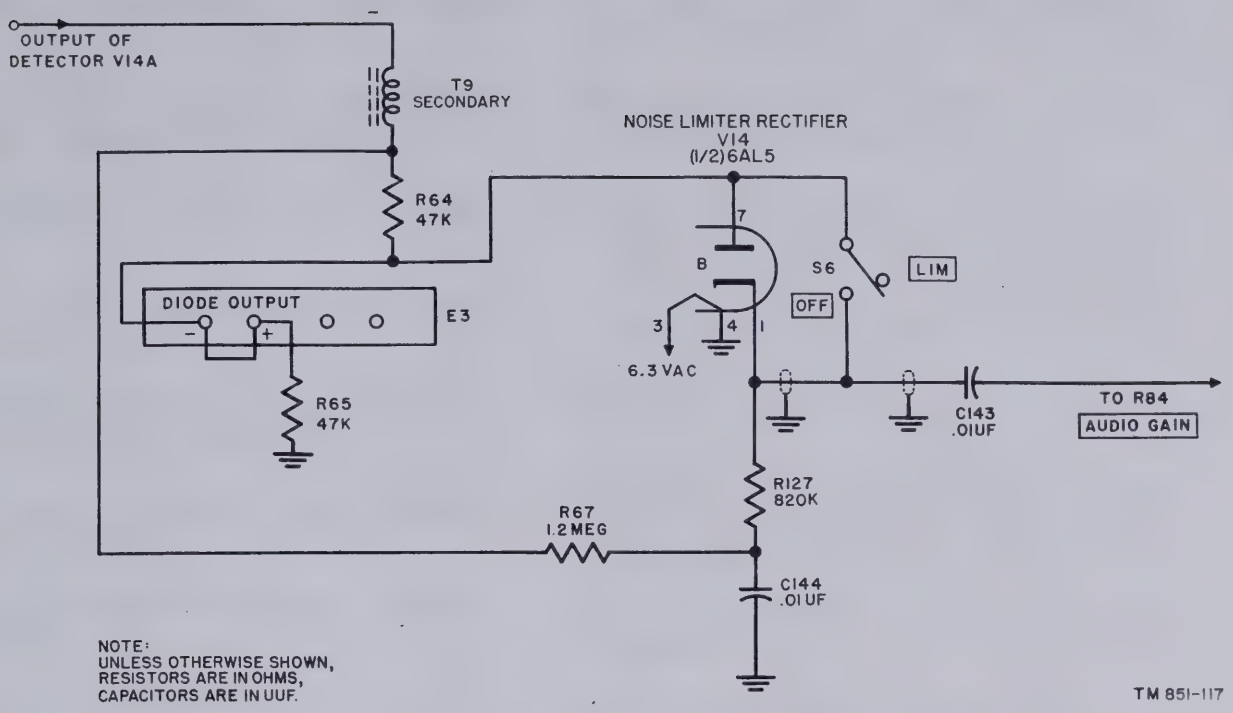


Figure 46.1. Radio Receiver R–620/FRR, schematic diagram of series type noise limiter rectifier.

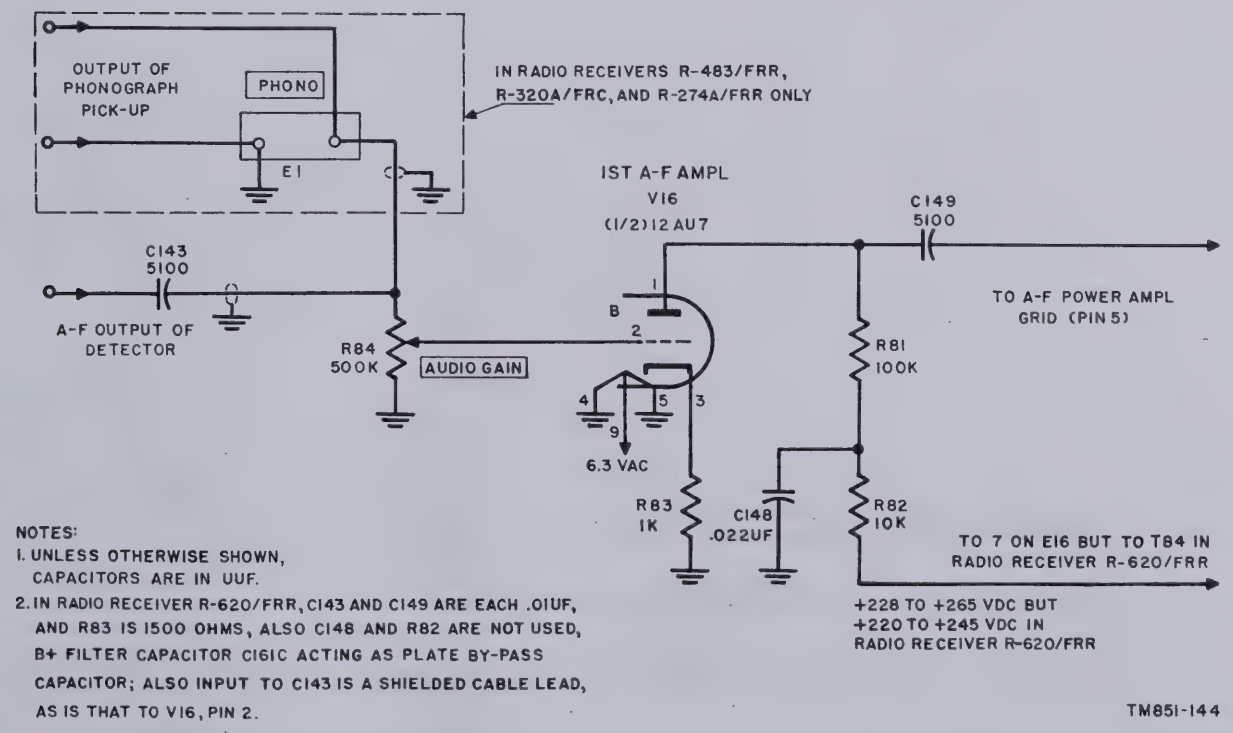


Figure 47. Radio receiver, all types, schematic diagram of first af amplifier.

conditions are restored and the tube conducts again.

Page 83. Figure 46. Caption. Insert "shunt type" between "of" and "noise".

Page 83. Figure 46. Add figure 46.1 after figure 46.

Page 83. Figure 47. Delete figure 47 and substitute new figure 47.

Page 84. Par. 73. Heading. Change "(fig. 48)" to read: (fig. 48 and 48.1).

Page 84. Par. 73*a*. Line 8. Change PHONE to read: PHONES.

Page 84. Par. 73*a*. Line 17. After "load" add: (fig. 48).

Page 84. Figure 48. Add figure 48.1 after figure 48.

Page 84. Par. 73*b*. Line 2. To sentence ending in "E16" add: (fig. 48) from junction L52, R85, and C161C (fig. 48.1).

Page 84. Par. 73*b*. Line 6. To sentence ending in "capacitor" add: (fig. 48).

Page 84. Par. 73*b*. Add the following to the paragraph: In Radio Receiver R–620/FRR, fixed bias (–12.0 dc volts) is developed across voltage divider R98 and R133 from the –41 dc volt bias supply.

Page 85. Par. 73*c* Line 6. After "C151" add: (fig. 48).

Page 85. Par. 73*c*. Line 8. Add the following after "C150": (In Radio Receiver R–620/FRR, capacitors C186 and C187),

Page 85. Par. 74*b*. Add paragraph 74.1 after paragraph 74*b*.

74.1. Rf Input Meter Rectifier V15B (fig. 49.1)

a. Rf input meter rectifier V15B rectifies the 455-kc if. signal voltage, developed across the

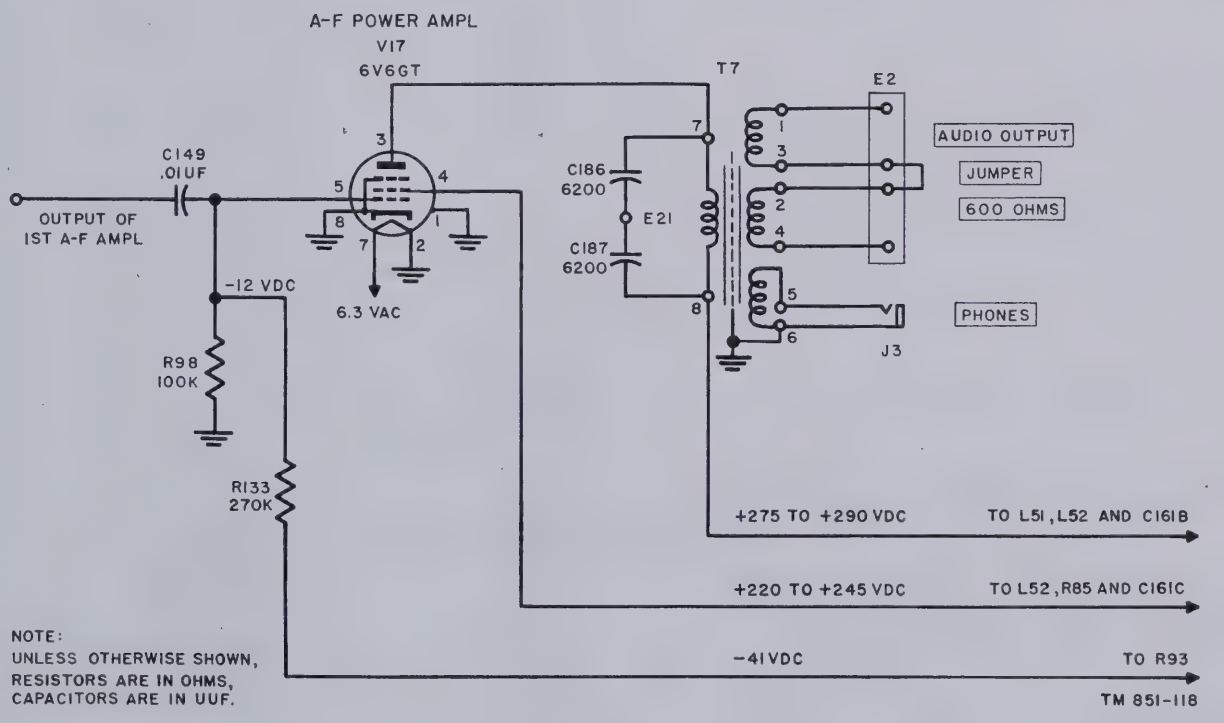


Figure 48.1. Radio Receiver R–620/FRR, schematic diagram of af power amplifier.

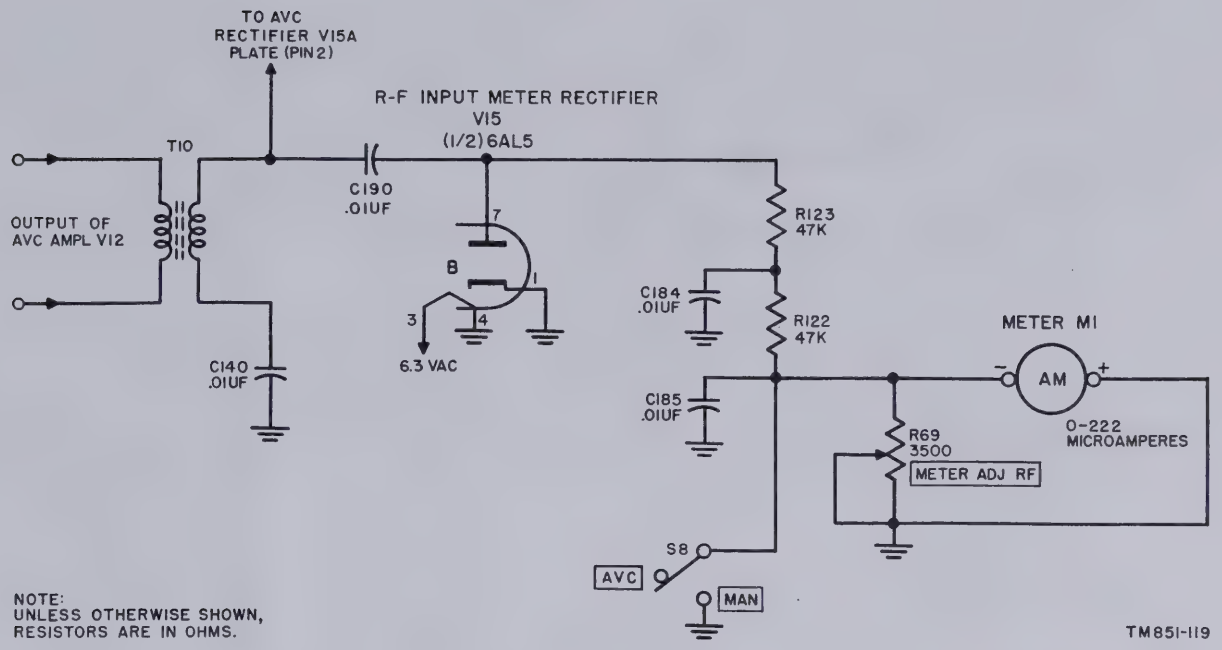


Figure 49.1. Radio Receiver R–620/FRR, schematic diagram of rf input meter rectifier.

secondary of T10. With AVC–MAN switch S8 at AVC, the plate current of V15B is through meter M1 and R69 to ground. With S8 at MAN, M1 is short circuited, and provides no indication. METÉR ADJ RF control R69 provides for the calibration adjustment of M1.

b. The 455-kc if. signal voltage developed across the secondary of T10, is coupled through C190, to the plate of V15B which becomes positive with respect to its cathode. Dc current flows through resistors R123 and R122, and with S8 at AVC, through M1, and R69 to ground. The filter circuit (resistors R122 and R123 and capacitors C184 and C185) removes the ac component of the pulsating dc current from M1. The dc current flow, being proportional to the 455-kc signal input voltage, provides for meter M1 indication to be proportional to the rf input signal to the receiver.

Page 85. Par. 75. Heading. Change to read: Power Supply V18, V19, V20 (fig. 50), and V21 (fig. 50.1).

Page 85. Par. 75. Line 20. After "J5" add: (fig. 50).

Page 86. Figure 50. Add figure 50.1 after figure 50.

Page 87. Par. 75*a*. Line 14. After "R73", add: (fig. 50).

Page 87. Par. 75*a*. Line 22. After "+150", add: (+145 in figure 50.1).

Page 87. Par. 75*a*. Line 23. After sentence ending in "receiver.", add: In figure 50.1, with SEND–REC switch S9 in the REC position, V21 and R128 also form part of the B+ rectifier load. R128 limits the current for V21 as does R85 for V18. The dc voltage across V21 is the regulated +105-volt dc supply voltage.

Page 87. Par. 75*a*. Line 24. After "+265", add: (+220 to +245 in figure 50.1).

Page 87. Par. 75*a*. Line 25. After "+305", add: (+275 to +290 in figure 50.1).

Page 87. Par. 75*a*. Lines 25 and 26. Change "across R72 and R73 in series" in line 17, to read: from the junction of L52, C161C, and R85.

Page 87. Par. 75*b*. Line 16. After "R96", add: (fig. 50).

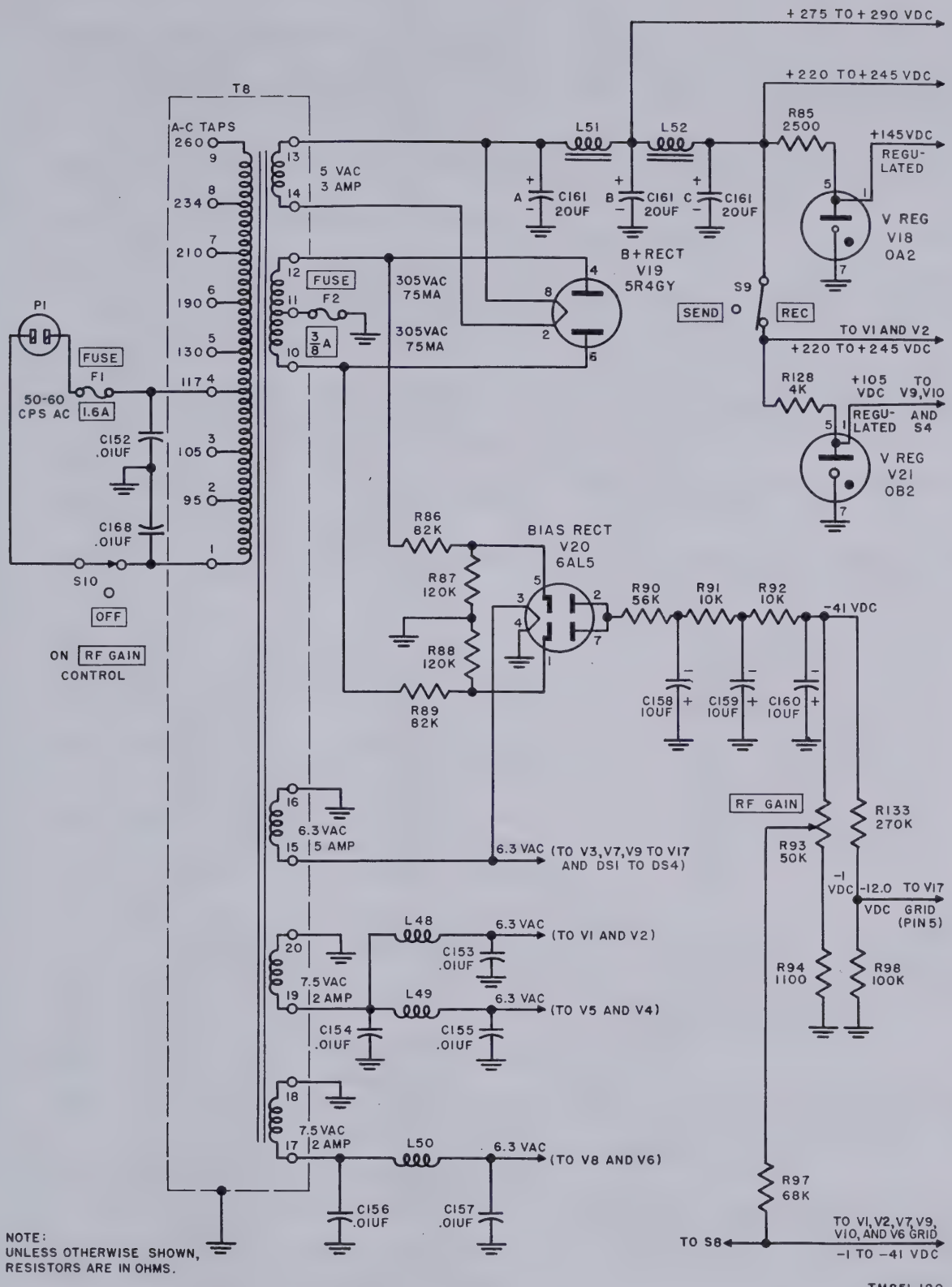


Figure 50.1. Radio Receiver R–620/FRR, schematic diagram of the power supply.

Page 87. Par. 75*b*. Line 23. After sentence ending with "supply." add: In Radio Receiver R–620/FRR, voltage divider resistors R133 and R98 at pin 5 of V17 provide for a –12.0 volt dc tap of the –41 volt dc supply.

Page 87. Par. 75*b*. Line 30. After "–51", add: (–41 in figure 50.1).

Page 87. Par. 75*b*. Line 31. After "R97", add: (fig. 50).

Page 87. Par. 75*b*. Add the following to the paragraph: In Radio Receiver R–620/FRR, R97 (fig. 50.1) is 68K and completes the dc load for avc rectifier V14A, through R93 and R94.

Page 87. Par. 75*c*. Line 8. After "I4" add: , or DS1, DS2, DS3, DS4 in figure 50.1.

Page 87. Par. 75*c*. Line 8. Change "V7" to read: V7 and V9.

Page 87. Par. 75*c*. Line 9. Change "R274C/FRR" to read: R–274C/FRR.

Page 89. Par. 77. Table. Add the following after the corresponding figure number.

Fig.	Description
102.1	Radio Receiver R–620/FRR, schematic diagram.
54.1	Radio Receiver R–620/FRR, variable frequency operation, tube socket voltage and resistance diagram.
58.1	Radio Receiver R–620/FRR, tube socket voltage and resistance diagram for crystal positions 1 through 6.
62.1	Radio Receiver R–620/FRR, resistor-capacitor board, voltage and resistance diagram.
72.1	Radio Receiver R–620/FRR, B+ voltage distribution.
75.1	Radio Receiver R–620/FRR, avc and bias voltage distribution.
76.1	Radio Receiver R–620/FRR, antenna rf tuner subassemblies for bands 1 through 6.
77.1	Radio Receiver R–620/FRR, interstage rf tuner subassemblies for bands 1 through 6.
78.1	Radio Receiver R–620/FRR, oscillator rf tuner subassemblies for bands 1 through 6.
79.1	Radio Receiver R–620/FRR, 3,955-kc if. transformer subassembly T2.
80.1	Radio Receiver R–620/FRR, if. filter circuit transformer subassembly T3.
81.1	Radio Receiver R–620/FRR, if. transformer subassemblies T4 and T5.
82.1	Radio Receiver R–620/FRR, bfo subassembly T6.
83.1	Radio Receiver R–620/FRR, 3.5-mc crystal oscillator subassembly Z25.
85.1	Radio Receiver R–620/FRR, first mixer if. transformer subassembly T1.
86.1	Radio Receiver R–620/FRR, rf strip subassembly, exploded view.

Page 89. Par. 77. Table. Description column. Fig. 71. After "than" add: R–620/FRR and.

Add: "other than R–620/FRR" after "all types" to the following figure titles in paragraph 77 in the Description column.

Page 89. Fig. No. 76.
Page 89. Fig. No. 77.
Page 89. Fig. No. 78.
Page 89. Fig. No. 79.
Page 89. Fig. No. 80.
Page 89. Fig. No. 81.
Page 89. Fig. No. 82.
Page 89. Fig. No. 83.
Page 89. Fig. No. 85.
Page 89. Fig. No. 86.

Page 89, Par. 77. Fig. 73. Description column. Change description to read: Radio receiver, all types other than R–274C/FRR, R–483A/FRR, and R–620/FRR, avc and bias voltage distribution.

Page 90. Par. 79*f*. Line 1. After "switch" add: (the R–620/FRR does not have this switch).

Page 90. Par. 79*h*. Line 5. After "AF" add: (found in all radio receivers, except the R–620/FRR).

Page 91. Par. 80. Step 1. Table. Add the following in the columns headed as shown:

Normal (ohms) Abnormal (ohms)	Possible cause of fault
23.9K in Radio Receiver R–620/FRR only.	For Radio Receiver R–620/FRR only, shorted C61, C163, C175 or C176.

Page 91. Par. 80. Step 1. Table. To sentence ending in "487" in line 7, "Abnormal (ohms)" column, and to paragraph ending with "C167." "Possible cause of fault" column, add the following:

Abnormal (ohms)	Possible cause of fault
; 2840 or 3020 in Radio Receiver R–620/FRR only.	For Radio Receiver R–620/FRR only, shorted C73 or C167; or shorted C72 (through S2) or C101.

Page 91. Par. 80. Step 1. "Possible cause of fault" column. Line 17. After "capacitors" add: ; or C145 in grid circuit of V16A for all receivers.

Page 91. Par. 80. Table. Step 1. "Abnormal (ohms)" column. Line 13. Add the following to sentence ending in "487":

Abnormal (ohms)	Possible cause of fault
; 3020 to 23.9K in Radio Receiver R–620/FRR.	

Page 91. Par. 80. Table. Step 3. Add the following to "65K" in column 3 and to sentence ending in "1570" in column 5:

Normal (ohms)	Possible cause of fault
; 125K in Radio Receiver R–620/FRR.	; also C140 or C164 for Radio Receiver R–620/FRR.

Page 91. Par. 80. Table. Step 3. Column 5. Add the following to sentence ending with "487":

	Possible cause of fault
	and Radio Receiver R–620/FRR.

Page 92. Par. 82. Line 16. Change "62" to read: 62.1.

Page 92. Par. 82. Line 17. Change "75" to read: 91.

Page 92. Par. 82. Table. item 1, Correction column. To sentence ending in "487" add: and Radio Receiver R–620/FRR.

Page 92. Par. 82. Item 4. Add the following to sentences ending respectively with "circuit" and "M1" in the columns indicated:

	Probable trouble	Correction
	; or defect, in avc amplifier V12 for Radio Receiver R–620/FRR.	; also, check C190 and filter network (R122, R123, C184, and C185), meter section of AVC-MAN switch S8, V12, and/or V15 for Radio Receiver R–620/FRR. Make resistance measurements from pins 1 and 7 of V15 and for V12 to locate defective part.

Page 92. Par. 82. Item 5. Add the following to sentences ending in "circuit", column 2, "V15", column 3.

	Probable trouble	Correction
	; or V14B, in Radio Receiver R–620/FRR.	; or V14, as applicable.

Page 92. Par. 82. Item 6. Correction column Line 4. Add the following to sentence ending in "62)".

		Correction
		; and from TB7, TB11, and junction of L52, C-161C, and R85 for Radio Receiver R–620/FRR (fig. 62.1).

Page 92. Par. 82. Item 6. Correction. Line 6. Add the following to sentence ending in "supply."

	Correction
	and V21 for Radio Receiver R–620/FRR.

Page 92. Par. 82. Item 6. Correction. Line 7. After "8" add the following: or TB11, as applicable.

Page 93. Par. 82. Item 11. To sentence ending with "V12" in column 2 and after "V13" in column 3, respectively, add, ", as applicable" and ", as applicable,".

Page 93. Par. 82. Item 11. Probable trouble. Change "amlifier v" to read: amplifier V.

Add, "510K BANDS 5, 6" after "26K" in the following places in the manual:
Page 96. Figure 52. 1ST MIXER. Pin 7
Page 97. Figure 53. 1ST MIXER. Pin 7
Page 98. Figure 54. 1ST MIXER. Pin 7
Page 100. Figure 56. 1ST MIXER. Pin 7
Page 101. Figure 57. 1ST MIXER. Pin 7
Page 102. Figure 58. 1ST MIXER. Pin 7

Page 98. Figure 54. Add figure 54.1 after figure 54.

Page 102. Figure 58. Add figure 58.1 after figure 58.

Page 106. Figure 62. Add figure 62.1 after figure 62.

Page 110. Figure 66. Add figure 66.1 after figure 66.

Page 114. Figure 70. Add figure 70.1 after figure 70.

Page 115. Figure 71. Title. Change title to read:
Figure 71. Radio receiver, all types other than R–274C/FRR from serial No. 487 through 1569, and R–620/FRR, B+ voltage distribution.

Page 116. Figure 72. Add figure 72.1 after figure 72.

Page 117. Figure 73. Title. Change title to read:
Figure 73. Radio receiver, all types other than R–274C/FRR, R–483A/FRR, and R–620/FRR, avc and bias voltage distribution.

Page 119. Figure 75. Add figure 74.1 after figure 75.

Page 120. Par. 83. L21. Add as a separate item after L21:

Receiver type	Transformer or coil	Winding or terminals	Ohms
Radio Receiver R–620/FRR	L21		Less than 1

Page 120. Par. 83. L23. Add as a separate item after item L23, the following item.

Receiver type	Transformer or coil	Winding or terminals	Ohms
Radio Receiver R–620/FRR	L23		21.5

Page 121. Par. 83. L34. Delete "Primary", "Secondary", and "Less than 1".

Page 121. Par. 83. Item L24. Change to read:

Receiver type	Transformer or coil	Winding or terminals	Ohms
Radio receiver, all types other than R–274C/FRR from serial No. 2988 and R–620/FRR	L24		8.5; otherwise 25

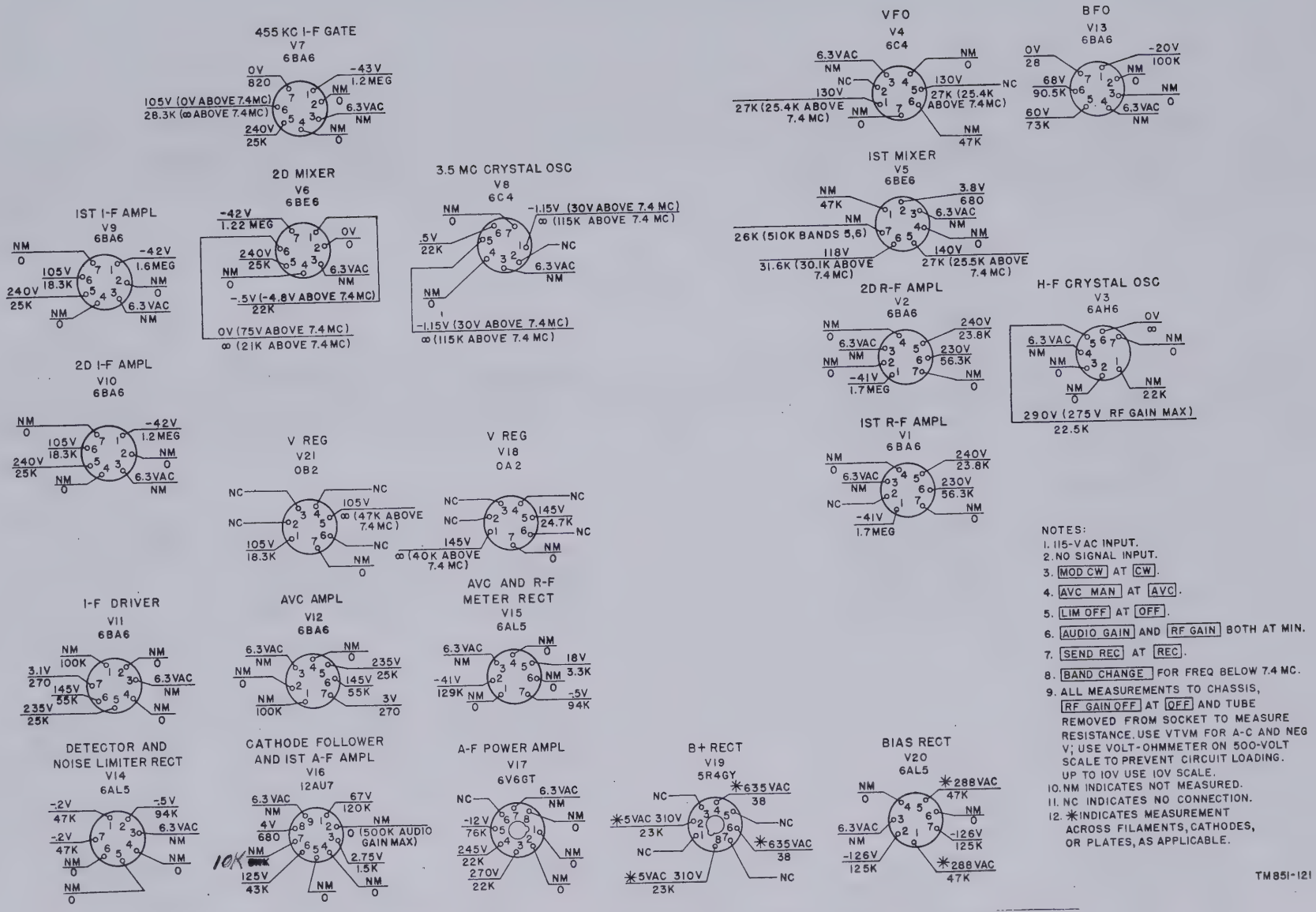
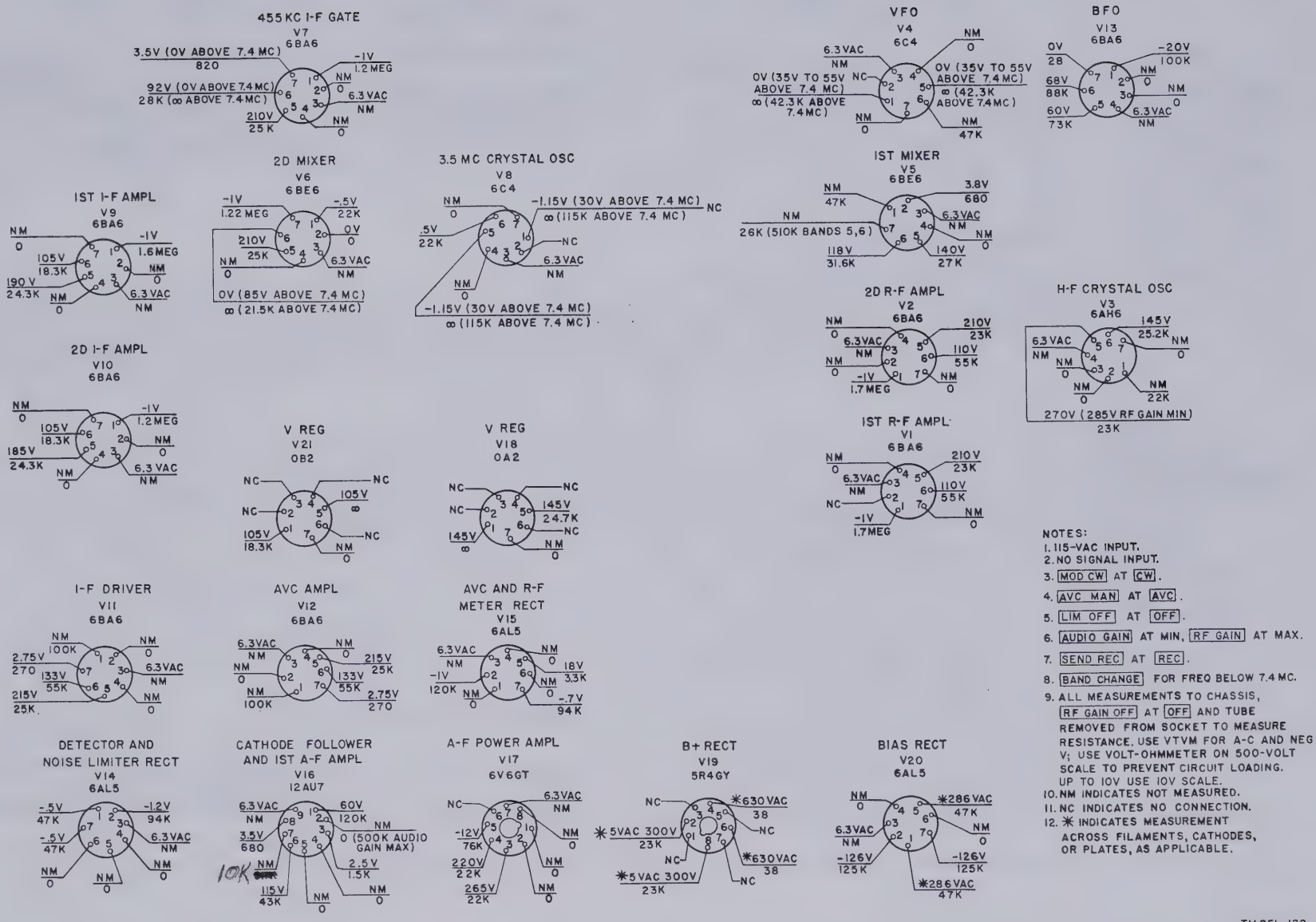


Figure 54.1. Radio Receiver R–620/FRR, variable frequency operation, tube socket voltage and resistance diagram.



NOTES:
1. 115-VAC INPUT.
2. NO SIGNAL INPUT.
3. MOD CW AT CW.
4. AVC MAN AT AVC.
5. LIM OFF AT OFF.
6. AUDIO GAIN AT MIN, RF GAIN AT MAX.
7. SEND REC AT REC.
8. BAND CHANGE FOR FREQ BELOW 7.4 MC.
9. ALL MEASUREMENTS TO CHASSIS, RF GAIN OFF AT OFF AND TUBE REMOVED FROM SOCKET TO MEASURE RESISTANCE. USE VTVM FOR A-C AND NEG V_1; USE VOLT-OHMMETER ON 500-VOLT SCALE TO PREVENT CIRCUIT LOADING. UP TO 10V USE 10V SCALE.
10. NM INDICATES NOT MEASURED.
11. NC INDICATES NO CONNECTION.
12. * INDICATES MEASUREMENT ACROSS FILAMENTS, CATHODES, OR PLATES, AS APPLICABLE.

TM 851-122

Figure 58.1. Radio Receiver R-620/FRR, tube socket voltage and resistance diagram for crystal positions 1 through 6.

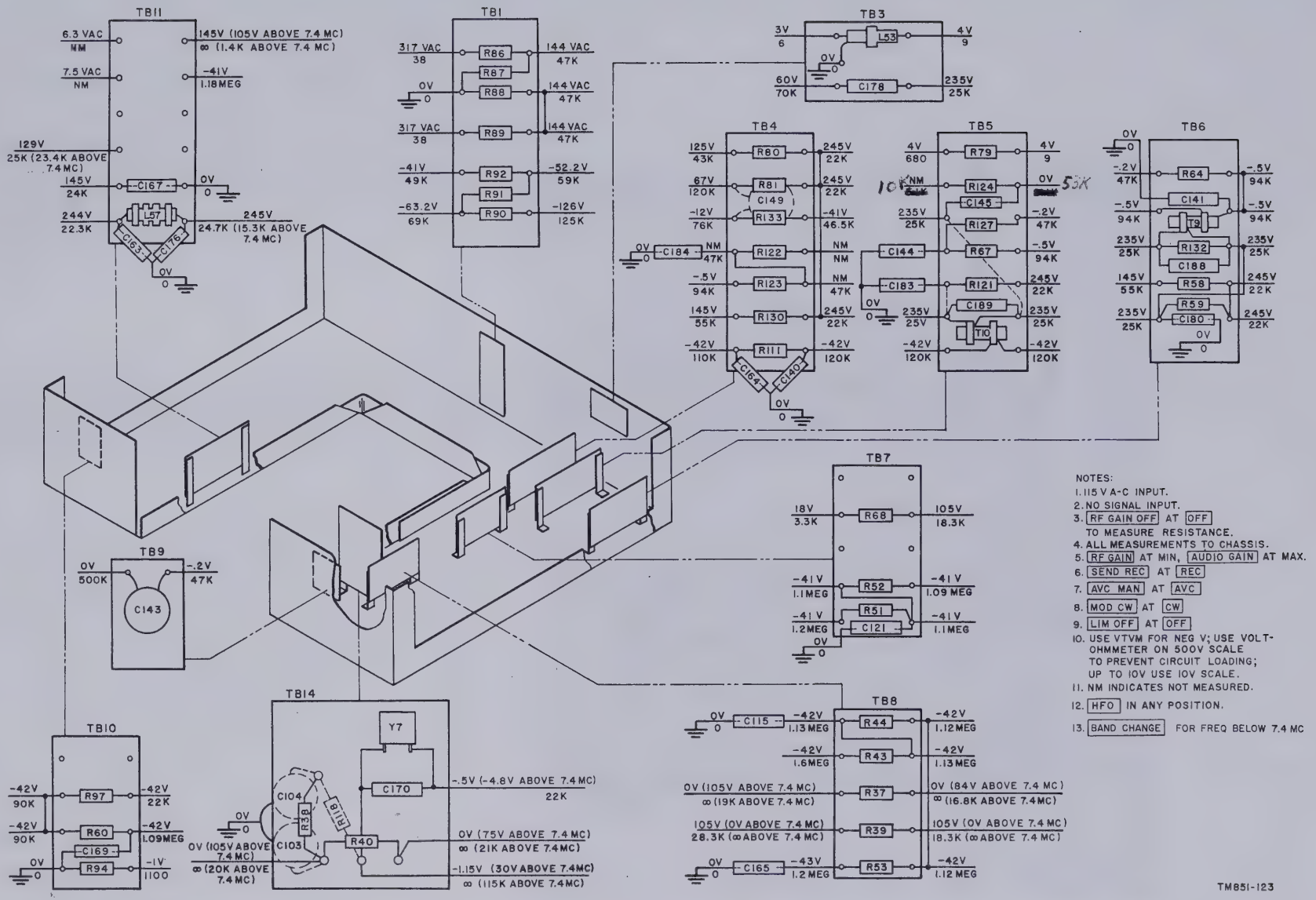


Figure 62.1. Radio Receiver R–620/FRR, resistor-capacitor board, voltage and resistance diagram.

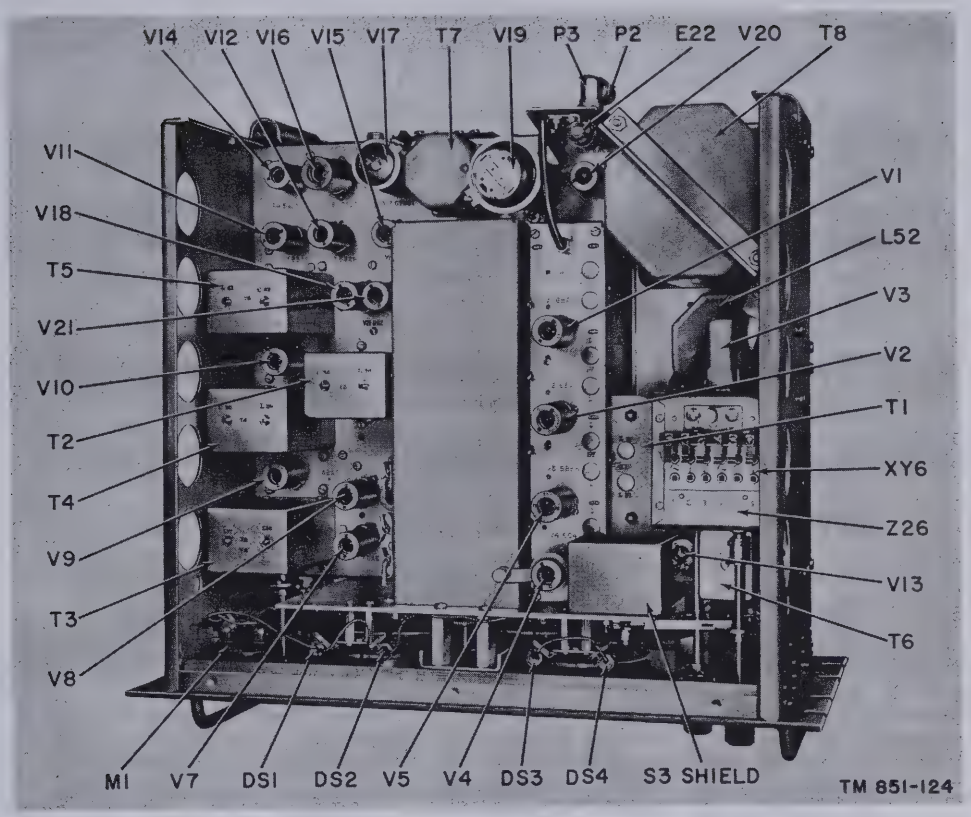


Figure 66.1. Radio Receiver R–620/FRR, top view of chassis.

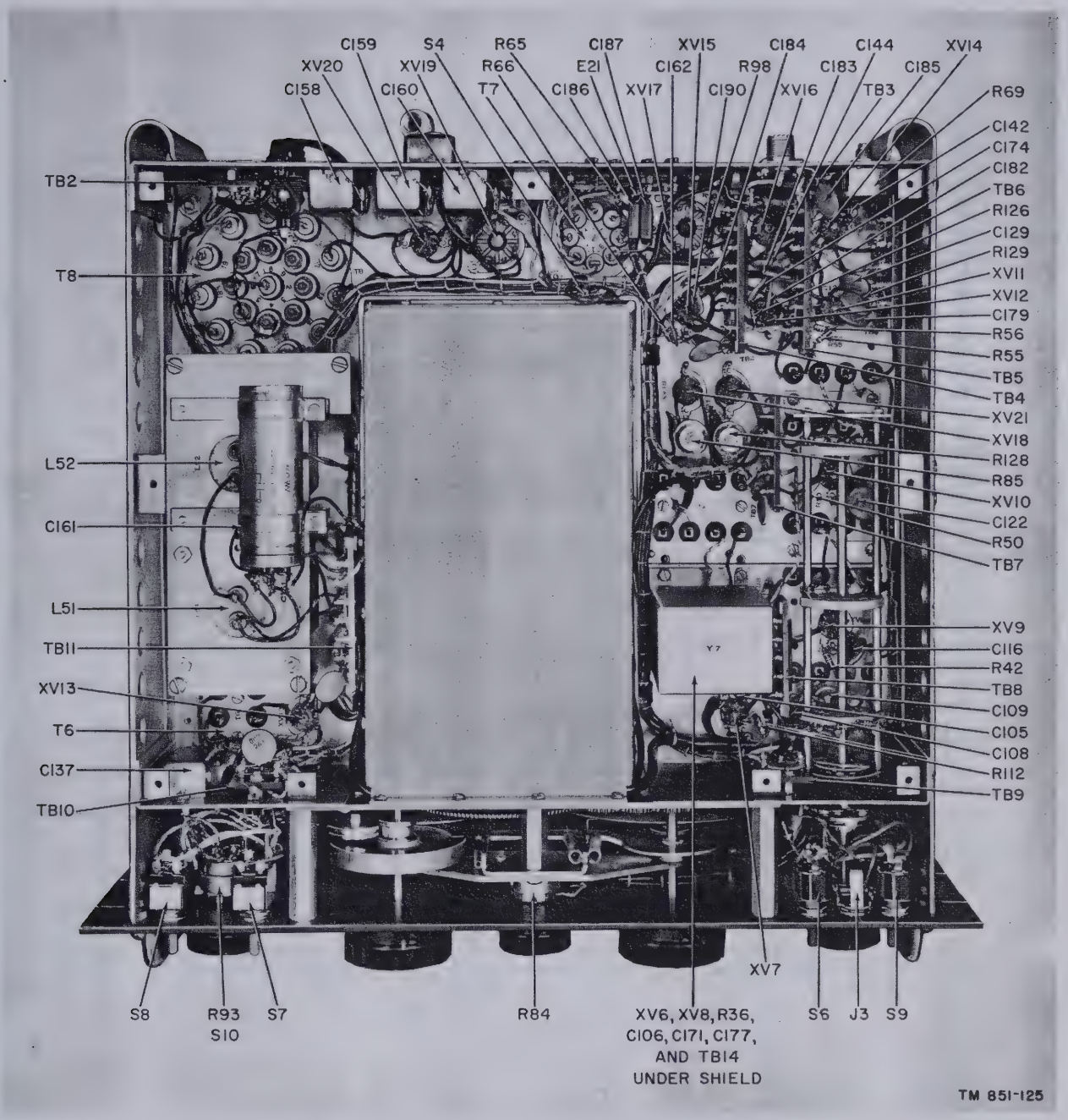


Figure 70.1. Radio Receiver R–620/FRR, bottom view of chassis.



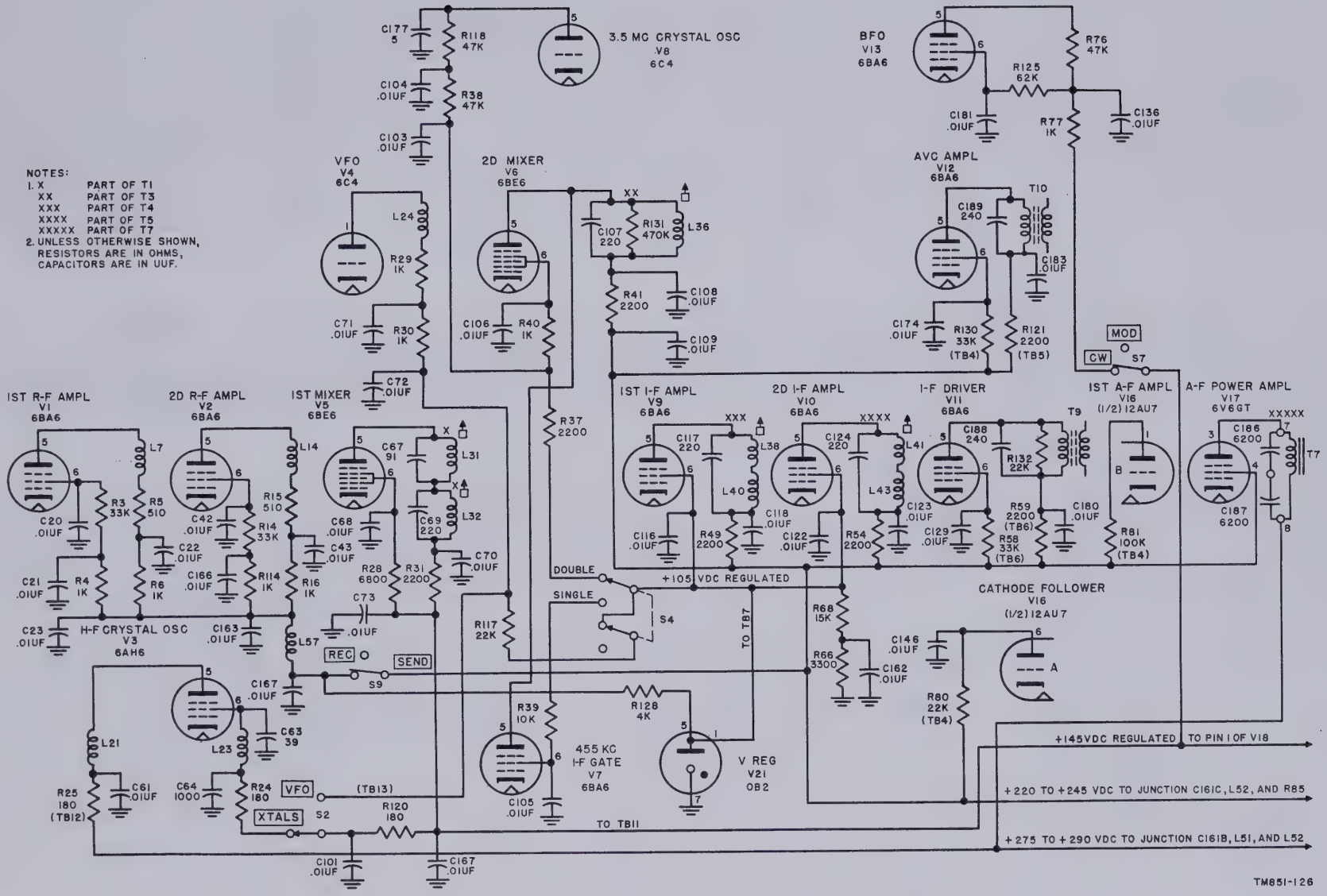


Figure 72.1. Radio Receiver R–620/FRR, B+ voltage distribution.

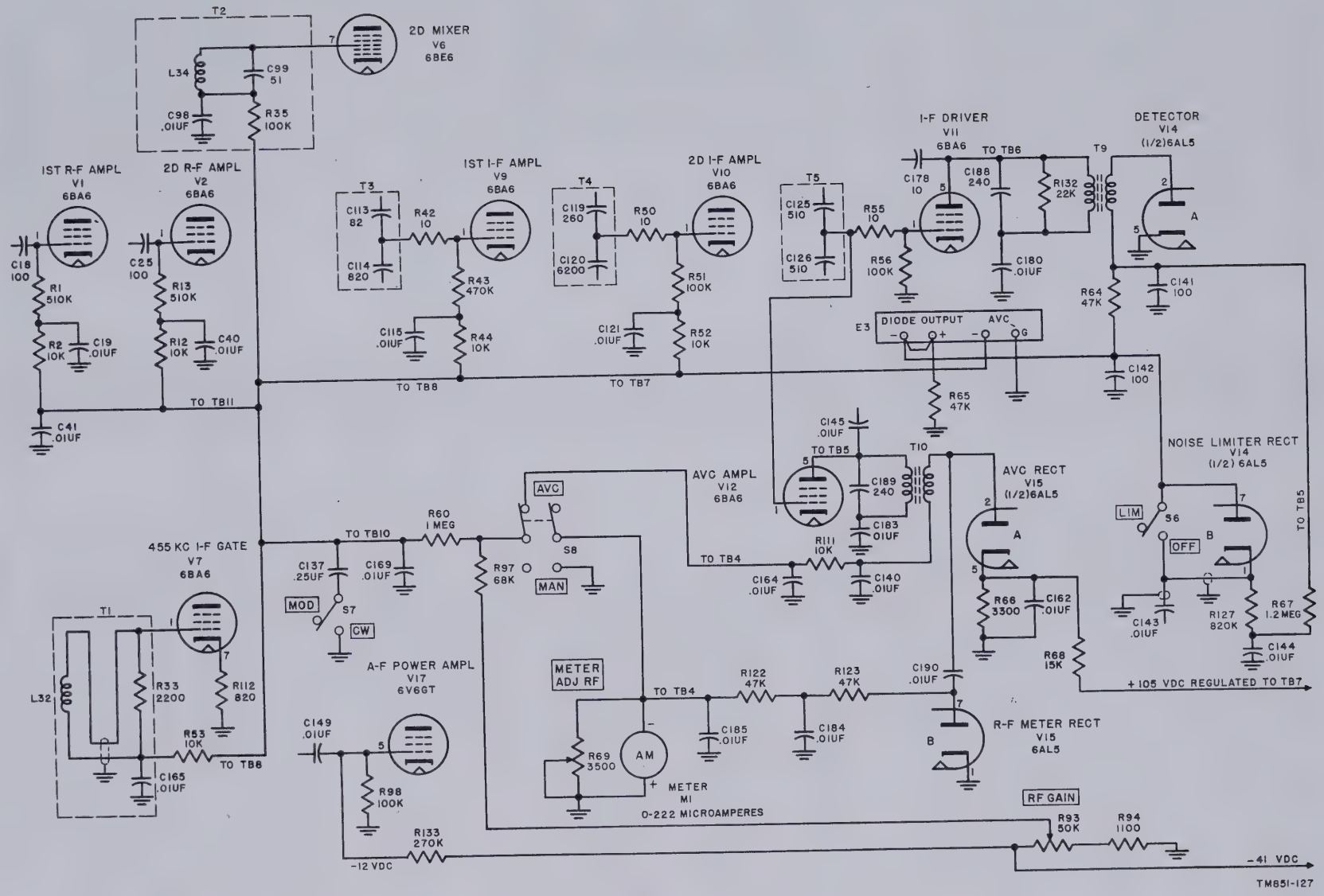


Figure 75.1. Radio Receiver R–620/FRR, avc and bias voltage distribution.

Page 121. Par. 83. Item L35. Change to read:

Receiver type	Transformer or coil	Windings or terminals	Ohms
Radio receiver, all types other than R–620/FRR	L35		8.5

Page 121. Par. 83. Item L40. Column 3. Add: per pie.

Page 121. Par. 83. Items L46 and L47. Change to read:

Receiver type	Transformer or coil	Windings or terminals	Ohms
Radio receiver, all types other than R–620/FRR	L46		1.31
Radio receiver, all types other than R–620/FRR	L47		46

Page 121. Par. 83. Items L54 and L55. Change to read: L154 and L155.

Page 121. Par. 83. Item L53. Add the following items after item L53.

Receiver type	Transformer or coil	Windings or terminals	Ohms
Radio Receiver R–620/FRR	L54		Less than 1
Radio Receiver R–620/FRR	L55		5

Page 121. Par. 83. Add the following as the last three items.

Receiver type	Transformer or coil	Winding or terminals	Ohms
Radio Receiver R–620/FRR	L56		23
Radio Receiver R–620/FRR	L57		8.5
Radio Receiver R–620/FRR	T9, T10	Primary or secondary	8

Page 122. Par. 85*d*. Line 9. After "V5" add: and for V3 in Radio Receiver R–620/FRR.

Page 122. Par. 85*d*. Line 10. After "V3" add: (in all radio receivers, except the R–620/FRR.

Page 122. Par. 85*i*. *Caution* notice. Last line. Change "62" to read: 62.1.

Page 122. Par. 86*a*. Table. Short circuit column, Line 2. To sentence ending in "S11" add: ; in Radio Receiver R–620/FRR, C186 and C187 together.

Page 123. Par. 86*a*. Table. Open circuit column. Line 5. To sentence ending in "R99" add: ; as applicable; also, R133 for Radio Receiver R–620/FRR.

Page 123. Par. 86*a*. Table. Short circuit column, Line 3. To sentence ending in "C151" add: , as applicable.

Page 123. Par. 86*a*. Table. Short circuit column. Line 3. After "C150" add: , or C186 and C187 together, in the R–620/FRR receiver.

Page 123. Par. 86*a*. Table. Other column. Add as line 1 the following: For Radio Receiver R–620/FRR, when either C186 or C187 is shorted, the high frequency af response falls off.

Page 123. Par. 86*b*. Table. Open circuit column. Line 6. To sentence ending in "capacitor" add: , but in Radio Receiver R–620/FRR, C149 only, and check with a .01 uf capacitor.

Page 123. Par. 86*b*. Open circuit. Line 8. To

sentence ending in "R84." add: , but only R81, R83, and R84 for Radio Receiver R–620/FRR.

Page 123. Par. 86*b*. Table. Short circuit column. Line 7. After "C148" add: (not in R–620/FRR receiver).

Page 124. Par. 87. Control column. Item 5. Change "Sg" to read: S8.

Page 124. Par. 87*a*. Table. Open circuit column. Line 1. To sentence ending in "C143" add: (C143 or T9 in Radio Receiver R–620/FRR).

Page 124. Par. 87*a*. Table. First test. Short circuit column. Add as line 1, the following: C188.

Page 124. Par. 87*a*. Third test. Open circuit column. Line 1. Change "C64" to read: R64.

Page 124. Par. 87*a*. Third test. Open circuit column. Line 1. After "R62" add: (or secondary of T9 in the R–620/FRR receiver).

Page 124. Par. 87*a*. Third test. Open circuit column. Line 1. After "R69" add: (R62 and R63 are not in Radio Receiver R–620/FRR).

Page 124. Par. 87*a*. Third test. Test column. Line 5. To sentence ending in "V14B" add: (when checking V14B for Radio Receiver R–620/FRR, LIM–OFF switch S6 is set to its LIM position).

Page 124. Par. 87*a*. Third test. Short circuit column. Line 1. After "C139" add: (between windings of T9, also, sheath of shielded lead at cathode of V14B for Radio Receiver R–620/FRR.

Page 124. Par. 87*a*. Third test. Short circuit column. Line 2. After "C138" add: (as applicable).

Page 124. Par. 87*a*. Fourth test. Test column. Line 1. After "V15" add: (V12 for Radio Receiver R–620/FRR).

Page 124. Par. 87*a*. Fourth test. Other column. Line 2. To sentence ending in "V15" add: (V12, for Radio Receiver R–620/FRR).

Page 124. Par. 87*a*. Fifth test. Short circuit column. Line 1. After "V15A" add: (pin 1 of V12, in the R–620/FRR).

Page 124. Par. 87*a*. Fifth test. Test column. Line 1. After "V15" add: (V12 in the R–620/FRR).

Page 124. Par. 87*a*. Fifth test. Test column. Line 5. To sentence ending in "V15B" add: (V12 for Radio Receiver R–620/FRR).

Page 124. Par. 87*a*. Seventh test. Test column. Line 7. To sentence ending in "shorted" add: In Radio Receiver R–620/FRR, note that R59 and primary of T9 are not open and that C180 and C188 are not shorted.

Page 124. Par. 87*a*. Seventh test. Open circuit column. Line 4. To sentence ending in "R–274C/FRR" add: (R55, R56, R58, R59, R129, C129, C179, C180, and C188 for Radio Receiver R–620/FRR).

Page 124. Par. 87*a*. Seventh test. Short circuit column. Line 2. To sentence ending in "C129A" add: (C129, C179, C180, or C188 but not C127, C128, or C129A for Radio Receiver R–620/FRR).

Page 124. Par. 87*a*. Seventh test. Test column. Add the following to the paragraph: In Radio Receiver R–620/FRR, R132 when not open, should feel slightly warm to the touch.

Page 125. Par. 87*b*. Heading. After "V12" add: *other than in Radio Receiver R–620/FRR.*

Page 125. Par. 87*b*. First test. Open circuit column. Add as line 1, "C178, for Radio Receiver R–620/FRR."

Page 125. Par. 87*b*. First test. Short circuit column. Line 3. To sentence ending in "terminal" add: in Radio Receiver R–620/FRR, sheath on pin 5 plate lead of V11, or of V13, may be grounding pin 5.

Page 125. Par. 87*b*. Second test. Test column. After "V12" add: , other than for Radio Receiver R–620/FRR.

Page 125. Par. 87*b*. Third test. Test column. Line 3. After "resistances" add: , other than for Radio Receiver R–620/FRR.

Page 125. Par. 87*b*. Fifth test. Open circuit column. Line 4. To sentence ending in "C136" add: (L56, C181, and R125, but not C133, for Radio Receiver R–620/FRR).

Page 125. Par. 87*b*. Fifth test. Short circuit column. Line 2. To sentence ending in "L45" add: (L56 or C181, but not C133, for Radio Receiver R–620/FRR).

Page 125. Par. 87*c*. Third test. Open circuit column. Line 5. Change ":" to a period.

Page 125. Par. 87*c*. Third test. Short circuit column. Line 2. To sentence ending in "C123" add: also, C169 in Radio Receiver R–620/FRR.

Page 125. Par. 87*c*. Third test. Open circuit column. Line 5. To sentence ending in "1570" add: and R–620/FRR.

Page 126. Par. 87*d*. Third test. Open circuit column. Line 5. To sentence ending in "1570" add: and R–620/FRR.

Page 126. Par. 87*e*. Line 7. To sentence ending in "volume" add: for radio receiver, all types; but should decrease for Radio Receiver R–620/FRR.

Page 126. Par. 87*e*. Second test. Test column. After sentence ending with "L37." add:

Test	
To check R131 for Radio Receiver R–620/FRR, for open, refer to paragraph 87*f*, last item under "Test".	

Page 126. Par. 87*e*. Fourth test. Open circuit column. Line 7. To sentence ending in "1570" add: and for Radio Receiver R–620/FRR.

Page 126. Par. 87*e*. Fourth test. Open circuit column. Line 9. Change "and R–274C/FRR" to read: R–274C/FRR, and R–620/FRR.

Page 126. Par. 87*e*. Fourth test. Short circuit column. Line 7. To sentence ending in "1570" add: and for Radio Receiver R–620/FRR.

Page 127. Par. 87*f*. First test. Open circuit column. Line 7. To sentence ending in "1570" add: and for Radio Receiver R–620/FRR, except R32 and R33.

Page 127. Par. 87*f*. Third test. Short circuit column. Line 6. After sentence ending with "R–320A/FRC" add:

	Short circuit	
	Remove frequency control unit, Z26 (par. 90*c*) for C101 in Radio Receiver R–620/FRR.	

Page 127. Par. 87*f*. Fourth test. Test column. Add as a separate paragraph, the following:

Test	
Check R131 in T3, for Radio Receiver R–620/FRR, with S8 set to AVC and S5 to 8-KC position, so that meter M1 indication for tuning 455-kc if. signal shows flat-top response.	

Page 127. Par. 87*f*. First test. Test column. Line 2. Add the following:

Test	
R33 for Radio Receiver R–620/FRR, when not open, should feel slightly warm to the touch.	

Page 127. Par. 87*f*. Fourth test. Test column. To sentence ending in "replacement" add: also, frequency control unit Z26, as applicable.

Page 127. Par. 87*g*. Third test. Open circuit column. Line 2. To sentence ending in "C104" add: also, R118, C170, C171, or C177, but not L35, in Radio Receiver R–620/FRR.

Page 127. Par. 87*g*. Third test. Short circuit column. Line 2. To sentence ending in "Y7" add: also, C170, C171, or C177 for Radio Receiver R–620/FRR.

Page 128. Par. 88*a*(1). Third test. Test column. Line 2. To sentence ending in "90*e*" add: if necessary, that in paragraph 90*c*., for Radio Receiver R–620/FRR.

Page 128. Par. 88*a*(1). Third test. Short circuit column. To sentence ending in "C75" add: also, C101 for Radio Receiver R–620/FRR, in frequency control unit Z26.

Page 128. Par. 88*a*(1). Fourth test. Open circuit column. Line 1. To sentence ending in "R30" add: also, R120 for Radio Receiver R–620/FRR, in frequency control unit Z26.

Page 128. Par. 88*a*(1). Last test. Test column. To sentence ending in "replacement" add: also frequency control unit Z26, in the R–620/FRR receiver.

Page 129. Par. 88*a*(2). Second test. Open circuit column. Line 2. To sentence ending in "S3" add: also, R71 and R120 for Radio Receiver R–620/FRR.

Page 129. Par. 88*a*(2). Second test. Open circuit column. Line 6. To sentence ending in "each" add: ; also, C175, L54, L55, and R119, for Radio Receiver R–620/FRR.

Page 129. Par. 88*a*(2). Second test. Short circuit column. Line 2. To sentence ending in "C65" add: ; also, C101 and C175 for Radio Receiver R–620/FRR.

Page 129. Par. 88*a*(2). Second test. Other column. Add as line 1: V4 (vfo) is operative for bands 4, 5, and 6 on crystal operation. Plus 105 V DC is applied through S4 and R117 to the plate of the vfo in Radio Receiver R–620/FRR. Make sure R117 is not open and has continuity to S2 switch.

Page 129. Par. 88*b*. Fourth test. Open circuit column. Line 5. To sentence ending in "487" add: ; also, R114 or L57 for Radio Receiver R–620/FRR; but not R6 for Radio Receivers R–620/FRR and R–274C/FRR from serial No. 487 through 1569.

Page 129. Par. 88*b*. Fourth test. Short circuit column. Line 8. After sentence ending with "1570" add: For Radio Receiver R–620/FRR, C163, C166, or C167.

Page 130. Par. 88*d*. Add the following paragraph: In Radio Receiver R–620/FRR, terminal board TB15, screw terminals A–A, and the socket contacts for neon lamp E22, are connected in parallel with J1, so that a low resistance indication could be due to one of these parts being faulty.

Page 130. Par. 89*a*. Table. Add the following:

	Approximate signal generator input to radio receivers			
			R–620/FRR	
			3.44 v. 0.33 v. 0.13 v. 578 uv. 56 uv. 124 uv. 100 uv. 164 uv. 120 uv.	

Page 131. Par. 89*b*. Line 27. Change "V1" to read: J1.

Page 131. Par. 90*a*. Heading. Change "(figs. 76 through 78) to read: (fig. 76 through 78.1).

Add "other than R–620/FRR", after "all types" in the following figure titles:
Page 132. Fig. No. 76

Page 133. Fig. No. 77
Page 134. Fig. No. 78
Page 135. Fig. No. 79
Page 135. Fig. No. 80
Page 136. Fig. No. 81
Page 137. Fig. No. 82
Page 137. Fig. No. 83
Page 139. Fig. No. 85
Page 141. Fig. No. 87

Page 132. Figure 76. Add figure 76.1 after figure 76.

Page 133. Figure 77. Add figure 77.1 after figure 77.

Page 134. Figure 78. Add figure 78.1 after figure 78.

Page 135. Par. 90*b*. Heading. Change "(figs. 79 through 83)" to read: (fig. 79 through 83.1).

Page 135. Par. 90*b*. Line 3. After "T9" add: (Z25, in the R–620/FRR).

Page 135. Figure 79. Add figure 79.1 after figure 79.

Page 135. Figure 80. Add figure 80.1 after figure 80.

Page 136. Figure 81. Add figure 81.1 after figure 81.

Page 137. Figure 82. Add figure 82.1 after figure 82.

Page 137. Figure 83. Add figure 83.1 after figure 83.

Page 135. Par. 90*c*. Heading. Change "(fig. 84)" to read: (fig. 84 and 84.1).

Page 135. Par. 90*c*(1). Line 3. After "(fig. 68)" add: or TB11 (fig. 70.1), in the R–620/FRR.

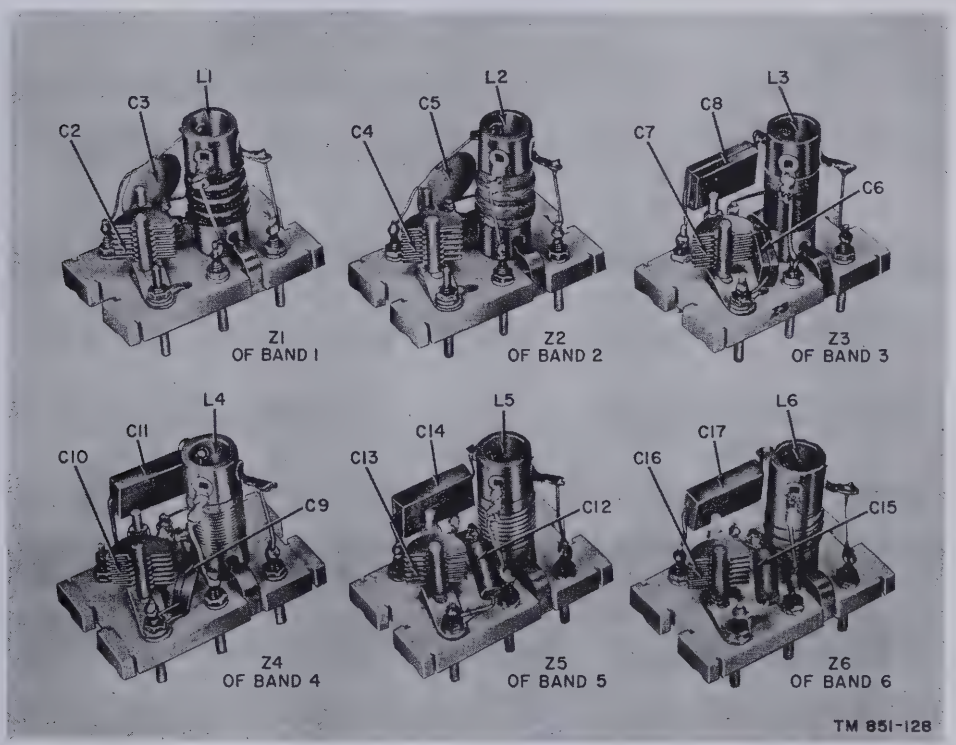


Figure 76.1. Radio Receiver R–620/FRR, antenna rf tuner subassemblies for bands 1 through 6.

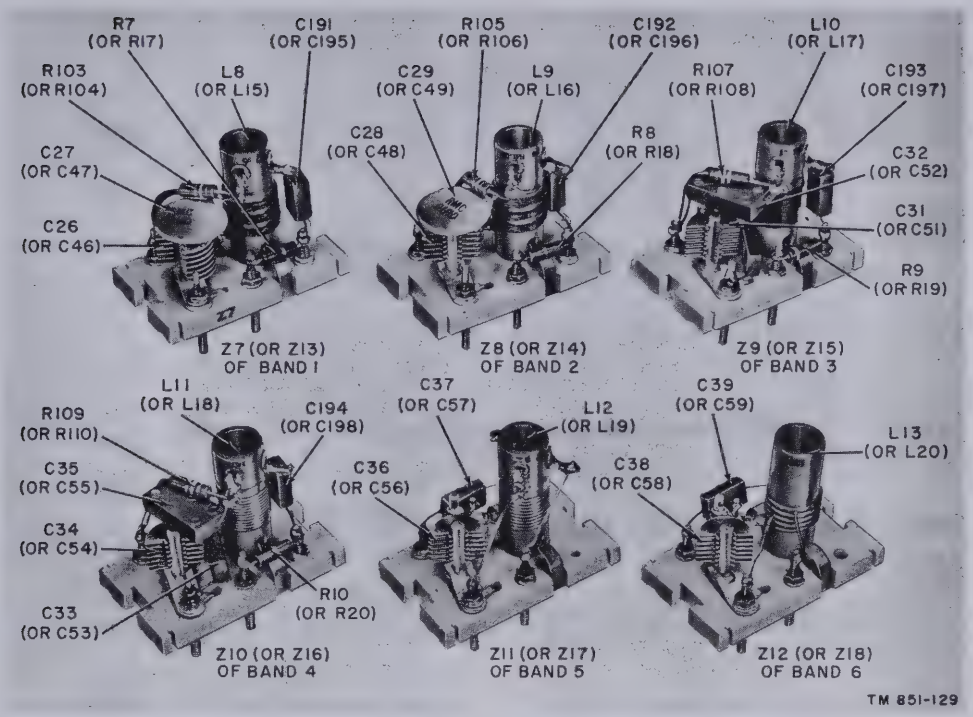


Figure 77.1. Radio Receiver R–620/FRR, interstage rf tuner subassemblies for bands 1 through 6.

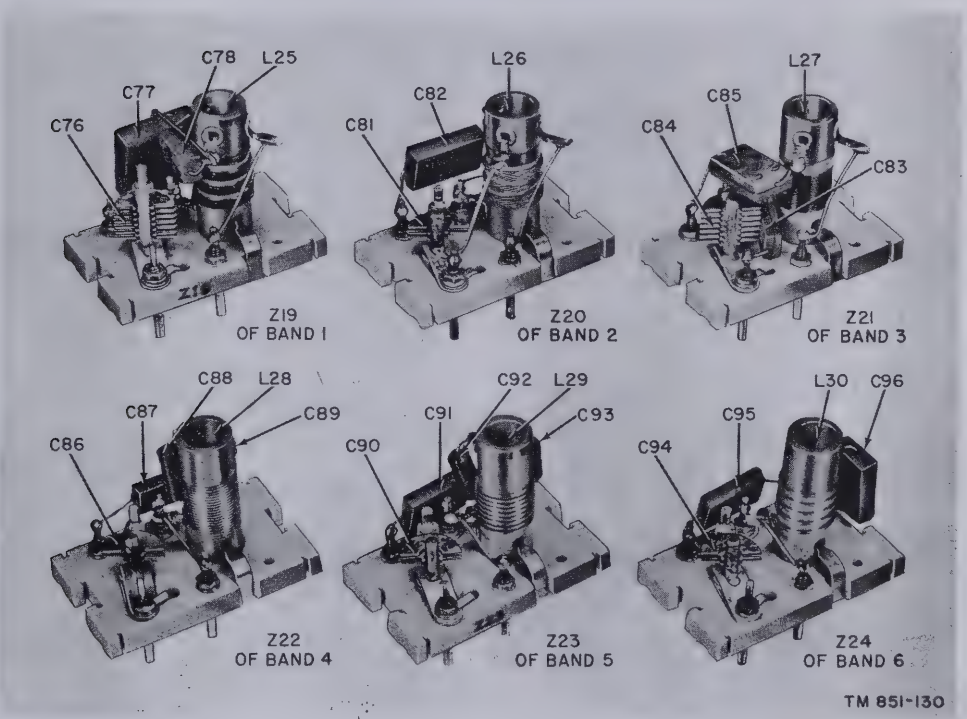


Figure 78.1. Radio Receiver R–620/FRR, oscillator rf tuner subassemblies for bands 1 through 6.

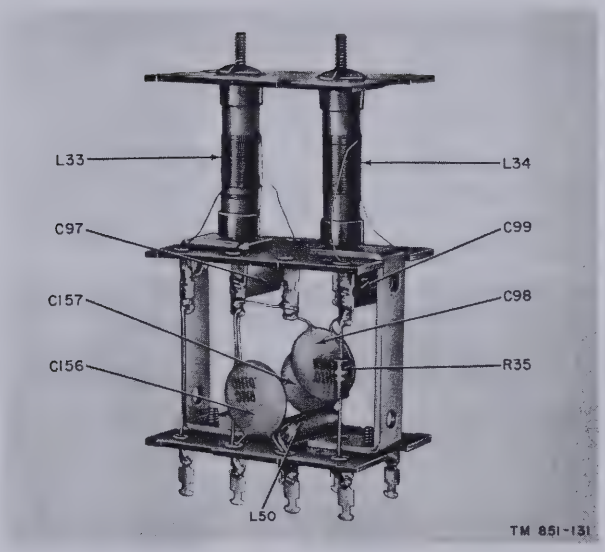


Figure 79.1. Radio Receiver R–620/FRR, 3,955-kc if. transformer subassembly T2.

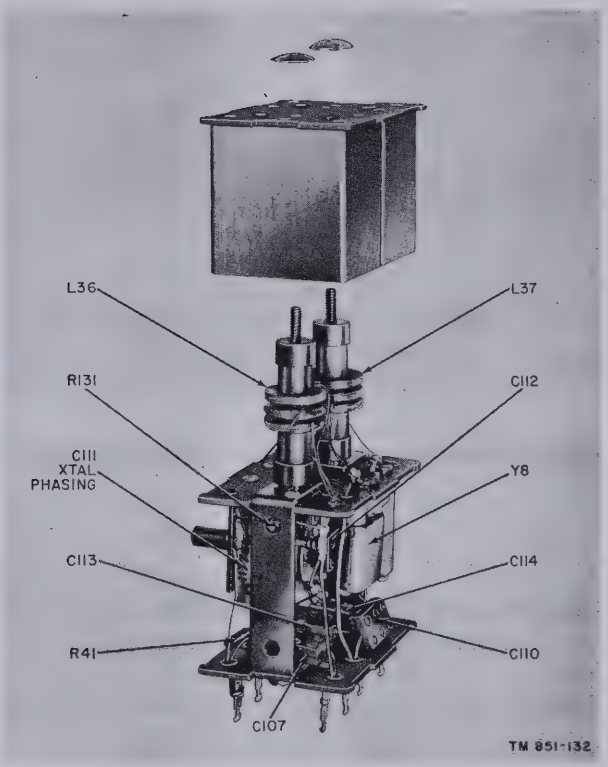


Figure 80.1. Radio Receiver R–620/FRR, if. filter circuit transformer subassembly T3.

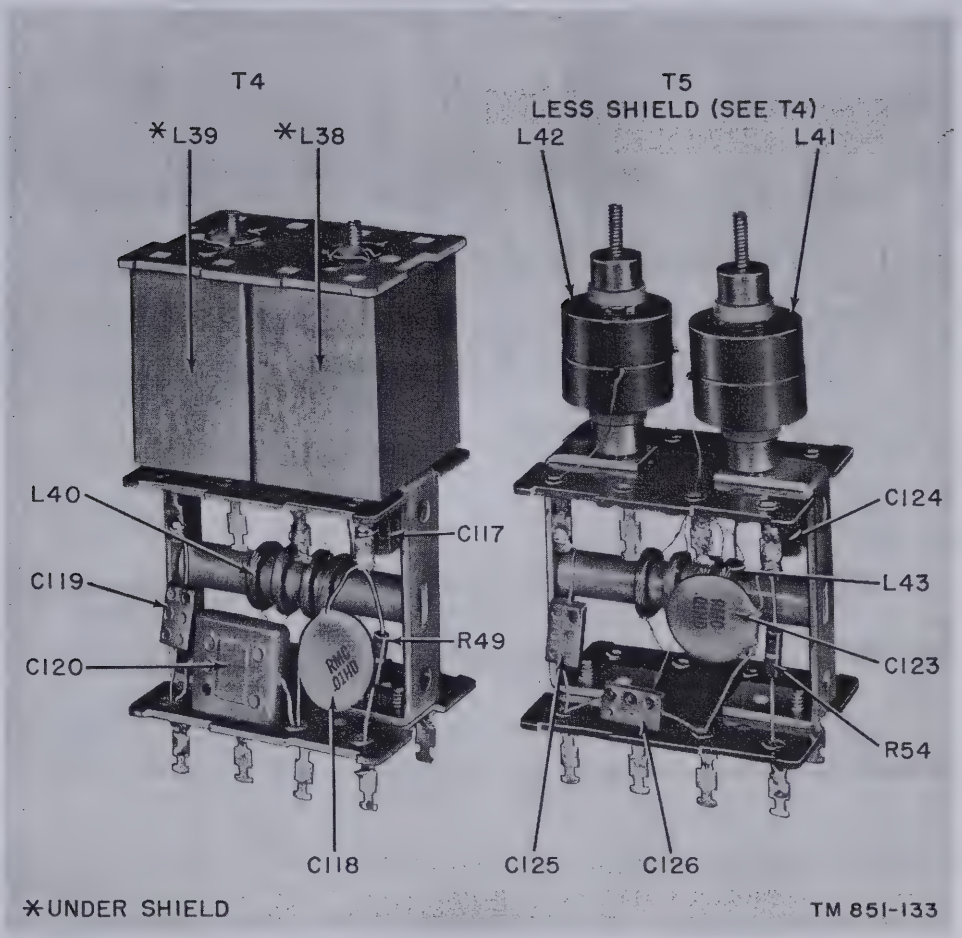


Figure 81.1. Radio Receiver R–620/FRR, if. transformer subassemblies T4 and T5.

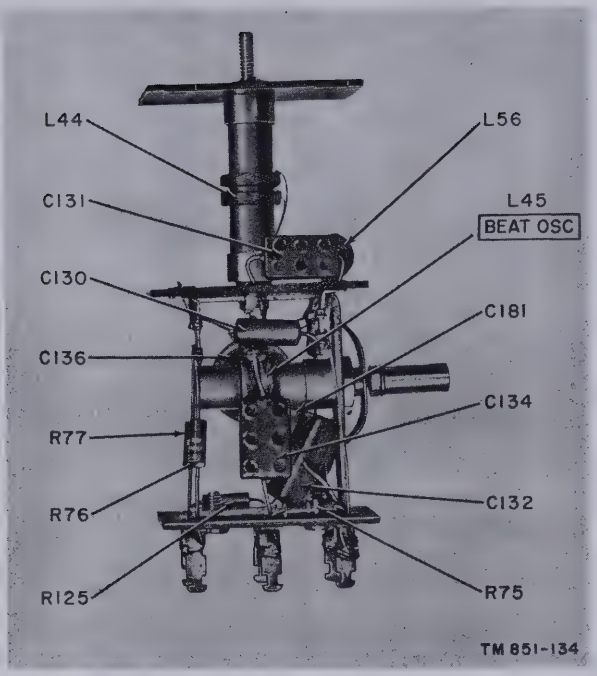


Figure 82.1. Radio Receiver R–620/FRR, bfo subassembly T6.

Page 135. Par. 90*c*(1). Line 4. Change "(fig. 70)" to read: (figs. 70 or 70.1, as applicable) ; also, brown lead from TB11.

Page 135. Par. 90*c*(6). After "C60" add: or R71 in the R–620/FRR.

Page 137. Par. 90*c*(8). Line 3. After "unit." add the following sentence:
To do this, first remove the four screws mounting the filter assembly plate at underside of chassis, moving the filter assembly to get at the four screws holding the frequency control unit.

Page 138. Figure 84. Add figure 84.1 after figure 84.

Page 137. Par. 90*d*. Caption. Change "(fig. 85)" to read: (fig. 85 and 85.1).

Page 139. Figure 85. Add figure 85.1 after figure 85.

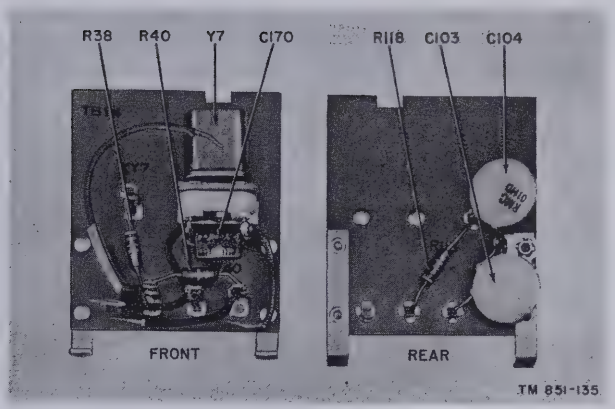


Figure 83.1. Radio Receiver R–620/FRR, 3.5-mc crystal oscillator subassembly Z25.

Page 137. Par. 90*e*. Caption. Change "(fig. 86)" to read: (fig. 86 and 86.1).

Page 139. Par. 90*g*(5). Line 1. After "strip" add: (not in Radio Receiver R–620/FRR).

Page 140. Figure 86. Add figure 86.1 after figure 86.

Page 141. Figure 87. Add figure 87.1 after figure 87.

Page 141. Par. 91*a*(4). Line 3. After, "(fig. 68)" add: , but RG–108/U green lead from pin 1 of V7 and white lead from junction of R53 and C165 on TB8 for Radio Receiver R–620/FRR.

Page 141. Par. 91*a*(4). Line 4. After "(fig. 66)" add: , but microphone cable and sheath ground connection from T2 for Radio Receiver R–620/FRR.

Page 141. Par. 91*a*(4). Line 7. After "(fig. 68)" add: , but from TB11 (fig. 70.1) for Radio Receiver R–620/FRR.

Page 141. Par. 91*a*(4). Line 10. Change "(fig. 67)" to read: (fig. 67 and 70.1), but also brown lead (fig. 70.1) for Radio Receiver R–620/FRR.

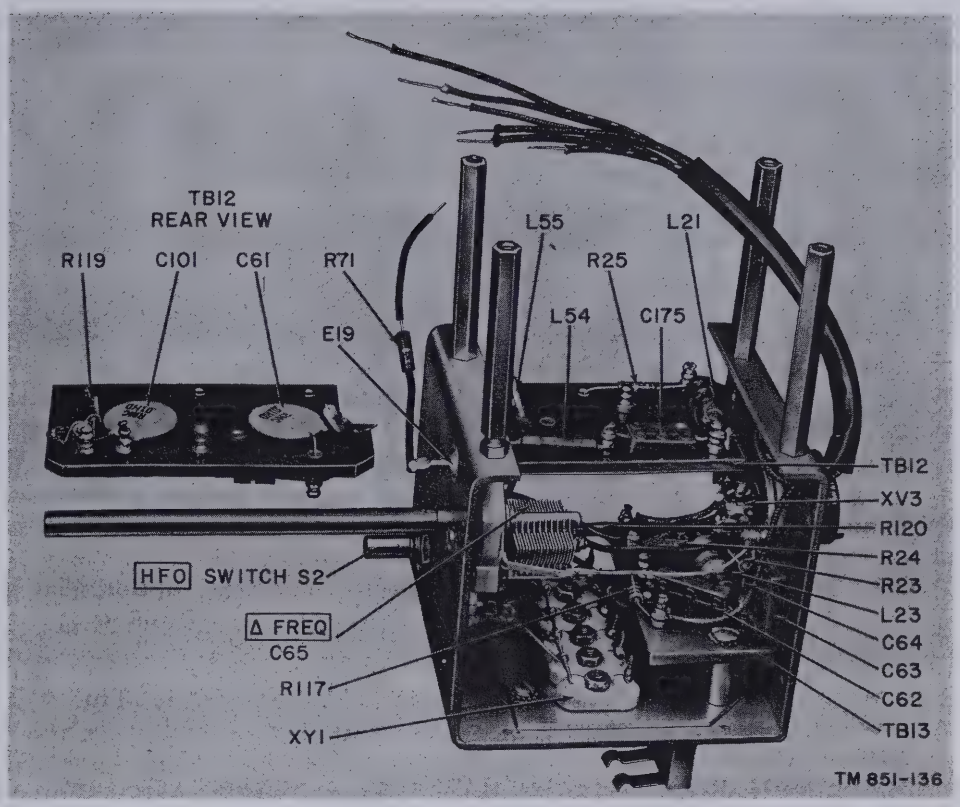


Figure 84.1. Radio Receiver R–620/FRR, frequency control unit, internal view, shield cover removed.

Page 143. Figure 89. Caption. After "S3 shield" add: T1 and T1 cable dressing,

Page 144. Par. 91*d*(10). Line 5. Change "assemblies" to read: assembly.

Page 147. Par. 93. Line 19. To sentence ending in "chassis" add: ; but for Radio Receiver R–620/FRR, this connection may be taken at the jumpered DIODE OUTPUT terminals of E3 on the rear apron.

Page 149. Par. 93*g*. Line 1. To sentence ending in "J1." add: ; terminal board TB15 is available in Radio Receiver R–620/FRR.

Page 150. Par. 95. Step 1. Line 10. To sentence ending in "uv" add: ; but Radio Receiver R–620/FRR at 300 uv.

Change "IRF" to "1RF" in the following places in the manual.

Page 152. Par. 98. Step 1. Alignment means column. Line 2
Page 152. Par. 98. Step 2. Alignment means column. Line 2

Page 153. Par. 100. Line 9. After "L25" add: , or with Z1, Z7, Z13, and Z19, in the R–620/FRR receiver.

Page 153. Par. 100. Line 10. After "L26" add: , or with Z2, Z8, Z14, and Z20, in the R–620/FRR.

Page 153. Par. 100. Line 11. After "L27" add: , or with Z3, Z9, Z15, and Z21, in the R–620/FRR.

Page 153. Par. 100. Line 13. After "L28" add: , or with Z4, Z10, Z16, and Z22, in the R–620/FRR.

Page 154. Par. 100. Line 1. After "L29" add:

, or with Z5, Z11, Z17, and Z23, in the R–620/FRR.

Page 154. Par. 100. Line 2. After "L30" add: , or with Z6, Z12, Z18, and Z24, in the R–620/FRR.

Page 154. Par. 104*c*. Add the following to the paragraph: (8 KC setting for Radio Receiver R–620/FRR).

Page 154. Par. 104*f*. Add the following to the paragraph: however, for Radio Receiver R–620/FRR the requirements are 2.5 uv or less for single conversion, and 3.5 uv or less for double conversion.

Page 154. Par. 105*c*. Line 3. After "position" add: (8 KC position for Radio Receiver R–620/FRR).

Page 156. Par. 106*c*. Line 2. After "input" add: (but for a standard signal of average sensitivity for Radio Receiver R–620/FRR).

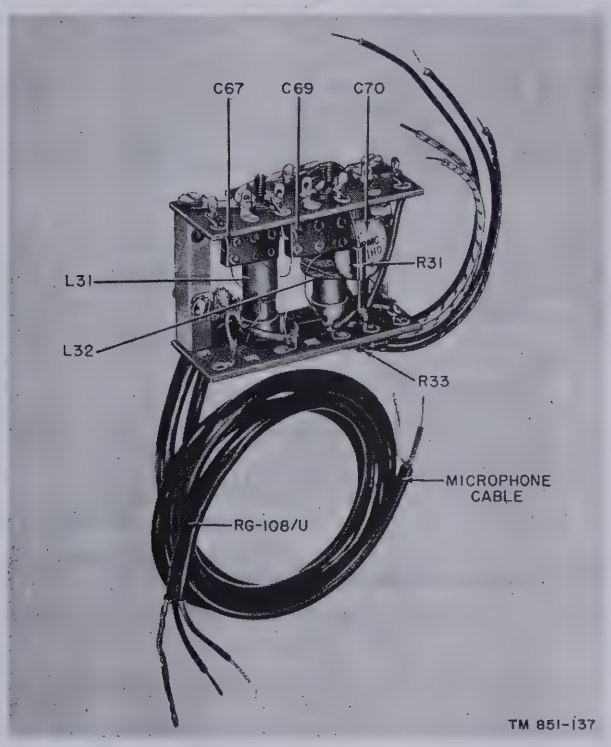


Figure 85.1. Radio Receiver R–620/FRR, first mixer if. transformer subassembly T1.

Page 156. Par. 107*c*. Line 3. Add the following to the paragraph: (75 millivolts minimum for Radio Receiver R–620/FRR).

Page 156. Par. 108*a*. Band 6. Change "50.0" to read: 54.0.

Page 156. Par. 108*d*. Add the following to the paragraph: NOTE. For Radio Receiver R–620/FRR, the increase in attenuation with a decrease in frequency in bands 6 through 4 and bands 3 through 1, is more rapid than that shown in chart (*a* above); also, no spurious responses should be observed below 100 db.

Page 157. Par. 109*e*. Line 2. After "600 kc" add: (but at least 65 db for Radio Receiver R–620/FRR).

Page 157. Par. 110*e*. Line 2. After "94 db" add: (a little higher for Radio Receiver R–620/FRR).

Page 157. Par. 112*d*. Add the following to the paragraph: For Radio Receiver R–620/FRR, the requirements are .50 uv, or less, for single conversion, and 1.75 uv, or less, for double conversion.

Page 158. Par. 115*d*. Line 3. After "of frequency" add: (but at least 1/5 of 1 percent for Radio Receiver R–620/FRR).

Page 158. Figure 94. NOTES. Line 1. To sentence ending in "INLET" add: OR JUNCTION OF C143 AND R84, IN THE R–620/FRR RECEIVER.

Page 158. Figure 94. Caption. Change to read: Radio receiver, all types, audio, but all types except the R–620/FRR, overall fidelity curves.

Page 158. Par. 116*a*. Line 2. After "frequency" add: (but at a 1.35 and 3.5-mc signal frequency (par. 116*e*) for Radio Receiver R–620/FRR).

Page 159. Par. 116*e*. Line 4. After "cps" add: (for Radio Receiver R–620/FRR, these requirements must be within ±1 db (300

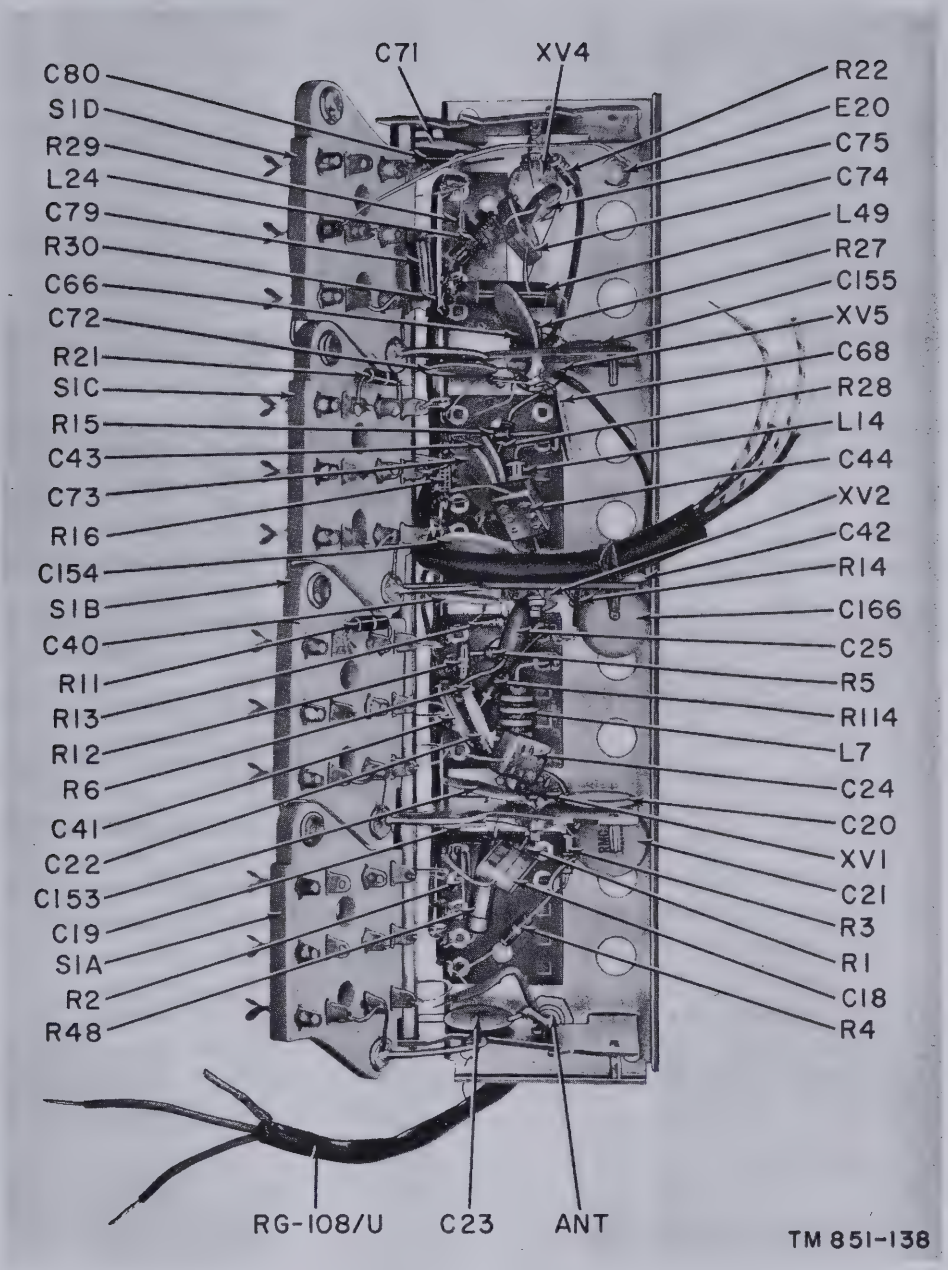


Figure 86.1. Radio Receiver R–620/FRR, rf strip subassembly, exploded view.

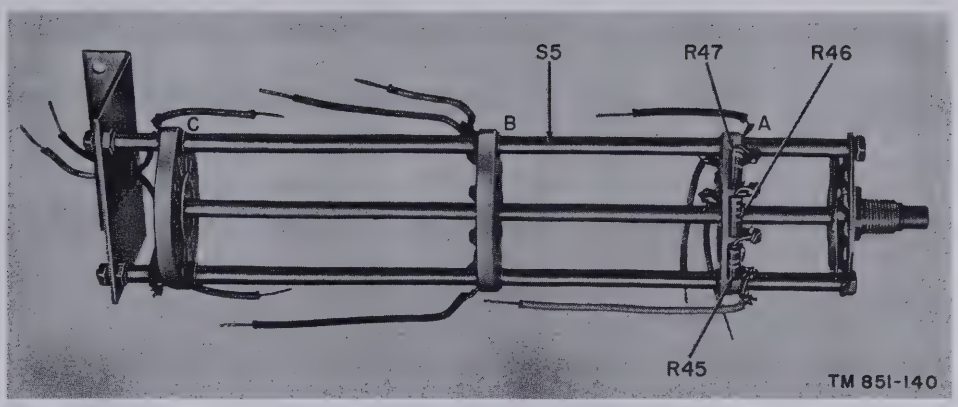


Figure 87.1. Radio Receiver R–620/FRR, SELECTIVITY switch subassembly.

to 1000 cps) and ±3 db (1000 to 3500 cps) for 8KC SELECTIVITY switch position, measured at 1.35 mc, and within ±1 db (300 to 3500 cps) for 13KC SELECTIVITY switch position, measured at 3.5 mc).

Page 159. Par. 118*d*. Add the following note to the paragraph:

Note. For Radio Receiver R–620/FRR, this requirement is applicable to signals, amplitude modulated up to 50 percent.

Page 159. Par. 119*d*. Add the following to paragraph: (but for Radio Receiver R–620/FRR, up to a modulation percentage of 50 percent).

Figure 102. Add figure 102.1 after figure 102.

Page 195. Index. Add after "Components, Radio Set SCR–244–D", the following: Components, Radio Receiver R–620/FRR ..... 7.1.

Page 195. Index. "Description." Seventh item. Add after seventh item, the following: Radio Receiver R–620/FRR ..... 13.1.

Page 195. Index. "Equipment." Third item. Add after third item, the following: Radio Receivers R–620/FRR and R–274C/FRR ..... 20.1.

Page 196. Index. Theory. Line 4. After line 4, add the following: Avc amplifier stage V12 ..... 67.1.

Page 196. Index. Theory. Line 17. After line 17, add the following: Rf input meter rectifier V15B ..... 74.1.

Figures 97 through 102. Add pilot lamp circuitry to schematic diagrams, as shown in figure 102.1. Figure 102. Delete "C103" shown twice.

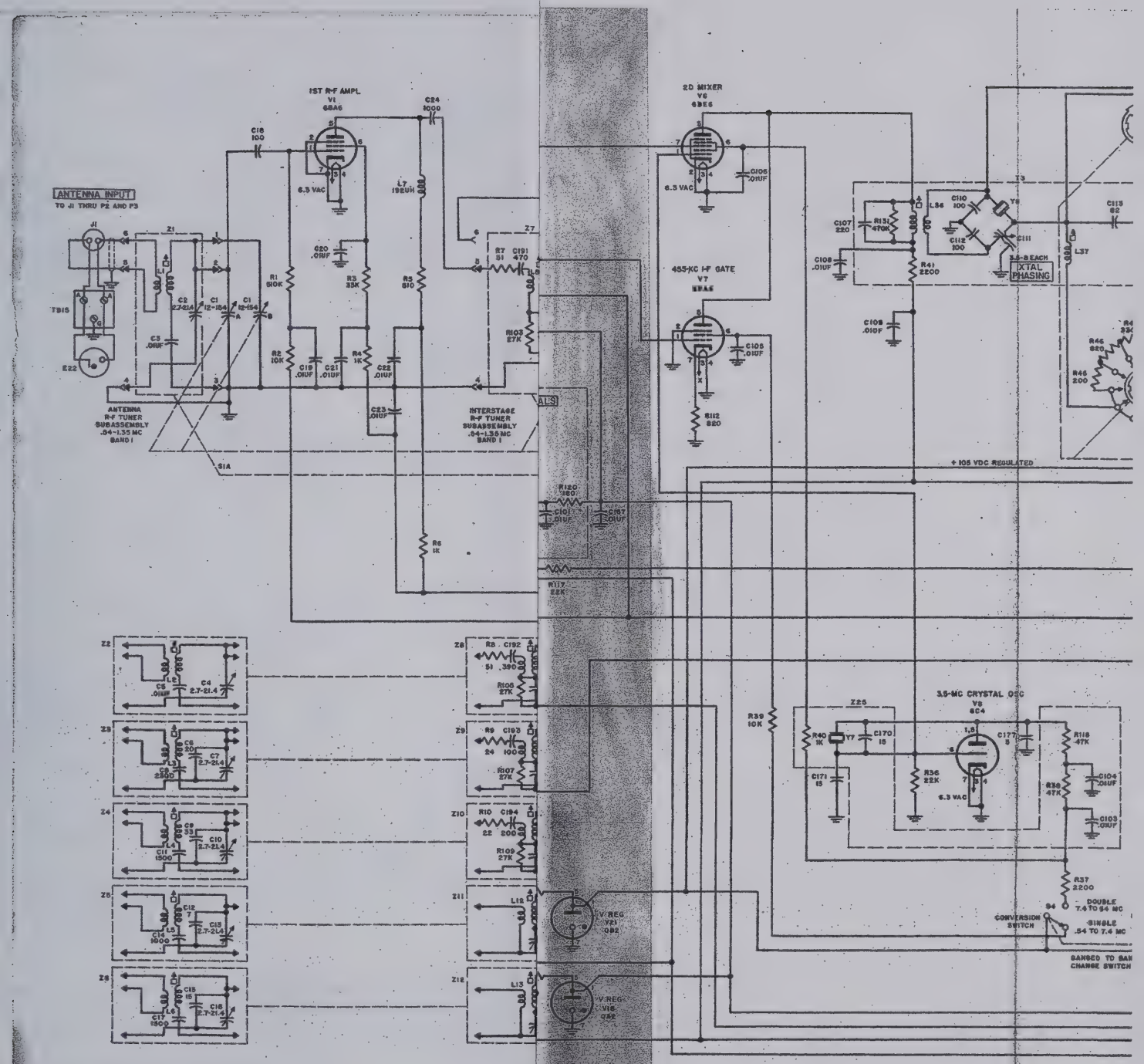


Figure 102.1. Radio Receiver R-620/FRR, sc

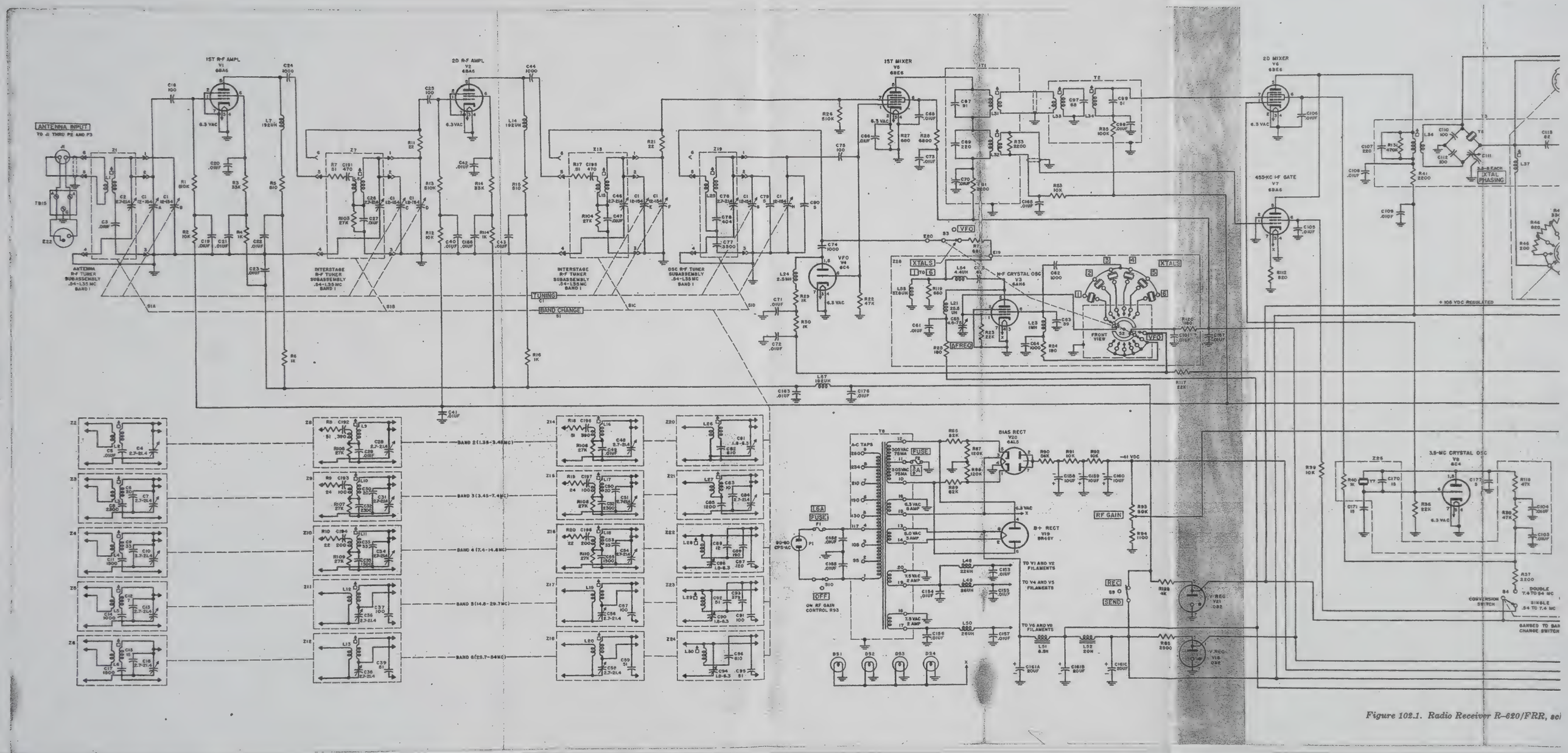
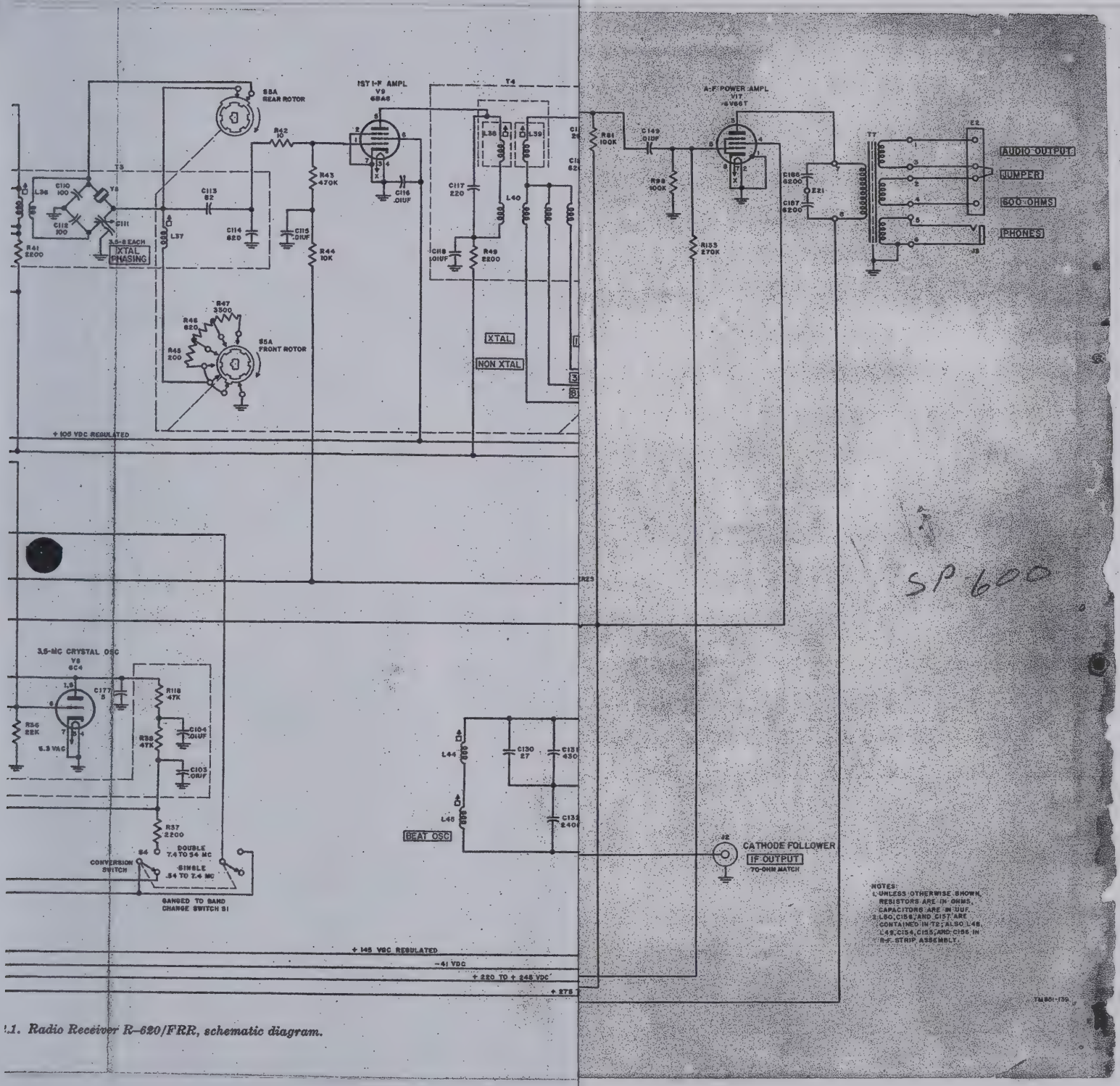
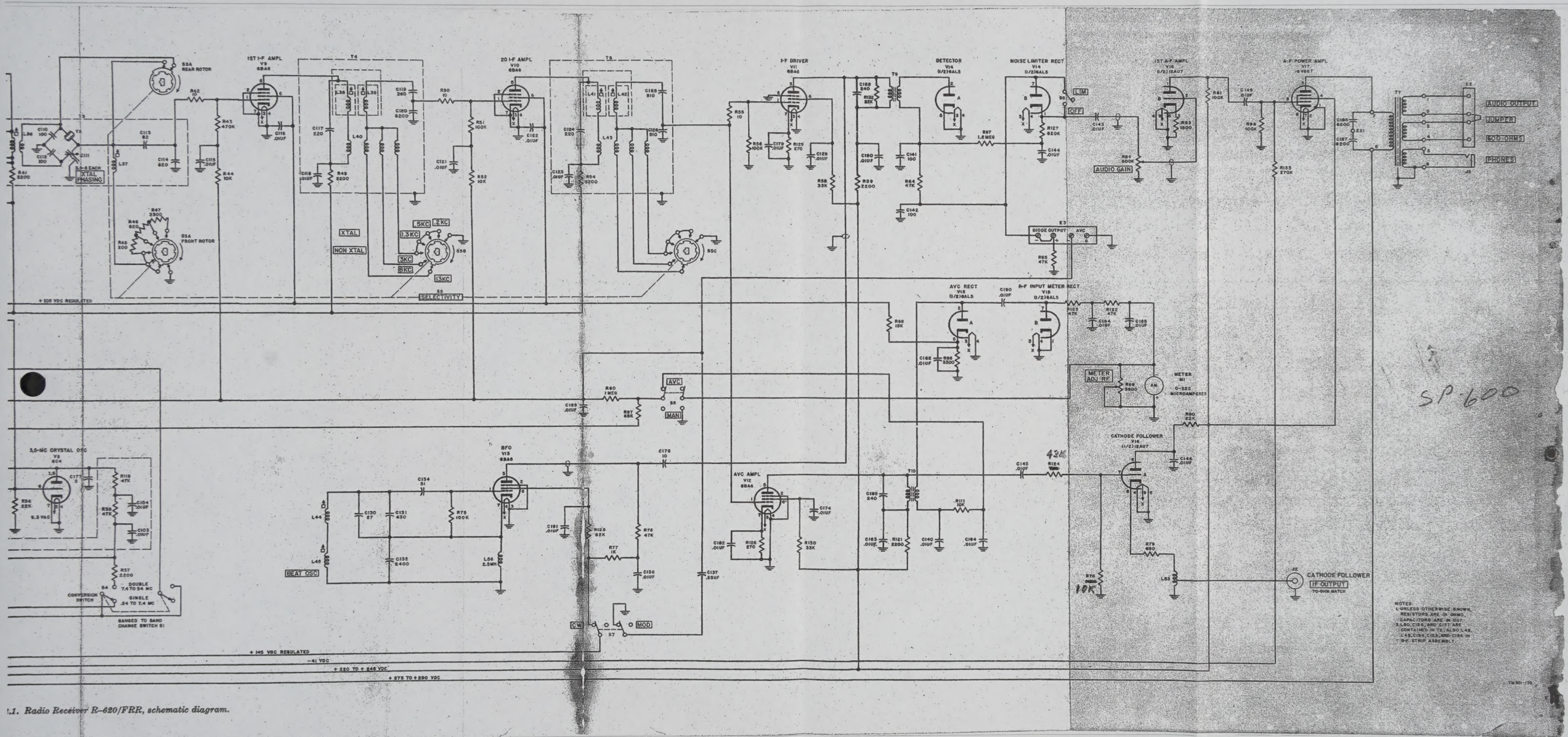


Figure 102.1. Radio Receiver R-620/FRR, sc



SP 600

1. Radio Receiver R–620/FRR, schematic diagram.

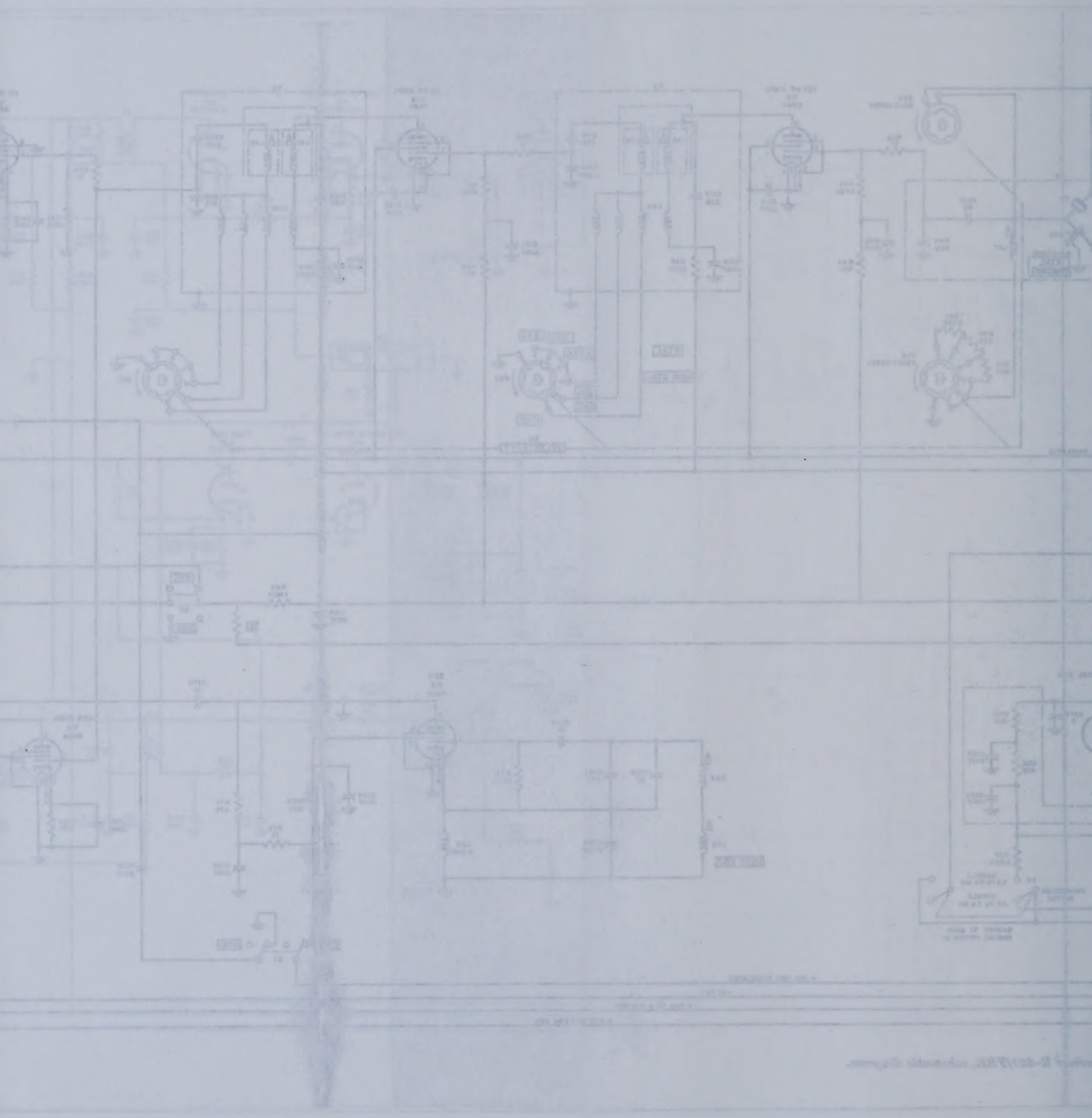


SP-600

NOTES:
1. UNLESS OTHERWISE SHOWN, RESISTORS ARE IN OHMS, CAPACITORS ARE IN MUF. L49, C159, AND C157 ARE CONTAINED IN T8; ALSO L48, L49, C154, C155, AND C156 IN R-F STRIP ASSEMBLY.

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1. Radio Receiver R-620/FRR, schematic diagram.



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