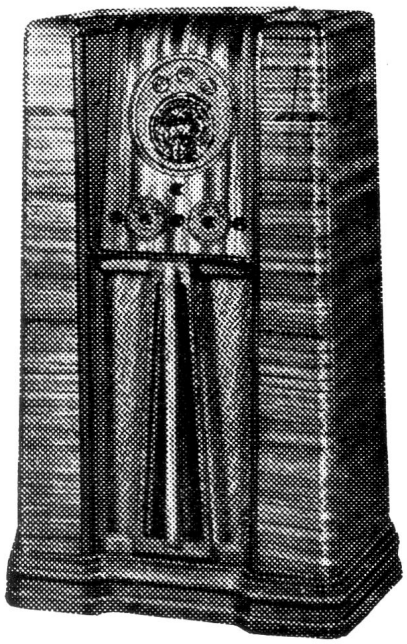
Models 1321, 1321A

The "Vimy"

Radio Receivers



Specifications

Frequency Range:

Broadcast, White—536 to 1560 K.C.
Police, Green—1.580 to 4.510 megacycles
Shortwave #1, Yellow—4.40 to 6.85 megacyles
Shortwave #2, Blue—6.48 to 10.25 megacycles
Shortwave #3, Red—9.8 to 16.2 megacycles

I.F.:

470 K.C.

Tubes:

Type	Function
6K7	R.F. Amplifier
6A8	Converter
6J7	A.F.C. Control
6K7	1st I.F. Amplifier
6K7	2nd I.F. Amplifier
6K7	A.F.C. Amplifier
6H6	Discriminator
6H6	2nd Detector, A.V.C.
6F5	1st A.F. Amplifier
6C5	2nd A.F. Amplifier
6V6G	Output Amplifier
6V6G	Output Amplifier
5X4G	Rectifier

Power Supply:

Model 1321—105 to 125 volts A.C., 60 cycles
Model 1321A—105 to 125 volts A.C., 25-60 cycles

A.V.C.:

Full control applied to R.F. and 1st I.F. stages. One fifth A.V.C. bias is applied to the grid of the A.F.C. amplifier tube.

Loudspeaker:

Ten inch electrodynamic, enclosed in a "Mirrophonic Tone Chamber".

Dial:

Large size edge-lighted aeroplane type.

Cabinet:

Console model.

GENERAL:—This model is an a-c operated radio receiver in a console cabinet using thirteen tubes and a superheterodyne circuit. Five tuning bands are provided, of which the Broadcast and Police bands are of the usual range, but the three short-wave bands have "spread-tuning". The "Dial-O-Matic" tuning feature comprises the use of manual tuning with automatic frequency control on the Broadcast band, and the selection by means of the Station-Selector switch of any four predetermined stations on the same band. Variable selectivity control of two i-f stages is provided by means of the fidelity-control switch. The tuning indicator is a lamp that dims when a station is tuned in. This lamp does not light when the fidelity control is in the "high-fidelity" (or expanded-selectivity) position. The chassis is of three-unit construction, of which the new-style "Centromatic" unit forms the centre part and mounts all the tuning mechanism and r-f tuned circuits. A variable tone control is provided also. A special tuning capacitor gang having separate smaller sections for the spread bands is mounted upon this unit on rubber cushions. A split knob is used on the tuning drive to give slow or fast tuning. A large size airplane type dial is used. This has an edge-lighted glass scale with the calibrations for the various bands printed in different colours. The tuning indicator, vernier tuning indicator, and the band indicator are located at the top of this dial as shown in Figure 1. The ten-inch loudspeaker is enclosed in a special "Mirrophonic Tone Chamber."

The a-c load rating at 115 volts line is 124 watts for both the 60 and 25-cycle models. The model 1321 operates on 60 cycles, and the model 1321-A on frequencies from 25 to 60 cycles.

For the various tuning bands, the frequency ranges and wave-change switch positions are as follows:

Band	Frequency Range	Dial Scale Band Color	Wave-Change Switch Position
Standard Broadcast	536 to 1560 kilocycles	White	Furthest-to-left
Police	1.580 to 4.510 megacycles	Green	Second-from-left
Short-Wave No. 1	4.40 to 6.85 megacycles	Yellow	Mid-position
Short-Wave No. 2	6.48 to 10.25 megacycles	Blue	Second-from-right
Short-Wave No. 3	9.8 to 16.2 megacycles	Red	Furthest-to-right

CIRCUIT:—The antenna section, item 1, of the wave-change switch selects the primaries of the antenna transformers. The resistor, item 29, shunts the primary, item 30, of the police band transformer to reduce the gain and noise on this band. Item 2, switch section, selects the corresponding secondaries and short-circuits those not in use. Note that trimmers, items 32 and 35, are connected directly across the Police (Green) Band and Broadcast (White) Band secondaries, while the other three trimmers connect to ground at the lower end. Switch section, item 3, selects the item 15 section of the main tuning capacitor for the Broadcast and Police Bands and the smaller section, item 14, for the short-wave bands with band-spreading. Item 10 is the antenna tuning section of another switch ("Dialomatic" Tuning) that switches the coils from variable tuning to any one of the four preset trimmer capacitors, items 39, 40, 41 and 42. The same switch controls the automatic-frequency-control feature, which is described below.

The primaries and secondaries of the r-f transformers are selected by switch sections, items 4 and 5, respectively. The latter section also short-circuits the secondaries of coils not in use. Switch sections, items 7 and 8, perform similar functions for the oscillator coils. Switch sections, items 11 and 12, act similarly to item 10 section in switching the coils on the r-f stage and oscillator respectively from variable tuning to automatic-frequency-control and to any one of the preset trimmer capacitors, items 43, 44, 45 and 46 for the r-f stage, and items 47, 48, 49 and 50 for the oscillator.

The r-f amplifier stage uses a type 6K7 tube. Resistors, items 97 and 101, shunt the secondaries, items

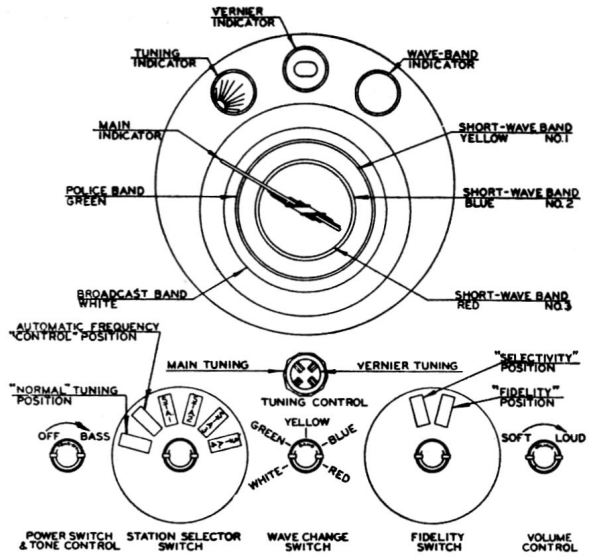


Figure 1—Control Layout.

95 and 99, of the Police and Broadcast Bands r-f transformers to balance the gains on the various bands. The converter is a type 6A8 tube. The oscillator grid (No. 1) is coupled to the grid windings of the oscillator coils through the capacitor, item 108, with resistor, item 107, as grid leak. The oscillator plate or anode-grid (grid No. 2) is fed from a separately filtered "B" supply. R.F. in the oscillator plate circuit is by-passed to ground through the capacitors, items 69 and 71, with item 230 as the r-f filter resistor.

There are two i-f amplifier stages using type 6K7 tubes. The first two i-f transformers are of the double-tuned air-core type. The primaries of both are tapped to give high selectivity. Both have their secondaries split into two coils, items 112 and 113, for the first, and items 122 and 123 for the second. These are connected in series by sections of the fidelity-control switch, items 129 and 130, when it is in the "high-fidelity" position. In this position the selectivity is broadened due to the increased coupling, and with the single secondary coils in the other switch position the selectivity is sharpened. Resistor, item 118, and capacitor, item 117, comprise a plate filter for the first i-f stage. Capacitor, item 127, is a grid by-pass capacitor, and capacitor, item 142, and resistor, item 141, form an i-f filter on the second i-f amplifier grid.

The third i-f transformer, item 132, is a permeability-tuned, iron-core type. Fixed capacitors, items 133 and 134, are connected across its primary and secondary, items 135 and 136, respectively. The type 6H6 that serves as the second detector and automatic-volume-control rectifier has the audio-demodulating diode connected to the i-f transformer secondary, and the a-v-c diode is coupled to primary through capacitor, item 138. Resistors, items 140 and 166, together with capacitors, items 139 and 165, form an i-f filter in the volume-control circuit. Resistors, items 176 and 175, which are in series with the bias resistor, item 218, form the a-v-c load resistor. Full a.v.c. is applied to the r-f and first i-f amplifier stages. The a-v-c filter on this line includes resistors, items 170 and 37, and capacitors, items 36 and 127. The second i-f amplifier is operated with a fixed grid bias developed across resistor, item 218. (On the first few sets made the bias across resistors, items 218 and 217, was applied). One-fifth a.v.c. bias is applied to the grid of the a-f-c amplifier tube, with resistor, item 169, and capacitor, item 144, as the a-v-c filter.

The tertiary coil, item 137, of the second i-f transformer couples to the automatic-frequency-control amplifier. This tube (type 6K7), besides amplifying the i-f signal with further automatic volume control and thus permitting correct operation of the automatic frequency control over a wide range of signal input, isolates the discriminator detector from the a-v-c and second-detector circuits with consequent lessening of distortion of sidebands. A third, double-tuned, air-core, i-f transformer, item 145, couples the a-f-c amplifier to the type 6H6 discriminator detector. The primary and secondary trimmers are items 146 and 147, respectively. A third small trimmer, item 153, is mounted directly at the tube socket and connected to one diode plate (Pin No. 5). The purpose of this is to balance the excess stray capacitance to ground that the secondary trimmer associates with the other diode plate.

The secondary, item 150, of this transformer is split at its centre, which is connected through the blocking capacitor, item 152, to the plate of the a-f-c amplifier tube. The two diodes are connected in a rectifier-bridge circuit, in which items 158 and 159 are the load resistors. The voltages fed to the diodes from the split secondary coil are 180 degrees out of phase. Combined with these is the voltage derived from the amplifier plate circuit through capacitor, item 152. When the intermediate frequency of the signal is exactly the same as the frequency (470 kc.) to which the i-f transformer is tuned, the latter voltage is 90 degrees out of phase with both of the other two voltages applied to the diode plates. The result is that the voltages across resistors, items 158 and 159, are equal and opposite, and therefore cancel.

It is the sum of the d-c voltages across these two resistors that determines the a-f-c bias which regulates the automatic-frequency-control tube. Capacitor, item 157, by-passes these resistors to i.f. Note that the shell of the tube is not grounded but connects to the cathode, and both are below ground to d.c. by the amount of the bias voltage across resistors, items 217 and 218. Grounding the shell would unbalance the discriminator and prevent tuning of the set. When the receiver signal is not tuned exactly the voltages fed to the two diode plates are not equal, and as a result the voltage across one of the load resistors exceeds that across the other. The resultant voltage across the two resistors has a positive or negative polarity, depending upon whether the signal is above or below the resonant frequency. The push-button switch, item 163, which is located at the back of the chassis, is used to short-circuit the load resistors during alignment of the fixed capacitors for the preset stations. Item 13 is the bias-control section of the station-selector switch. In the "tune" position the bias from resistors, items 217 and 218, is applied through resistors, items 160 and 161, to the control grid of the type 6J7 automatic-frequency-control tube. Capacitors, items 67 and 83, are filter by-passes. When this switch is in the a-f-c position (either with manual tuning or set to any one of the four stations with preset tuning) the bias on the control tube is the sum of that across resistors, items 217 and 218, and the resultant voltage across the a-f-c load resistors, items 158 and 159. This total bias is applied through resistor, item 162.

The type 6J7 control tube, which regulates the oscillator frequency (on the Broadcast Band only), is connected across winding, item 66, of the Broadcast Band oscillator coil and the capacitors, items 68 and 69, in series. The voltage across these three components is applied to the plate circuit through capacitor, item 79, and to the grid circuit through capacitors, items 78 and 77. Resistor, item 81, is the grid leak. Resistor, item 80, determines the phase of the voltage from the oscillator that is fed to the grid. Due to this grid voltage, the plate impedance of the tube varies cyclically and draws a current through the capacitors, items 68 and 69, in the oscillator lag circuit. This current is out of phase with the main oscillator current through these capacitors, and the

effect of any alteration in the phase differences of the two currents is equivalent to changing the reactance, thereby shifting the oscillator frequency. Thus an increase or decrease in the a-f-c bias shifts the oscillator frequency to one side or the other of its normal value, and so brings the receiver automatically into tune with the signal. The range of this automatic-frequency-control is only a few kilocycles on either side of the normal frequency. If the control covered a wider range the antenna and r-f amplifier circuits might be badly out of tune and cause distortion.

Item 174 is the 24-volt lamp that serves as the tuning indicator. It is shunted by resistors, items 172 and 173, which preserve the circuit continuity if the lamp burns out. Item 131 is a section of the fidelity-control switch that short-circuits the lamp in the "high-fidelity" position.

The volume control and i-f transformer are connected to terminals, item 164, on the back of the chassis. With the strap connected as shown, these two are connected together, and the phonograph pick-up is shorted if it is connected to the "Phono" terminals. If the strap is moved to the "P" position, the radio output of the diode transformer is disconnected from the volume control and grounded, and the phonograph pickup is connected across the volume control.

The volume control, item 167, is resistance-capacitance coupled to the type 6F5, first audio amplifier. The same type of coupling connects this tube to the type 6C5, second a-f amplifier. The constant-impedance tone control circuit includes the potentiometer, item 189, and the capacitor, item 187. The grid leak resistors are items 185 and 188 (and part of the tone control), of which item 188 serves as an a-f filter with capacitor, item 186. The grid bias is developed across resistor, item 190. Resistor, item 191, also in the cathode circuit, has half the a-f plate voltage developed across it 180 degrees out of phase with that across the plate resistor, item 193. Both of these load resistors are resistance-capacitance coupled to the type 6V6G beam-power output tubes. Grid bias for these tubes is obtained from resistors, items 216, 217 and 218, in the main filter. Capacitor, item 198, and resistor, item 197, form a hum-decoupling filter.

The output stage is a push-pull amplifier. The mica capacitors, items 199 and 200, suppress parasitic oscillations, and items 201 and 202, are plate by-pass capacitors. The loudspeaker plug, item 204, cuts off the high voltage from the electrolytic capacitors when it is disconnected. Electrolytic capacitor, item 212, and resistor, item 214, form an additional filter stage for the oscillator "B" supply, and similarly resistor, item 203, and capacitor, item 211, for the "B" supply to the 6F5 and 6C5 plates, and similarly the screen "B" supply is filtered by electrolytic capacitor, item 177, across resistor, item 178, which forms with resistor, item 171, a voltage divider. Capacitor, item 219, is an r-f by-pass connected across the heater winding of the power transformer. Items 228 and 229 are filter capacitors that remove r-f line noise.

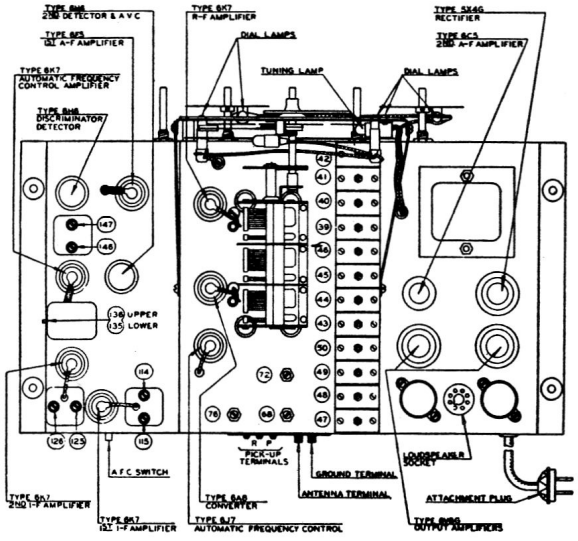
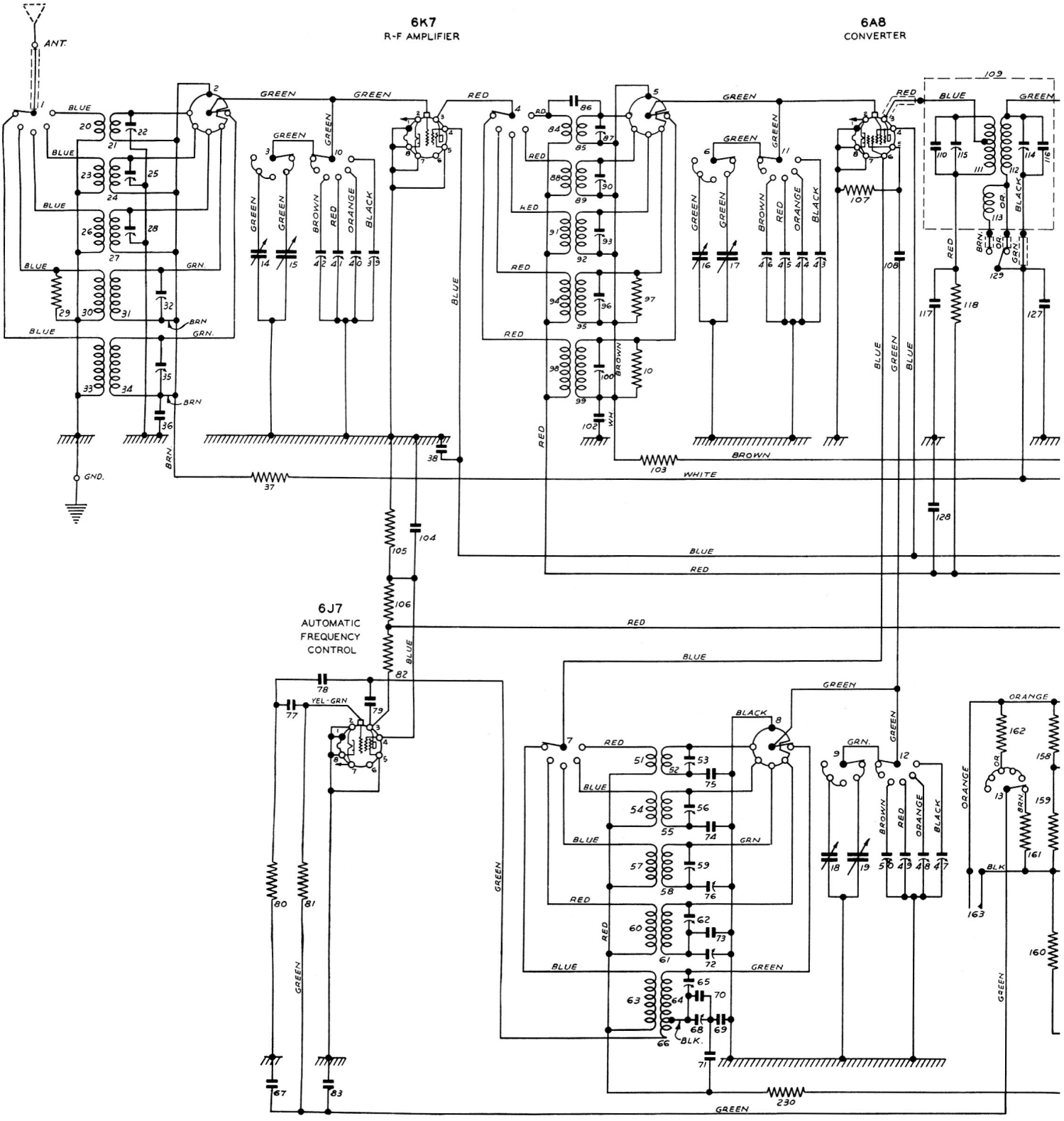
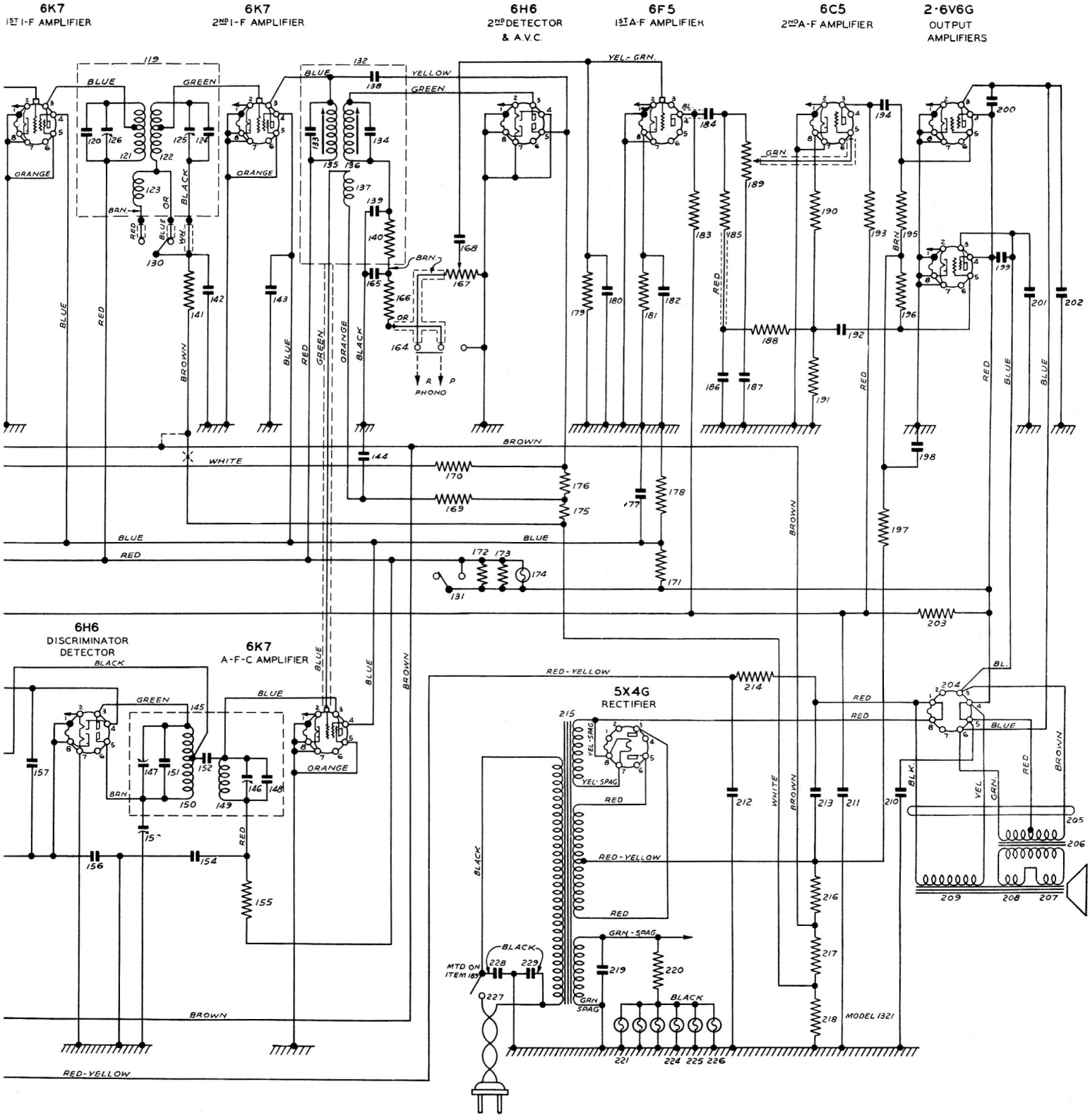


Figure 2—Chassis Layout showing Top Aligning Positions.


6K7
R-F AMPLIFIER
6A8
CONVERTER
6J7
AUTOMATIC
FREQUENCY
CONTROL
ANT.
GND.
BLUE
GREEN
RED
BROWN
ORANGE
BLACK
WHITE
YEL-GRN
BRN
GRN.
BLK.
OR

MODEL 1321 RADIO RECEIVER



REALIGNING INSTRUCTIONS

To secure full advantage of the performance characteristics of this receiver, any realignment found necessary should be carried out carefully. A reliable oscillator or signal generator covering the entire frequency range, and an output meter should be employed.

I.F. ALIGNMENT:

(*a*) Set the wave-change switch in the broadcast position, the tuning capacitor gang in the closed position, the fidelity control in the "normal" (contracted-selectivity) position, and the station selector ("dialomatic tuning") switch in the "normal" tuning position. Accuracy in setting the signal generator to the required frequency of 470 k.c. is essential to ensure good tracking of the i-f and r-f circuits. Couple the output of the signal generator through a 0.1 mf. capacitor to the grid cap of the converter (6A8) tube.

(*b*) In the contracted-selectivity position the first and second i-f transformers have a single sharp response. The diode i-f transformer is more broadly tuned. Realignment can be carried out in the usual fashion by adjustment of the trimmers, items 135, 136, 125, 116, 112 and 115, for maximum response. The a-f-c circuits have no effect on these adjustments.

(NOTE:—Do not disturb the trimmers, items 146 and 147, in the a-f-c circuits).

(*c*) Reduce the output of the signal generator to the lowest value that will produce an output reading and check all the adjustments. All trimmers should peak properly.

(*d*) Set the fidelity control in the "high-fidelity" (expanded-selectivity) position. If the previous adjustments have been made correctly, as the generator frequency is varied a few kilocycles on either side of 470 kc., the output from the receiver should remain nearly constant, due to the flat-top, band-pass response, and should drop off fairly abruptly and symmetrically for frequencies further above and below. If response is not symmetrical, adjust diode trimmers slightly until symmetry is obtained.

R.F. ALIGNMENT—BROADCAST (WHITE) BAND:

(*a*) Connect the output of the signal generator through a 100 mmf. capacitor to the antenna terminal on the receiver. Ground the receiver ground terminal. For the r-f alignment of this and the other four bands, the fidelity-control switch should be in the "normal" (contracted-selectivity) position, and the station-selector switch in the "tune" position.

(*b*) Set the signal generator and receiver at 1400 kilocycles. Adjust trimmer, item 65, to bring in the signal. Then adjust trimmers, items 100 and 35, for maximum output.

(*c*) Set the generator at 600 kc. and tune the receiver to it. While rocking the gang, adjust trimmer, item 68, for maximum sensitivity.

(*d*) If the pointer does not track the scale at 600 kc. turn it around on its shaft as required.

(*e*) Recheck at 1400 kc.

R.F. ALIGNMENT—POLICE (GREEN) BAND:

(*a*) Use the same connections from the generator as for the Broadcast band alignment.

(*b*) Turn the wave-change switch to the correct position, and set both generator and receiver at 4.0 megacycles. Adjust trimmer, item 62, to bring in the signal. (The oscillator is operated above the signal in frequency on all bands so that the image will be tuned in with the generator set at a frequency 940 kc. higher than the wanted signal. Check that the set is not tuned to the image by locating the image at a higher frequency on the generator).

(*c*) Adjust trimmers, items 96 and 32, for maximum output.

(*d*) Set the generator at 1.7 kc., and tune the receiver to it. While rocking the gang, adjust trimmer, item 72, for maximum sensitivity.

(*e*) Recheck at 4.0 megacycles.

R.F. ALIGNMENT—SHORT WAVE No. 1 (YELLOW) BAND:—

(*a*) Substitute a 400-ohm resistor in place of the capacitor in the lead from the signal generator.

(*b*) Turn the wave-change switch to the correct band position. Set generator and receiver at 6.6 mc. Adjust trimmer, item 59, to bring in the signal. (Check that the set is not tuned to the image).

(*c*) Adjust trimmers, items 93 and 28, for maximum output.

(*d*) Set generator at 4.6 mc., and tune the set to it. While rocking the gang, adjust trimmer, item 76, for maximum sensitivity.

(*e*) Recheck at 6.6 mc.

R.F. ALIGNMENT — SHORT WAVE No. 2 (BLUE) BAND:

(*a*) Turn the wave-change switch to the correct position. Set the generator (with the same connections as for the short wave No. 1 band) at 10.0 mc., and put the receiver at the same setting. Adjust trimmer, item 56, to bring in the signal. (Check that the set is not tuned to the image frequency).

(*b*) While rocking the gang, adjust trimmer, item 90, for maximum output. Adjust trimmer, item 25, similarly.

(*c*) Check alignment at 6.8 mc. (the lag capacitor is fixed).

R.F. ALIGNMENT — SHORT WAVE No. 3 (RED) BAND:

(*a*) With the wave-change switch in the correct position, set receiver and generator at 15.5 mc. Adjust trimmer, item 53, to bring in the signal.

(Make sure that the set is not tuned to the image frequency.

(*b*) Adjust the r-f trimmer, item 87, for maximum output, at the same time rocking the gang. Proceed similarly with the antenna trimmer, item 22.

(*c*) Check alignment at 10.25 mc. (The lag capacitor is fixed).

AUTOMATIC-FREQUENCY-CONTROL ALIGNMENT:

The need for re-alignment of these circuits is indicated by the fact of the output volume changing when the station-selector switch is turned from the "normal' to the "control" position.

If the misalignment is very slight, the simple method described below may be employed, but it is generally not advisable to change any of the adjustments of the trimmers in these circuits without following the electrical method, to be described later, employing the use of a Weston Model 772 volt-ohmmeter or some other equivalent meter having a microammeter with a range of 50 microamperes or less.

A. Procedure When A-F-C Misalignment is Slight:

(*a*) Tune the receiver to the generator set at 1000 kc. with a low generator output (about 100 microvolts is suitable).

(*b*) With the station-selector switch in the a-f-c position, adjust trimmer, item 147, until no change in the output reading occurs when the automatic-frequency-control is switched on and off.

IMPORTANT NOTE:—The trimmer variation permissible using this alignment method is very slight. Do not on any account make the adjustment rapidly or without paying careful attention to the variation in the output reading.

B. Normal Procedure for A-F-C Realignment:

After checking that the alignment of the i-f circuits is correct according to the methods described in the section of "I-F Alignment", proceed as follows:

(*a*) Connect the 50-microampere range of a Weston Model 772 volt-ohmmeter or equivalent meter across the terminals of the a-f-c switch on the back of the chassis.

(*b*) Set the generator at 1000 kc. with a low output (100 microvolts is suitable) and tune the set exactly with station-selector switch in the "normal" or "tune" position.

(*c*) With the a-f-c still not in use, adjust primary trimmer, item 146, for a peak reading on the microammeter.

(*d*) Turn the secondary trimmer, item 147, full IN.

(*e*) Next, unscrew this trimmer so that the meter reading approaches peak. (If the meter reads backwards, reverse it).

(*f*) Continue unscrewing trimmer past the peak adjustment until the meter reads zero.

(*g*) Reverse the meter and unscrew the trimmer further until a SECOND peak is obtained.

(*h*) Reverse the adjustment when the peak is reached and turn the trimmer back (IN) until only a very small deflection shows. (It is necessary to have some reading show to complete the adjustments).

(*i*) Retune the primary trimmer, item 146, to peak exactly.

(*j*) Adjust the secondary trimmer, item 147, for zero meter reading.

(*k*) If the preceding adjustments have been carried out correctly, there will be no variation in the meter reading when the station-selector switch is changed from the "control" to the "tune" position or vice-versa.

IMPORTANT NOTE:—Care must be exercised during these operations to see that the set remains exactly in tune. Check this frequently.

(*l*) **Special Diode-Circuit Trimmer Adjustment:**—After the a-f-c circuits have been adjusted as above, the diode compensating trimmer, item 153 (located at the diode tube socket) is adjusted as follows:

(1) With the station-selector switch in "control" position and generator set at 1000 kc. tune the receiver to the signal. When the generator frequency is varied on either side of tune, the meter reading across the a-f-c switch should be between 10 and 30 microamperes for a 100-microvolt signal input.

(2) Adjust trimmer, item 153, to bring the peak current within these limits.

(*m*) The a-f-c action can be checked on the air by tuning a local station in without a-f-c action and then detuning so that the station is just not heard. Then switch the a-f-c on and it should pull the circuits into tune with the station.

ADJUSTMENT OF STATION-SELECTOR TRIMMERS FOR DIALOMATIC TUNING:

A. Ranges of Fixed Trimmers:—When the station selector switch is turned to the position to tune any of the four stations, these trimmers replace the sections of the tuning capacitor gang.

On the receiver as delivered, the trimmers are supplied in the positions shown (refer to Fig. 1) and will tune any station in the range indicated:

Station Selector Switch Position	Tuning Range	Schematic Item Nos.			Part Number and Dot Colour
		Antenna Trim.	R.F. Trim.	Osc. Trim.	
1	1000-1620 Kc.	42	46	50	K-3324-4 (Red Dot)
2	800-1375 Kc.	41	45	49	K-3324-3 (Blue Dot)
3	540-1000 Kc.	40	44	48	K-3324-2 (Green Dot)
4	530-775 Kc.	39	43	47	K-3324-1 (Black Dot)

B. Setting Trimmers for Stations Chosen:—After ascertaining the set-user's choice of stations, proceed as follows:

(*a*) Set station-selector switch to the range in which the desired station fails, as shown in the table.

(*b*) Press button back of chassis and tune oscillator trimmer until desired station is heard. Tune for maximum dimming of tuning lamp or maximum sound output.

(*c*) Tune antenna and r-f trimmers for maximum dimming of tuning meter lamp or maximum sound output. It is NOT necessary to depress push button while tuning the antenna and r-f trimmers.

By following this procedure four different stations may be set up on the four sets of trimmers, to be tuned merely by the turn of a switch.

If two stations on one of the given tuning ranges are required, it will be necessary to remove one set of trimmers and substitute for them a set that will tune the desired station. The numbers of these trimmers are given in the table (in each range, antenna, r-f, and oscillator trimmers are the same) and they may be removed easily without disturbing the chassis, by simply unscrewing the machine screws at either end. Be sure to replace the trimmers so that the plate next the head of the adjusting screw is to the right facing the rear of the chassis.

Extra trimmers may be ordered by their part number from the nearest Northern Electric dealer.

C. Station-Call-Letter Cards:—With the Instruction Folder envelope attached to each set is another envelope that contains these cards. They are printed in strips on celluloid and may be cut readily into cards to fit into the frames on the dial marked "Dialomatic Tuning" that correspond to the chosen stations and the associated fixed trimmers.

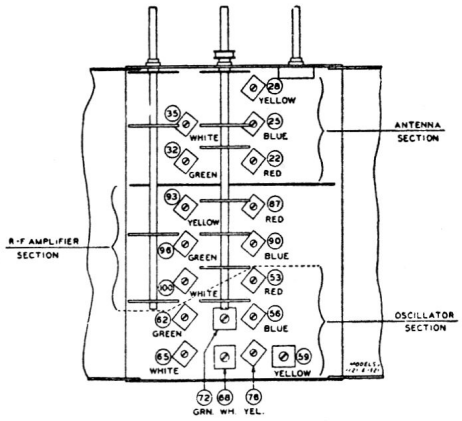


Figure 3—Underside Aligning Positions.

COIL RESISTANCES

Item	Description	Ohms
20	SW-3 (Red) Ant. Trans., Pri.....Below	0.5
21	SW-3 (Red) Ant. Trans., Sec.....Below	0.5
23	SW-2 (Blue) Ant. Trans., Pri.....Below	0.5
24	SW-2 (Blue) Ant. Trans., Sec.....Below	0.5
26	SW-1 (Yellow) Ant. Trans., Pri....Below	0.5
27	SW-1 (Yellow) Ant. Trans., Sec....Below	0.5
30	Police (Green) Ant. Trans., Pri....	3.2
31	Police (Green) Ant. Trans., Sec....	1.2
33	B'dc't (White) Ant. Trans., Pri....	24.0
34	B'dc't (White) Ant. Trans., Sec....	4.0
51	SW-3 (Red) Osc. Trans., Pri.....	0.5
52	SW-3 (Red) Osc. Trans., Sec.....Below	0.5
54	SW-2 (Blue) Osc. Trans., Pri.....	1.1
55	SW-2 (Blue) Osc. Trans., Sec.....Below	0.5
57	SW-1 (Yellow) Osc. Trans., Pri....	1.2
58	SW-1 (Yellow) Osc. Trans., Sec....Below	0.5
60	Police (Green) Osc. Trans., Pri....	2.0
61	Police (Green) Osc. Trans., Sec....	1.1
63	B'dc't (White) Osc. Trans., Pri....	1.6
64	B'dc't (White) Osc. Trans., Sec....	8.8
84	SW-3 (Red) R.F. Trans., Pri.....	1.0
85	SW-3 (Red) R.F. Trans., Sec.....Below	0.5
88	SW-2 (Blue) R.F. Trans., Pri.....	0.6
89	SW-2 (Blue) R.F. Trans., Sec.....Below	0.5
91	SW-1 (Yellow) R.F. Trans., Pri....	1.0
92	SW-1 (Yellow) R.F. Trans., Sec....Below	0.5

Item	Description	Ohms
94	Police (Green) R.F. Trans., Pri....	2.0
95	Police (Green) R.F. Trans., Sec....	1.2
98	B'dc't (White) R.F. Trans., Pri....	2.5
99	B'dc't (White) R.F. Trans., Sec....	12.5
114	1st I.F. Trans., Pri.....	6.1
115	1st I.F. Trans., Sec.....	6.1
116	1st I.F. Trans., Sec., No. 2.....	.6
124	2nd I.F. Trans., Pri.....	6.1
125	2nd I F Trans., Sec.....	6.1
126	2nd I.F. Trans., Sec. No. 2	.8
135	3rd I F. Trans., Pri.....	6.5
136	3rd I.F. Trans., Sec.....	6.5
137	3rd I.F. Trans., Tertiary.....	2.6
149	Discr. I.F. Trans., Prim.....	6.8
150	Discr. I.F. Trans., Sec.....	6.8
206	Output Trans., Prim.....	850.0
	Output Trans., Sec.....Below	0.5
207	Voice-Coil (Imp.= 1.82 ohms @ 400 cy.).....	1.7
208	Hum-bucking Coil.....Below	0.5
209	Field Coil.....	540.0
215	Power Trans. Prim. (60 cycle).....	2.0
	Power Trans., Prim. (25 cycle)....	3.1
	Power Trans., H.V. Sec. (60 cycle).	350.0
	Power Trans. H.V., Sec. (25 cycle).	480.0
	Power Trans. Heater.....Below	0.5
	Power Trans. Rect. Fil..... Below	0.5

SOCKET VOLTAGE READINGS

These readings were taken with the gang capacitor all in, wave-change switch in broadcast position, fidelity control switch in "high-fidelity" position, station-selector switch in "tune" position, and the line voltage at 115 volts. Voltage readings can be duplicated using any good voltmeter having a resistance of 1000 ohms per volt, such as the Weston Model 663 Volt Ohmmeter or the Weston Model 772 having a resistance of 20,000 ohms per volt. Current readings may be duplicated with the Model 772 and a Model 666-1A Socket Selector. When taking readings using the selector attachment, connect a 0.1 mf. capacitor from the grid of the tube in the selector to the chassis, to prevent oscillation.

TUBE	VOLTAGES				CURRENTS—M.A.		
						PLATE	
	Fil (A-C)	Plate	Screen	Cathode	Screen	Normal Bias	Bias red. 4.5 V.
Type 6K7 R-F Amplifier	6.3	250	97	0③	1.8	6.5	10.5
Type 6A8 Converter	6.3	247①	97	0④	6.5	5.0②	11.0
Type 6J7 A-F-C Control	6.3	180	98	0④	.1	.75	4.0
Type 6K7 1st I-F Amplifier	6.3	250	97	0③	1.25	5.5	10.0
Type 6K7 2nd I-F Amplifier	6.3	250	97	0③	1.25	5.5	10.0
Type 6K7 A-F-C Amplifier	6.3	246	97	0③	1.25	5.5	9.4
Type 6H6 Discriminator	6.3	—	—	4.8⑤	—	—	—
Type 6H6 2nd Detector and A.V.C.	6.3	—	—	0	—	—	—
Type 6F5 1st A-F Amplifier	6.3	85	—	0	—	.3	.55
Type 6C5 2nd A-F Amplifier	6.3	170	—	35⑥	—	3.4	4.5
Type 6V6G Output Amplifier	6.3	240	250	0⑦	2.6	32	42
Type 6V6G Output Amplifier	6.3	240	250	0⑦	2.6	32	42
Type 5X4G Rectifier	5.1	—	—	320	Plate 62	62	—

① Anode Grid Voltage = 140
② Anode Grid Current = 5.5 ma.
③ Grid Bias — 3.5 V. measured across Resistor 218
④ Grid Bias — 4.8 V. measured across Resistors 217 and 218
⑤ Measured across Resistors 217 and 218
⑥ Grid bias — 4.8 V. measured across Resistors 217 and 218.
⑦ Grid Bias — 16.5 V. measured from power transformer centre—tap to ground

SOCKET RESISTANCE READINGS TO GROUND — OHMS

TUBE TYPE	Top Cap Control	Pin No. 1 Shell	Pin No. 2 Heater	Pin No. 3 Plate	Pin No. 4 Screen	Pin No. 5	Pin No. 6	Pin No. 7 Heater	Pin No. 8 Cathode
6K7 (R.F.)	2.35 meg.	0	Below 0.5	22,000	12,500	(Suppressor) 0	—	0	0
6A8	0.5 meg.	0	Below 0.5	23,000	12,500	(Osc-Grid) 50,000	(Anode-Grid) 62,500	0	0
6J7	3.5 meg.	0	0	42,000	19,700	(Suppressor) 0	—	Below 0.5	0
6K7 (1st I.F.)	2.25 meg.	0	Below 0.5	22,000	12,500	(Suppressor) 0	—	0	0
6K7 (2nd I.F.)	1 meg.	0	Below 0.5	22,000	12,500	(Suppressor) 0	—	0	0
6K7 (A-F-C Amp.)	1.25 meg.	0	Below 0.5	23,000	12,500	(Suppressor) 0	—	0	0
6H6 (Disc.)	—	1 meg.	Below 0.5	(Diode Plate) 1.5 meg.	2 meg.	(Diode Plate) 1.5 meg.	—	0	1 meg.
6H6 (2nd Det.)	—	0	Below 0.5	(Diode Plate) 0.6 meg.	0	(Diode Plate) 1.25 meg.	—	0	0
6F5	2 meg.	0	Below 0.5	—	(Plate) 277,000	—	—	0	5,000
6C5	—	0	Below 0.5	37,000	—	(Cont. Grid) 1.5 meg.	—	0	11,500
6V6G	—	0	Below 0.5	22,400	22,000	(Cont. Grid) 0.2 meg.	—	0	0
6V6G	—	0	Below 0.5	22,400	22,000	(Cont. Grid) 0.2 meg.	—	0	0
5X4G	—	—	—	300 (60 cy.) 367 (25 cy.)	—	(Plate) 300 (60 cy.) 367 (25 cy.)	—	22,500	(Filament) 22,500

These readings are taken with the set switched off, wave-change switch in the broadcast position, station-selector switch in the "tune" position and the fidelity-control switch set in the "high-fidelity" position. The pin numbers for the sockets correspond with those shown on the schematic circuit.

REPLACEMENT PARTS PRICE LIST

(*Prices subject to change*)

(These prices supersede prices of similar part numbers in any previous bulletin.)

Item	Description	Part Number	Price
1	Ant. Prim. Sect. W/C Switch	K-3200	$2.50
2	Ant. Sec. Sect. W/C Switch		
3	Ant. Gang Sect. W/C Switch		
4	R-F Prim. Sect. W/C Switch		
5	R-F Sec. Sect. W/C Switch		
6	R-F Gang Sect. W/C Switch		
7	Osc. Prim. Sect. W/C Switch		
8	Osc. Sec. Sect. W/C Switch.		
9	Osc. Gang Sect. W/C Switch		
10	Ant. Sect. Station-Selector Switch	K-3308	1.30
11	R-F Sect. Station-Selector Switch		
12	Osc. Sect. Station-Selector Switch		
13	A-F-C Sect. Station-Selector Switch		
14	Ant. (Sw.) Sect. Cap. Gang, max. 89 mmf.	K-3121	3.80
15	Ant. (B. & P.) Sect. Cap. Gang, max. 414 mmf.		
16	R-F (Sw.) Sect. Cap. Gang, max. 89 mmf.		
17	R-F (B. & P.) Sect. Cap. Gang, max. 414 mmf.		
18	Osc. (Sw.) Sect. Cap. Gang, max. 89 mmf.		
19	Osc. (B. & P.) Sect. Cap. Gang, max. 414 mmf.		
20	SW-3 (Red) Ant. Trans., Prim.	K-3413	1.00
21	SW-3 (Red) Ant. Trans., Sec.		
22	Capacitor, Trim., 3-25 mmf.	K-1458-6	.18
23	SW-2 (Blue) Ant. Trans., Prim.	K-3410	1.00
24	SW-2 (Blue) Ant. Trans., Sec.		
25	Capacitor, Trim., 3-25 mmf.	K-1458-6	.18
26	SW-1 (Yel.) Ant. Trans., Prim.	K-3407	1.00
27	SW-1 (Yel.) Ant. Trans., Sec.		
28	Capacitor, Trim., 3-25 mmf.	K-1458-6	.18
29	Resistor, 10,000 ohms	K-2226-10	.23
30	Police (Green) Ant. Trans., Prim.	K-3404	1.00
31	Police (Green) Ant. Trans., Sec.		
32	Capacitor, Trim., 3-25 mmf.	K-1458-6	.18
33	B'dc't (White) Ant. Trans., Prim.	K-3325	1.00
34	B'dc't (White) Ant. Trans., Sec.		
35	Capacitor, Trim., 3-25 mmf.	K-1458-6	.18
36	Capacitor, 0.05 mf., 175 V.	K-2227-8	.16
37	Resistor, 1/10 meg.	K-2226-8	.23
38	Capacitor, 0.1 mf., 175 V.	K-2227-9	.16
39	Capacitor, Trim. 160-485 mmf.	K-3324-1	.35
40	Capacitor, Trim. 125-375 mmf.	K-3324-2	.35
41	Capacitor, Trim. 50-250 mmf.	K-3324-3	.35
42	Capacitor, Trim. 10-70 mmf.	K-3324-4	.35
43	Capacitor, Trim. 160-485 mmf.	K-3324-1	.35
44	Capacitor, Trim. 125-375 mmf.	K-3324-2	.35
45	Capacitor, Trim. 50-250 mmf.	K-3324-3	.35
46	Capacitor, Trim. 10-70 mmf.	K-3324-4	.35
47	Capacitor, Trim. 160-485 mmf.	K-3324-1	.35
48	Capacitor, Trim. 125-375 mmf.	K-3324-2	.35
49	Capacitor, Trim. 50-250 mmf.	K-3324-3	.35
50	Capacitor, Trim. 10-70 mmf.	K-3324-4	.35
51	SW-3 (Red) Osc. Coil, Prim.	K-3415	1.00
52	SW-3 (Red) Osc. Coil, Sec.		
53	Capacitor, Trim. 1.5-10 mmf.	K-1458-5	.18
54	SW-2 (Blue) Osc. Coil, Prim.	K-3412	1.00
55	SW-2 (Blue) Osc. Coil, Sec.		
56	Capacitor, Trim., 3-25 mmf.	K-1458-6	.18
57	SW-1 (Yel.) Osc. Coil, Prim.	K-3409	1.00
58	SW-1 (Yel.) Osc. Coil, Sec.		
59	Capacitor, Trim. 3-25 mmf.	K-1458-6	.18
60	Pol. (Green) Osc. Coil, Prim.	K-3406	1.00
61	Pol. (Green) Osc. Coil, Sec.		
62	Capacitor, Trim., 3-25 mmf.	K-1458-6	.18
63	B'dc't (White) Osc. Coil, Prim.	K-3327	1.00
64	B'dc't (White) Osc. Coil, Sec.		
65	Capacitor, Trim., 3-25 mmf.	K-1458-6	.18
66	B'dc't (White) Osc. A-F-C Coupling Coil	Part of 63-64	—
67	Capacitor, 0.05 mf, 175 V.	K-2227-8	.16
68	Capacitor, Lag, 40-120 mmf.	K-3083-3	.20
69	Capacitor, Mica, 2000 mmf. ± 5%	K-1952-6	.25
70	Capacitor, Mica, 300 mmf. ± 5%	K-1611-10	.20
71	Capacitor, 0.001 mf, 350 V.	K-2228-1	.20
72	Capacitor, Lag, 220-680 mmf.	K-3083-6	.25
73	Capacitor, Mica, 1000 mmf, ± 5%	K-1611-30	.20
74	Capacitor, Mica, 2000 mmf, ± 5%	K-1952-6	.25
75	Capacitor, Mica, 1050 mmf, ± 3%	K-1952-17	.25

REPLACEMENT PARTS PRICE LIST—(Continued)

Item	Description	Part Number	Price
76	Capacitor, Lag. 220-680 mmf	K-3083-6	.25
77	Capacitor, Mica, 100 mmf.	K-1611-2	.20
78	Capacitor, Mica, 65 mmf.	K-1611-8	.20
79	Capacitor, 0.001 mf, 350 V.	K-2228-1	.20
80	Resistor, 600 ohm	K-2226-56	.23
81	Resistor, ½ meg	K-2226-3	.23
82	Resistor, 15,000 ohm	K-2226-9	.23
83	Capacitor, 0.1 mf, 175 V.	K-2227-9	.16
84	SW-3 (Red) R.F. Trans., Prim.	K-3414	1.00
85	SW-3 (Red) R.F. Trans., Sec.		
86	Capacitor, Coupling, 6 mmf		
87	Capacitor, Trim., 1.5-10 mmf	K-1458-5	.18
88	SW-2 (Blue) R.F. Trans., Prim.	K-3411	1.00
89	SW-2 (Blue) R.F. Trans., Sec.		
90	Capacitor, Trim., 3-25 mmf.	K-1458-6	.18
91	SW-1 (Yel.) R.F. Trans., Prim.	K-3408	1.00
92	SW-1 (Yel.) R.F. Trans., Sec.		
93	Capacitor, Trim., 3-25 mmf.	K-1458-6	.18
94	Pol. (Green) R.F. Trans., Prim.	K-3405	1.00
95	Pol. (Green) R.F. Trans., Sec.		
96	Capacitor, Trim., 1.5–10 mmf	K-1458-5	.18
97	Resistor, 1/10 meg	K-2226-5	.23
98	B'dc't (White) R.F. Trans., Prim.	K-3326	1.00
99	B'dc't (White) R.F. Trans., Sec.		
100	Capacitor, Trim., 1.5–10 mmf	K-1458-5	.18
101	Resistor, 1/10 meg	K-2226-5	.23
102	Capacitor, 0.05 mf., 175 V.	K-2227-8	.16
103	Resistor, ½ meg	K-2226-3	.23
104	Capacitor, Dry Elec., 4 mf, 100 V	K-3507	.20
105	Resistor, 30,000 ohns	K-2226-44	.23
106	Resistor, 30,000 ohms	K-2226-44	.23
107	Resistor, 50,000 ohms	K-2226-6	.23
108	Capacitor, Mica, 100 mmf.	K-1611-2	.20
109	1st I.F. Trans. Assy. (items 110-116)	K-3416	2.00
110	Capacitor, Mica, 200 mmf.	K-3450-5	.20
111	1st I-F Trans., Prim.	—	—
112	1st I-F Trans., Sec.	—	—
113	1st I-F Trans., Sec. No. 2.	—	—
114	Capacitor, Trim., 15-100 mmf.	K-2134-3	.40
115	Capacitor, Trim., 15-100 mmf.		
116	Capacitor, Mica, 200 mmf.	K-3450-5	.20
117	Capacitor, 0.05 mf, 350 V.	K-2228-8	.20
118	Resistor, 1000 ohms	K-2226-16	.23
119	2nd I-F Trans. Assem. (items 120-124)	K-3417	2.00
120	Capacitor, Mica, 200 mmf.	K-3450-5	.20
121	2nd I-F Trans., Prim.	—	—
122	2nd I-F Trans., Sec.	—	—
123	2nd I-F Trans., Sec. No. 2.	—	—
124	Capacitor, Mica, 200 mmf.	K-3450-5	.20
125	Capacitor, Trim., 15-100 mmf.	K-2134-3	.40
126	Capacitor, Trim., 15-100 mmf.		
127	Capacitor, 0.05 mf, 175 V.	K-2227-8	.16
128	Capacitor, 0.1 mf, 350 V.	K-2228-9	.20
129	1st I-F Sect. Fidelity-Control Switch	K-3448	.55
130	2nd I-F Sect. Fidelity-Control Switch		
131	Lamp Sect. Fidelity-Control Switch		
132	3rd I-F Trans. Assem. (items 133-140)	K-3418	2.50
133	Capacitor, 105 mmf.	—	—
134	Capacitor, 118 mmf.	—	—
135	1st I-F Trans., Prim.	—	—
136	1st I-F Trans., Sec.	—	—
137	1st I-F Trans., Tertiary	—	—
138	Capacitor, Mica, 100 mmf.	K-3450-4	.20
139	Capacitor, Mica, 100 mmf.	K-3450-4	.20
140	Resistor, 50,000 ohms	K-2226-6	.23
141	Resistor, 1 meg	K-2226-2	.23
142	Capacitor, 0.05 mf, 175 V.	K-2227-8	.16
143	Capacitor, 0.1 mf, 175 V.	K-2227-9	.16
144	Capacitor, 0.05 mf, 175 V.	K-2227-8	.16
145	Discr. I-F Trans. Assy. (items 146-152)	K-3419	2.00
146	Capacitor, Trim., 15-100 mmf.	K-2134-3	.40
147	Capacitor, Trim., 15-100 mmf.		
148	Capacitor, Mica, 150 mmf.	K-3450-14	.20
149	Discr. I-F Trans., Prim.	—	—
150	Discr. I-F Trans., Sec.	—	—
151	Capacitor, Mica, 200 mmf.	K-3450-5	.20
152	Capacitor, Mica, 100 mmf.	K-3450-4	.20
153	Capacitor, Trim., 1.5-10 mmf	K-1458-5	.18
154	Capacitor, 0.05 mf, 350 V.	K-2228-8	.20
155	Resistor, 1000 ohm	K-2226-16	.23
156	Capacitor, 0.25 mf, 175 V.	K-2227-10	.25
157	Capacitor, 0.1 mf, 175 V.	K-2227-9	.16
158	Resistor, ½ meg	K-2226-3	.23
159	Resistor, ½ meg	K-2226-3	.23
160	Resistor, 1 meg	K-2226-2	.23
161	Resistor, 2 meg	K-2226-1	.23
162	Resistor, 2 meg	K-2226-1	.23
163	Switch, A-F-C Shorting	—	—
164	Ant.-Grnd-Phono. Terminal Strip	K-2986	.20
165	Capacitor, Mica, 100 mmf.	K-1611-2	.20
166	Resistor, 50,000 ohms	K-2226-6	.23
167	Volume Control, 500,000 ohms	K-3228	1.00

REPLACEMENT PARTS PRICE LIST—(Continued)

Item	Description	Part Number	Price
168	Capacitor, 0.02 mf, 175 V..	K-2227-7	.16
169	Resistor, 1 meg.....	K-2226-2	.23
170	Resistor, 1 meg.....	K-2226-2	.23
171	Resistor, 9,500 ohms.....	K-3493-1	.27
172	Resistor, 10,000 ohms.....	K-3315-12	.27
173	Resistor, 10,000 ohms.....	K-3315-12	.27
174	Lamp, 24 Volt (Tuning Indicator).....	K-2643	.50
175	Resistor, ¼ meg.....	K-2226-4	.23
176	Resistor, 1 meg.....	K-2226-2	.23
177	Capacitor, Dry Elec., 8 mf, 100 V.....	K-3399	.70
178	Resistor, 12,500 ohms.....	K-3315-49	.27
179	Resistor, 2 meg.....	K-2226-1	.23
180	Capacitor, Mica, 100 mmf..	K-1611-2	.20
181	Resistor, 5,000 ohms.....	K-2226-12	.23
182	Capacitor, Dry Elec., 5 mf, 25 V.....	K-3442-1	.60
183	Resistor, ¼ meg.....	K-2226-4	.23
184	Capacitor, 0.02 mf, 350 V..	K-2228-7	.20
185	Resistor, ½ meg.....	K-2226-3	.23
186	Capacitor, 0.05 mf, 175 V..	K-2227-8	.16
187	Capacitor, 0.001 mf, 350 V.	K-2228-1	.20
188	Resistor, ½ meg.....	K-2226-3	.23
189	Tone Control, ½ meg.....	K-3335	.75
190	Resistor, 1500 ohms.....	K-2226-15	.23
191	Resistor, 10,000 ohms.....	K-2226-10	.23
192	Capacitor, 0.02 mf, 175 V..	K-2227-7	.16
193	Resistor, 10,000 ohms.....	K-2226-10	.23
194	Capacitor, 0.02 mf, 350 V..	K-2228-7	.20
195	Resistor, 1/10 meg.....	K-2226-5	.23
196	Resistor, 1/10 meg.....	K-2226-5	.23
197	Resistor, 1/10 meg.....	K-2226-5	.23
198	Capacitor, 0.1 mf, 175 V...	K-2227-9	.16
199	Capacitor, Mica, 100 mmf..	K-1611-2	.20
200	Capacitor, Mica, 100 mmf..	K-1611-2	.20
201	Capacitor, 0.001 mf, 350 V.	K-2228-1	.20
202	Capacitor, 0.001 mf, 350 V.	K-2228-1	.20
203	Resistor, 5,000 ohms.....	K-2226-12	.23
204	Loudspeaker Plug.....	K-2678	.16
205	Loudspeaker Cable.....	—	—
206	Output Trans.....	K-2718-7	1.40
207	Voice-Coil & Diaphragm Assy.....	K-3138	2.50
208	Hum-Buck Coil.....	—	—
209	Field Coil.....	K-2543-6	2.00
210	Capacitor, Dry Elec., 8 mf, 275 V.....	K-3241	1.50
211	Capacitor, Dry Elec., 8 mf, 250 V.....		
212	Capacitor, Dry Elec., 4 mf, 210 V.....		
213	Capacitor, Wet Elec., 16 mf, 440 V.....	K-3240	.85
214	Resistor, 30,000 ohms.....	K-2363-3	.25
215	Power Trans., 60 cycle.....	K-3242-3	7.00
	Power Trans., 25 cycle.....	K-3242-4	7.50
216	Resistor, 90 ohms.....	K-3315-31	.27
217	Resistor, 10 ohms.....	K-2226-61	.23
218	Resistor, 27 ohms.....	K-2226-60	.23
219	Capacitor, 0.1 mf, 175 V...	K-2227-9	.16
220	Resistance Wire, 0.62 ohm, 6 in. long.....	K-3436-26	per c. .50
221 226	Lamp, Dial, 6.3 V.....	K-2589-3	.18
227	A-C Switch.....	Part of 189	—
228	Capacitor, 0.025 mf, 520 V., a.c.....	K-1750	.40
229	Capacitor, 0.025 mf, 520 V, a.c.....		
230	Resistor, 10,000 ohms.....	K-2226-10	.23

MISCELLANEOUS

Loudspeaker with O.T. and Plug Assy.....	K-3137-2		P.O.A.
Loudspeaker only.....	K-3097-2		$5.30
Tube Sockets.....	K-1924-3		.10
Shield (Ant. Sect.).....	K-3329		.10
Trimmer Mounting Strip.....	K-3198		.55
Insulation Strip.....	K-2505		.10
Grid Clips.....	K-1821		.07
Drive Disc Assy.....	K-3293		.65
Indicator Disc Assy. (A.T.).....	K-3318		.25
Indicator Tuning.....	K-2654-3		.15
Drive Belt.....	K-3255		.18
Band Indicator Scale.....	K-3237		.40
Dial Scale (with facing).....	K-3601		2.90
Reduction Drive Assy.....	K-3343		2.00
Dial Lamp Sockets.....	K-2835		.10
Tuning Lamp Socket.....	K-3123		.05
Insulator Shell for T.L. Socket..	K-3124		.05
Indicator Scale Assy.....	K-3311		.40
Cable, Bronze (use 32" overall)..	K-1694	per ft.	.05
Cable Spring.....	103164		.10
Insulation Strip (3 plus 1).....	K-2180		.10
Insulation Strip (single six).....	K-1888-1		.10
Insulation Strip (double).....	K-1683-1		.05
A-F-C Push Button.....	K-3517	doz.	.10
Phono Link.....	K-3291	doz.	.25
Antenna & Phono Strip.....	K-2986		.20
Chassis Mounting Screw.....	K-1109-10	doz.	.10
Rubber Grommets (chassis mounting).....	K-2498-3	doz.	.25
Tee Nuts (chassis mounting)....	K-3282		.05
Knob—"Tuning" (large).....	K-3356-1		.15
Knob—"Tuning" (small-vernier)	K-2830-5		.15
Knob—"Volume".....	K-2765-3		.15
Knob—"Band".....	K-2765-9		.15
Knob—(Plain).....	K-2765-1		.15
Knob—"Tone-On-Off".....	K-2765-6		.15
Felt washers under large knobs..	K-2491-1	doz.	.15
Felt washers under small knobs..	K-2491-4	doz.	.05
Station Call Letter Cards.....	K-3492		.60
"Dialomatic" Escutcheon.....	K-3392		.75
"Fidelity" Escutcheon.....	K-3508		.80
Main Dial Escutcheon complete..	K-3245		1.30
Escutcheon Crystal.....	K-3246		.25
Escutcheon Retaining Ring.....	K-3249		.10
Tuning Light Scale.....	K-3236		.20
No. 8 Auto Washer (Tone Chamber Cover).....	K-3353-2	doz.	.05
Tone Chamber Cover Screw.....	K-3354-12	doz.	.10
Tuning Wrenches (all models)...	K-836		.70