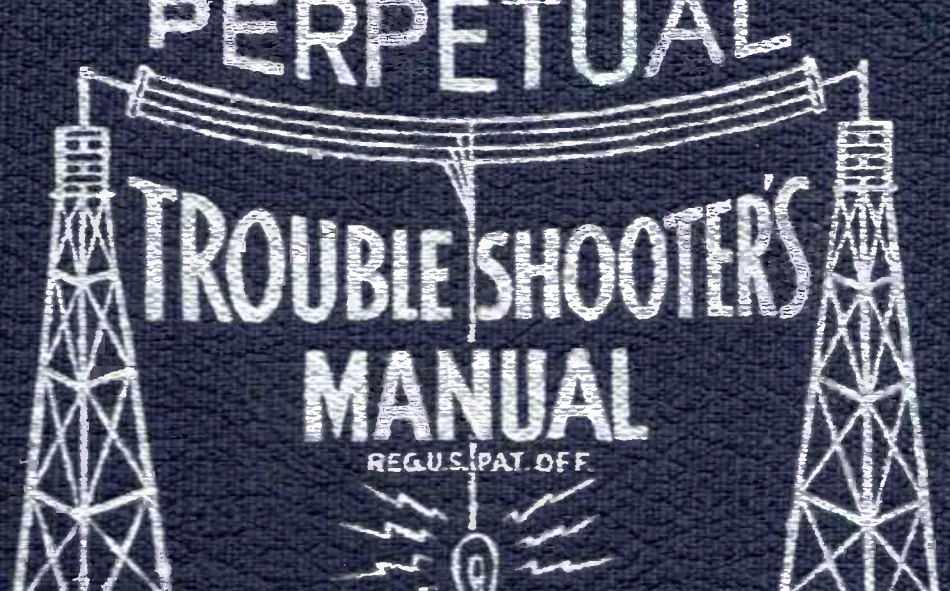
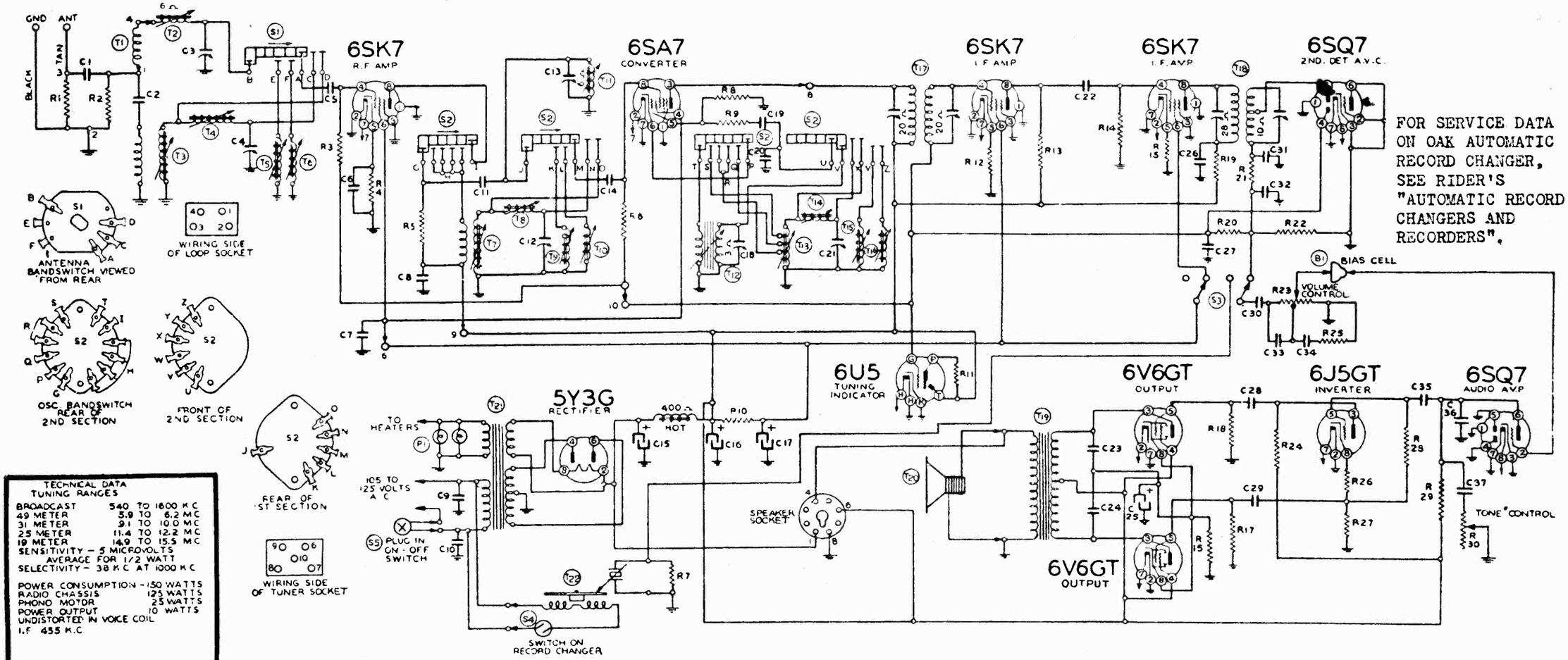
VOLUME XIV

PERPETUAL TROUBLE SHOOTER'S MANUAL



JOHN F. RIDER

BELMONT RADIO CORP.



FOR SERVICE DATA ON OAK AUTOMATIC RECORD CHANGER, SEE RIDER'S "AUTOMATIC RECORD CHANGERS AND RECORDERS".

TECHNICAL DATA

TUNING RANGES

BROADCAST	540 TO 1600 K.C.
49 METER	5.9 TO 6.2 M.C.
31 METER	9.1 TO 10.0 M.C.
25 METER	11.4 TO 12.2 M.C.
19 METER	14.9 TO 15.5 M.C.

SENSITIVITY – 5 MICROVOLTS AVERAGE FOR 1/2 WATT
SELECTIVITY – 38 K.C. AT 1000 K.C.

POWER CONSUMPTION – 150 WATTS
RADIO CHASSIS 125 WATTS
PHONO MOTOR 25 WATTS
POWER OUTPUT 10 WATTS
UNDISTORTED IN VOICE COIL
I.F. 455 K.C.

MAIN CHASSIS PARTS LIST

CONDENSERS

1009	C29, C30	.05 x 200 Volt Tubular Condenser	2
10037	C37	.003 x 600 Volt Tubular Condenser	1
10013	C38, C35	.05 x 400 Volt Tubular Condenser	2
1001	C26	.1 x 400 Volt Tubular Condenser	1
10065	C23, C24	.015 x 600 Volt Tubular Condenser	2
10022	C27	.05 x 200 Volt Tubular Condenser	1
100134	C34	.006 x 120 Volt Tubular Condenser	1
10061	C9, C10	.02 x 600 Volt Bakelite Condenser	2
11969	C25	Electrolytic Filter Condenser. 16 Mfd. x 350 Volts	1
119112	C15, C16, C17	Electrolytic Filter Condenser. 30 Mfd.; 30 Mfd.; 10 Mfd. x 450 Volts or	1
119112B	C15, C16, C17	Electrolytic Filter Condenser 30 Mfd.; 30 Mfd.; 10 Mfd. x 450 Volts	1
1292	C1, C22	.0005 Mica Type Condenser—20%	2
12912	C36	.00025 Mica Type Condenser—20%	1
12939	C33	.00005 Mica Type Condenser—20%	1
129161	C31, C32	.0001 Mica Dual Condenser—10%	1

RESISTORS

101275	R23	Volume Control (2.8 Megohm)	1
125180	R30, S3	Tone Control and Phono-Radio Switch (1 Megohm)	1
13070	R12	500 Ohm—½ Watt Resistor—10%	1
13082	R13	10M Ohm—½ Watt Resistor—10%	1
130317	R16	250 Ohm—2 Watt Resistor—10%	1
13094	R21, R24, R27	50M Ohm—½ Watt Resistor—10%	3
130192	R19	2M Ohm—½ Watt Resistor—10%	1
130235	R15	1500 Ohm—½ Watt Resistor—10%	1
130218	R26	5M Ohm—½ Watt Resistor—10%	1
130172	R29	250M Ohm—½ Watt Resistor—10%	1
13019	R20	1 Megohm—½ Watt Resistor—20%	1
13020	R14	10M Ohm—½ Watt Resistor—20%	1
1307	R25	40M Ohm—½ Watt Resistor—10%	1
130238	R22	400M Ohm—½ Watt Resistor—20%	1
1303	R7, R17, R18, R28	500M Ohm—½ Watt Resistor—20%	4
130232	R1, R2	25M Ohm—½ Watt Resistor—10%	2
10667	R10	16M Ohm—3.5 Watt Resistor—10%	1

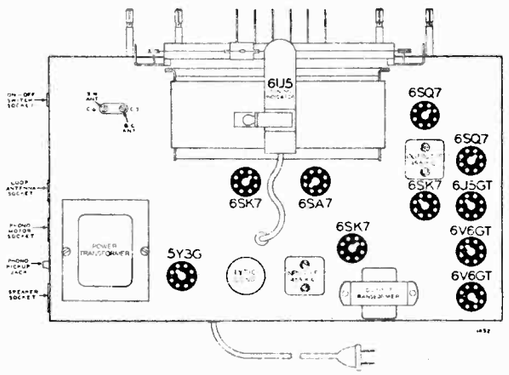
TUNER CHASSIS PARTS LIST

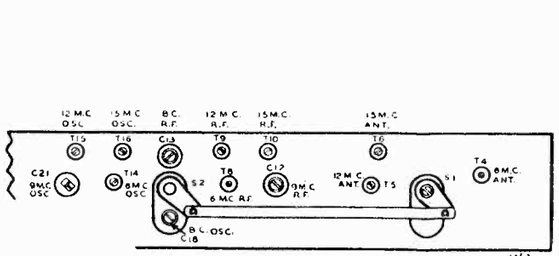
CONDENSERS

10020	C6	.1 x 200 Volt Tubular Condenser	1
10047	C2	.002 x 600 Volt Tubular Condenser	1
10074	C7, C8	.1 x 400 Volt Tubular Condenser	2
124138	C12	9 Mc., R.F. Adjustable Trimmer Condenser	1
124139	C13	B.C., R.F. Adjustable Trimmer Condenser	1
124143	C3, C4	B.C. and 9 Mc. Dual Adjustable Antenna Trimmer Condenser	1
124144	C18	B.C. Oscillator Adjustable Trimmer Condenser	1
124145	C21	9 Mc. Oscillator Adjustable Trimmer Condenser	1
1292	C5, C14	.0005 Mica Type Condenser—20%	1
129165	C19	.00005 Mica Type Condenser—10%	1
129168	C11	.00001 Mica Type Condenser—30%	1
129167	C20	.0002 Silver Mica Type Condenser—3%	1

RESISTORS

13019	R3, R6	1 Megohm—½ Watt Resistor—20%	2
130218	R5	5M Ohm—½ Watt Resistor—10%	1
130232	R8	25M Ohm—½ Watt Resistor—10%	1
130239	R4	250 Ohm—½ Watt Resistor—10%	1
	R11	1 Megohm—In Tuning Eye Cable	1
130174	R9	50 Ohm—½ Watt Resistor	1

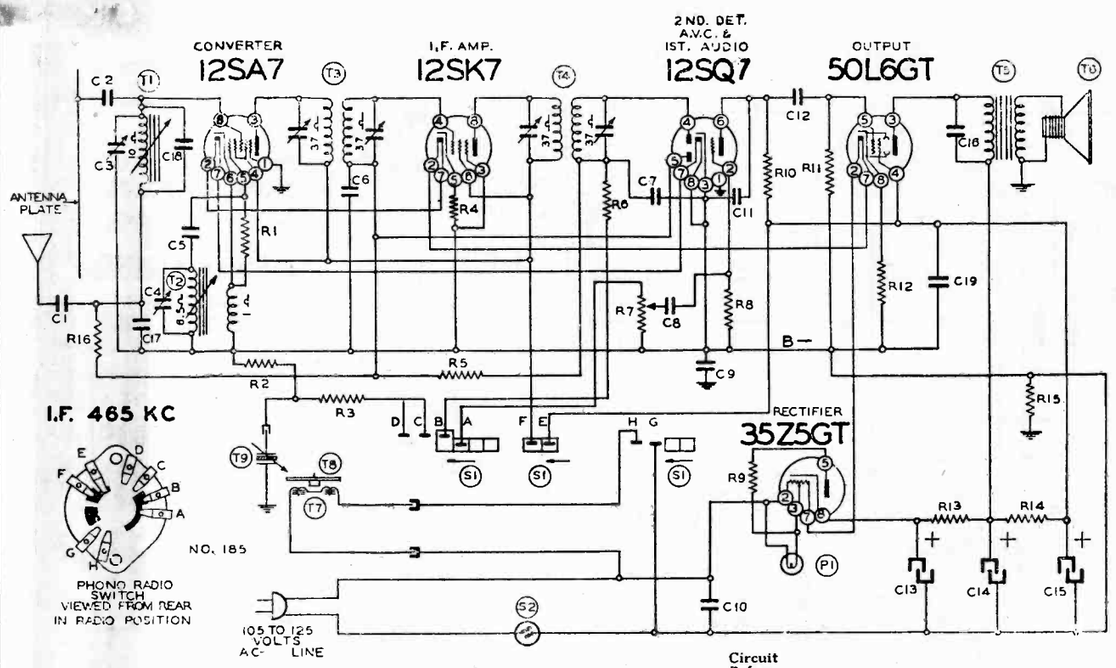




TRIMMER VIEW

MODEL 533, Series C

BELMONT RADIO CORP.



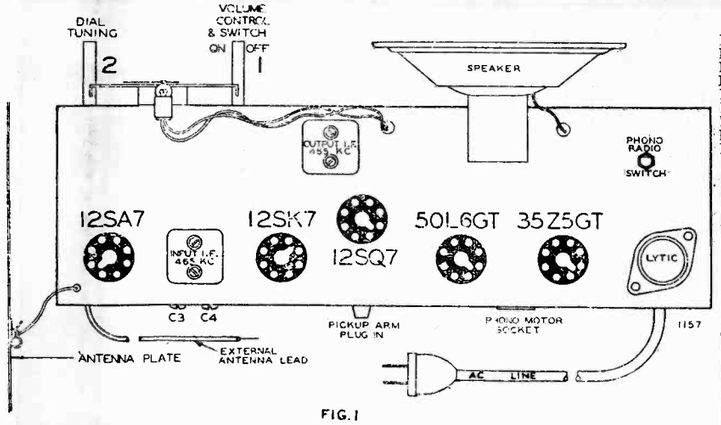
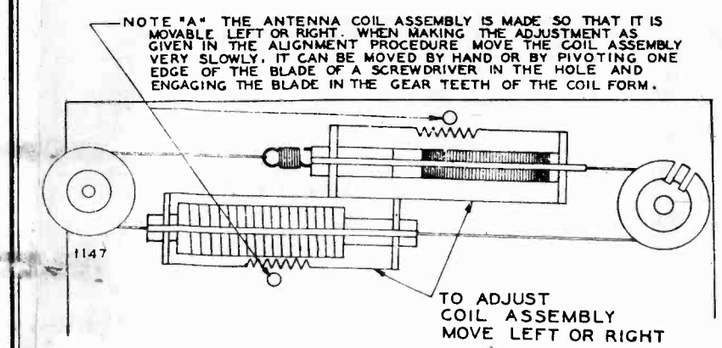


FIG. 1



Circuit Ref. No.	Part No.	Description
		RESISTORS
R1	130176	20M ohm—½ w.
R2	130118	600M ohm—½ w.
R3	130138	600M ohm—½ w.
R4	13056	100 ohm—½ w.
R5	130170	3 megohm—½ w.
R6	13012	50M ohm—½ w.
R7	101217	½ megohm—volume control
R8	130257	5 megohm—½ w.
R9	130215	25 ohm—½ w.
R10	1309	200M ohm—½ w.
R11	13037	750 ohm—½ w.
R12	130165	450 ohm—½ w.
R13	13097	200 ohm—½ w.
R14	130287	1200 ohm—1 watt
R15	1309	200M ohm—½ w.
R16	1309	200M—½ w.
		CONDENSERS
C1	1295	.0001 Mica Condenser
C2	129114	.0003 mfd. mica
C3	124136	Antenna Trimmer
C4	124136	Oscillator Trimmer
C5	1295	.0001 mica
C6	1009	.05 x 200 v.
C7	1295	.0001 mica
C8	10025	.002 x 600 v.
C9	100119	.1 x 400 v.
C10	1001	.1 x 400 v.
C11	12912	.00025 mica
C12	10019	.006 x 600 v.
C13	11994	40 mfd. lytic—150 w. v.
C14	11994	20 mfd. lytic—150 w. v.
C15	11994	20 mfd. lytic—150 w. v.
C16	10011	.01 x 400 v.
C17	129162	.0008 Mica Condenser
C18	129163	.000025 Ceramicon Condenser
C19	10013	.05 x 400 v. Cond.
		C3 and C4 in same unit
		C13, C14 and C15 are in same unit
		PARTS
T1	112866	Antenna Coil—Permeability tuning assembly complete
T2	112866	Oscillator Coil
T3	108140F	Input I. F. Coil—465 kc.
T4	108145D	Output I. F. Coil—465 kc.
T5	105108	Output Transformer
T6	114193	5" P.M. Speaker
T7	104206	Phono Motor
T8	12228	Turntable
T9	114194	Phono pick up arm
S1	125113	Phono Switch
S2		Switch on volume control
P1	.107249	Pilot light T47
		T1 and T2 in same unit

MODEL 533, Series C

BELMONT RADIO CORP.

ALIGNMENT PROCEDURE

The following equipment is required for aligning.

- An all wave signal generator which will provide an accurately calibrated signal at the test frequencies as listed.
- Output indicating meter.
- Non-metallic screwdriver.
- Dummy antennas—.1 Mfd., and 200 Mmf.

- Volume control—Maximum all adjustments.
- Connect — B of radio chassis to ground post of signal generator through .1 Mfd. condenser.
- Connect dummy antenna value in series with generator output lead.
- Connect output meter across primary of output transformer.
- Allow chassis and signal generator to "heat up" for several minutes.

BAND	SIGNAL GENERATOR Frequency Setting	Dummy Antenna	Connection to Radio	Position of Iron Cores (Dial Setting)	Trimmers Adjusted (in Order Shown)	Trimmer Function	Adjustment
I. F.	465 Kc.	.1 MFD.	Connect to Antenna Plate (See Fig. 4)	Iron Cores All the way out	Two trimmers on top (See Fig. 1)	Output I. F.	Adjust to maximum output
	465 Kc.	.1 MFD.	Connect to Antenna Plate (See Fig. 4)	Iron Cores All the way out	Two trimmers on top (See Fig. 1)	Input I. F.	Adjust to maximum output,
BROAD-CAST BAND	1690 Kc.	.1 MFD.	Connect to Antenna Plate (See Fig. 4)	Iron Cores All the way out	Trimmer C4 (See Fig. 4)	Oscilator	Adjust to maximum output
	1690 Kc.	200 MMF.	Connect to Antenna Lead (See Fig. 4)	Iron Cores All the way out	Trimmer (C3) (See Fig. 4)	Antenna	Adjust to maximum output
	1400 Kc.	200 MMF.	Connect to Antenna lead (See Fig. 4)	Dial to 1400 Kc.	Adjust position of antenna coil right or left.	Antenna Coil Adjustment	Adjust to maximum output (See Note "A")
	1690 Kc.	200 MMF.	Connect to Antenna lead (See Fig. 4)	Dial to 1690 Kc.	Adjust trimmer (C3) (See Fig. 4)	Antenna	Check for tracking (See Note "B")

NOTE "A"—The antenna coil assembly is made so that it is movable right or left. When making the adjustment as given in the alignment procedure move the coil assembly very slowly. It can be moved by hand or by pivoting one edge of the blade of a screwdriver in the hole and engaging the blade in the gear teeth of the coil form.

NOTE "B"—After the antenna coil has been tracked at 1400 Kc. it is necessary to check the antenna trimmer (C3) adjustment again at 1690 Kc. If no appreciable change in trimmer adjustment is made the coil is in track, if the trimmer requires considerable change it will be necessary to again adjust the position of the antenna coil at 1400 Kc. These two adjustments should be tried several times until no change of trimmer adjustment is required at 1690 Kc.

FREQUENCY RANGE
535 to 1690 K.C.

Power Consumption ..... Radio Only 30 Watts
Power Output ..... 900 Milliwatts Undistorted, 1.7 Watts Maximum
Intermediate Frequency ..... 465 K.C.

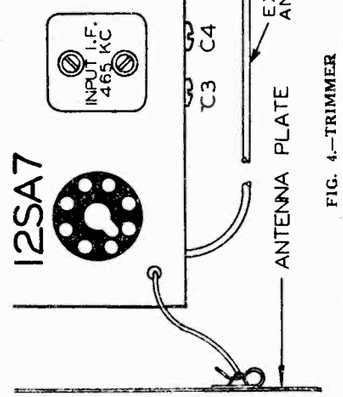


FIG. 4.—TRIMMER

BOTTOM VIEW OF CHASSIS

VOLTAGES MEASURED WITH 1000 OHM PER VOLT VOLTMETER BETWEEN SOCKET TERMINALS AND B—

[A] CANNOT BE MEASURED WITH D.C. VOLTMETER.
[B] POINTS OF LINE CONTACT.

NOTE: SWITCH SHOULD BE IN RADIO POSITION AND SET CONNECTED TO 117 V. 60 CYCLE A.C. SUPPLY SOURCE. NO SIGNAL AND VOLUME CONTROL IN MINIMUM POSITION.

12SQ7 — 45 V.

* OSC. VOLTAGE TO BE MEASURED WITH R.F. CHOKE IN SERIES WITH VOLTMETER LEAD.

12SK7 — 1.1 V.

35Z5GT — 120 [A]

50L6GT — 100 [A]

12SA7 — 1.1 V.

REAR OF CHASSIS

1140

PERPETUAL

TROUBLE SHOOTER'S MANUAL

Reg. U.S. Pat. Off.

VOLUME XIV

JOHN F. RIDER PUBLISHER, INC.

404 Fourth Avenue New York 16, N. Y.

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AUTOMATIC RECORD CHANGERS AND RECORDERS

✦

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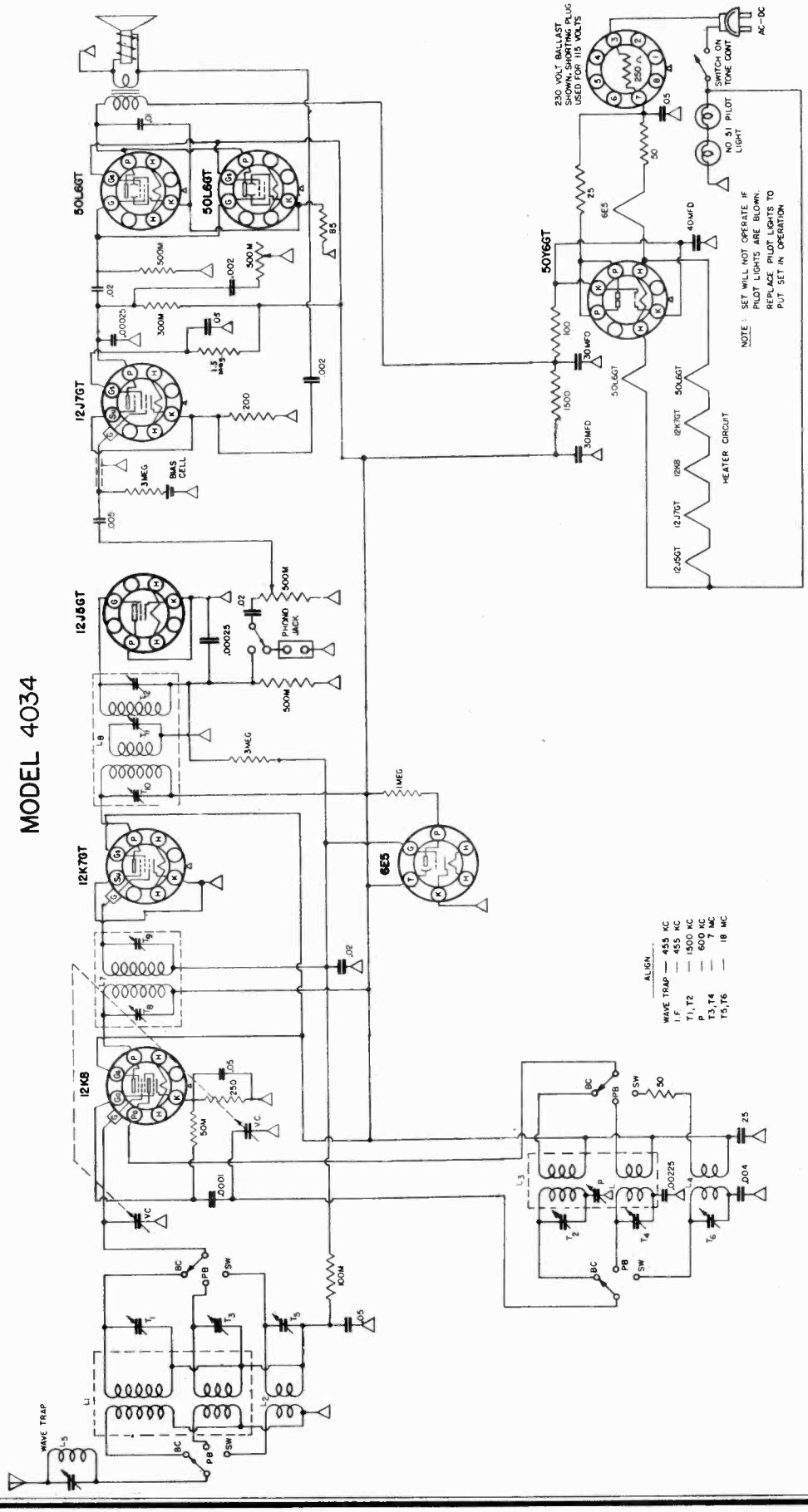
MODEL 4034

AIR KING PRODUCTS CO., INC.



MODEL 4136

AIR KING PRODUCTS CO., INC.

FAILURE OF MECHANISM TO CHANGE TO THE NEXT RECORD: An old record may occasionally be found (made before the introduction of automatic phonographs) that does not carry the needle close enough to the turntable spindle to set the changer mechanism in operation. Should one of these old records be used, moving the "REJECT" button will operate the changer mechanism. Need for doing this can be avoided by placing the old record at the top of the stack, so that it will come into position last.

SELECTION OF NEW RECORDS: When buying records inspect them carefully to be sure that they do not have chipped edges and that they are perfectly flat. Records that are warped or "saucer shaped" or that have chipped edges may not operate properly in the phonograph mechanism.

TO AVOID WARPING OF RECORDS, NEVER LEAVE RECORDS RESTING ON THE SHELF PLATES WHEN RECORD PLAYER IS SHUT OFF.

IF NOISE DEVELOPS: Scratching indicates worn records. Poor tone is evidence of a worn needle. Some records will wear longer than others, even if kept equally clean. This is due not only to quality of manufacture and care given the records, but also to the kind of music recorded.

OILING: For oiling, remove the turntable by lifting it straight up with both hands. Remove the cadmium plated screw marked "Oil Hole" in the illustration. Put in a few drops of oil (S. A. E. 20) and replace the screw. The motor should be oiled about once a year with this oil, at which time it is advisable to put a drop of oil on all friction surfaces of the mechanism.

ADJUSTING THE STARTING POSITION OF NEEDLE: Should the pickup arm not come down with the needle the proper distance from the edge of the record, it may be adjusted as follows:

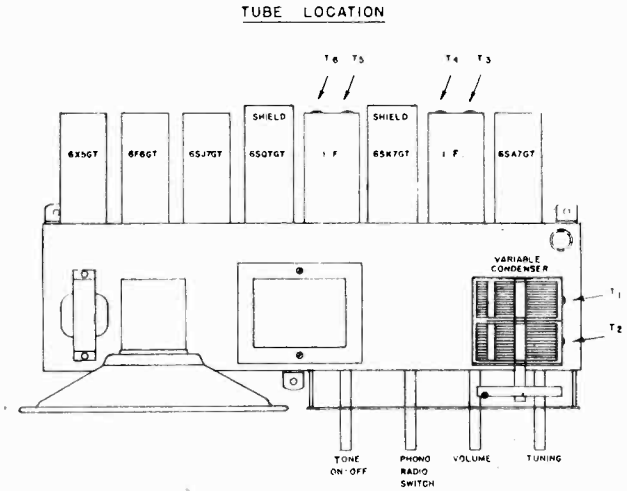
Place a record on the turntable and rotate the turntable by hand. Push the "REJECT" button while continuing to rotate the turntable, until the needle is just about to touch the record as at the start of playing. Loosen the pickup arm adjusting screw about one turn (see illustration). Shift the screw slightly in its slot (which will move the pickup arm and needle) until the needle is at the proper distance from the edge of the record. Then tighten the pickup arm adjusting screw.

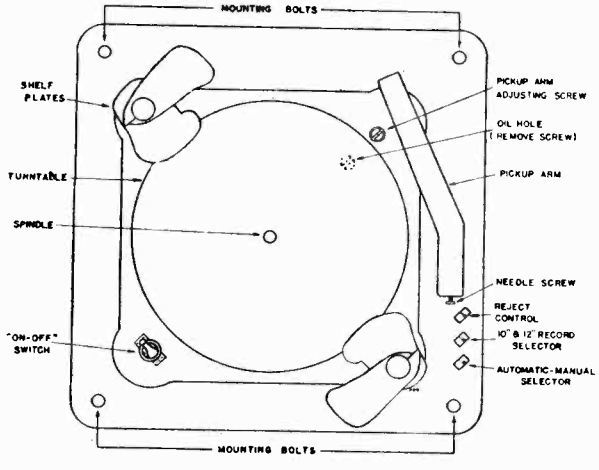
LOADING THE RECORDS FOR AUTOMATIC OPERATION: This mechanism automatically plays in sequence up to twelve 10" records or ten 12" records at one set-up. ALL RECORDS MUST BE THE SAME SIZE FOR EACH SET-UP.

The changer plates should be turned so that the larger bottom shelf plates are toward the center of the turntable. The stack of records should then be placed over the spindle and allowed to rest on the shelf plates.

Move the slide button so that the marking "10" or "12" is exposed, in agreement with the size of the records to be played.

Move the AUTOMATIC-MANUAL button so that "AUTOMATIC" is exposed.

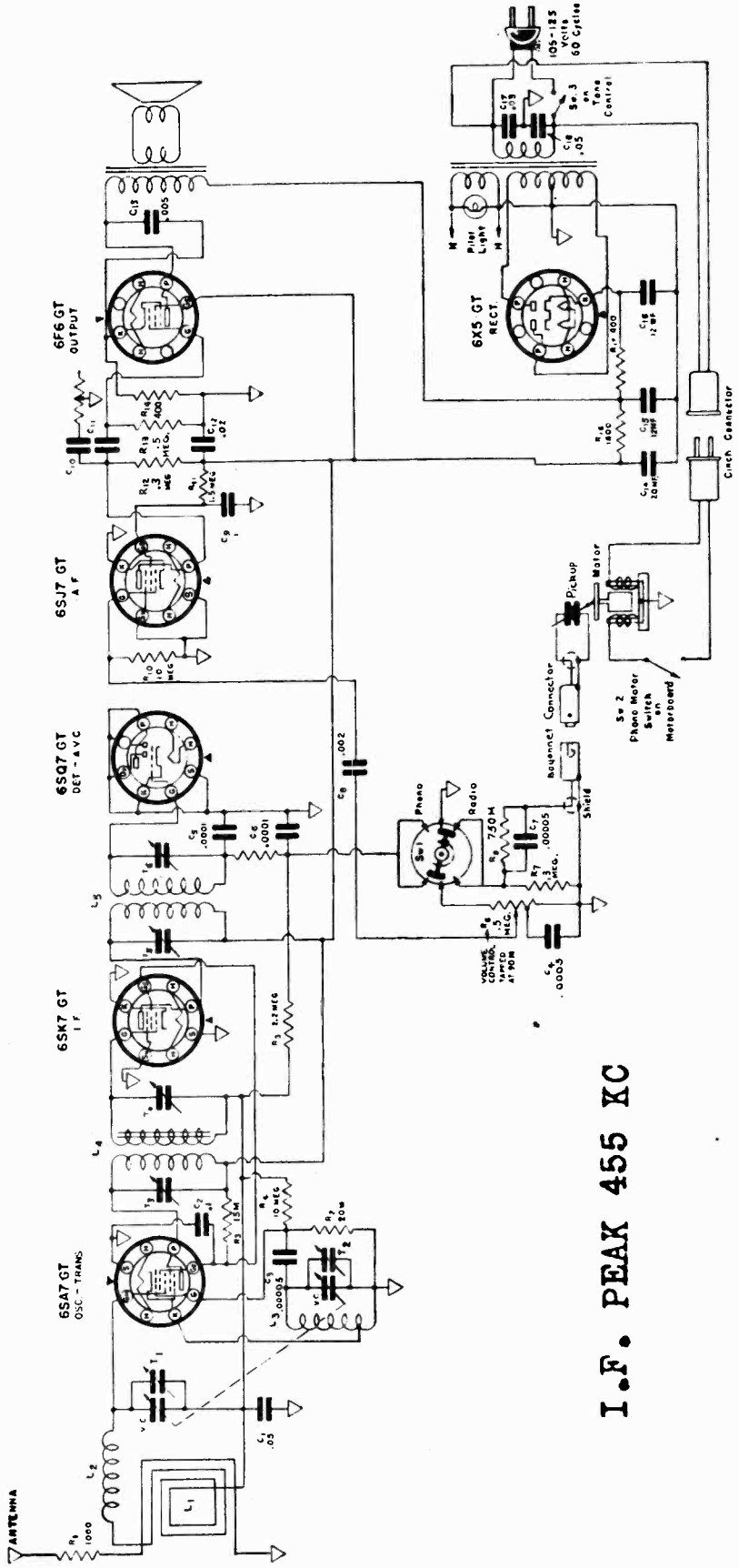




STARTING THE MECHANISM: With the radio turned on and set for record reproduction, snap the turntable switch on. The pickup should be on its rest. Push the "REJECT" button. (The button returns to its normal position automatically.) This will release the bottom record from the stack and the pickup arm will drop to its proper position on the record and start playing. When the end of the record is reached, the mechanism will automatically lift the pickup arm from the played record, will drop the next record into position, and will bring the pickup arm into place for playing this record. The mechanism will continue to repeat the last record until switched off.

MODEL 4136

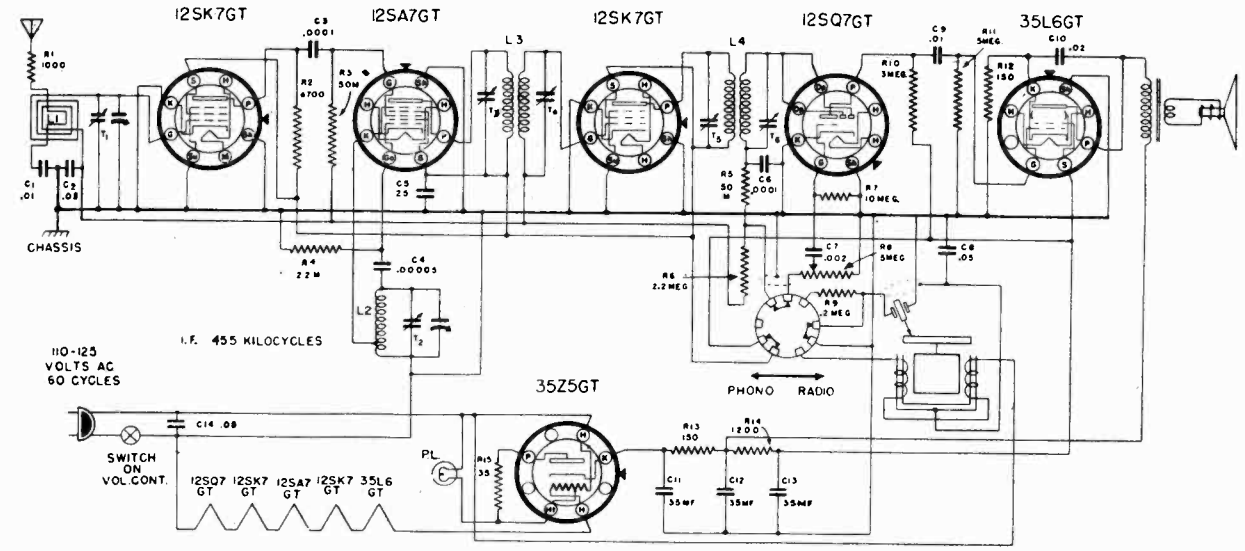
AIR KING PRODUCTS CO., INC.



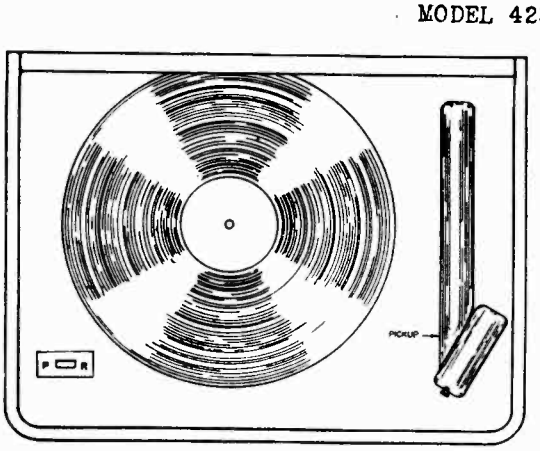
SCHEMATIC LOCATION	PART NUMBER	DESCRIPTION
	1104536	Cable—Dial and Spring
	1106331	Cartridge—Crystal
L1	1102812	Coil—Antenna Loop
L2	5	Coil—Loading
L3	4	Coil—Oscillator
C1	3	Condenser—.05, 400 volts
C2, C7		Condenser—.1, 400 volts
C3, C4		Condenser—.00005 mica
C5, C6		Condenser—.0005 mica
C8		Condenser—.001 mica
C9		Condenser—.002, 400 volts
C10		Condenser—.1, 400 volts
C11, C12		Condenser—.0025, 400 volts
C13		Condenser—.02, 400 volts
C14, C15, C16	1102063	Condenser—.005, 800 volts
		Condenser—20 mfd, 12 mfd, 350 volt, electrolytic
C17		Condenser—.03 moulded mica
C18		Condenser—.05 moulded mica
R15	1102515	Control—"Off-tone" .5 megohm with switch
R6	1102454	Control—Volume, .5 megohm (tap at 90,000)
R1		Resistor—1000 ohms, 1/4 watt
R2		Resistor—20,000 ohms, 1/4 watt
R3		Resistor—15,000 ohms, 1 watt
R4, R10		Resistor—10 megohms, 1/4 watt
R5		Resistor—2.2 megohms, 1/4 watt
R7, R12		Resistor—.3 megohms, 1/4 watt
R8		Resistor—50,000 ohms, 1/4 watt
R9		Resistor—.75 megohms, 1/4 watt
R11		Resistor—1.5 megohms, 1/4 watt
R13		Resistor—.5 megohms, 1/4 watt, wire-wound
R14		Resistor—400 ohms, 1/2 watt, wire-wound
R16		Resistor—1600 ohms, 2 watt, wire-wound
R17		Resistor—400 ohms, 1 watt, wire-wound

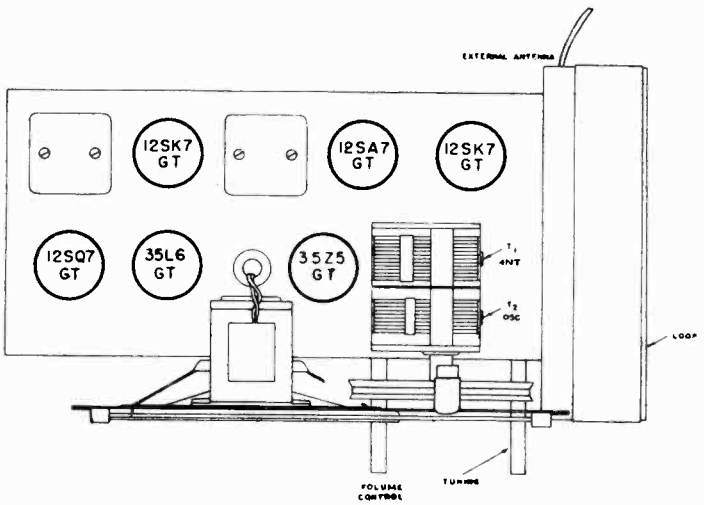
MODEL 4234
MODELS 4232, 4233
4246, 4248
4252, 4254

AIR KING PRODUCTS CO., INC.



MODEL 4234





ALIGNMENT FOR MODELS 4232, 4233, 4234, 4246, 4248, 4252, 4254

Alignment Frequencies:

I. F.	455 K.C.
R. F.	1500 K.C.

I. F. Alignment

Connect an output meter across the voice coil. Rotate the volume to maximum. Set test oscillator to 455 K.C. and apply signal to lug on stator of gang condenser to which loop is connected through a .05 Mfd. capacitor. Align the second I. F. transformer trimmers, next adjust the first I. F. transformer trimmers. Keep test oscillator output as low as a readable meter reading will permit.

R. F. Alignment

Set the dial pointer and generator at 1500 K.C. Run a wire from the output terminal of the generator, having it come near the receiver. However, no metallic connection is made between the signal generator and the receiver.

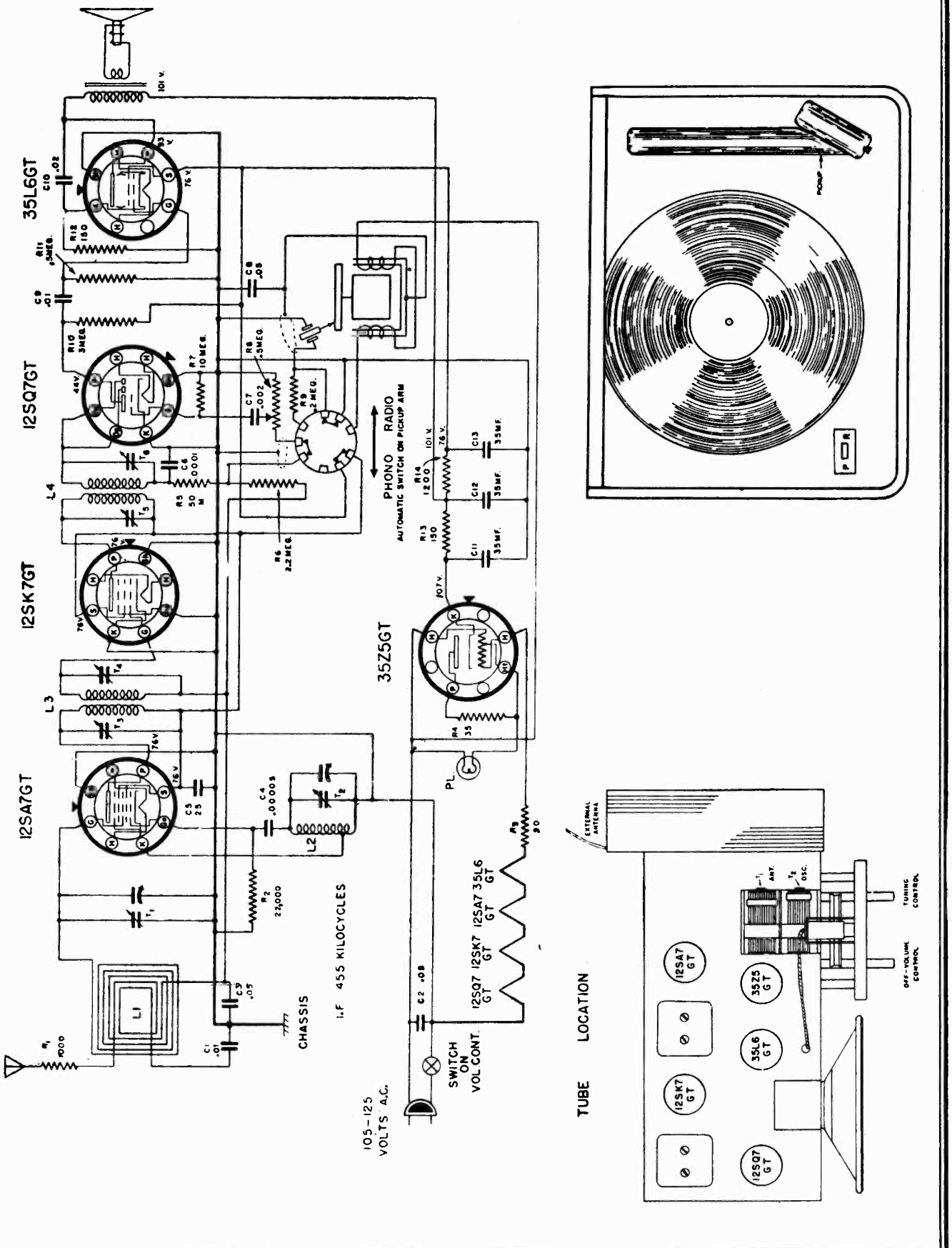
Peak the oscillator trimmer for maximum output and then the antenna trimmer.

If the variable condenser plates have become bent or damaged, it may be necessary to adjust them for tracking, at 600 K.C. The oscillator plates are adjusted first, then the antenna plates are adjusted for maximum output at 600 K.C.

This radio is a compact, table model phono-radio superheterodyne receiver using six tubes and operates from an A.C. source of power. This receiver tunes the broadcast band of frequencies, covering the range of 540-1720 kilocycles.

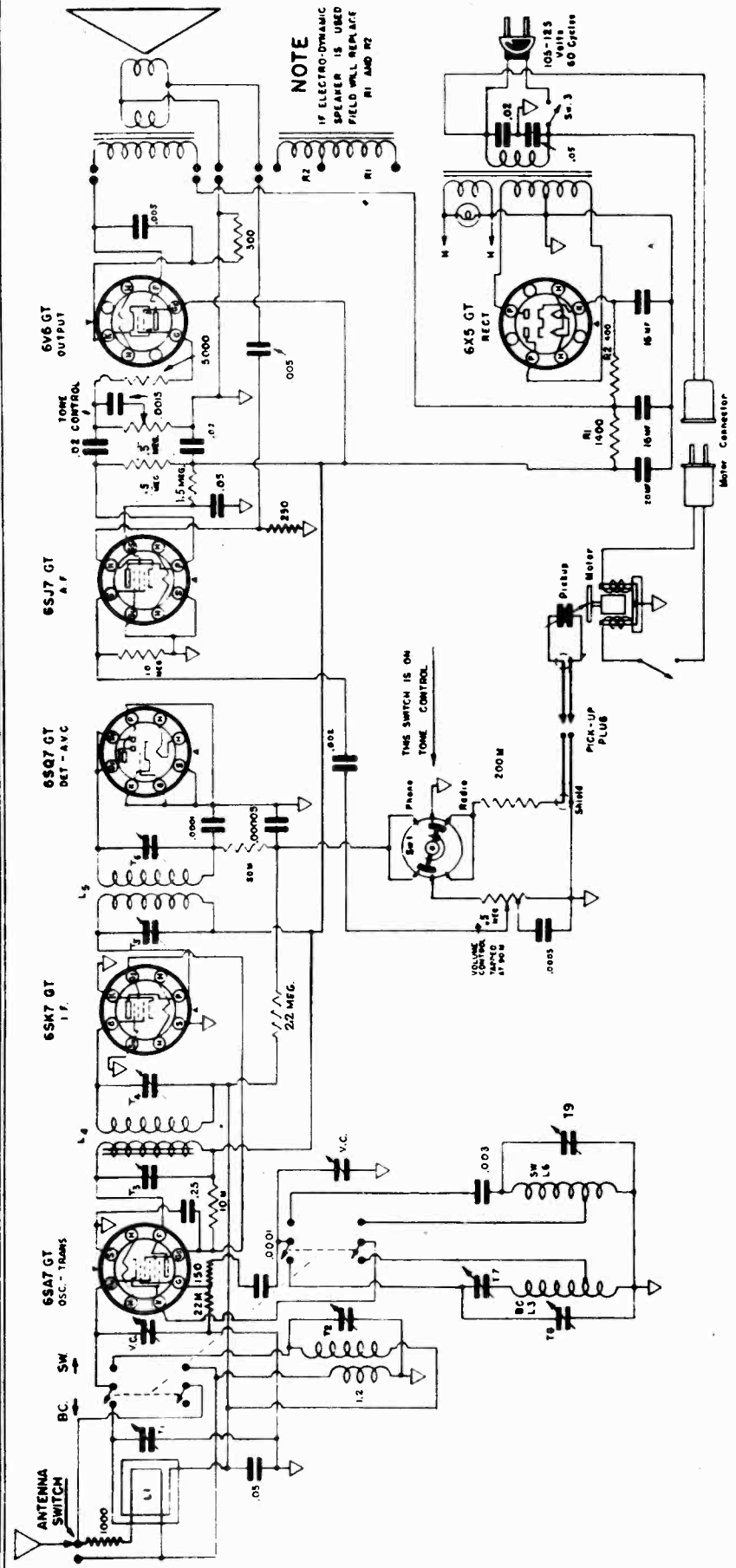
AIR KING PRODUCTS CO., INC.

MODELS 4232, 4233
4246, 4248
4252, 4254



MODELS 4245, 4247, 4265, 4267

AIR KING PRODUCTS CO., INC.



Alignment Frequencies:

I. F.	455 K.C.
B. C.	1500 K.C. and 600 K.C.
S. W.	16 M.C.

I. F. Alignment

Connect an output meter across the voice coil. Rotate the volume control to maximum and rotate the tone control to the "brilliant" position. Set test oscillator to 455 K. C. and apply signal to the control grid of the 6SA7GT converter tube (control grid pin No. 8) through a .05 MFD. capacitor. Align the second I. F. transformer trimmers, next adjust the first I. F. transformer trimmers. Keep test oscillator output as low as a readable meter reading will permit. Repeat this procedure for greater accuracy.

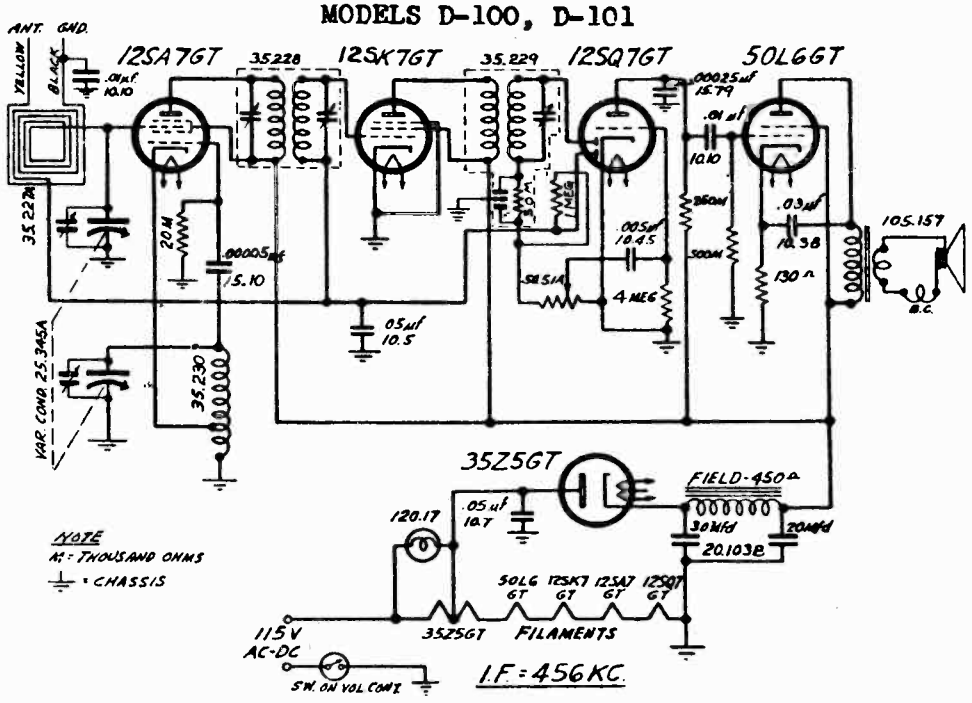
R. F. Alignment

Run a wire from the output terminal of the generator, having it come near the receiver. However, no metallic connection is made between the signal generator and the receiver. Set the dial pointer and generator at 1500 K. C. for high frequency alignment on the Broadcast Band. Peak oscillator trimmer T8 and then antenna trimmer T1 for maximum output meter reading. Set the dial pointer and generator at 600 K. C. and "rock in" oscillator padder T7. Next reset dial pointer and generator at 1500 K. C. and readjust T8. For short-wave alignment set dial pointer and generator at 16 megacycles and adjust oscillator trimmer T9 and then antenna trimmer T2 for maximum reading of output meter.

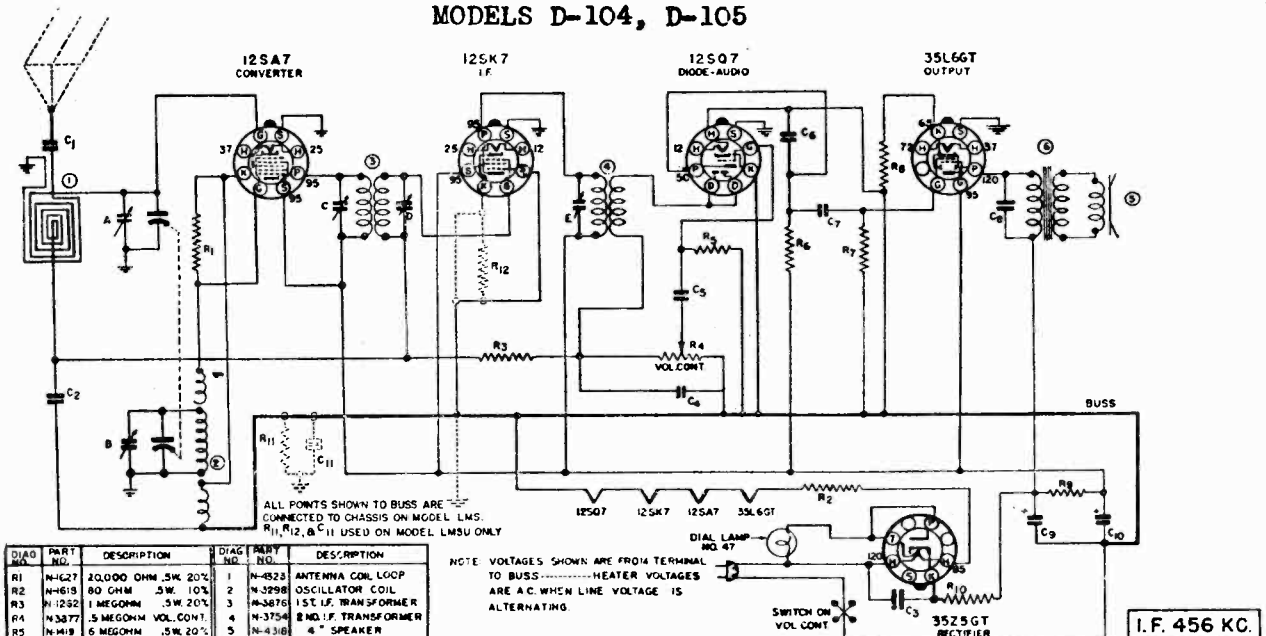
MODELS D-100, D-101
MODELS D-104, D-105

ALLIED RADIO CORP.

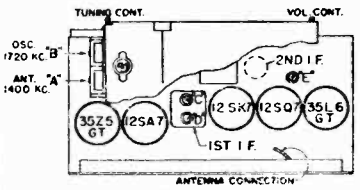
MODELS D-100, D-101



MODELS D-104, D-105



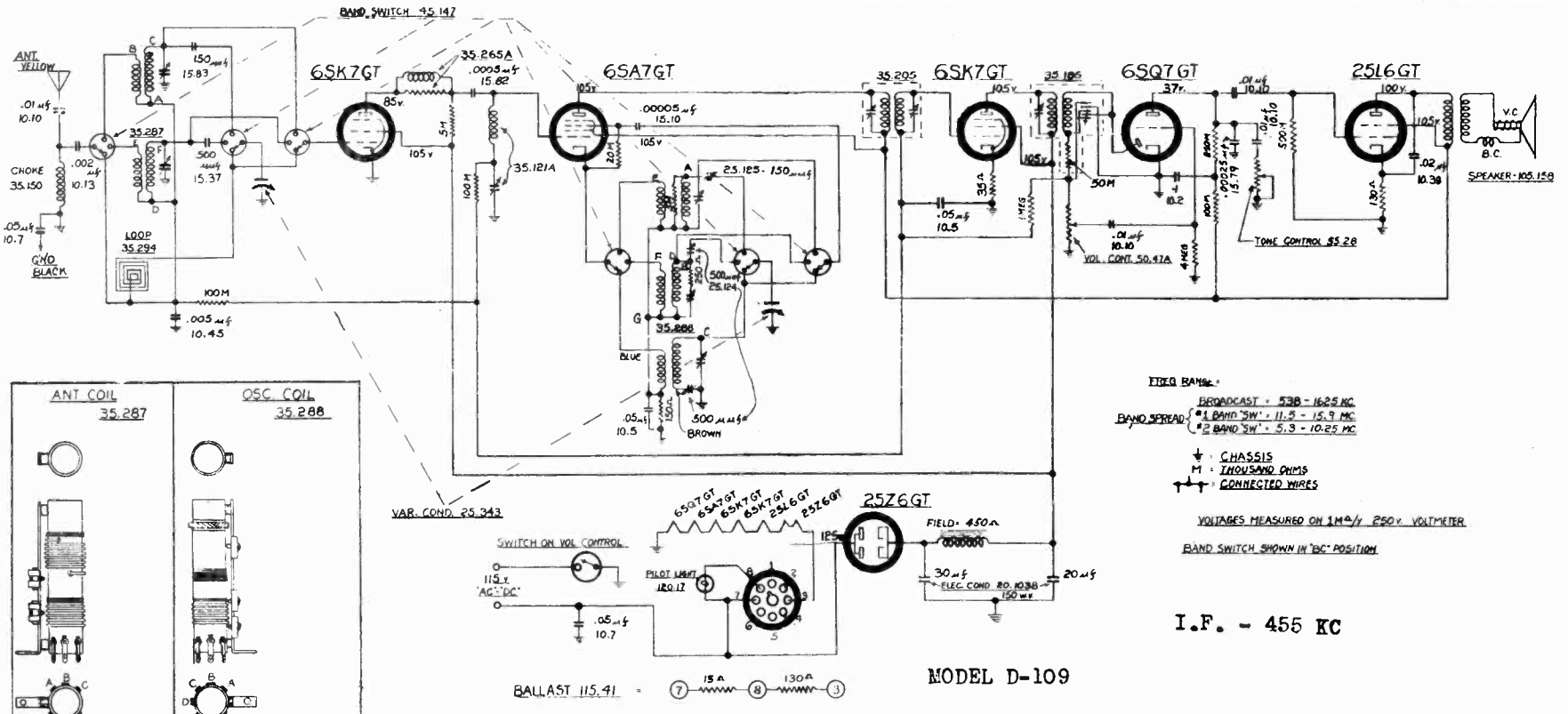
DIAG NO.	PART NO.	DESCRIPTION	DIAG NO.	PART NO.	DESCRIPTION
R1	N-1627	20,000 OHM .5W. 20%	1	N-4523	ANTENNA COIL LOOP
R2	N-1618	80 OHM .5W. 10%	2	N-3298	OSCILLATOR COIL
R3	N-1252	1 MEGOHM .5W. 20%	3	N-3876	1ST I.F. TRANSFORMER
R4	N-3877	.5 MEGOHM VOL. CONT.	4	N-3754	2ND I.F. TRANSFORMER
R5	N-1419	6 MEGOHM .5W. 20%	5	N-4316	4" SPEAKER
R6	N-1261	250,000 OHM .5W. 20%	6	N-3699	OUTPUT TRANSFORMER
R7	N-1264	500,000 OHM .5W. 20%			
R8	N-3756	200 OHM .5W. 10%			
R9	N-3344	1,000 OHM .5W. 20%			
R10	N-1742	25 OHM .5W. 20%			
R11	N-1779	150,000 OHM .5W. 20%		N-4310	2 GANG CONDENSER
R12	N-1482	250 OHM .5W. 20%			
C1	N-1344	.01 MFD. 400V.			
C2	N-1345	.05 MFD. 200V.			
C3	N-1346	.05 MFD. 400V.			
C4	N-1574	100 MMFD.			
C5	N-2712	.004 MFD. 400V.			
C6	N-1447	.0005 MFD. 400V.			
C7	N-1344	.01 MFD. 400V.			
C8	N-1576	.02 MFD. 400V.			
C9	N-3302	35 MFD. 150V. ELECT.			
C10		30 MFD. 150V.			
C11	N-3080	.22 MFD. 200V.			

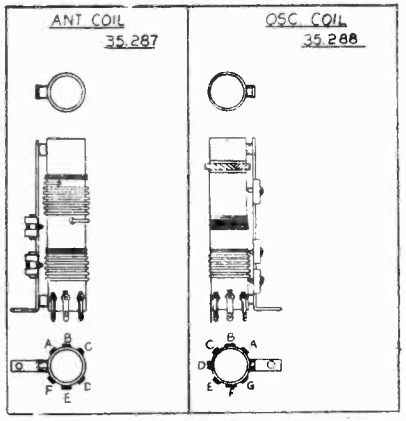


TUBE AND TRIMMER LOCATIONS

5 TUBE AC-DC

SUPERHETERODYNE SINGLE BAND





PUSH-BUTTON DATA MODEL D-110

Remove the call letters of your four selected stations from the list supplied with your receiver and slip them into the end of the push-buttons. Arrange the call letters in the buttons in any order you desire. The buttons are interchangeable and, therefore, may be used with any stations you choose to use.

Follow the procedure outlined below in order to adjust the push-buttons properly:

1. Remove all four push-buttons by pulling forward, and with a small screw-driver loosen set screw in the push-button stems, about two turns counter clockwise. Replace push-buttons to their original positions.

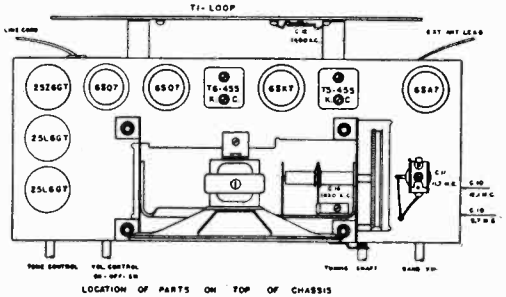
2. By means of the tuning knob, tune in as accurately as possible your first desired station.

3. Push the push-button for that station down as far as it can go, making sure that your desired station is still tuned in properly. It may be necessary to re-tune your station.

4. Release push-button and remove from stem. Tighten set screw firmly. Replace push-button.

Follow through with this same procedure in setting up the other three stations.

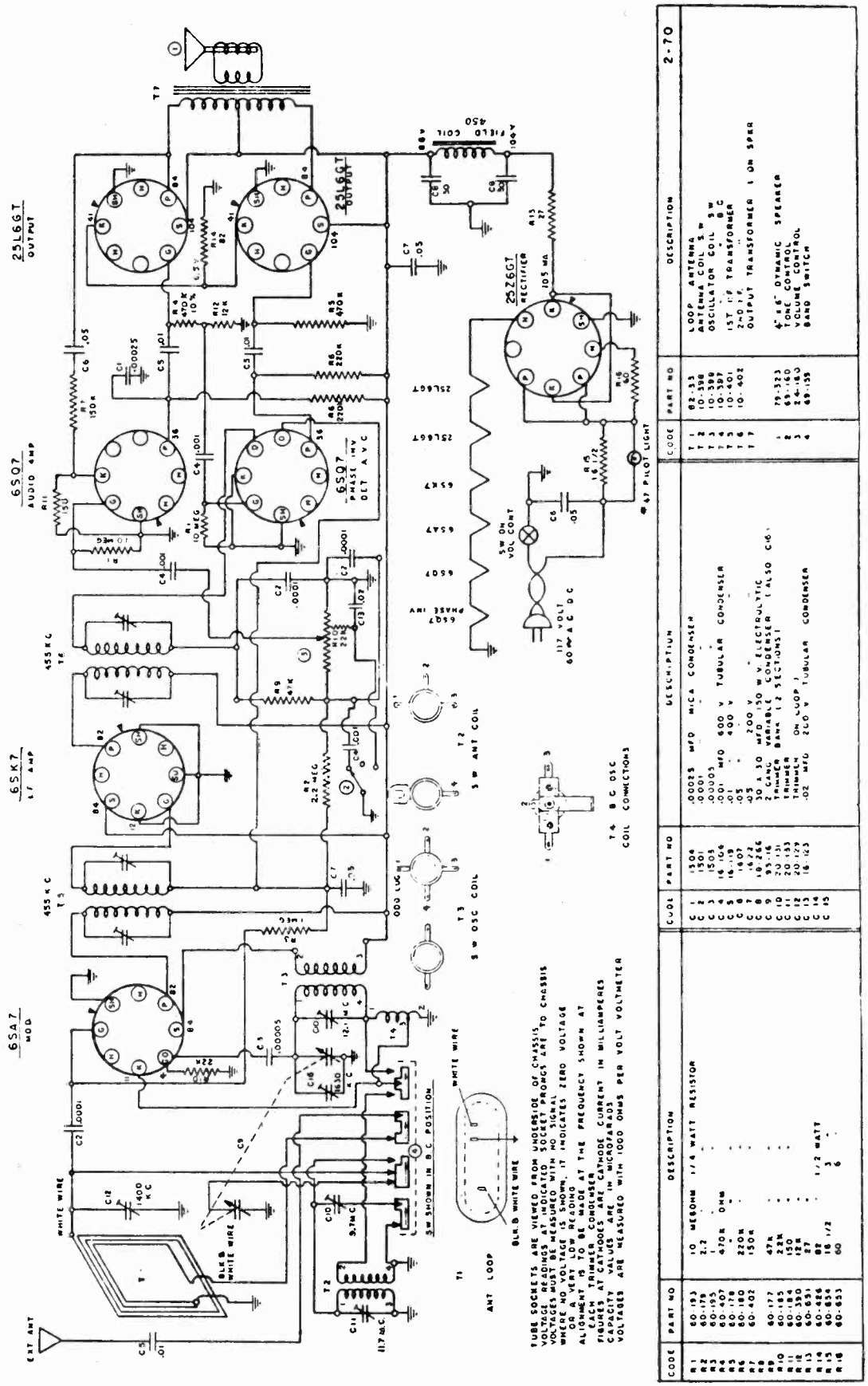
If a long, thin screw-driver is available, it will be possible to adjust the automatic push-button system without removing push-buttons, by simply inserting screw-driver through hole in push-button and following the above procedure.



LOCATION OF PARTS ON TOP OF CHASSIS

ALLIED RADIO CORP.

MODEL D-110



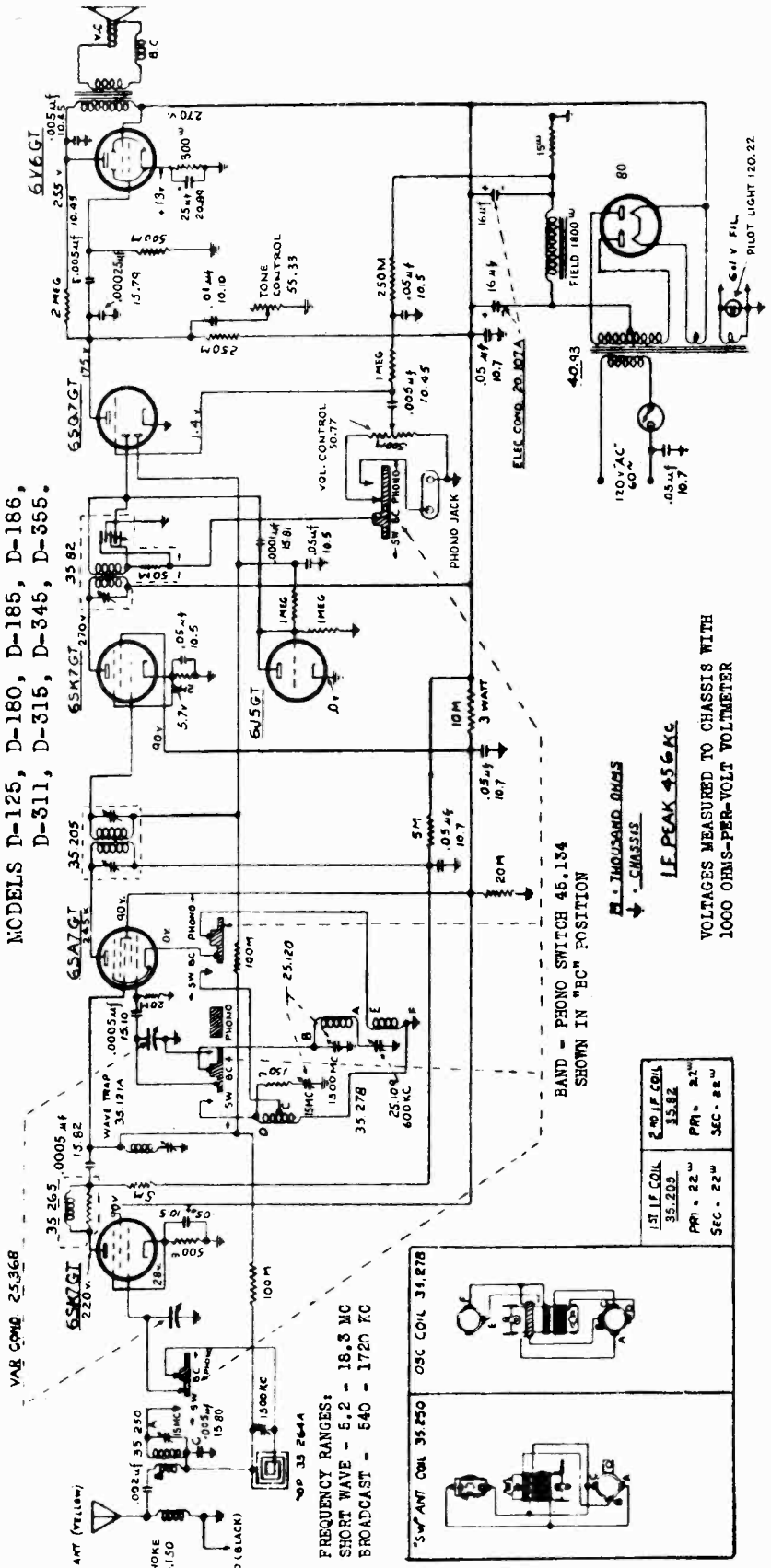
CODE	PART NO	DESCRIPTION
R1	60-193	10 MEGOHM 1/4 WATT RESISTOR
R2	60-155	2.2 " " "
R3	60-155	470K OHM " "
R4	60-407	" " "
R5	60-178	220K " "
R6	60-180	150K " "
R7	60-402	" " "
R8	60-177	47K " "
R9	60-155	2.2K " "
R10	60-184	150 " "
R11	60-390	12K " "
R12	60-651	27 " "
R13	60-426	82 " 1/2 WATT
R14	60-654	18 1/2 " 3 "
R15	60-653	60 " 6 "

CODE	PART NO	DESCRIPTION
C1	1504	.00025 MFD MICA CONDENSER
C2	1501	.0001 " "
C3	1503	.00005 " "
C4	16-106	.001 MFD 600 V TUBULAR CONDENSER
C5	16-119	.01 " 400 V " "
C6	1607	.05 " " " "
C7	16-72	.05 " 200 V " "
C8	16-146	30-14-50 MFD 150 V ELECTROLYTIC
C9	95-146	2 GANG VARIABLE CONDENSER (ALSO C10)
C10	20-131	TRIMMER BANK (2 SECTIONS)
C11	20-133	TRIMMER " "
C12	20-129	TRIMMER ON LOOP "
C13	16-123	.02 MFD 200 V TUBULAR CONDENSER
C14		
C15		

CODE	PART NO	DESCRIPTION 2-70
T1	83-33	LOOP ANTENNA
T2	10-398	ANTENNA COIL S-W
T3	10-398	OSCILLATOR COIL S-W
T4	10-397	" " B.C.
T5	10-401	1ST I.F. TRANSFORMER
T6	10-402	2ND I.F. "
T7		OUTPUT TRANSFORMER & ON SPKR
	79-323	4" x 6" DYNAMIC SPEAKER
	69-160	TONE CONTROL
	24-160	VOLUME CONTROL
	69-155	BAND SWITCH

MODELS D-125, D-180, D-185, D-186, D-311, D-315, D-345, D-355 ALLIED RADIO CORP.

MODELS D-127, D-149, D-189, D-190



MODELS D-127, D-149, D-189, D-190

INSTRUCTIONS FOR SETTING BUTTONS

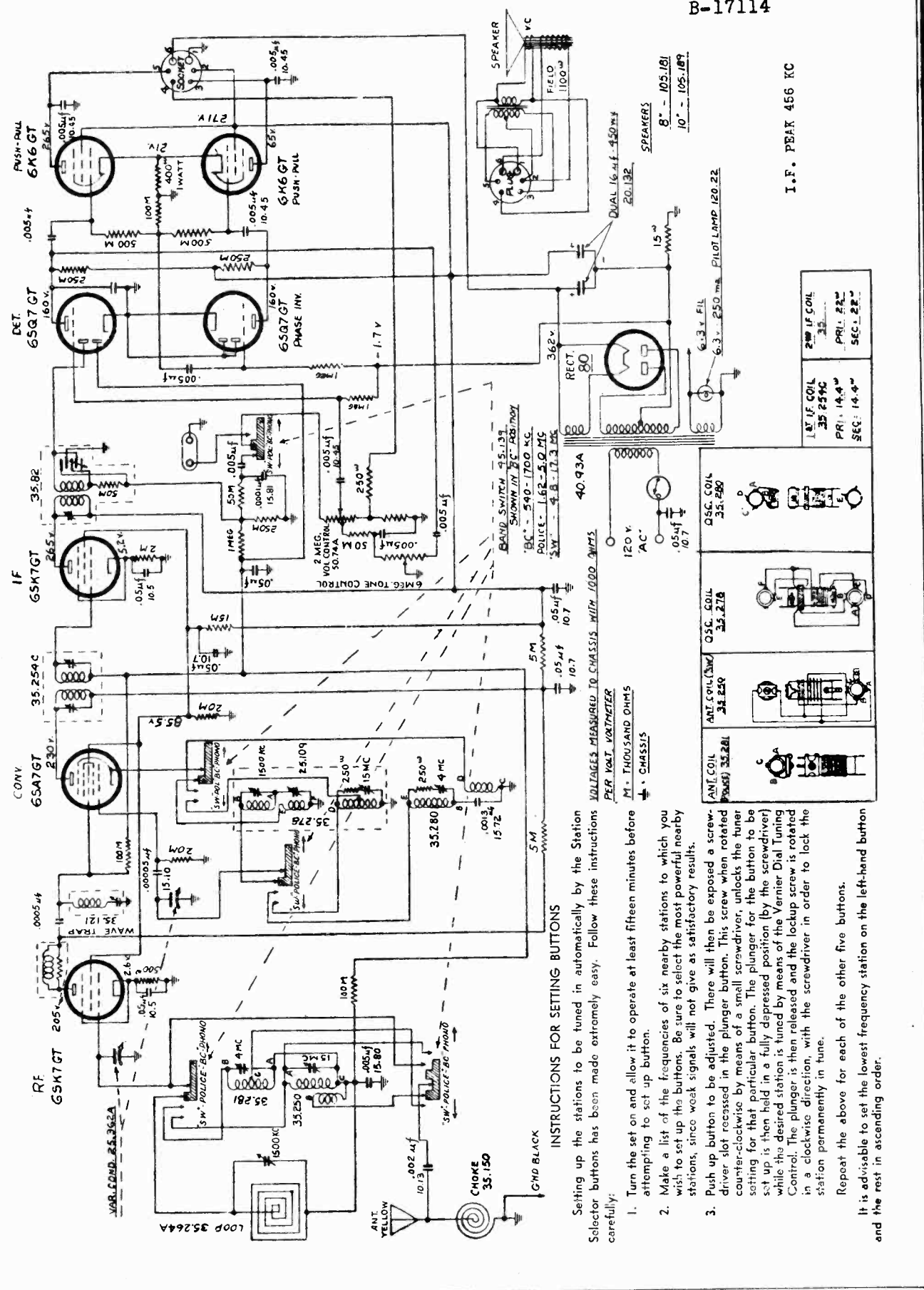
Setting up the stations to be tuned in automatically by the Station Selector buttons has been made extremely easy. Follow these instructions carefully:

1. Turn the set on and allow it to operate at least fifteen minutes before attempting to set up button.
2. Make a list of the frequencies of six nearby stations to which you wish to set up the buttons. Be sure to select the most powerful nearby stations, since weak signals will not give as satisfactory results.
3. Push up button to be adjusted. There will then be exposed a screwdriver slot recessed in the plunger button. This screw when rotated counter-clockwise by means of a small screwdriver, unlocks the tuner setting for that particular button. The plunger for the button to be set up is then held in a fully depressed position (by the screwdriver) while the desired station is tuned by means of the Vernier Dial Tuning Control. The plunger is then released and the lockup screw is rotated in a clockwise direction, with the screwdriver in order to lock the station permanently in tune.

Repeat the above for each of the other five buttons.

It is advisable to set the lowest frequency station on the left-hand button and the rest in ascending order.

ALLIED RADIO CORP. MODELS D-127, D-149, D-189 D-190, B-17113, B-17114



INSTRUCTIONS FOR SETTING BUTTONS

Setting up the stations to be tuned in automatically by the Station Selector buttons has been made extremely easy. Follow these instructions carefully:

1. Turn the set on and allow it to operate at least fifteen minutes before attempting to set up button.
2. Make a list of the frequencies of six nearby stations to which you wish to set up the buttons. Be sure to select the most powerful nearby stations, since weak signals will not give as satisfactory results.
3. Push up button to be adjusted. There will then be exposed a screwdriver slot recessed in the plunger button. This screw when rotated counter-clockwise by means of a small screwdriver, unlocks the tuner setting for that particular button. The plunger for the button to be set up is then held in a fully depressed position (by the screwdriver) while the desired station is tuned by means of the Vernier Dial Tuning Control. The plunger is then released and the lockup screw is rotated in a clockwise direction, with the screwdriver in order to lock the station permanently in tune.

Repeat the above for each of the other five buttons.

It is advisable to set the lowest frequency station on the left-hand button and the rest in ascending order.

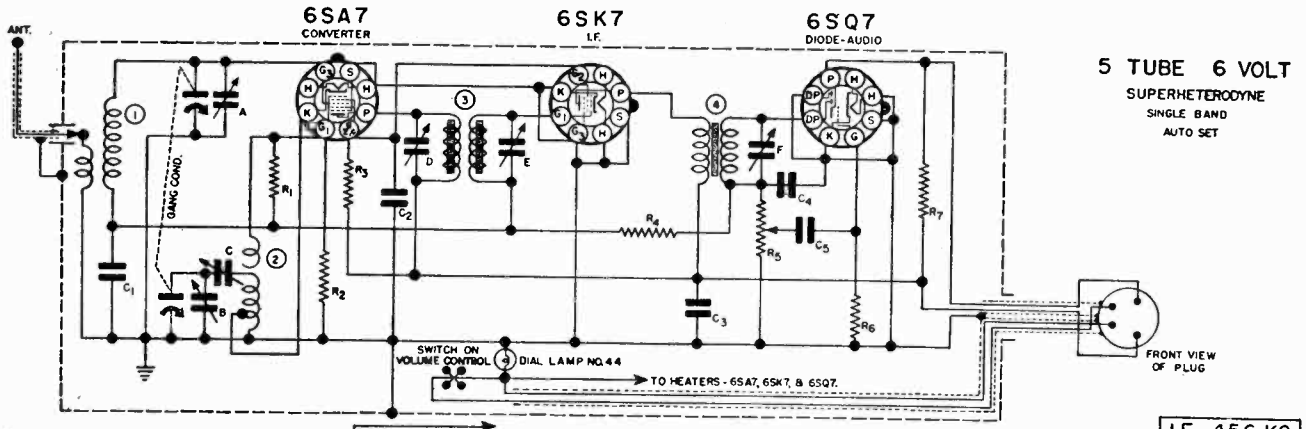
VOLTAGES MEASURED TO CHASSIS WITH 1000 OHMS PER VOLT VOLTMETER

M - THOUSAND OHMS

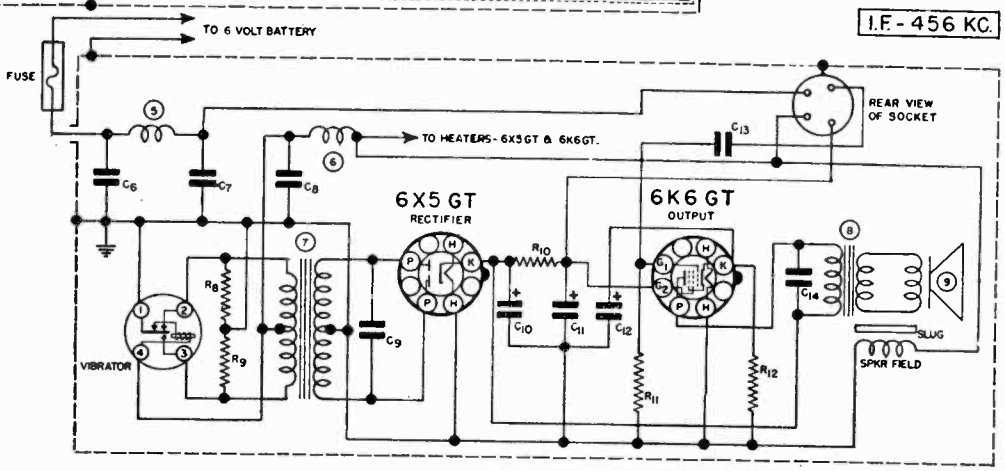
⏚ - CHASSIS

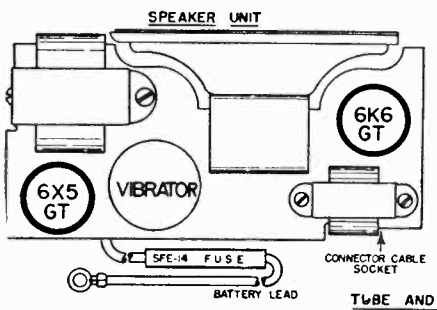
MODELS D-130, B-17140

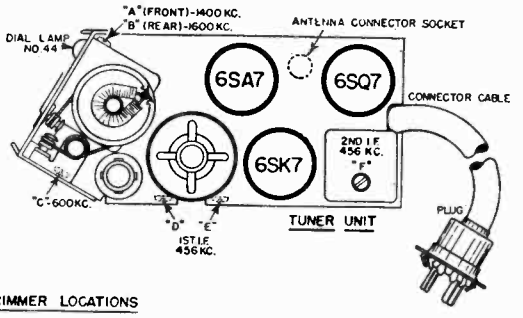
ALLIED RADIO CORP.



DIAG NO.	PART NO.	DESCRIPTION
R1	N-4231	10 MEGOHM .5WATT 20%
R2	N-4025	22,000 OHM .5WATT 20%
R3	N-4229	10,000 OHM 1 WATT 10%
R4	N-1262	1 MEGOHM .5WATT 20%
R5	N-4125	0.5 MEGOHM VOLUME CONTROL
R6	N-4061	4.7 MEGOHM .5WATT 20%
R7	N-4230	330,000 OHM .5WATT 20%
R8	N-1481	75 OHM .5WATT 20%
R9	N-1481	75 OHM .5WATT 20%
R10	N-4227	820 OHM 1 WATT 10%
R11	N-4027	470,000 OHM .5WATT 20%
R12	N-4228	680 OHM .5WATT 10%
C1	N-2594	.05 MFD. 200 VOLT
C2	N-1351	.1 MFD. 200 VOLT
C3	N-1623	.1 MFD. 400 VOLT
C4		100 MMFD. (IN 2ND I.F. CAN)
C5	N-1347	.006 MFD. 600 VOLT
C6	N-2807	.0002 MFD. SPARK PLATE
C7	N-2814	.5 MFD. 100 VOLT
C8	N-2814	.5 MFD. 100 VOLT
C9	N-4276	.006 MFD. 1200 VOLT
C10	N-4178	16 MFD 350 W.V. ELECTROLYTIC
C11		14 MFD 350 W.V.
C12		20MFD 25 W.V.
C13	N-3094	.01 MFD. 400 VOLT
C14	N-2817	.015 MFD. 600 VOLT
1	N-4181	ANTENNA COIL
2	N-4172	OSCILLATOR COIL
3	N-4170	1ST. I.F. TRANSFORMER
4	N-4171	2ND I.F. TRANSFORMER
5	N-4183	MOTOR NOISE CHOKE
6	N-4184	HASH CHOKE
7	N-4161	VIBRATOR TRANSFORMER
8	N-4176	OUTPUT TRANSFORMER
9	N-4175	5" DYNAMIC SPEAKER
	N-4160	VIBRATOR
	N-4163	GANG CONDENSER
	N-2798	BATTERY LEAD
	N-4358	BATTERY LEAD EXTENSION







TUBE AND TRIMMER LOCATIONS

INSTALLATION

GRILLE MOUNTING

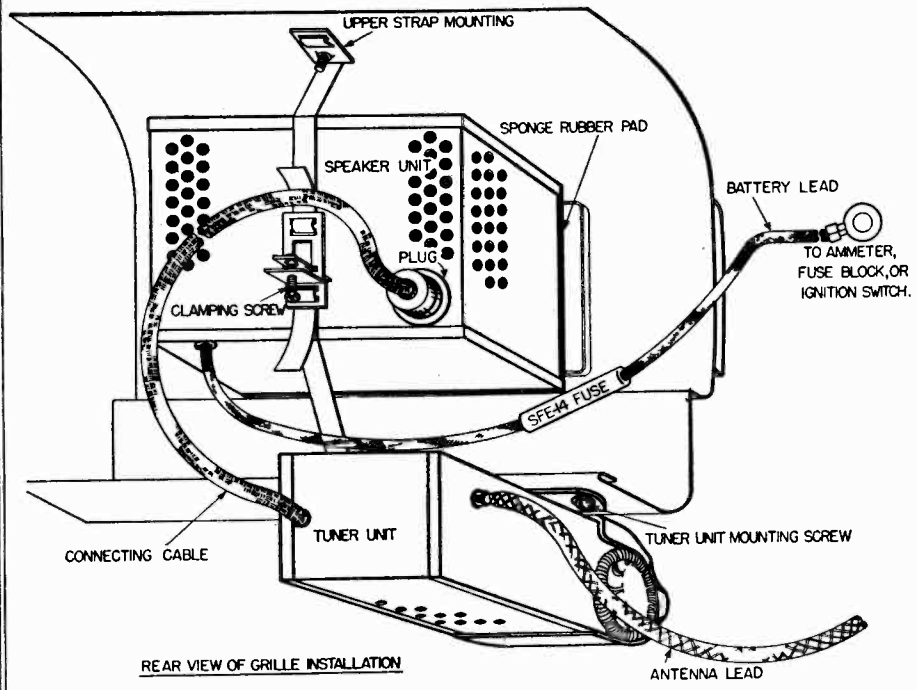
Remove the cloth on the sponge rubber pad and press the pad on the front of the speaker case. Figure 1 shows a rear view of a typical grille installation and Figure 2 shows a side view along with arrangements of the clamps and strap lugs. Hold the speaker unit in place behind the grille of the car and determine the hole positions for the strap lugs. These positions will vary with different cars. In cars having no ash tray or other ornamentation above the center of the grille, one strap will be sufficient. In other cars it is necessary to use two straps in order to make the screw heads symmetrical about the ash tray or decoration. Be careful that the straps will not cover the plug from the tuner unit. Also, before drilling the holes for mounting the speaker unit, hold the tuner unit in place to determine if any of the bolts holding the speaker unit in place will interfere with the mounting of the tuner unit. Attach the strap lugs to the straps (Fig. 2B and 2C) and fasten the straps to top and bottom of grille as shown in Figure 2A.

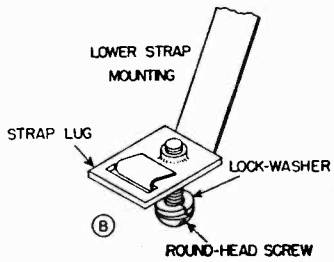
Hold the speaker unit in place and make a slight bend in the upper straps and the lower straps so there is about 1" clearance between the lower and upper straps. Use these bends to locate the clamps in the proper positions. Fasten the clamps to the upper and lower straps as shown in Figure 2D. Slip the two portions of the clamps together and turn the screw to take all the slack out of the straps.

Next, drill the two holes in the lower flange of the dash for the tuner mounting, mount the tuner unit and securely bolt into place.

Plug the cable from the tuner unit into the speaker unit, taking care that the plug is all the way in so the flange on the plug is resting on the case. After the antenna has been installed according to directions furnished with it, plug into the socket in the tuner unit. (see section on antenna). Connect the battery cable as described in the section on battery connections.

ALLIED RADIO CORP.





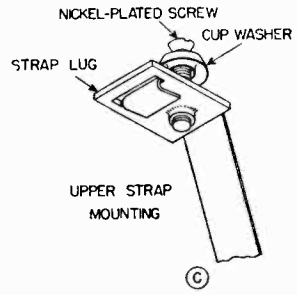
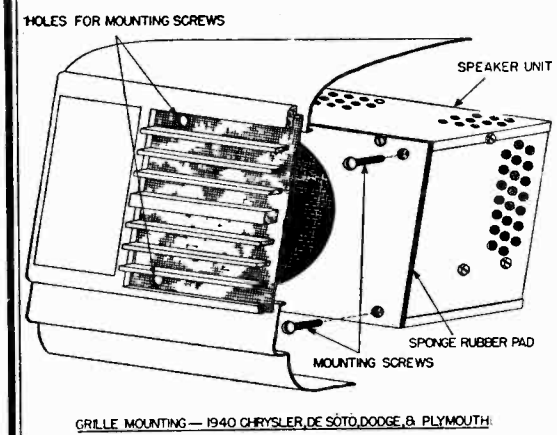


Figure 1



GRILLE MOUNTING — 1940 CHRYSLER, DE SOTO, DODGE, & PLYMOUTH

FIGURE 3.

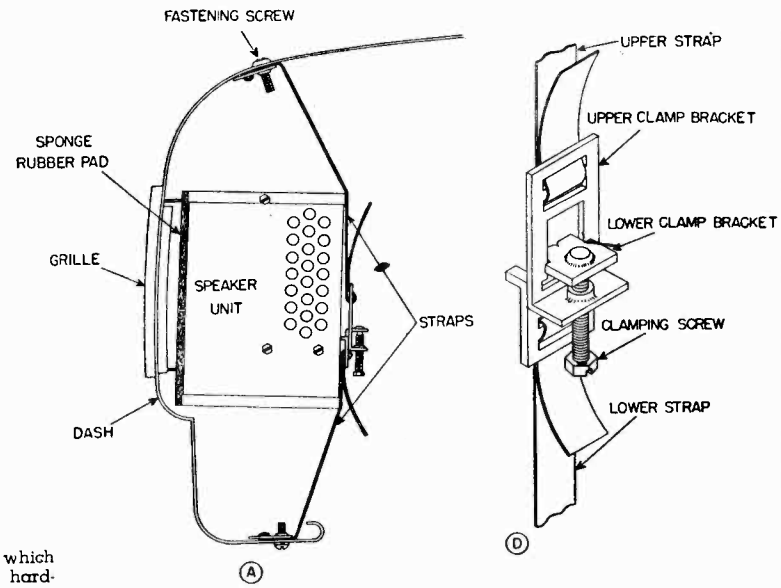


Figure 2

FIRE WALL MOUNTING

For cars not having a grille, special accessories which include a baffle housing, the necessary mounting hardware, and an extended battery lead can be obtained from your dealer.

ANTENNA

This receiver is designed for use with whip type antennas of the cowl or hinge mounting types. Either is suitable and both will work equally well. The cowl type is recommended for permanent installations and requires a minimum of attention once installed.

Mechanical details of installation will depend on the individual peculiarities of the antenna as manufactured, but in general, the lead-in should be shielded at all points between the antenna where it enters the car and the receiver case itself.

At the antenna end of the lead-in the shielding should be well grounded to the body of the car and no unshielded part of the antenna wire is permitted inside the car.

Most of the whip type aerials are adjustable in length, in general, the signal pick-up being greater as the length is increased.

SPECIAL GRILLE MOUNTINGS

On 1940 Chrysler, Dodge, DeSoto and Plymouth, it is not necessary to mount the speaker unit with straps as special provision has been made to take care of these cars. (see Figure 3). Take a sharp pointed tool and from the rear of the grille, pierce the grille at the four small holes arranged around the speaker opening. Hold the speaker unit in place and with the four small screws furnished, fasten the unit in place from the front of the grille. Use the rubber pad on the front of the speaker unit. On some cars with ash trays or other devices on the lower ledge of the dash panel near the center of the grille, it is possible to move them to one side or the other to place the tuner unit in a more convenient position. It is advisable to have the tuner unit within easy reach of the driver.

MODELS D-130, B-17140

ALLIED RADIO CORP.

BATTERY CONNECTION

The battery lead extending from the rear of the speaker case should be connected to one of the two terminal posts of the ammeter, the fuse block, or to the ignition switch depending upon the make of car. The most accessible point for connection can readily be determined by inspection. This receiver will operate on any polarity of the battery without any adjustment of the receiver.

GROUND

This connection is automatically made when the receiver units are fastened in position. Rotate the left hand knob toward you and the dial will become illuminated. This knob is the combined volume control and "ON-OFF" switch. If dial fails to light check the battery connection, look for a burned-out fuse, and make certain the cable from the tuner unit is plugged into the speaker unit.

TUNING PROCEDURE

A range of 535 to 1600 kilocycles is covered by turning the right hand knob or tuning control. The knob on the left hand side of the case is the combined volume control and "on-off" switch. To tune in a station, turn this knob towards you and the dial will become illuminated. Allow the set to warm up for about a minute, turn the right hand knob until the station you desire is heard with maximum volume and clarity, then adjust to the required volume with the volume control. Never adjust the volume by detuning.

ALIGNMENT DATA AND SERVICING

NOTE: Lack of sensitivity and poor quality may be due to any one or a combination of causes such as weak or defective tubes or speaker, open or grounded bias resistor, defective by-pass condenser, or defective antenna or ground. Never attempt to realign set until all other possible sources of trouble have been first thoroughly investigated and definitely proven not to be the cause.

GENERAL DATA. The alignment of this receiver requires the use of a test oscillator that will cover the frequencies of 456, 600, 1400 and 1600 KC. and an output meter to be connected across the primary or secondary of the output transformer. If possible, all alignments should be made with the volume control on maximum and the test oscillator output as low as possible, to prevent the AVC from operating and giving false readings.

CORRECT ALIGNMENT PROCEDURE. The intermediate frequency (I.F.) stages should be aligned properly as the first step. After the I.F. transformers have been properly adjusted and peaked, the antenna and oscillator should be aligned.

I. F. ALIGNMENT. With the gang condenser set at minimum, adjust the test oscillator to 456 KC and connect the output to the grid of the first detector tube (6SA7) through a .05 or .1 mfd. condenser. The ground on the test oscillator should be connected to the chassis ground. Align all three trimmers to peak or maximum reading on the output meter.

ANT. AND OSC. ALIGNMENT. Connect the antenna to the generator through a 65 MMF dummy* and set the dial and generator at 1600 KC (gang at minimum capacity). Align the BC oscillator trimmer for maximum output. Set the test oscillator at 1400 KC and tune in the signal with the dial and adjust the antenna trimmer for maximum output.
Next set the test oscillator at 600 KC and tune in the signal with the dial. Adjust the 600 KC padder for maximum output while slowly rocking the gang condenser at the 600 KC position on the dial. If this padder is badly out of adjustment it is necessary to repeat the 1600 and 1400 KC adjustments.
*If the antenna is aligned using a whip antenna shielded lead use a 30 MMF dummy antenna.

INSTALLATION AND SERVICE HINTS

MOTOR NOISE ELIMINATION

Interference from motor noise may be encountered due to the peculiarities of certain automobiles. This type of interference can be recognized by the presence of a regular popping sound when the motor is running, especially on the weaker stations.

The following list of suggestions will be helpful in eliminating or reducing motor noise interference. It may not be necessary to follow any of these suggestions. They are to be followed only if motor noise is present after complete installation. The suggestions are listed in the correct sequence and only in rare instances will it be necessary to do all of the things listed. (See Fig. 4).

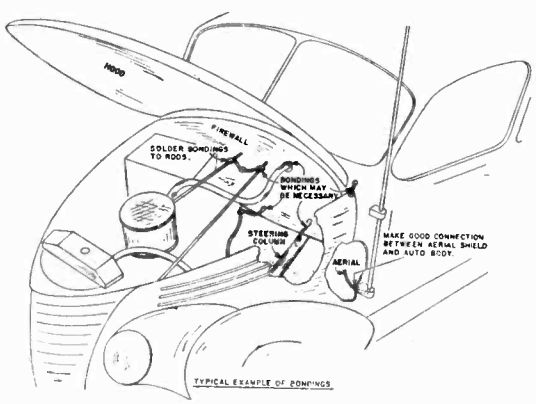


Figure 4

1. Ground the antenna lead-in shield at one or more points to the cowl or any other metal surface in contact with the lead-in.

2. Move the battery lead around to a point of least noise pick-up and fasten in place with tying cord or tape. Keep this lead as far away from the tuner unit as possible.

3. Bond together the throttle rod, choke rod and any metal tubing with a piece of copper braid and ground to the fire wall. This should be done on the engine side.

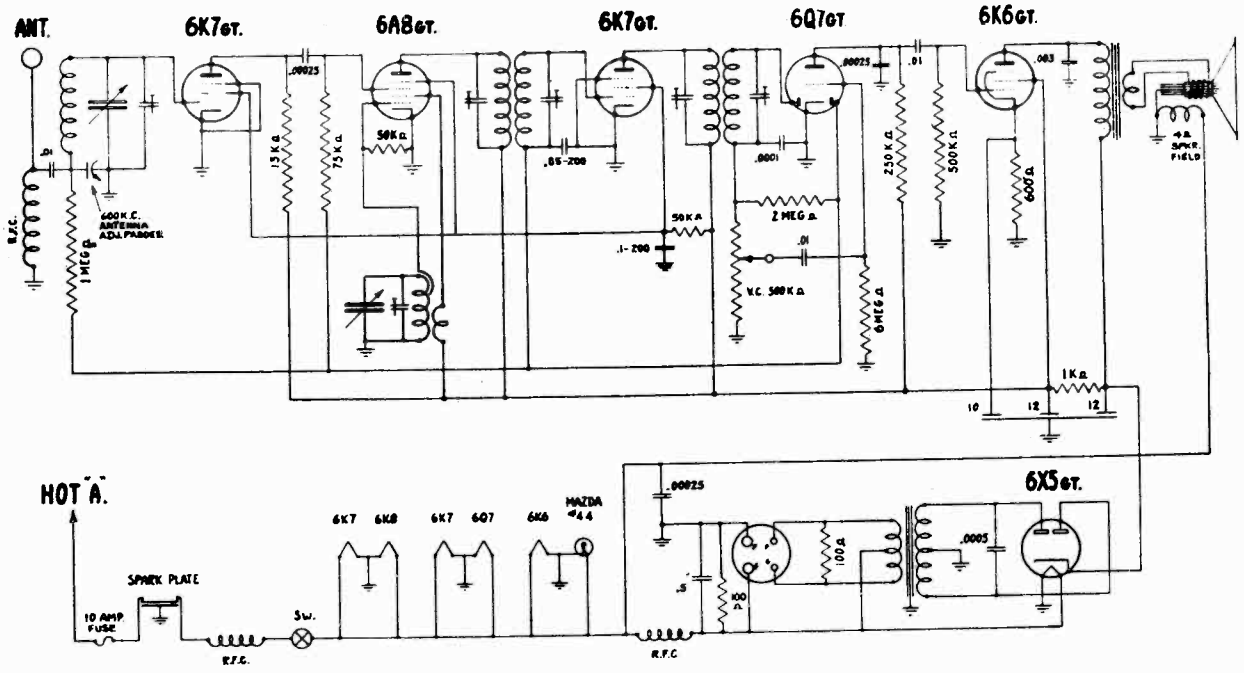
4. Bond steering post to firewall.

5. Bond hood, side panel and other protective covering for engine if it is not making a positive contact to the body.

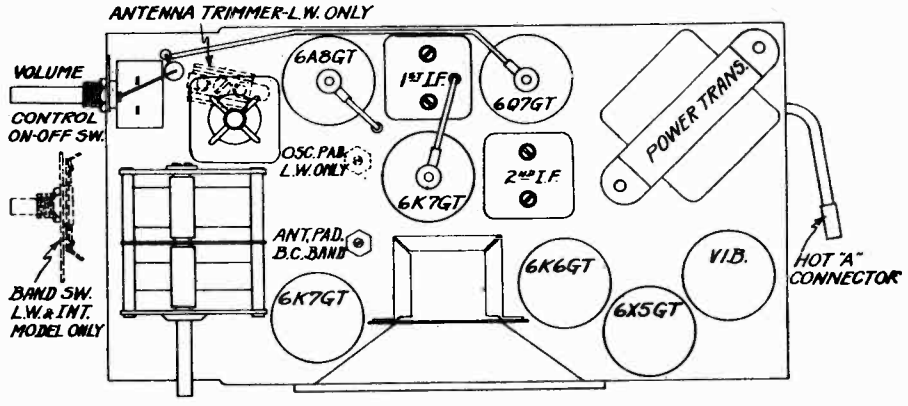
In extreme cases, a distributor resistor and generator condenser will reduce noise interference to a minimum. These parts are available at your dealer.

From the standpoint of motor noise, the whip type antenna recommended has been found to be the most satisfactory. It is advisable to use this type antenna even if the car is equipped with a built-in antenna.

ALLIED RADIO CORP.



I.F. PEAK 456 KC



This radio is designed to operate on 6 volts D.C. **only.** A special model is built to operate on 12 volts D.C and it will carry a tag plainly marked so. The tuning range covers the Standard Broadcast Band from 538 to 1550 kilocycles

BATTERY CONNECTION

A single, heavy insulated wire lead extends from a hole in the rear of the set. This lead has a fuse receptacle containing a 10 ampere fuse, in the center of its length, and a connecting lug on the end. The lug is connected to the terminal post on the car's ammeter so that a discharge is shown on the meter when the radio is in operation.

The fuse receptacle may be disconnected at any time to change the fuse, or to remove the radio. On the 12 volt model the fuse should be of a 5 ampere rating instead of 10.

ANTENNA CONNECTION

The shielded antenna lead supplied with the radio is plugged into the receptacle provided in the underside of the radio. The other end is connected to the lead from the antenna and taped so the connection cannot touch the cable shield or any metal part of the car. If the automobile has a built-in antenna, the lead should be found behind the dash, extending from the right or left-hand corner post. It is important that this lead be cut and connected to the shielded set lead as close to the corner post as possible, to eliminate antenna pickup of motor noise.

On cars where it is necessary to install an antenna, a "fish-pole" type, an "over-the-roof" type, or a "under-the-running board" type, may be used. Two antennas, one mounted under each running board, are recommended for the best reception, as the noise on the radio will increase as the size of the antenna decreases.

The lead from the antenna should be shielded, direct, and as short as is practical. It should not be twisted around any part of the car, and should not lead thru the motor compartment. All connections should be clean, tight, **soldered,** and insulated with tape. The antenna must **never** touch any part of the car.

Instructions for mounting any particular type of antenna are packed with the antenna

ANTENNA MATCHING ADJUSTMENT

As the sizes and types of antennas vary considerably, it is necessary to adjust the radio to "match" the antenna used. To do this, tune in a station, accurately, at roughly 600 kilocycles, reduce the volume of the set, pry out the plug on the underside of the set, insert a screw driver, and turn for maximum output. Replace the plug when this has been accomplished, and the radio is ready to operate efficiently on any station.

MOTOR NOISE ELIMINATION

To eliminate motor noise, a condenser and a suppressor are supplied with the radio. The condenser is mounted on the generator with its lead connected to the terminal of the generator output on the generator side rather than on the battery side. The heavy insulated lead in the center of the distributor cap is pulled out, the suppressor inserted in its place, and the heavy lead inserted in the end of the suppressor.

This, with the antenna installed properly will eliminate motor noise in most cars. In some of the older cars it may be necessary to install a condenser similar to the generator condenser, bolted to the dash or a good ground, with the lead connected to the ammeter with the set battery lead. When a built-in roof antenna is used, a condenser should be connected to the dome light lead where it passes through the right or left hand post to the roof. The condenser should be bolted to grounded metal.

PUSH BUTTON ADJUSTMENT

Six push button station selectors are incorporated in this receiver, and each may be set to select any frequency or station within the range of the set.

To adjust each button, follow these instructions.

1. With the set in operation, tune in any station the push button is to be set for, with the right hand tuning knob.

2. Keep a firm grip on the tuning knob so the station will not be detuned, and turn the push button about one turn to the left to loosen the mechanism. Press the button all the way in and turn it to the right until it is tight.

Repeat these operations with the other five buttons, setting each for a different station. Insert the correct call letter tab into the space provided in the panel just above the push buttons.

TECHNICAL INSTRUCTIONS

A good output meter should be used in all alignment adjustments. This meter should be of the high resistance A.C. type, with a low range scale of 2.5 or 3 volts. The leads are connected across the voice coil terminals of the speaker.

I. F. ALIGNMENT

Set the variable condenser at minimum capacity, (dial pointer at 1550 K.C.). Connect the two leads from a good, modulated signal generator, the ground lead to the radio chassis and the other lead through a .1 mfd. condenser, to the grid cap of the 6A8GT with the tube's grid lead still in place.

Connect the leads from a fully charged 6 volt storage battery to the receiver chassis and battery lead, the polarity being reversible.

With the set in operation and the volume control full on, set the signal generator to 456 K.C. and increase its output until the signal is heard in the set's speaker. Starting with the second I. F., adjust the I. F. trimmers for maximum output, decreasing the signal generator output as the receiver output increases.

The generator output in all the alignment adjustments should be adjusted so the meter will read approximately .4 volts continually.

R. F. ALIGNMENT

With the variable condenser still full open, set the generator to 1550 K.C. Connect the generator lead to the antenna lead through a .0001 mfd. condenser as dummy antenna. Adjust the oscillator trimmer for maximum output. Set the receiver dial and the generator to 1400 K.C. so the signal comes through, and adjust the antenna trimmer for maximum output.

Set the receiver dial and generator to 600 K.C. and adjust the oscillator padder for maximum output by rocking the variable condenser (with the tuning knob) as the padder is adjusted.

Return the dial and generator setting to 1400 K.C. and check for alignment.

MODEL D-132

ALLIED RADIO CORP.

Power Consumption	8.1 Amperes at 6.3 Volts
Power Output	6 Watts Undistorted
	8 Watts Maximum
Sensitivity	1 Microvolt at .5 Watt Output (L-D Switch in Distance Position)
Selectivity	38 KC Broad at 1000 Times Signal
Tuning Frequency Range	540 to 1580 KC
Intermediate Frequency	456 KC
Speaker	6" Electro-Dynamic

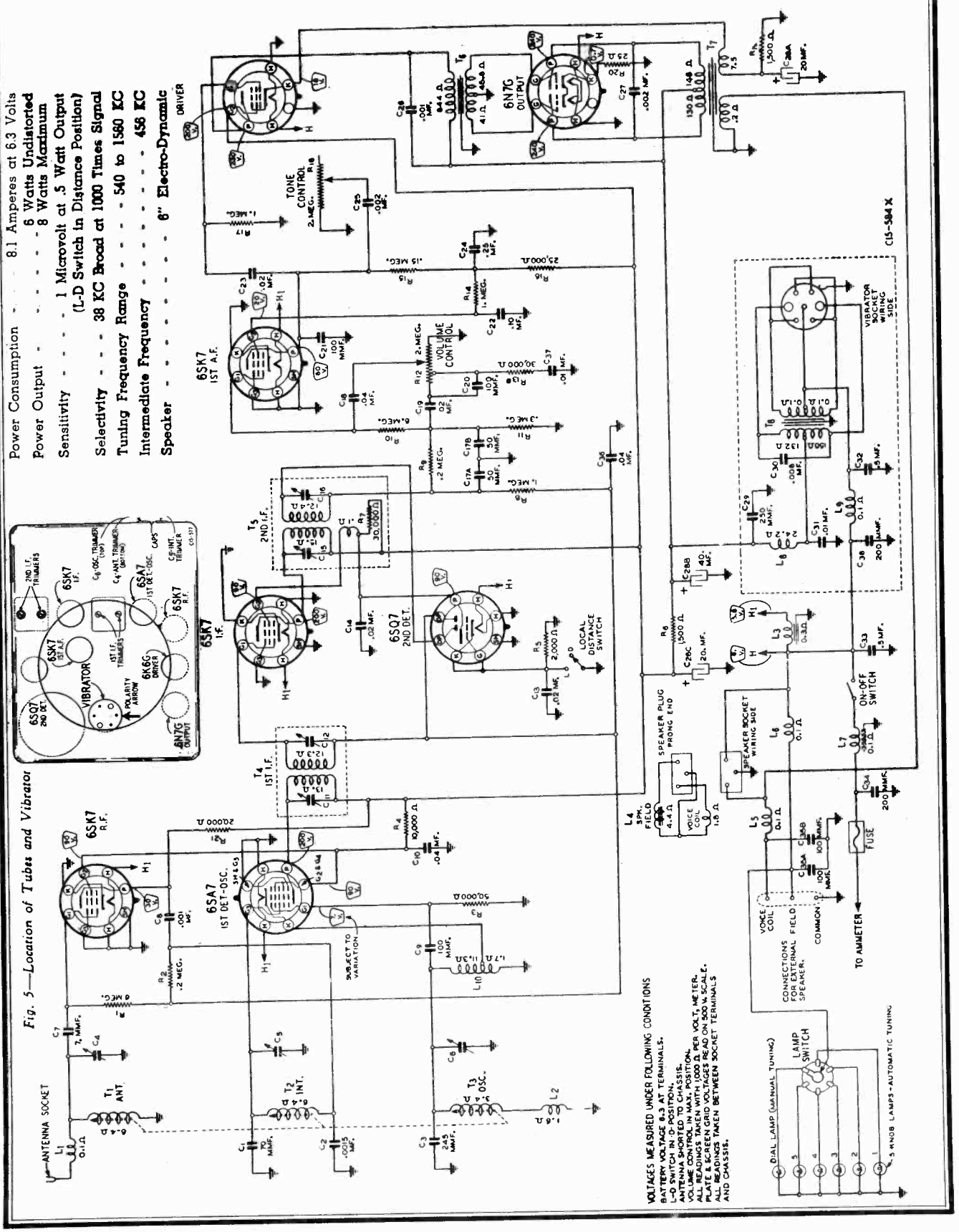


Fig. 5—Location of Tubes and Vibrator

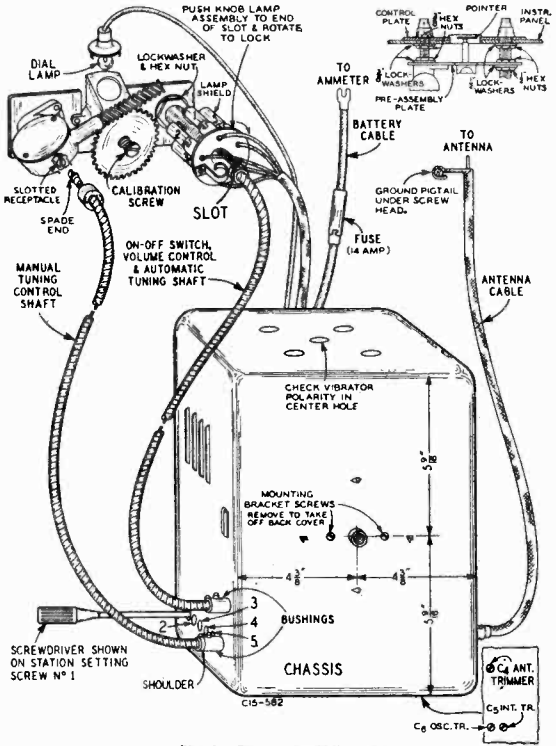


Fig. 3—General Installation View

ANTENNA CABLE

Keep the antenna cable as far away from car wiring as possible and ground the pigtail of the antenna cable shield at the antenna end, otherwise ignition noise may be picked up. The length of the pigtail from the grounding point to the end of the antenna cable should be kept as short as possible, preferably not over one inch.

For the "fishpole" and over-the-roof type antenna, the lead must be shielded the entire distance from the radio to the point where the lead goes through the car body to the outside.

When the antenna cable is connected to an antenna lead coming down the pillar post, the shielded cable should be pushed several inches up into the pillar post.

Final Installation Items

Before Mounting Chassis

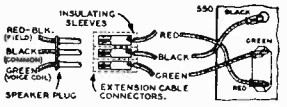
Before mounting the chassis to the fire wall, it is advisable in most cases to complete the wiring connections. The stations should be set for Automatic Tuning at this time if this procedure cannot be followed after the chassis is mounted.

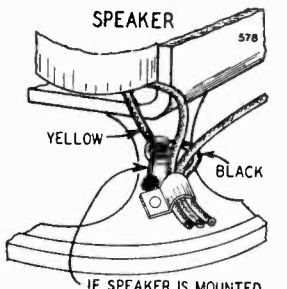
Battery Cable and Fuse

The battery connection is made at the ammeter. The end of the battery cable with the connecting lug is secured to one of the posts at the back of the ammeter in the instrument panel. The other end of the cable with the fuse receptacle connects to the battery cable from the radio after the fuse has been inserted. A 14 ampere fuse is used.

Dial Lamp Cable

Insert the dial lamp assembly in the hole at the top of the lamp housing as indicated in Fig. 3. The dial lamp used in this unit is a 6-8 volt automobile type lamp (Bulb No. 51).





Inserting Vibrator Unit

IMPORTANT—The vibrator unit can be inserted in two ways. The proper method of insertion will depend on which terminal of the car battery is grounded. If the POSITIVE (+) terminal of the car battery is grounded, line up the + mark on the top of the vibrator with the arrow on the chassis base. If the NEGATIVE (—) terminal of the car battery is grounded, line up the — mark on the top of the vibrator with the arrow on the chassis base.

On one side of the chassis case is a hole (See Fig. 3) through which may be seen the vibrator. If a red stripe is seen on the side of the vibrator, the vibrator is inserted for cars on which the positive terminal of the battery is grounded. If no paint mark is visible, the vibrator is inserted for cars with the negative terminal of the battery grounded.

Adjusting Antenna Trimmer

After the antenna is connected, tune in a weak signal at approximately 1000 KC with the volume control about three-fourths on. Turn the adjusting screw of the antenna trimmer (C4) up or down until maximum output is obtained. See Fig. 3 for location of this trimmer.

Bolting Chassis in Place

Put the chassis in place on the fire wall extending the mounting bolt through the drilled hole in the fire wall. If the chassis must be spaced away from the fire wall, first assemble the wood spacer on the mounting bolt.

See article "Locating the Chassis and Drilling Mounting Hole" for additional data on mounting chassis.

On the mounting bolt, assemble the washers and nuts. Then tighten the mounting bolt nut securely so that the spurs on the chassis case bite into the fire wall insulation and the washers bear firmly against the fire wall.

After the chassis is in place, secure the flexible shafts and electrical cables in position at the nearest convenient point.

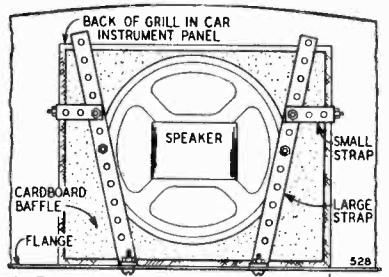


Fig. 4—External Speaker Connections, One Method of Mounting, and Cutting Off Bare Ground Wire When Speaker is Mounted Externally.

Calibration

(For later type control with no stop on pointer shaft.)

Tune to a station of known frequency (about 850 KC). Turn the knurled calibration screw at the back end of the pointer disc shaft one complete turn (360°) in a clockwise direction (from back of instrument panel). Then continue to turn the screw in a clockwise direction until the pointer is at the frequency of the station being received.

Mounting Speaker in Back of Instrument Panel Grille

Some automobiles have a grille in the instrument panel, in back of which a speaker may be mounted. The speaker may be taken out of the case should it be desired to mount it in back of such a grille.

Remove the grille plate and speaker from the case (see article "Replacing Tubes and Vibrator"). Pull out the speaker plug. Replace the grille, putting the round cardboard gasket under the grille. Cut off the bare ground wire on the speaker as shown in Fig. 4.

At one side of the speaker grille is a rectangular cover. Unscrew the screw at each end and remove this cover. Three clips, each a different color, will be seen. Using the 24 inch, 3 wire cable supplied with the radio, match the color of each wire with a clip and insert the solid pin tips in the clips—See Fig. 4. Pass the cable through the same hole in the cover provided for the other wires. Push each of the connectors at the other end of the cable over the proper prong of the speaker plug, matching the color as shown in Fig. 4. Be sure the insulating sleeves cover the connectors completely. Tape over the speaker plug and connectors. Replace the cover.

Two perforated straps are provided which may be used as mounting brackets to secure the speaker in back of the grille. The method of mounting will vary in different cars. If the spring clamps on the back of the speaker frame interfere with the mounting, they may be cut off.

In the mounting shown in Fig. 4, the long and short straps have each been cut in two pieces and attached as indicated. The speaker should be supported at two points on the rim 180 degrees apart.

Secure the straps under any nearby screw head or nut which is convenient. Frequently it will be advisable, as shown in Fig. 4, to bend the straps under the flange at the bottom of the instrument panel and then drill two holes in the flange through which to extend the mounting bolts.

A piece of cardboard is provided for use as a baffle. This is cut for a 5¼ inch speaker which may be purchased if it is required. The outline of the hole necessary for a 6 inch speaker (speaker in radio) is shown on the cardboard. Cut the cardboard to size so that it covers all of the grille opening that is not covered by the speaker.

Several pieces of felt are also provided to be used around the rim of the speaker in those cars in which the grille is curved or bent.

Replacing Tubes and Vibrator

To replace the tubes or vibrator, remove the screw on the grille plate. Take off grille plate and pull the speaker out of the case. The speaker is held in place by 2 spring clamps. The tubes and vibrator are now accessible for replacement

Local-Distance Switch

This switch is located on the cover of the chassis case.

LOCAL—While driving in the city or close to broadcasting stations, it is best to have the switch in the "local" (L) position for least noise.

DISTANCE—When driving in the country or when listening to distant stations, best results are obtained with the switch in the "distance" (D) position. In this position, the sensitivity is at a maximum.

Procedure for Setting the Stations

There are 6 positions of the Automatic Station Mechanism. Five of these are Automatic Station positions and one is the Manual Tuning position. A sixth station may be tuned in with the Manual Tuning Knob. If the position of this knob is not disturbed, the sixth station will be automatically tuned in when the Automatic Station Mechanism is in the Manual Tuning position.

The different positions are reached by pushing the Automatic Station Knob firmly and gently all the way in and releasing this knob so that it snaps all the way back. Pushing in the knob once in this manner will advance the mechanism to the next position, twice will move it to the second position, etc.

When the radio is in the Manual Tuning position, the dial is illuminated. When it is in any of the 5 station setting positions, one of the numbers on the Automatic Station Knob is illuminated.

Make a list of your favorite stations, those which you tune in regularly. There may be any number up to and including 6 in this list.

Any station setting position may be used for any station you can receive although it is better to put the stations on your list in frequency order.

First get the mechanism in the Manual Tuning position. If the dial is illuminated, it is already in this position. If one of the numbers on the Automatic Station Knob is illuminated, depress this knob one or more times until every number is dark.

Select the first station from the list you have made and carefully tune in this station by rotating the Manual Tuning Knob. Determine what program is being broadcast.

Then advance the mechanism to position No. 1 by depressing the Automatic Station Knob once. As shown in Fig. 3, there are 5 small holes in the chassis case through which the station setting screws are reached.

Insert a small bladed screwdriver in the opening for setting screw No. 1 and turn this screw in or out until the desired station (the one previously tuned in) is heard. Turning the screw in (clockwise) will tune in stations with lower kilocycle numbers while turning the screw out (counter-clockwise) will tune in stations with higher kilocycle numbers.

There is a card supplied with the radio on which is a frequency scale. Using the screwdriver as a guide, this scale will show the approximate frequency (kilocycle number) at which the setting screw is set.

Be sure not to tune in some other station broadcasting the same program. Turn the screw slowly back and forth until this station is carefully tuned in to the clearest and loudest point. The final motion of the setting screw should be to the right (clockwise). The station is now set for position No. 1.

Next advance the mechanism to position No. 2 by depressing the Automatic Station Knob once more. Tune in the second station on your list by adjusting setting screw No. 2 as explained above.

If you have difficulty in knowing when this station is tuned in, push the Automatic Tuning Knob 4 times to reach the Manual Tuning position. Then tune in this station with the Manual Tuning Knob, noting the program that is being broadcast. Push in the Automatic Station Knob twice to get the mechanism back into position No. 2 and again tune in this station by carefully adjusting setting screw No. 2 until the station is clearest and loudest.

Proceed in like manner to set any remaining stations on your list.

Suppression of Motor Noise

The following procedure has been found to be effective in reducing motor noise to a satisfactory level in most cars. Follow the steps in the order given. Additional procedure, which may be required in exceptional cases of motor noise, is not covered here and will be found by referring to current literature on this subject.

GENERATOR CONDENSER—A generator condenser is required in all cases. Connect the condenser lead to the battery terminal of the generator. The case and mounting strap connect the other side of the condenser to ground. This unit must, therefore, be well grounded at its mounting.

CAUTION—In cars with automatic regulators, it is important not to connect the condenser across the field terminal. Most manufacturers at the present time have a recommendation for the proper post at which to connect the condenser.

DISTRIBUTOR SUPPRESSOR—A distributor suppressor will be required in most cases. Remove the high tension lead to the distributor. Insert a distributor suppressor and connect the wire to the other end of the suppressor (See Fig. 7). If this is not practical, cut the high tension lead close to the distributor and use a wood screw end type distributor suppressor in this line.

Withdraw Antenna Cable Plug

Turn on the radio and start the motor.

If motor noise is heard, proceed as follows:

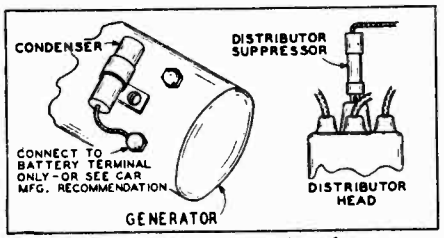


Fig. 7—Generator Condenser and Distributor Suppressor

BONDING CABLES—Try grounding to the fire wall all cables and tubing which pass through it such as oil lines, gas lines, etc. By means of a file, contact can be established between any of the lines and the fire wall in order to determine whether such a ground will reduce the noise. To bond the cables to the fire wall, clean the point of contact, wrap a length of braided shielding around the cable, and solder the connection. Then solder the end of the shielding to the fire wall or ground it under a screw head if one is convenient.

Sufficient play should be left in the bonding shielding so that movement of the cables or tubing will not loosen this shielding from the fire wall.

BONDING STEERING COLUMN, ETC.—It is possible for the steering column, foot pedals, and brake lever to carry interference to the back of the fire wall at which point it may affect the radio. See if each of these items is well grounded to the frame of the car. By means of a file or a braided shielding jumper, contact can be established between any of these items and the frame in order to determine whether or not such a ground will reduce the noise. A piece of one inch braided shielding should be used if such a ground is necessary and this shielding may be grounded under a screw head, nut, or may be soldered in position.

Then Reinsert Antenna Cable Plug

If motor noise is heard when the antenna cable is reconnected, proceed as follows until the noise is satisfactorily reduced:

DOME LIGHT LEAD—Noise due to radiation from the dome light lead is generally experienced only when a roof antenna is being used. Disconnect the dome light lead connection at the back of the instrument panel and ground this wire. If this is found to reduce the noise noticeably, interference is being radiated by the dome light lead. Reconnect the dome light lead and then connect a .5 mfd. bypass condenser between the point at which this lead leaves the pillar post and ground.

BYPASS CONDENSERS—Try a .5 mfd. bypass condenser from the ammeter to ground and see if interference is reduced. Install this condenser permanently if there is an improvement.

In like manner, try a .5 mfd. condenser from car fuse to ground, switch to ground, tail light and stop light connections to ground, windshield wiper and various other 6 volt connections to ground, noting what effect these condensers have on the noise pick-up.

Try a .5 mfd. condenser from the "Hot" side of the coil primary to ground.

The electric gauges used for oil, water, and gas are often a source of interference and bypass condensers should be tried.

HIGH AND LOW TENSION LEADS—In some cases, the high and low tension leads between the coil and distributor are run close together. In some cars, they are in the same conduit. If this is the case, remove the low tension lead from this conduit. In any event, keep the high and low tension leads as far apart from each other as possible. If separating the two leads is not sufficient, shield and ground the shield of the low tension lead.

GROUNDING MOTOR AND OTHER PARTS—The motor must, in every case, be well grounded to the frame of the car. If it is not, use a very heavy braided lead for this purpose, similar to a storage battery ground lead. In like manner, it may be necessary to check the grounding of the metal fire wall, instrument panel, transmission, radiator, hood, and muffler to the frame of the automobile. To obtain a good electrical connection, scrape off the paint, if necessary, at the point where ground contact is made.

PEENING ROTOR ARM—In extreme cases of motor noise, it is advisable to peen the distributor rotor arm, that is, increase the length of the arm by using a small machinist's hammer. This will lessen the gap between the rotor arm and the stationary contacts thus reducing the spark. Be sure, after peening the arm, that it does not strike the stationary contacts.

SPARK PLUG SUPPRESSORS—If motor noise persists, spark plug suppressors must be installed. One suppressor is put on each plug. These are not regularly supplied with the radio and must be purchased extra. Ninety-five percent of all cars will not require spark plug suppressors.

Care should be taken that a good mechanical and electrical connection is made between the spark plugs, suppressors, and plug wires.

WHEEL OR BRAKE STATIC—Noise from this source is generally experienced only when an under car antenna is being used. To determine if noise is being caused from this source, set the car in motion; then with the motor shut off and the clutch disengaged, apply the brakes. If the noise stops, the source of the static is in the wheels. The use of a front or rear wheel static eliminator will generally end the trouble.

Service Data (For Professional Service Men)

ALIGNMENT PROCEDURE

Remove Grille, Speaker, Trimmer Caps and Rear Cover From Chassis Case—(See Figs. 3 and 5).

Volume Control—Maximum All Adjustments.

Local-Distance Switch—"Distance" Position.

Connect Radio Chassis to Ground Post of Signal Generator with a Short Heavy Lead.

Allow Chassis and Signal Generator to "Heat Up" for several minutes.

The following equipment is required for aligning:

A Signal Generator which will provide an accurately calibrated signal at the test frequencies as listed.

Output Indicating Meter—Non-Metallic Screwdriver.

Dummy Antenna—.05 mf., See Note A.

SIGNAL GENERATOR FREQUENCY SETTING	CONNECTION AT RADIO	DUMMY ANTENNA	IRON CORE SETTING	ADJUST TRIMMERS TO MAXIMUM (See Figs. 3 and 5)
I.F.	Control Grid (prong No. 8) 6SA7 1st Det. Tube			1st I.F. (C11) & (C12) 2nd I.F. (C15) & (C16)
456 KC		.05 mf.		
OSCILLATOR				
1560 KC	Antenna Cable See Note A	See Note A	Extreme Position out of Coil	Oscillator (C6)
1000 KC ADJUSTMENT				
1000 KC	Antenna Cable	See Note A	Tune to Max. Output with Tuning Knob	Ant. (C5) Ant. (C4)

Reassemble Radio—Install in Car—Connect Car Antenna to Radio.

Car Antenna Readjustment—Tune in weak signal near 1000 KC—Readjust Antenna Trimmer C4 for maximum output.

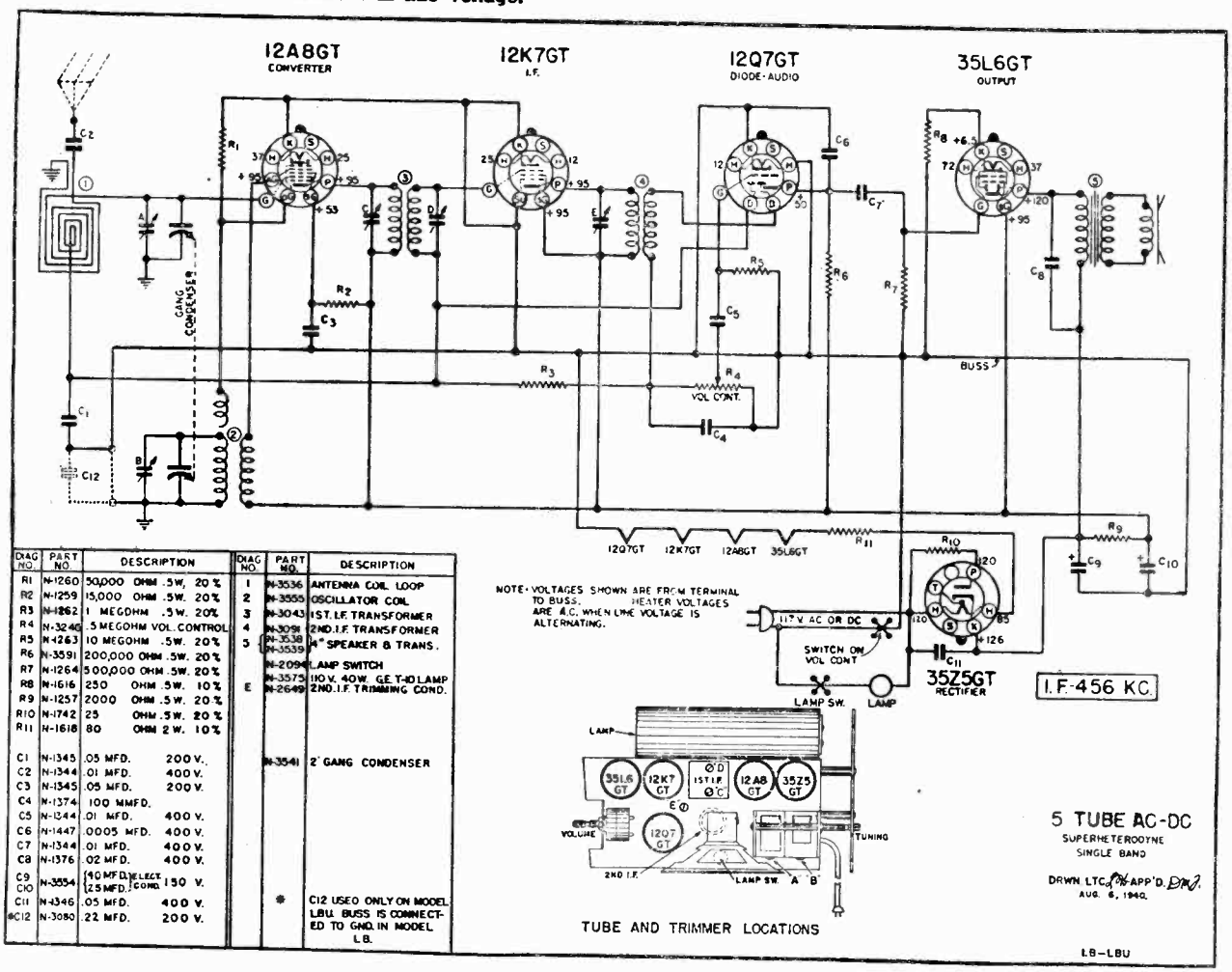
NOTE A—Insert the antenna cable plug in the antenna socket on the chassis. The total capacity of the antenna cable and dummy antenna should be 60 mmf. If the cable, for example, has a capacity of 30 mmf., use a 30 mmf. condenser for a dummy antenna. Connect the other end of the antenna cable through the dummy antenna capacity to the output of the signal generator.

CALIBRATION—To calibrate the radio, tune in a station of known frequency. At the back of the pointer disc shaft is the calibration screw. Turn this screw with the fingers until the pointer on the dial scale is at the frequency of the station being received.

MODELS D-121, D-122,
Lullaby

ALLIED RADIO CORP.

Voltages shown on the circuit diagram are from socket terminals to chassis base. In measuring voltages use a voltmeter having a resistance of at least 1000 ohms per volt. Allowances should be made for variations in line voltage.



DIAG NO.	PART NO.	DESCRIPTION
R1	N-1260	50,000 OHM .5W, 20 %
R2	N-1259	15,000 OHM .5W. 20%
R3	N-1262	1 MEGOHM .5W. 20%
R4	N-3246	.5 MEGOHM VOL. CONTROL
R5	N-1263	10 MEGOHM .5W. 20%
R6	N-3591	200,000 OHM .5W. 20 %
R7	N-1264	500,000 OHM .5W. 20%
R8	N-1616	250 OHM .5W. 10%
R9	N-1257	2000 OHM .5W. 20 %
R10	N-1742	25 OHM .5W. 20 %
R11	N-1618	80 OHM 2 W. 10%
C1	N-1345	.05 MFD. 200 V.
C2	N-1344	.01 MFD. 400 V.
C3	N-1345	.05 MFD. 200 V.
C4	N-1374	100 MMFD.
C5	N-1344	.01 MFD. 400 V.
C6	N-1447	.0005 MFD. 400 V.
C7	N-1344	.01 MFD. 400 V.
C8	N-1376	.02 MFD. 400 V.
C9 C10	N-3554	(40 MFD. SELECT 25 MFD. COND.) 150 V.
C11	N-1346	.05 MFD. 400 V.
*C12	N-3080	.22 MFD. 200 V.

DIAG NO.	PART NO.	DESCRIPTION
1	N-3536	ANTENNA COIL LOOP
2	N-3555	OSCILLATOR COIL
3	N-3043	1ST. I.F. TRANSFORMER
4	N-3091	2ND. I.F. TRANSFORMER
5	N-3538 N-3539	4" SPEAKER & TRANS.
	N-2094	LAMP SWITCH
	N-3575	110 V. 40 W. G.E. T-10 LAMP
E	N-2649	2ND. I.F. TRIMMING COND.
	N-3541	2 GANG CONDENSER
*		C12 USED ONLY ON MODEL LBU. BUSS IS CONNECTED TO GND. IN MODEL LB.

Lack of sensitivity and poor tone quality may be due to any one or a combination of causes such as weak or defective tubes or speaker, open or grounded bias resistor, bypass condenser, etc. Never attempt to realign set until all other possible sources of trouble have been first thoroughly investigated and definitely proved not to be the cause.

NOTE: IT IS ABSOLUTELY NECESSARY THAT AN ACCURATELY CALIBRATED TEST OSCILLATOR WITH SOME TYPE OF OUTPUT MEASURING DEVICE BE USED WHEN ALIGNING THE RECEIVER AND THAT THE PROCEDURE BE CAREFULLY FOLLOWED, OTHERWISE THE RECEIVER WILL BE INSENSITIVE AND THE DIAL CALIBRATION WILL BE INCORRECT. THE TRIMMERS WILL BE REFERRED TO BY THEIR FUNCTION AS INDICATED ON THE PARTS DIAGRAM.

ALIGNMENT PROCEDURE

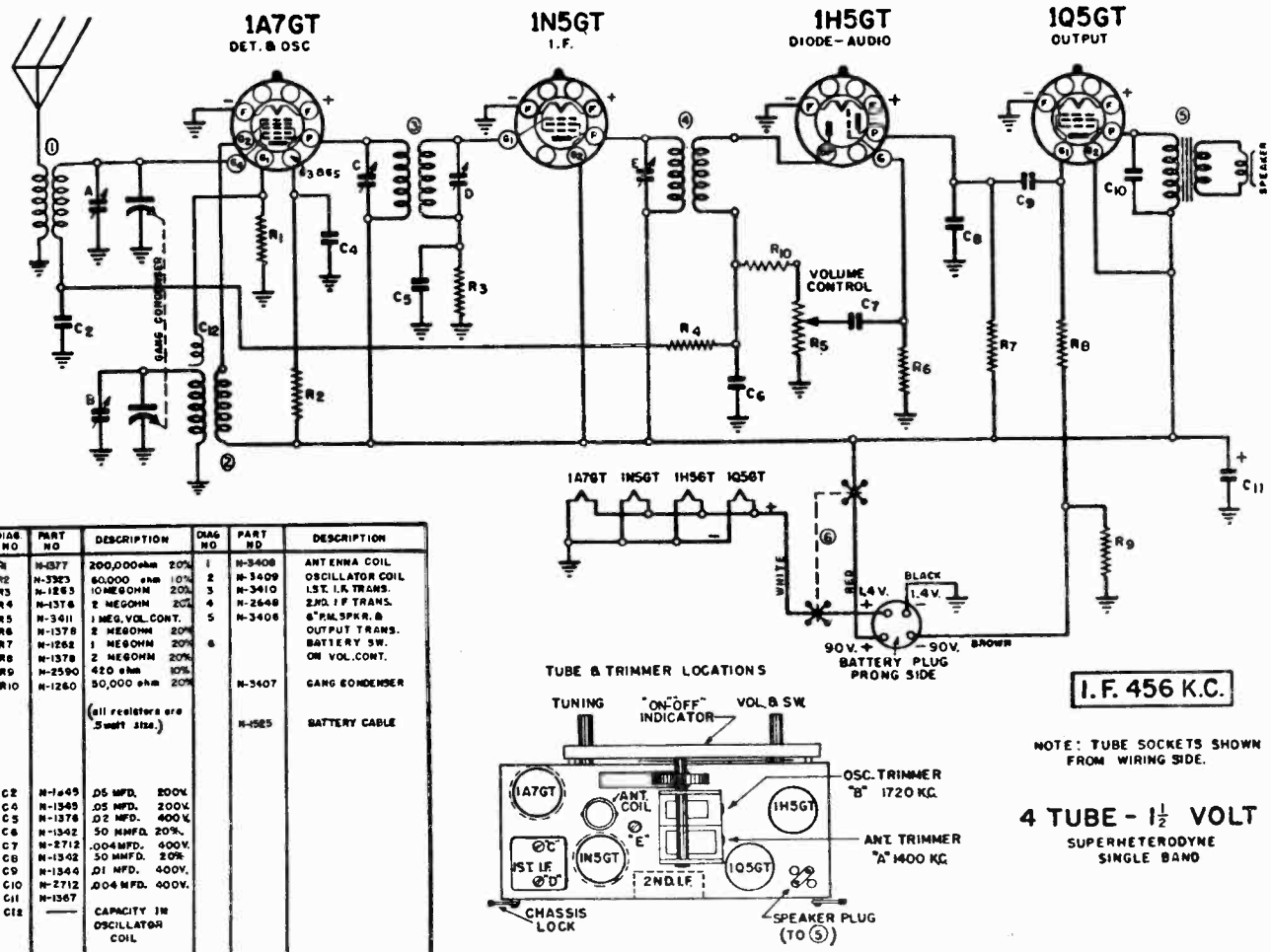
GENERAL DATA. The alignment of this receiver requires the use of a test oscillator that will cover the frequencies of 456, 600, 1400 and 1720 KC and an output meter to be connected across the primary or secondary of the output transformer. If possible, all alignments should be made with the volume control on maximum and the test oscillator output as low as possible to prevent the AVC from operating and giving false readings.

CORRECT ALIGNMENT PROCEDURE. Remove the chassis from the cabinet and set on a bench taking care that no iron or other metal is near the loop. Do not make this setup on a metal bench. The intermediate frequency (I.F.) stages should be aligned properly as the first step. After the I.F. transformers have been properly adjusted and peaked, the broadcast band should be adjusted.

I. F. ALIGNMENT. With the gang condenser set at minimum, adjust the test oscillator to 456 KC and connect the output to the grid of the first detector tube (12A8GT) through a .05 or .1 mfd. condenser. The ground on the test oscillator should be connected to the chassis ground. Align all three I.F. trimmers to peak or maximum reading on the output meter.

BROADCAST BAND ALIGNMENT. Connect the test oscillator to the antenna of the set through a 200 mmfd. (.0002) condenser. With the gang condenser set at minimum capacity, set the test oscillator at 1720 K.C. and adjust the oscillator (or 1720 KC trimmer) on gang condenser. Next—set the test oscillator at 1400 KC, and tune in the signal on the gang condenser. Adjust the antenna trimmer (or 1400 KC trimmer) for maximum signal. Next set the test oscillator at 600 KC, and tune in signal on condenser to check alignment of coils.

ALLIED RADIO CORP.



DIAG. NO	PART NO	DESCRIPTION	DIAG NO	PART NO	DESCRIPTION
R1	N-1377	200,000 ohm 20%	1	N-3408	ANTENNA COIL
R2	N-3383	60,000 ohm 10%	2	N-3409	OSCILLATOR COIL
R3	N-1263	10 MEGOHM 20%	3	N-3410	1ST. I.F. TRANS.
R4	N-1378	2 MEGOHM 20%	4	N-2648	2ND. I.F TRANS.
R5	N-3411	1 MEG. VOL. CONT.	5	N-3406	6"PM. SPKR. & OUTPUT TRANS.
R6	N-1378	2 MEGOHM 20%	6		BATTERY SW. ON VOL. CONT.
R7	N-1262	1 MEGOHM 20%			
R8	N-1378	2 MEGOHM 20%			
R9	N-2590	420 ohm 10%		N-3407	GANG CONDENSER
R10	N-1260	50,000 ohm 20%			
		(all resistors are ½ watt size.)		N-1525	BATTERY CABLE
C2	N-1649	.05 MFD. 200V.			
C4	N-1349	.05 MFD. 200V.			
C5	N-1376	.02 MFD. 400V.			
C6	N-1342	50 MMFD. 20%			
C7	N-2712	.004 MFD. 400V.			
C8	N-1342	50 MMFD. 20%			
C9	N-1344	.01 MFD. 400V.			
C10	N-2712	.004 MFD. 400V.			
C11	N-1367				
C12	——	CAPACITY IN OSCILLATOR COIL			

I. F. 456 K.C.

NOTE: TUBE SOCKETS SHOWN FROM WIRING SIDE.

4 TUBE - 1½ VOLT
SUPERHETERODYNE
SINGLE BAND

ALIGNMENT PROCEDURE

GENERAL DATA. The alignment of this receiver requires the use of a test oscillator that will cover the frequencies of 456, 600, 1400 and 1720 KC and an output meter to be connected across the primary or secondary of the output transformer. If possible, all alignments should be made with the volume control on maximum and the test oscillator output as low as possible to prevent the AVC from operating and giving false readings.

CORRECT ALIGNMENT PROCEDURE. The intermediate frequency (I.F.) stages should be aligned properly as the first step. After the I.F. transformers have been properly adjusted and peaked, the broadcast band should be adjusted.

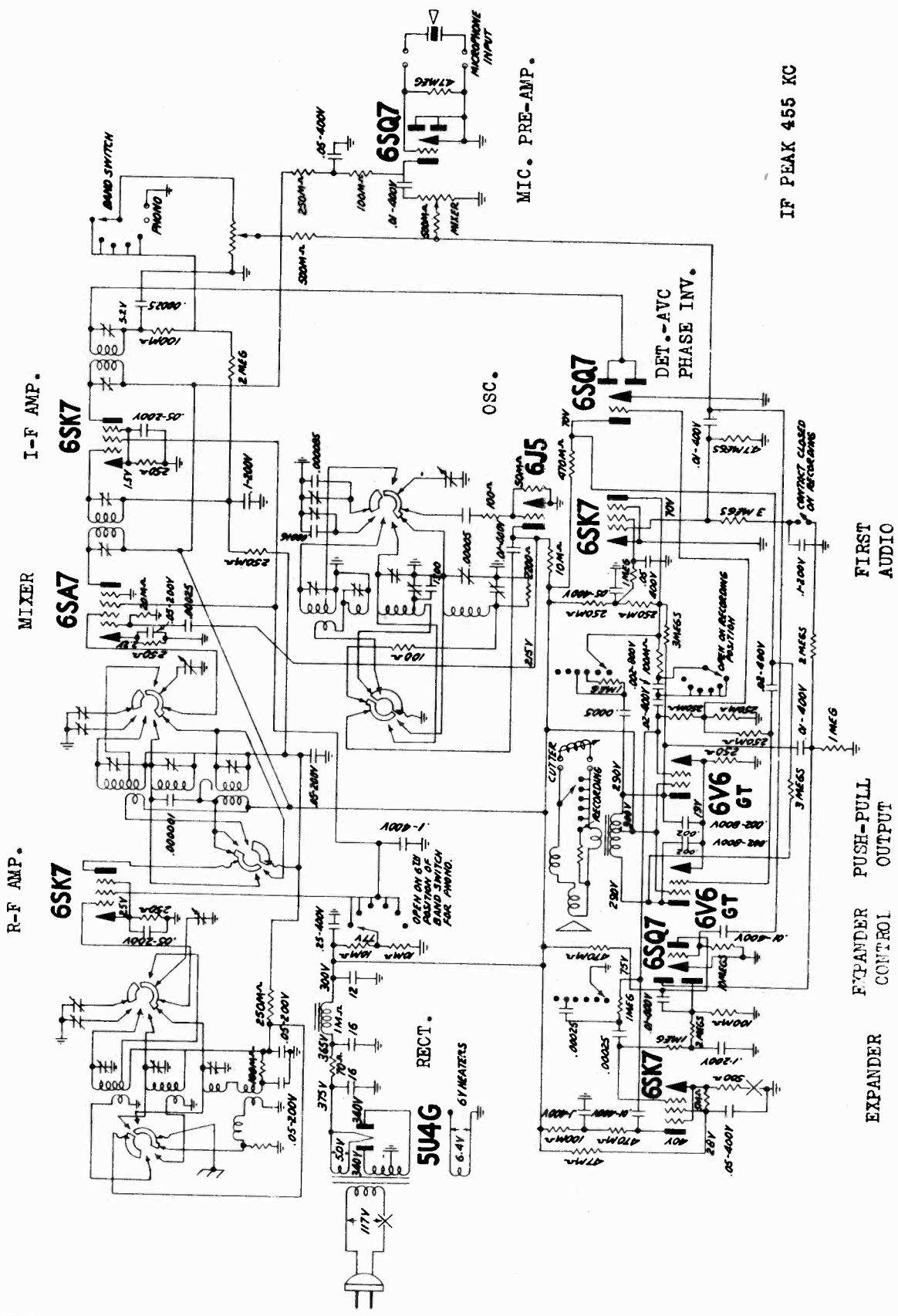
I. F. ALIGNMENT. With the gang condenser set at minimum, adjust the test oscillator to 456 KC and connect the output to the grid of the first detector tube (1A7GT) through a .05 or .1 mfd. condenser. The ground on the test oscillator should be connected to the chassis ground. Align all three I.F. trimmers to peak or maximum reading on the output meter.

BROADCAST BAND ALIGNMENT. Connect the antenna to the generator through a 200 MMF dummy and set the dial and generator at 1720 KC (gang at minimum capacity). Align the BC oscillator trimmer for maximum output. Set the test oscillator at 1400 KC and tune in the signal with the dial and adjust the antenna trimmer for maximum output.

Next set the test oscillator at 600 KC and check the sensitivity to determine if the gang or the coils have been damaged.

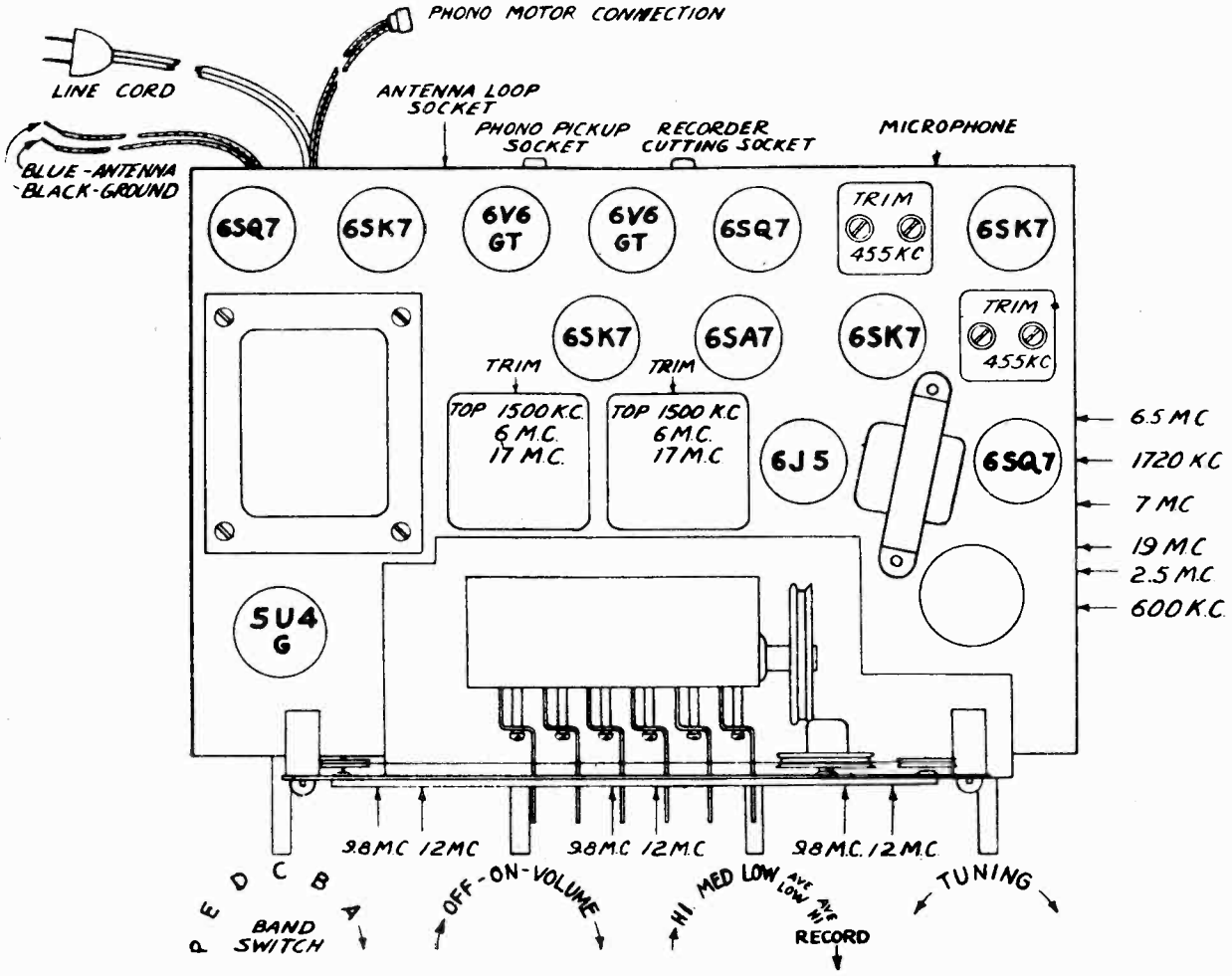
MODELS D-150, D-195, D-196

ALLIED RADIO CORP.



ALLIED RADIO CORP.

TUBE LAYOUT



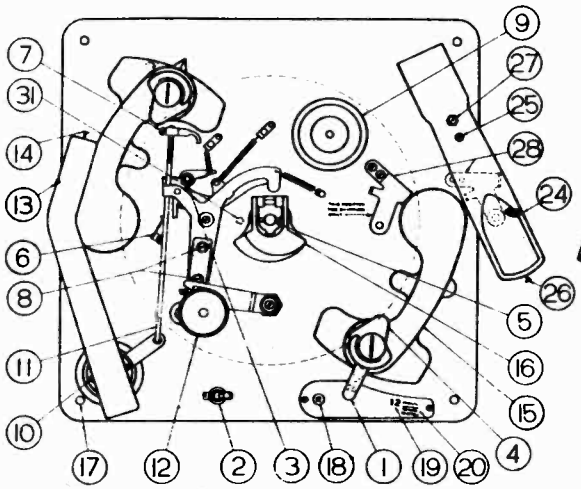
SETTING UP OF PUSH BUTTONS

1. Turn the set on and allow it to operate for at least fifteen minutes before setting the push buttons.
2. Remove the push buttons by pulling them away from the set. If they are difficult to remove, they may be pried off by inserting a nail file in the call station slot and pulling toward you.
3. Select six strong stations, preferably local or nearby stations. Remove the call letter tabs of the chosen six stations from the complete list of station tabs supplied with this receiver.
4. Using a screw driver, loosen the screw left exposed by removing the push button (See figure 2).
5. Push the loosened adjustment screw lightly with a screw driver (do not turn), and tune in one of the desired stations with the Station Selector Knob until it is heard with the best tone. This will correspond to maximum bass and minimum treble of "hiss".
6. Hold the station exactly in tune with the Station Selector Knob and tighten the adjustment screw while pushing it lightly.
7. Replace the push button.
8. Insert the proper station tab in the push button slot.
9. Follow this procedure for each push button until all buttons are adjusted.
10. "Push Button Stations" will be tuned accurately by pushing the push button all the way to its stop.

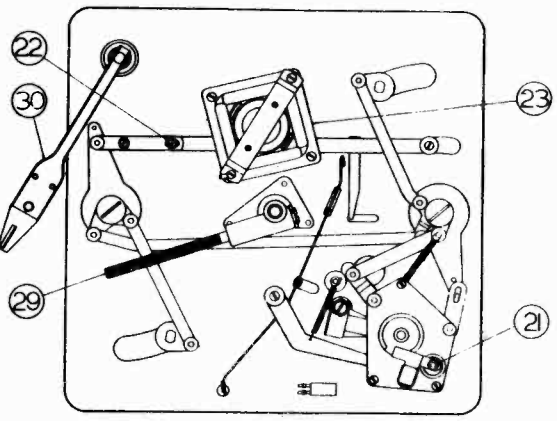
MODELS D-150, D-195, D-196

ALLIED RADIO CORP.

RECORD CHANGER-RECORDER



TOP VIEW WITH TURNTABLE REMOVED



BOTTOM VIEW UNDER BASE PLATE

(1.) Lever for setting to play 10-inch or 12-inch records. Manual playing or Remove records. Mechanism as shown is set for playing 10-inch records.

(2.) "On" and "Off" switch for operating the record playing mechanism. Not used on some models.

(3.) Trip mechanism designed to handle automatically records with either spiral run-in or oscillating grooves.

(4.) Record Support Fingers.

(5.) Turntable Shaft.

(6.) Trip Rod Tension Spring.

(7.) Adjustment for run-in or spiral grooved records.

(8.) Adjusting lock screws for controlling position of power take-off wheel(12).

(9.) Rubber-tired Drive Wheel. By means of a spring, this wheel contacts the steel pulley on the motor and the inside flange of the turntable; driving the table in clockwise rotation.

(10) Adjusting screws for locking tone arm in position so that needle will rest properly on edge of record.

(11) Trip Rod.

(12) Rubber-tired power take-off wheel. It is through the trip mechanism this wheel contacts the inside flange of the turntable during the change cycle from one record to the next, but does not operate during the playing of a record.

(13) Pickup Arm.

(14) Needle Set Screw.

(15) Record Support Arm.

(16) Master Trip Cam.

(17) Mounting Holes. Rubber washers or springs should be used when bolting changer in cabinet to absorb possible vibration.

(18) Reject Button. By pressing this button, changing mechanism operates immediately regardless of needle position on the record. Also by pressing this button, the first record will drop on turntable.

(19) Position for Lever (1) when playing 12-inch records.

(20) Position for Lever (1) for Manual playing, Removing records or Cutting records.

(21) Adjusting screw for setting vertical movement for tone arm. If properly set, no further adjustment will be necessary.

(22) Adjustable Tie Bar used for positioning record support arms. The adjustment of this bar properly made should require no further attention.

(23) Rim Drive Electric Motor. Be sure Voltage and Cycles are correct for your Power Line.

ALLIED RADIO CORP.

MODELS D-150, D-195, D-196
RECORD CHANGER-RECORDER DATA - continued

(24) Cutter Arm. At all times except when actually recording, cutter arm is placed on cutting arm support rest (28).

(25) Adjusting Screw by which the tension on the cutter head equalizing spring may be varied for different types of records.

(26) Cutting Stylus clamp screw.

(27) Adjusting Screw and Lock Nut for proper spacing between cutter arm and record.

(28) Cutter Arm Support Rest. Holds cutter arm out of the way when automatic record changer is in use and also removes all strain on cutter-head equalizing spring. Mounted in inside position for shipping purposes. Before attempting to use mechanism it is necessary to move rest to the outside position shown.

(29) Lead Screw.

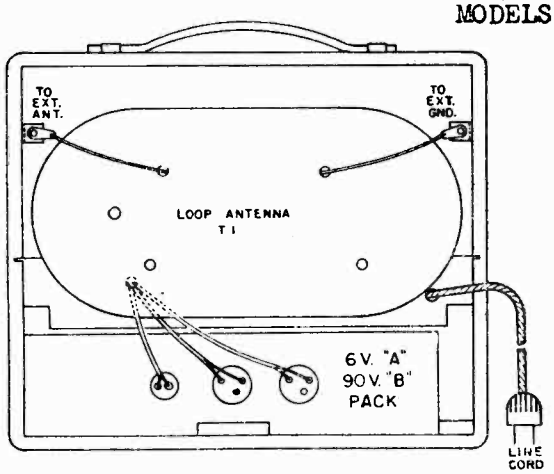
(30) Follower Arm and Spring Cam. This arm and cam mesh with lead screw(29) to provide lateral motion of cutter arm during recording.

(31) Retractable Pin in turntable for driving home recording disc.

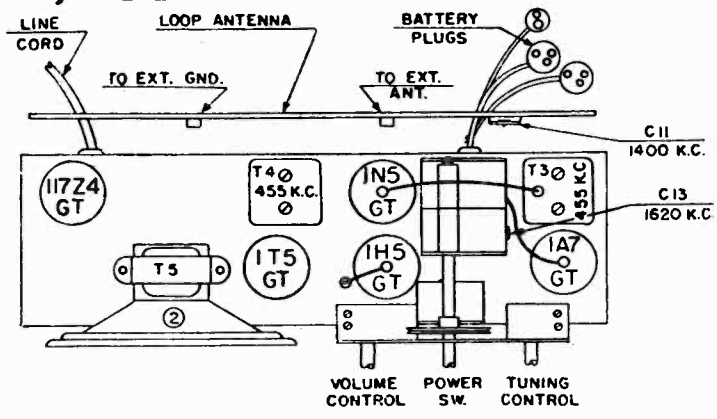
CUTTING HEAD AND ARM ADJUSTMENTS MODELS D-150, D-195, D-196

There is a possibility, that these adjustments may have been altered after leaving our factory; if so, the following information should be sufficient to make proper read-adjustments. With record blank on turntable, cutting stylus in cutting head and cutting arm lowered on the record, the cutting stylus clamp screw(26) should be centered in the slot through which it protrudes. This condition should occur when the underside of the nose of cutter arm is approximately 1/4 inch above record surface. If this height of the arm differs appreciably, adjustments may be made by adjusting screw and lock nut(27). A cut of at least ten turns should now be made on the record blank. Remove record and hold so light is reflected from surface just cut, then relative width of cut can be observed. When properly adjusted, grooves are just about as wide as space between grooves. For readjustments; turn adjusting screw(25) to right to increase depth and width of cut and to left to decrease the depth or width. Turn screw in quarter or half-turns only as this adjustment is very critical. When cutting head is properly adjusted and arm is raised to approximately 45 degrees, cutting stylus screw should just rest on bottom of slot and cutting head almost flat.

MODELS D-160, D-161



LOCATION OF PARTS IN CABINET



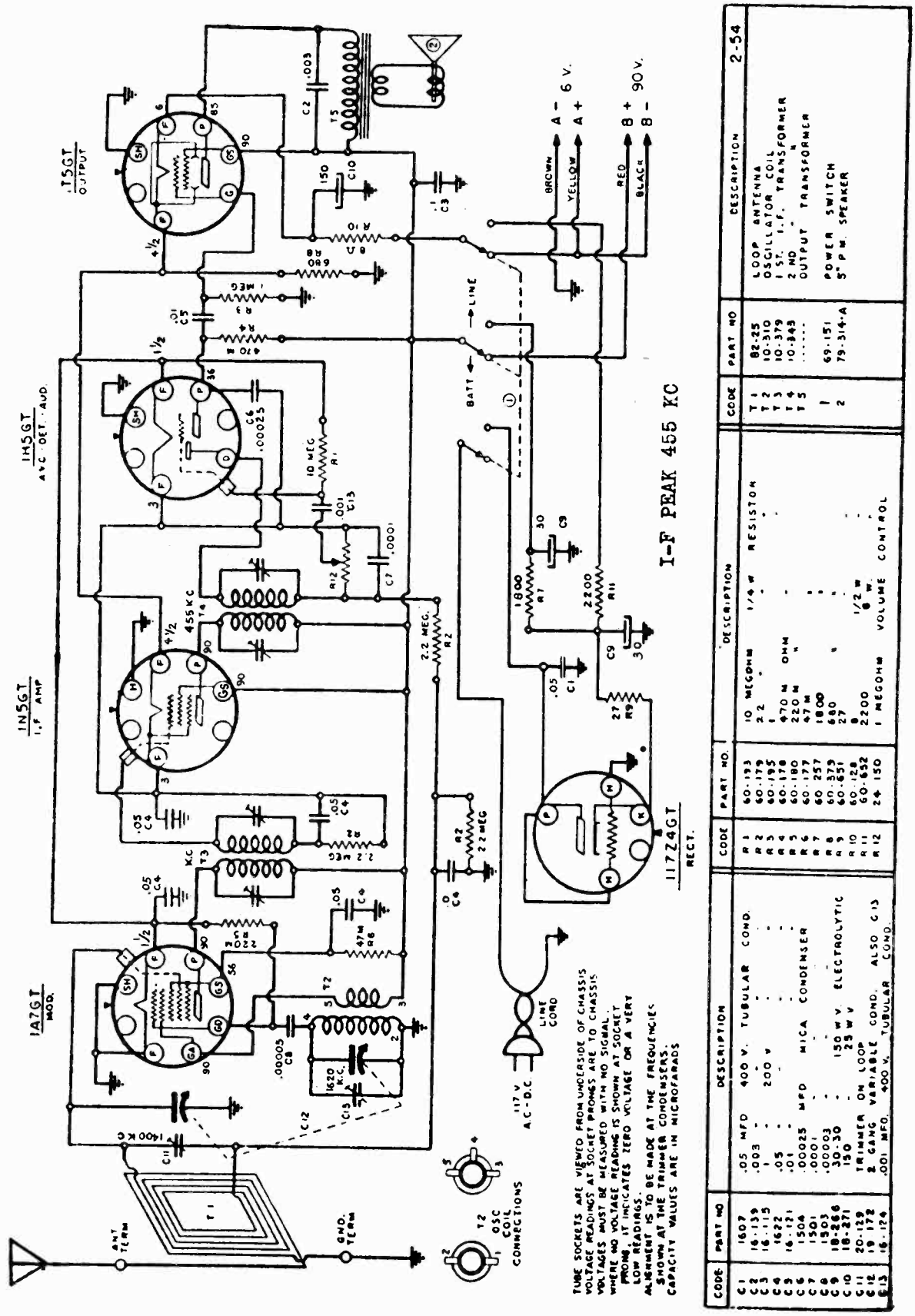
LOCATION OF PARTS ON TOP OF CHASSIS

INSTALLATION

If the receiver is purchased complete with battery, it is ready for operation. If it is purchased without battery, it is necessary (for battery operation) to install one Ray-O-Vac No. AB694-3 or General Dry Battery No. 60A-4FL4, or an equivalent, combination 90v. and 6v. battery pack. (See figure below for installation). It is not necessary to install battery to operate receiver on a 117 volt A.C. or D.C. supply.

MODELS D-160, D-161

ALLIED RADIO CORP.



TUBE SOCKETS ARE VIEWED FROM UNDERSIDE OF CHASSIS
VOLTAGE READINGS AT SOCKET PRONGS ARE TO CHASSIS
VOLTAGES MUST BE MEASURED WITH NO SIGNAL.
WHERE NO VOLTAGE READING IS SHOWN AT SOCKET PRONG, IT INDICATES ZERO VOLTAGE OR A VERY LOW READING.
ALIGNMENT IS TO BE MADE AT THE FREQUENCIES SHOWN AT THE TRIMMER CONDENSERS.
CAPACITY VALUES ARE IN MICROFARADS

CODE	PART NO	DESCRIPTION
C1	1607	.05 MFD 400 V. TUBULAR COND.
C2	10-139	.003 " " " "
C3	10-115	1 " 200 V. " "
C4	1622	.05 " " " "
C5	10-121	.01 " " " "
C6	1504	.00025 MFD MICA CONDENSER
C7	1501	.0001 " " "
C8	1503	.00003 " " "
C9	18-266	30-30 " 150 W.V. ELECTROLYTIC
C10	18-271	150 " 25 W.V. "
C11	20-129	TRIMMER ON LOOP
C12	19-172	2 GANG VARIABLE COND. ALSO C13
C13	10-124	.001 MFD. 400 V. TUBULAR COND.

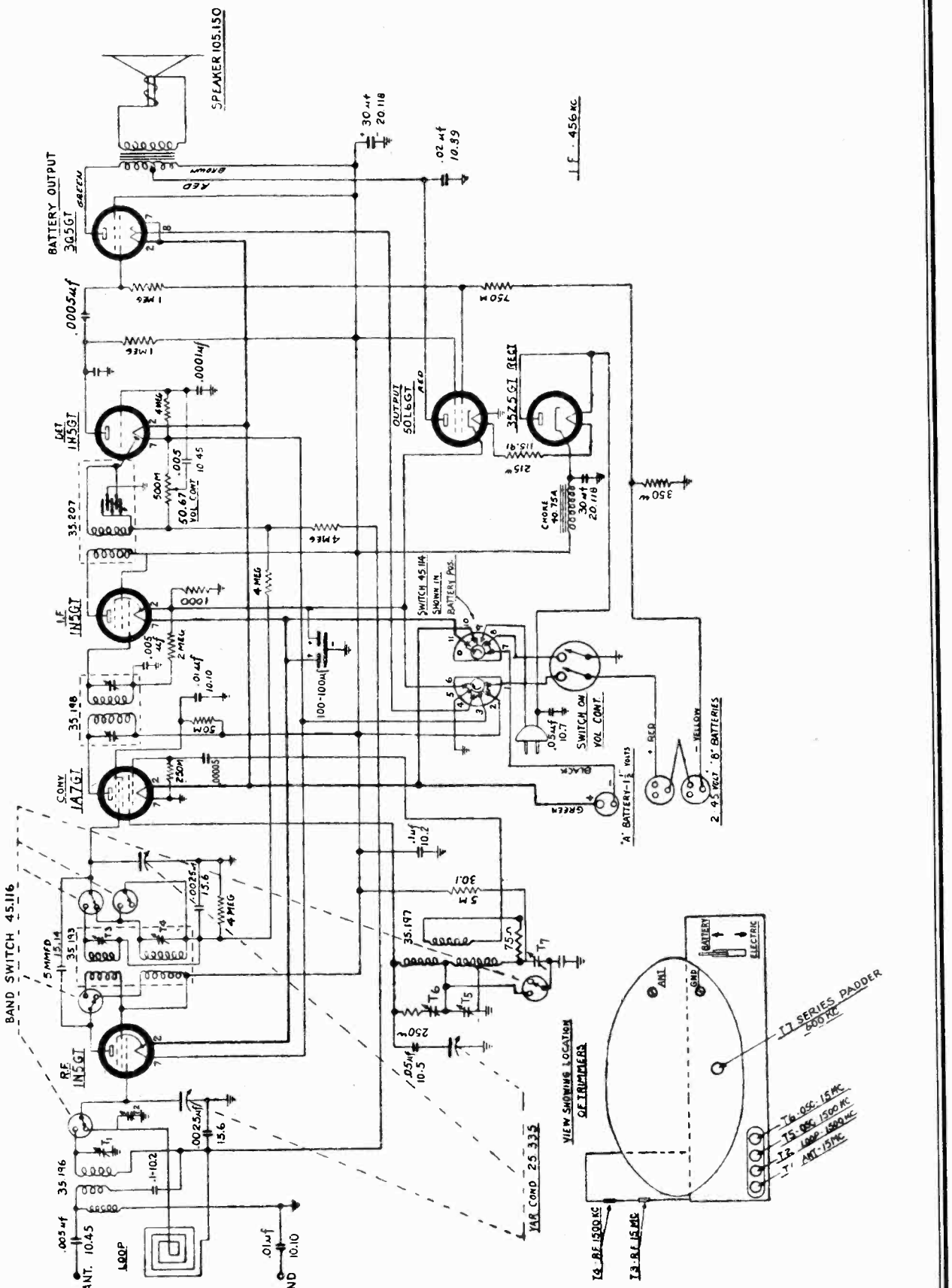
CODE	PART NO	DESCRIPTION
R1	60-133	10 MEGOHM 1/4 W RESISTOR
R2	60-179	2.2 " " "
R3	60-195	1 " " "
R4	60-178	470 M OHM "
R5	60-180	220 M " "
R6	60-177	47 M " "
R7	60 257	1800 " "
R8	60-373	680 " "
R9	60-631	27 " "
R10	60-128	8 " 1/2 W.
R11	60-632	2200 " "
R12	24 150	1 MEGOHM VOLUME CONTROL

CODE	PART NO	DESCRIPTION
T1	82-25	LOOP ANTENNA
T2	10-310	OSCILLATOR COIL
T3	10-379	1 ST. I.F. TRANSFORMER
T4	10-343	2 ND. " "
T5	.....	OUTPUT TRANSFORMER
1	69-151	POWER SWITCH
2	79-314-A	5" P.M. SPEAKER

2-54

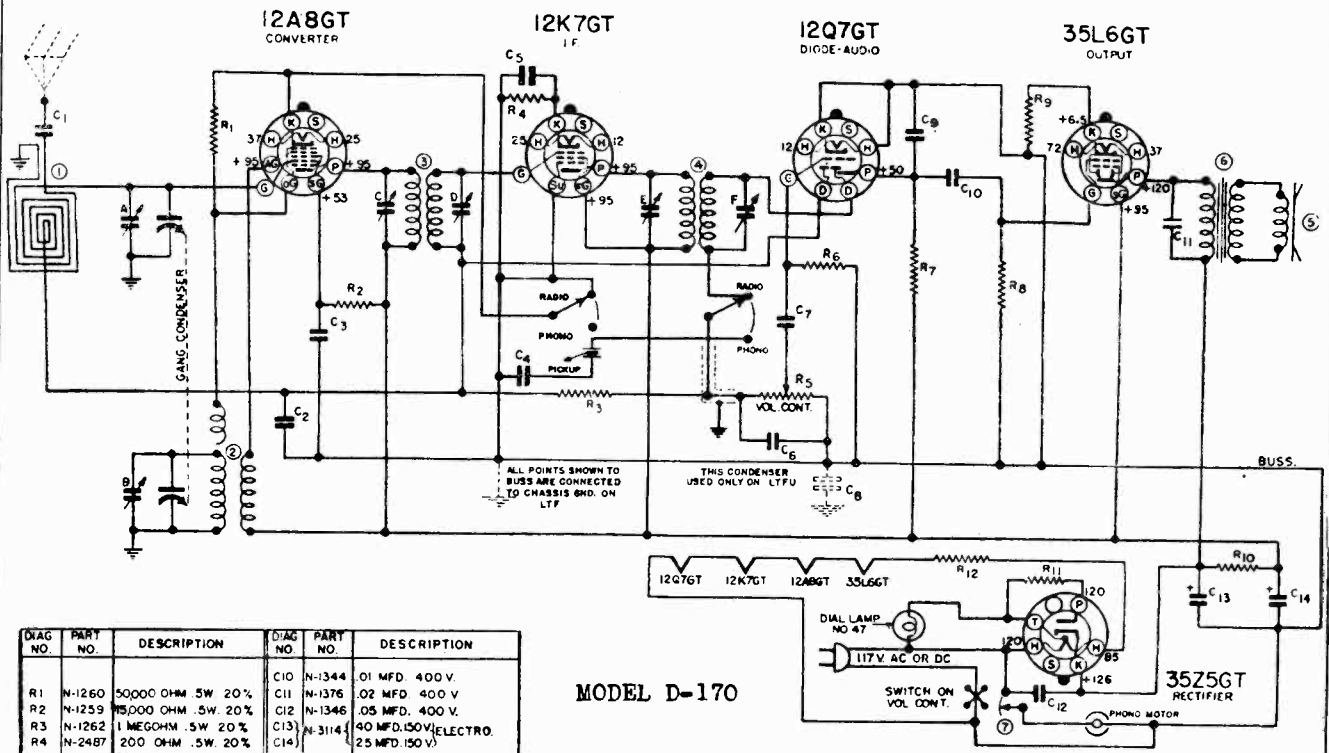
ALLIED RADIO CORP.

MODELS D-165, B-17109



MODEL D-170
MODEL D-174

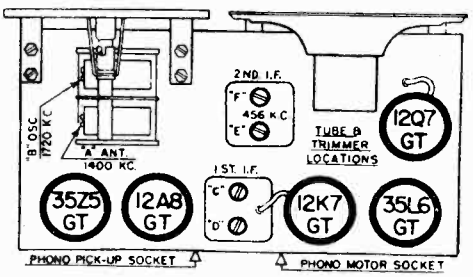
ALLIED RADIO CORP.



MODEL D-170

I.F. 456 KC.

DIAG NO.	PART NO.	DESCRIPTION
R1	N-1260	50,000 OHM .5W. 20%
R2	N-1259	15,000 OHM .5W. 20%
R3	N-1262	1 MEGOHM .5W. 20%
R4	N-2487	200 OHM .5W. 20%
R5	N-3045	0.5 MEGOHM VOL.CON.
R6	N-1263	10 MEGOHM .5W. 20%
R7	N-1377	200,000 OHM .5W. 20%
R8	N-1264	500,000 OHM .5W 20%
R9	N-1616	250 OHM .5W. 10%
R10	N-1257	2,000 OHM .5W. 20%
R11	N-1742	25 OHM .5W. 20%
R12	N-1618	80 OHM 2W. 10%
C1	N-1344	.01 MFD. 400 V.
C2	N-1345	.05 MFD. 200 V.
C3	N-1345	.05 MFD. 200 V.
C4	N-2642	.09 MFD. 200 V.
C5	N-1351	.1 MFD. 200 V.
C6	N-1374	.0001 MFD. MICA
C7	N-1344	.01 MFD. 400 V.
C8	N-3080	.22 MFD. 200 V.
C9	N-1447	.0005 MFD. 400 V.
C10	N-1344	.01 MFD. 400 V.
C11	N-1376	.02 MFD. 400 V.
C12	N-1346	.05 MFD. 400 V.
C13	N-3114	40 MFD. 150 V. (ELECTRO.
C14		25 MFD. 150 V.)
1	N-3041	LOOP ANTENNA COIL
2	N-1432	OSCILLATOR COIL
3	N-3043	1 ST. I.F. TRANSFORMER
4	N-3044	2ND. I.F. TRANSFORMER
5	N-2624	5" P.M. SPEAKER
6	N-3568	OUTPUT TRANSFORMER
7	N-4136	PHONO MOTOR SWITCH
	N-3046	2 GANG CONDENSER
	N-3550	RADIO-PHONO SWITCH
	N-4188	CRYSTAL PICK-UP
	N-3143	PHONO MOTOR & TURNTABLE



NOTE: VOLTAGES SHOWN ARE FROM TERMINAL TO BUSS. HEATER VOLTAGES ARE A.C. WHEN LINE VOLTAGE IS ALTERNATING.

SERVICE

MODELS D-170 and D-174

As the phonograph motor is the only moving part it is the only part of your phono-attachment that will require any attention. The motor requires oiling once every year.

Remove the turntable and detach the motor by removing the 3 screws. Apply 2 or 3 drops of Number 10 S.A.E. Oil in each of the felt wicks around the bearings.

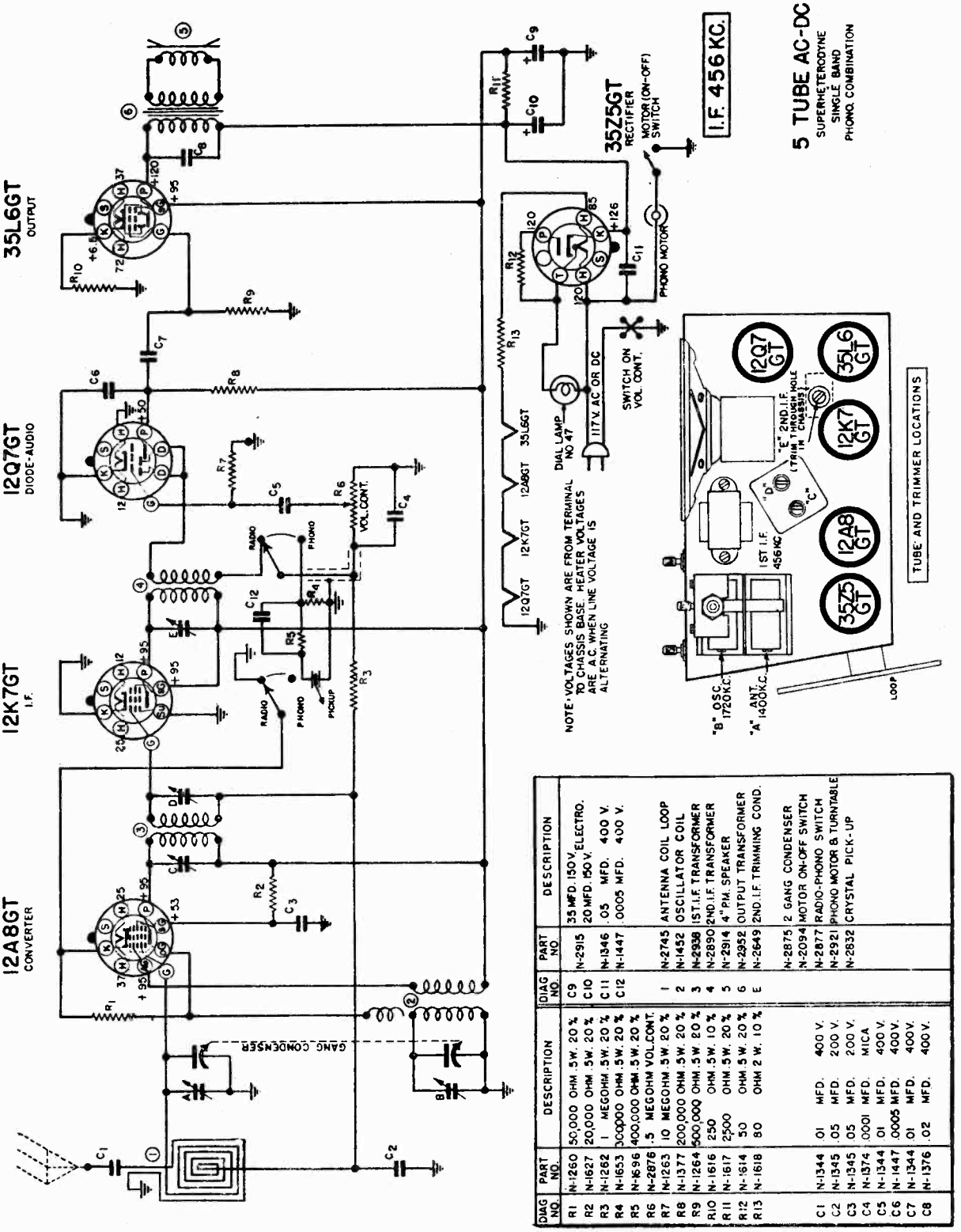
ALIGNMENT PROCEDURE

I. F. ALIGNMENT. With the gang condenser set at minimum, adjust test oscillator to 456 KC, and connect the oscillator output lead to the first detector tube (12A8GT) through an .05 or .1 mfd. condenser. The test oscillator ground lead should be connected to the chassis base. Proceed by adjusting the four I.F. trimmers for maximum signal, or swing on output meter, if available.

BROADCAST ALIGNMENT. Connect the test oscillator to the antenna of the set through a 200 mmfd. (.0002) condenser. With the gang condenser set at minimum capacity, set the test oscillator at 1720 KC, and adjust the oscillator (or 1720 KC trimmer) on gang condenser. Next — set the test oscillator at 1400 KC, and tune in the signal of the gang condenser. Adjust the antenna trimmer (or 1400 KC trimmer) for maximum signal. Next set the test oscillator at 600 KC, and tune in signal on condenser to check alignment of coils.

MODEL D-174

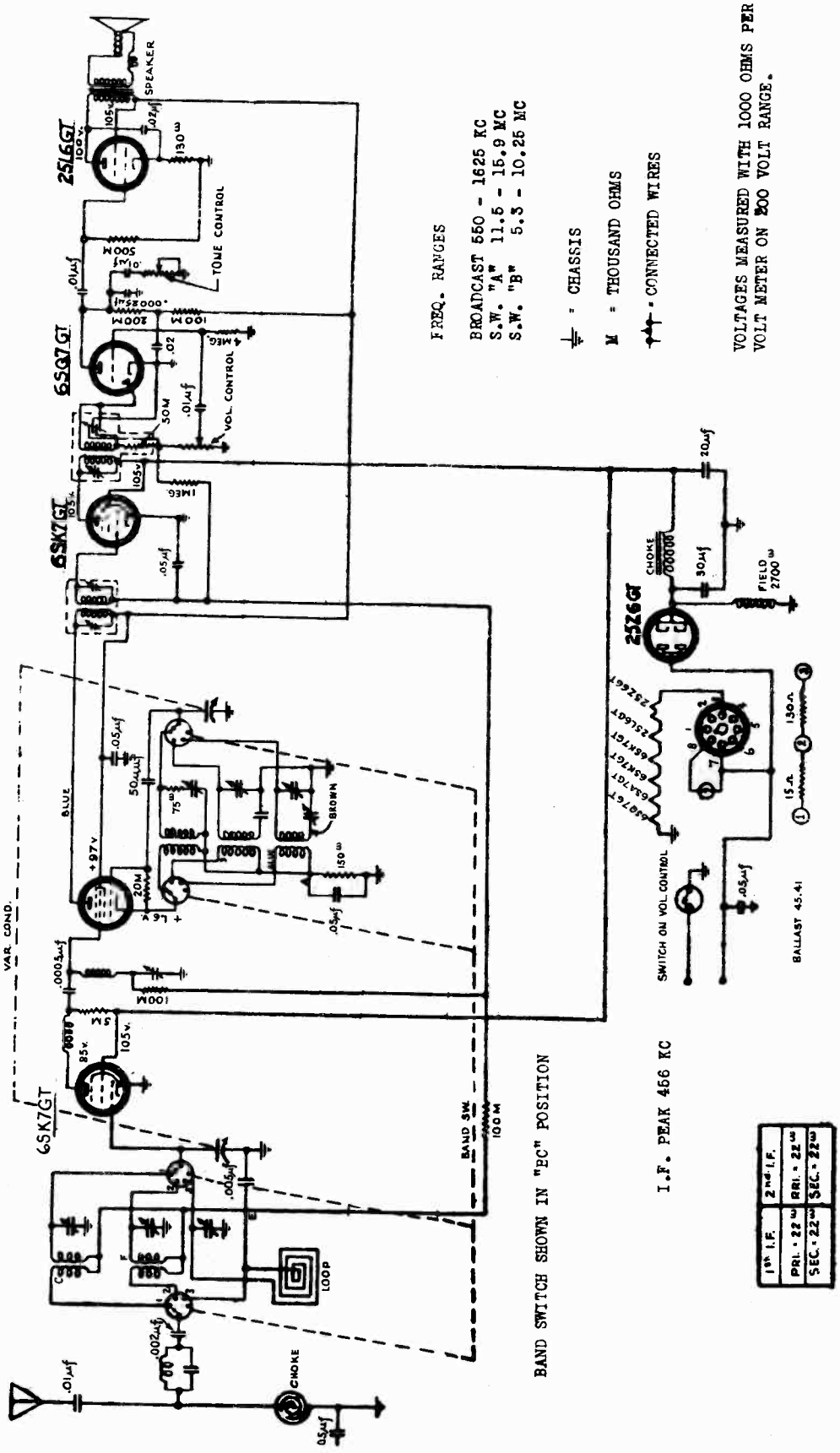
ALLIED RADIO CORP.



DIAG NO.	PART NO.	DESCRIPTION			DIAG NO.	PART NO.	DESCRIPTION
R1	N-1260	50,000 OHM .5W. 20 %			C9	N-2915	35 MFD. 150 V. ELECTRO.
R2	N-1627	20,000 OHM .5W. 20 %			C10		20 MFD. 150 V.
R3	N-1262	1 MEGOHM .5W. 20 %			C11	N-1346	.05 MFD. 400 V.
R4	N-1633	300000 OHM .5W. 20 %			C12	N-1447	.0005 MFD. 400 V.
R5	N-1696	400,000 OHM .5W. 20 %					
R6	N-2876	.5 MEGOHM VOL.CONT.			1	N-2745	ANTENNA COIL LOOP
R7	N-1263	10 MEGOHM .5W. 20 %			2	N-1452	OSCILLATOR COIL
R8	N-1377	200,000 OHM .5W. 20 %			3	N-2938	1ST I.F. TRANSFORMER
R9	N-1264	500,000 OHM .5W. 20 %			4	N-2890	2ND I.F. TRANSFORMER
R10	N-1616	250 OHM .5W. 10 %			5	N-2914	4" PM. SPEAKER
R11	N-1617	2500 OHM .5W. 20 %			6	N-2952	OUTPUT TRANSFORMER
R12	N-1614	50 OHM .5W. 20 %			E	N-2643	2ND I.F. TRIMMING COND.
R13	N-1618	80 OHM 2 W. 10 %				N-2875	2 GANG CONDENSER
						N-2094	MOTOR ON-OFF SWITCH
C1	N-1344	.01	MFD.	400 V.		N-2877	RADIO-PHONO SWITCH
C2	N-1345	.05	MFD.	200 V.		N-2921	PHONO MOTOR & TURNTABLE
C3	N-1345	.05	MFD.	200 V.		N-2832	CRYSTAL PICK-UP
C4	N-1374	.0001	MFD.	MICA			
C5	N-1344	.01	MFD.	400 V.			
C6	N-1447	.0005	MFD.	400 V.			
C7	N-1344	.01	MFD.	400 V.			
C8	N-1376	.02	MFD.	400 V.			

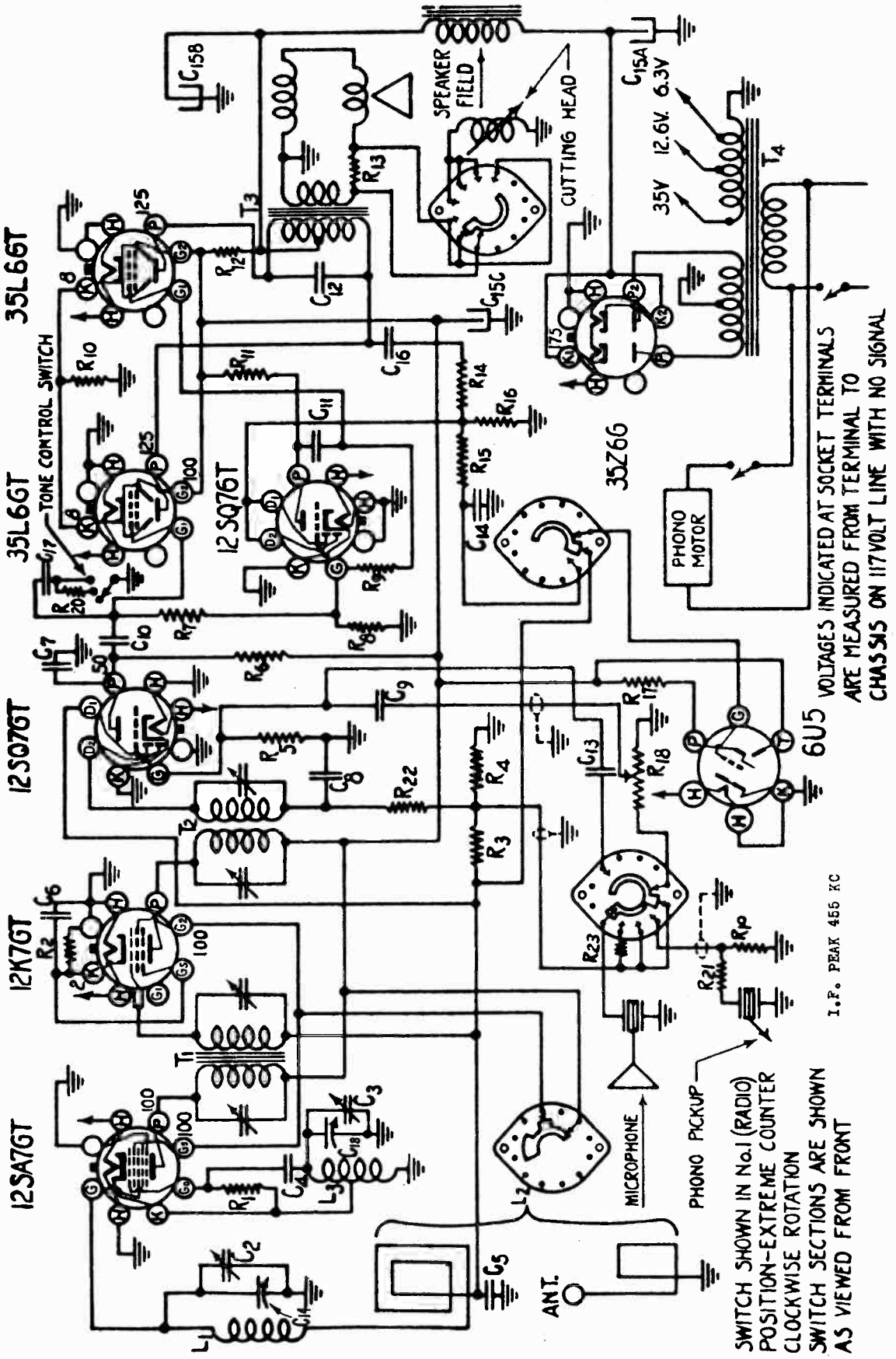
MODEL D-175

ALLIED RADIO CORP.



MODEL D-176

ALLIED RADIO CORP.



MODEL D-176

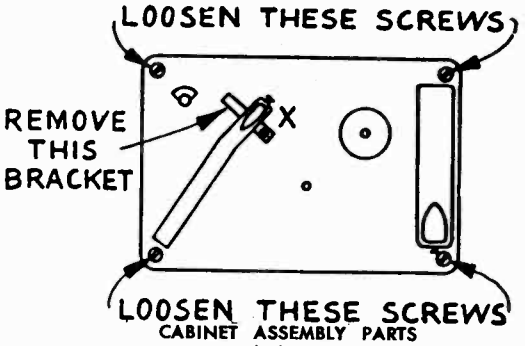
ALLIED RADIO CORP.

INSTALLATION

The recorder is rigidly mounted for shipping purposes. To prepare the unit for operation, loosen the four corner screws on the recorder and allow the unit to float on its rubber mountings. Remove the small bracket (X) which holds the tone arm in place.

Place the turntable disc on the spindle and press the motor drive wheel under so that it allows the disc to settle on its bearing.

See illustration.



Schematic Location	Part Number	Description
		CHASSIS PARTS
	4417	Button, Snap (Dial Mounting)
	8931	Cable, Tuning Tube
	2163	Cable, drive
	3227	Cap, Grid
R18	8910	Control, Volume and Switch
	1732	Cord, Line
	6424	Clamp, Linecord
	4314	Clamp, Tapped—For Tuning Tube
	4315	Clamp, Plain—For Tuning Tube
L3	8422	Coil, Oscillator
L1	8423	Coil, Tracking
C1a,b	8911	Condenser, Variable (with Pulley)
C2,3	8504	Condenser, Dual Trimmer
C15a,b,c	8425	Condenser, Electrolytic (20-250)—(20-150)—(20-150)
C4		Condenser, 100 Mmf. Mica
C5,14		Condenser, 1 Mfd. 200 v.
C6		Condenser, .05 Mfd. 200 v.
C7		Condenser, 250 Mmf. Mica
C8		Condenser, 100 Mmf. Mica
C9		Condenser, .002 Mfd. 600 v.
C10,16		Condenser, .01 Mfd. 400 v.
C11		Condenser, .05 Mfd. 400 v.
C12,13		Condenser, .001 Mfd. 600 v.
C17		Condenser, .005 Mfd. 600 v.
	7209	Grommet, Tuner Assembly Mtg.
	9121	Dial Chart
	8941	Microphone Socket Assembly
	6244	Pulley, Idler
	5026	Pointer
	6158	Pilot Lite
	1207	Retainer, "C" Washer (Holds Tuning Shaft)
R1		Resistor, 20M, 1/3 Watt
R2		Resistor, 200 Ohm, 1/3 Watt
R3,4,14,16		Resistor, 1 Meg. 1/3 Watt
R5		Resistor, 10 Meg. 1/3 Watt
R6,7,8,9,11		Resistor, 200M. 1/3 Watt
R10		Resistor, 120 Ohm, 1/2 Watt
R12		Resistor, 1000 Ohm, 1 Watt
R13		Resistor, 35 Ohm, 1/2 Watt
R15		Resistor, 2 Meg. 1/3 Watt
R17		Resistor, 1 Meg (in Tuning Tube Socket)
R19,20,21,22		Resistor, 50M, 1/3 Watt
R23		Resistor, 4 Meg. 1/3 Watt
	8440	Socket, Dual Dial Lamp
	8648	Spring, Drive Cable
	8427	Shaft, Drive
	8428	Switch, Tone Control
	8932	Switch, Master Control
	8919	Speaker, 6½" Dynamic
T4	8918	Transformer, Power, 60 cycle
T4	8933	Transformer, Power, 50 cycle
T3	89191	Transformer, Output
T1	8434	Transformer, 1st IF
T2	8435	Transformer, 2nd IF

CABINET ASSEMBLY PARTS

	Back for Cabinet
	Book, Instruction
8462	Bushing, Rubber (Recorder Unit Mtg.)
9205	Carton, Shipping
9210	Cabinet
9206	Escutcheon
2750	Knob, Motor Switch
8487	Knob, Tuning
8488	Knob, Tone
8489	Knob, Volume
8925	Knob, Master Control Switch
8491	Loop Antenna Assembly
9208	Plate, Instruction
8477	Plate, Motor-on-off
8287	Plug, 1 Prong (for Cutter Leads)
3288	Plug, 1 Prong (for Phono Pickup Leads)
8493	Plug, 2 Prong (for Motor Leads)
8454	Switch, Motor
2997	Washer, Rubber (for Recorder Mtg.)

RECORDER UNIT PARTS

6943	Hex Nut for Pivot Post
6947	Motor Mounting Screw
6948	Adjusting Screw (Follower Arm)
9413	Turntable Shaft Locking Screw
9417	Recorder Arm Rest
9418	Follower Arm Complete
9424	Pickup Cartridge
9426	Pickup Arm Complete
9428	Cutter Head Tension Spring
9484	Magnetic Cutter Head with Leads
9434	Recorder Arm Complete
9438	Pivot Post Return Spring
9450	10" One-piece Turntable
9456	Turntable Drive Disc Stud Clip
9458	Lead Screw and Pinion Assembly
9463	Turntable Drive Disc Tension Spring
9464	Turntable Shaft
9466	Turntable Drive Disc
9467	Turntable Drive Disc Mounting Bracket Assembly

The following parts are for models with ONE-PIECE TURNTABLE ONLY

9469	Retractable Pin Spring
9470	Retroctable Pin
9472	Rotor Shaft Pulley
9474	Rotor Shaft Pulley Set-Screw
9481	Motor 60 Cycle
9482	Motor 50 Cycle

MODEL D-176

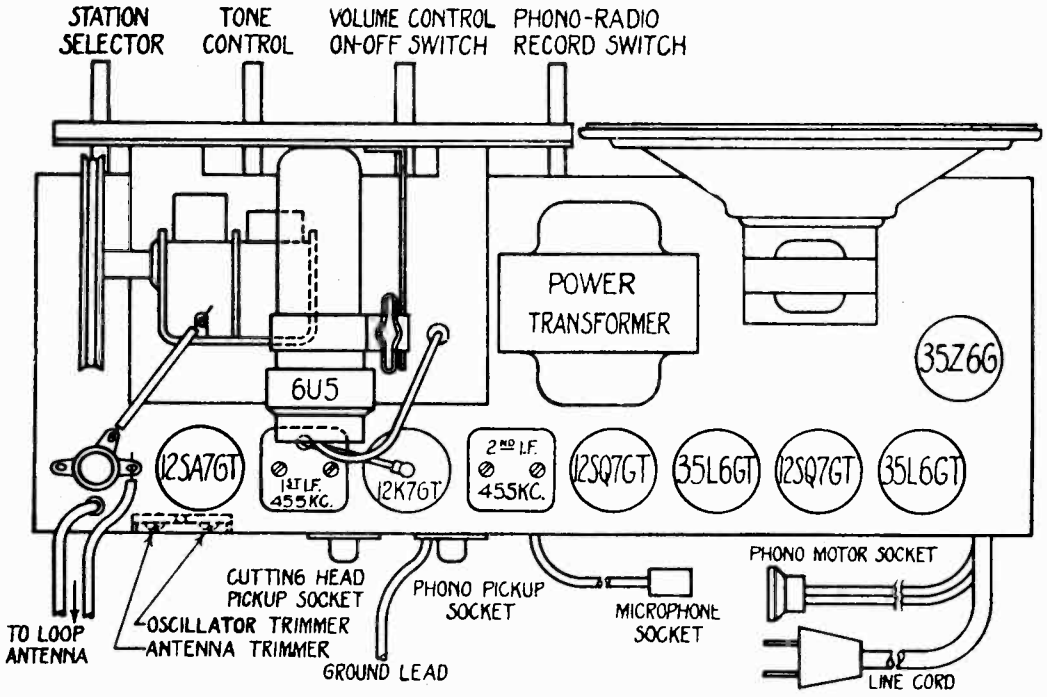
ALLIED RADIO CORP.

ALIGNMENT PROCEDURE

Output meter connection . . . . . Across speaker voice coil
Connection of generator ground lead . . . . . To Chassis
Connection of generator output lead . . . . . See chart below
Dummy antenna value to be used in series with generator . . . . See chart
Position of volume control . . . . . Full on (Clockwise)

POSITION OF VARIABLE	GENERATOR FREQUENCY	DUMMY ANTENNA	GENERATOR CONNECTION	TRIMMERS ADJUSTED (IN ORDER SHOWN)
Open (Min. capacity)	455 kc.	.1 mfd.	Ant. section of variable	T2, T1.
Min. capacity	1720 kc.	50 mmf.	Ant. Terminal	Oscillator Trimmer
Tune in signal from generator	1400 kc.	50 mmf.	Ant. Terminal	Antenna Trimmer

ALL ALIGNMENT OPERATIONS MUST BE DONE WITH THE MASTER CONTROL SWITCH IN THE NO. 1 (RADIO) POSITION.



RECORDING ARM ADJUSTMENTS

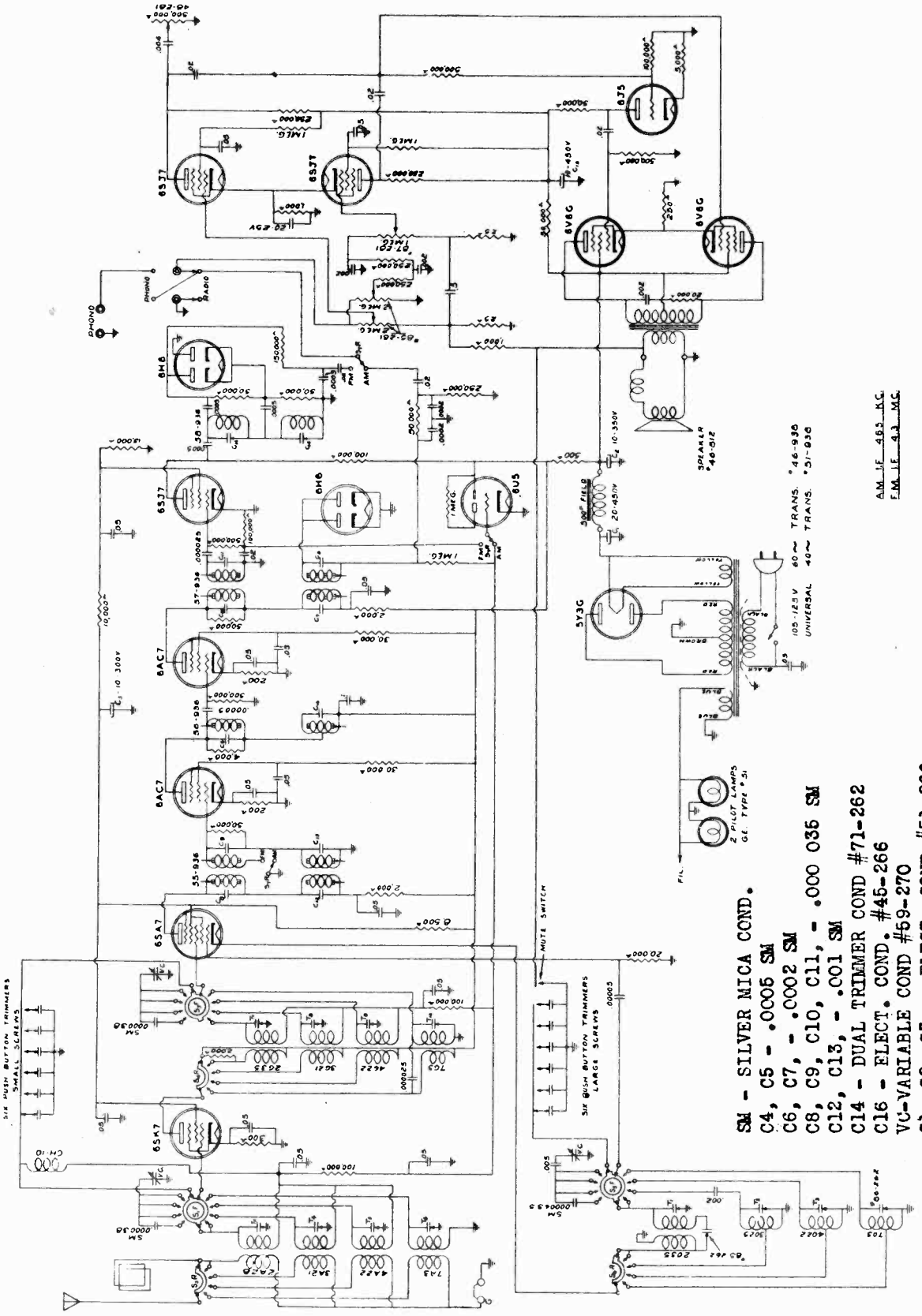
The recorder arm and recording head are adjusted at the factory for best operation. The following paragraph tells how to correct these adjustments should they, for any reason, become changed from their factory setting.

The bottom of the recording arm should be exactly 1/4 inch from the surface of the record. This should be measured beside the needle retaining screw on the end of the arm. The screw for making this adjustment can be found when the arm is raised, on a small platform near the hinge. Turning the adjusting screw to the left raises the arm, turning to the right lowers it. In making an adjustment turn the screw only a small fraction of a turn at a time.

Make a cut of at least ten or fifteen turns to see whether or not the needle is exerting the correct pressure on the record. This is correct when the groove cut by the needle is of approximately the same width as the space between grooves. On top of the cutting arms is a flat head screw. Turning this screw to the right increases the depth of cut, to the left decreases it. This adjustment is quite critical and the screw should be turned not more than 1/4 turn at a time.

MODEL D-182, D-197

ALLIED RADIO CORP.



SM - SILVER MICA COND.
C4, C5 - .0006 SM
C6, C7, - .0002 SM
C8, C9, C10, C11, - .000 036 SM
C12, C13, - .001 SM
C14 - DUAL TRIMMER COND #71-262
C16 - ELECT. COND. #45-266
VC-VARIABLE COND #59-270
C1, C2, C3, - ELECT. COND #51-266
S2R, ETC. -SECTION TWO REAR - BAND SWITCH #57-914A
TRIMMER CONDS. #87-262- T1, T2, T3, T4, T5, T6, T7, T8, T9, T10, T11

MODEL D-182, D-197

ALLIED RADIO CORP.

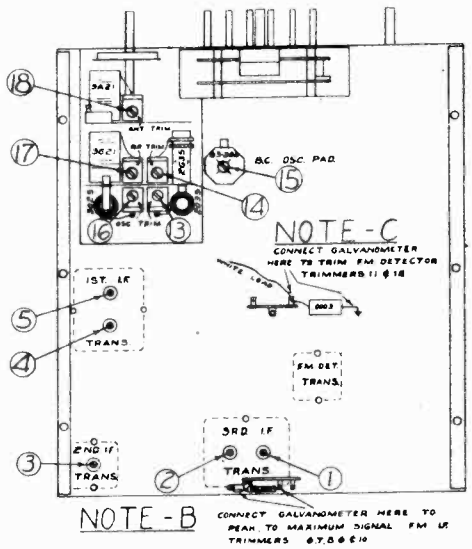
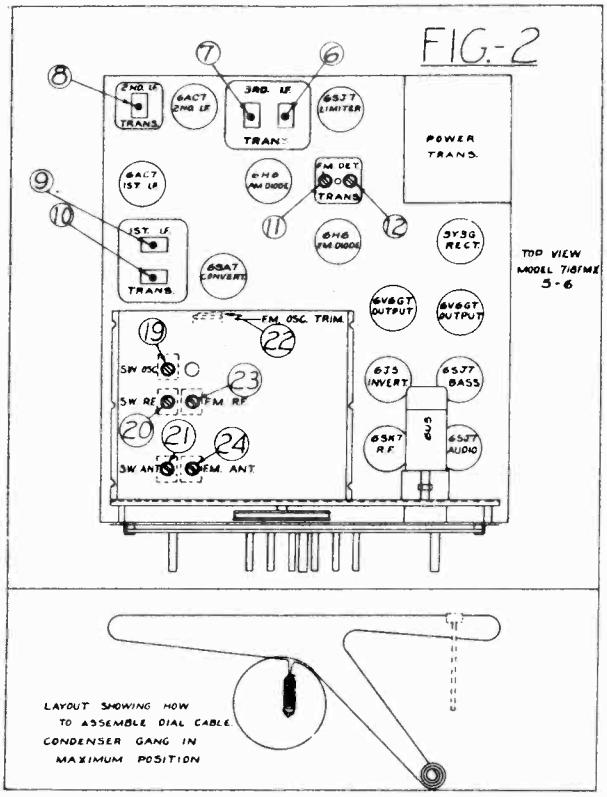


FIG.-1

BOTTOM VIEW OF CHASSIS



SOCKET VOLTAGE READINGS

* Socket Terminal Number

Voltage taken from ground with voltage at 117 Volts AC. Drop across speaker field 65 V. Use at least a 1000 Ohm per Volt Meter. High voltage reading off rectifier 300 V. DC.

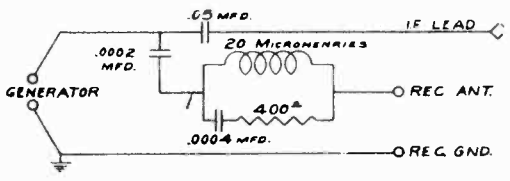
TUBE	FUNCTION	CATH.		SG.		PLATE			
6SK7	R.F.	5	* 5	100	6	230	8		
6SA7	Converter			100	4	220	3		
6AC7	1st. I.F.	3	5	155	6	225	8		
6AC7	2nd I.F.	3	5	155	6	210	8		
6SJ7	Limiter			65	6	65	8		
6H6	FM Des-Det.								
6H6	AM Det.								

TUBE	FUNCTION	CATH.		SG.		PLATE			
6SJ7	A.F.	1	5	20	6	25	8		
6SJ7	Bass Boost	1	5	20	6	25	8		
6U5	Tuning Eye					230			
6J5	Inverter	6	8			80	3		
6V6GT	Output	14	8	235	4	225	3		
6V6GT	Output	14	8	235	4	225	3		
5Y3G	Rectifier								

ALIGNMENT PROCEDURE

EQUIPMENT REQUIRED:

1. SIGNAL GENERATOR to accurately cover the alignment frequencies as shown below.
2. GALVANOMETER 75 microamperes center "0" (Such as Simpson Type 25) USE SERIES RESISTOR OF 100,000 Ohms in positive lead. Leads from meter to set to be as short as possible.
3. OUTPUT METER (0 to 3 V. AC if used in voice coil circuit).
4. DUMMY ANTENNA. Although the values as shown in below table for antenna load may be satisfactory, we urgently recommend the circuit as shown at the right to properly take care of the various frequencies to accomplish the correct alignment.



MODEL D-182, D-197

ALLIED RADIO CORP.

START ALIGNMENT WITH:
Treble and Bass controls turned toward left, Volume Control full ON to right and Band Switch in Broadcast position. After checking for pointer travel to last line above 550, set dial to point where there is no interference with generator signal and proceed with AM-IF alignment.

DUMMY ANTENNA	SIG. GEN. CONNECTION TO	GEN. FREQ.	BAND SW. POSITION	DIAL SETTING	ORDER OF TRIMMER ADJUSTMENTS	TRIMMER FUNCTION	SEE NOTE
.05 Mfd.	Grid of 6SA7	465 KC	BC	Off Station	See Fig. 1 ① ② ③ ④ ⑤	AM I.F. peak to max. output	A
"	Grid of 6SA7 - remove tuned circuit	4.3 MC Unmod.	FM	"	See Fig. 2 ⑥ ⑦ ⑧ ⑨ ⑩	FM I.F. See Fig.1 Galvanometer Position	B
"	"	4.4 MC	FM	"	Turn ⑪ down tight - Then adjust ⑫	FM Detector See Fig. 2	C
"	"	4.3 MC	FM	"	After ⑫, adjust ⑪ for zero deflection	FM Detector See Fig. 2	D
400 Ohm Resistor	"A" Ant. post	1400 KC	BC	1400 KC	See Fig. 1 ⑬ then ⑭	BC Osc. and RF	E
"	"	600 KC	BC	600 KC	⑮ Rock Dial	BC Osc. Pad.	E
"	"	5 MC	Police	5 MC	⑯ ⑰ ⑱	Osc. - RF - Ant. Check image at 4.1	E
"	"	16 MC	S.W.	16 MC	⑲ ⑳ ㉑	Osc. - RF - Ant. Check image at 15.1	E
"	"	48 MC 8th Har. of 6 MC	FM	48 MC	㉒ ㉓ ㉔	FM Osc.- RF - Ant	E

NOTE A: When a re-alignment is made of either the AM I.F. or FM I.F. it should not be necessary to turn the adjustments very far in either direction. The AM I.F. adjustments are reached through holes in the base from underside of chassis. Should the screws be turned too far in, they might fall out of position which would require that the coil be re-assembled. At the other extreme, if the screws are forced too far out, there is danger of breaking the iron cores.

NOTE B: Connect Galvanometer from tap of limiter grid load circuit to ground. See Fig. 1. Adjust for max. current. Normal gain should give deflection (with meter as specified) of 22 with 2,000 to 3,000 microvolt input. Now shift generator frequency each side of 4.3; that is, to 4.2 and 4.4. The drop-in meter deflection should be approximately proportional to change in frequency. If not, recheck alignment.

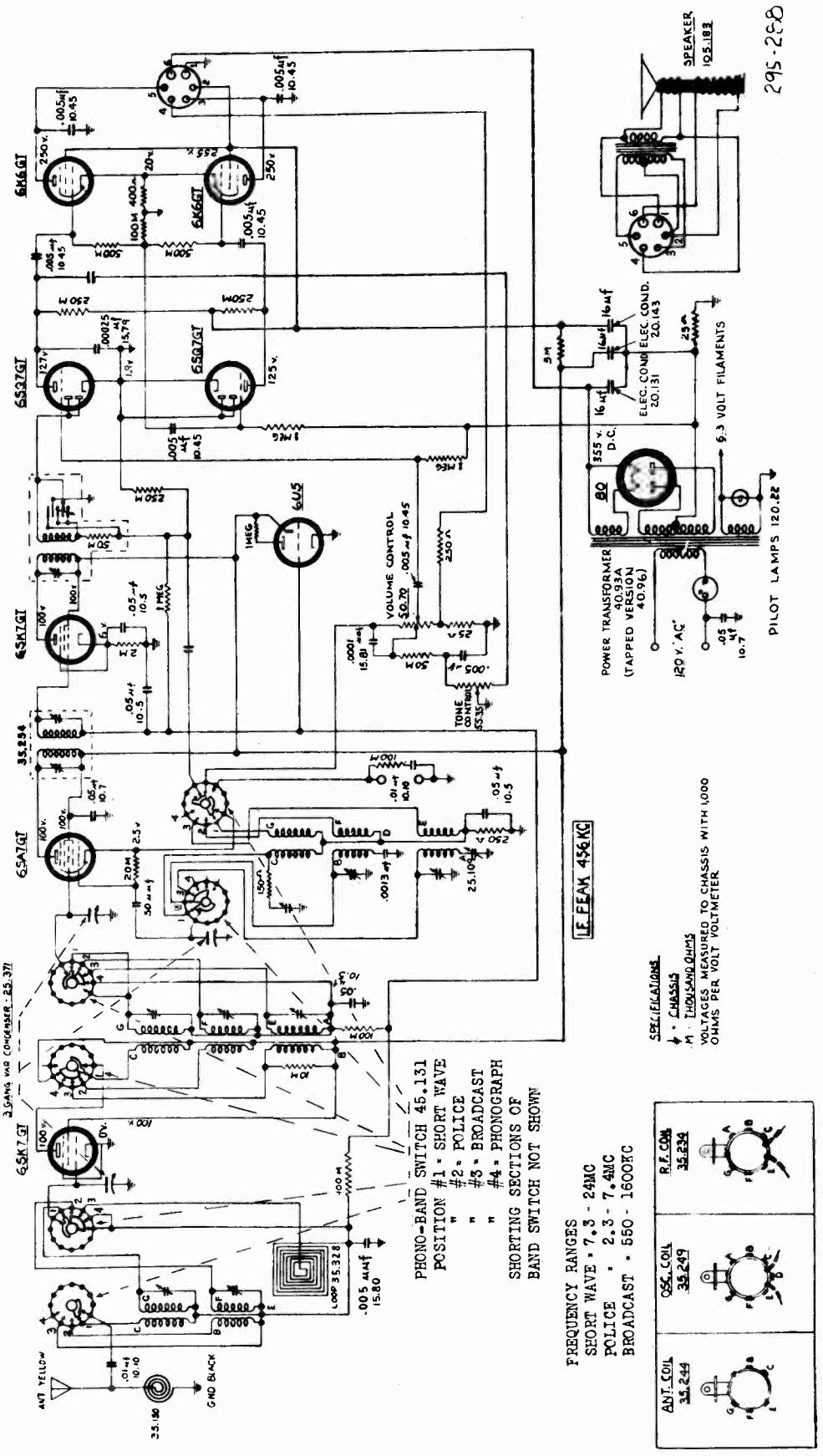
NOTE C: With Galvanometer connected to FM Detector output (See Fig. 1) and Trimmer 11 turned all the way in temporarily, adjust Trimmer 12 for max. deflection at 4.4 MC. Normal gain should give deflection of 9 with 2,000 to 3,000 microvolts input.

NOTE D: After trimmer 12 is adjusted to 4.4, adjust Trimmer 11 to zero deflection at 4.3. Then shift generator to 4.2 MC. Meter should then show deflection approximately same as at 4.4 at reverse polarity. If the I.F. circuits are ever readjusted, always recheck detector afterwards.

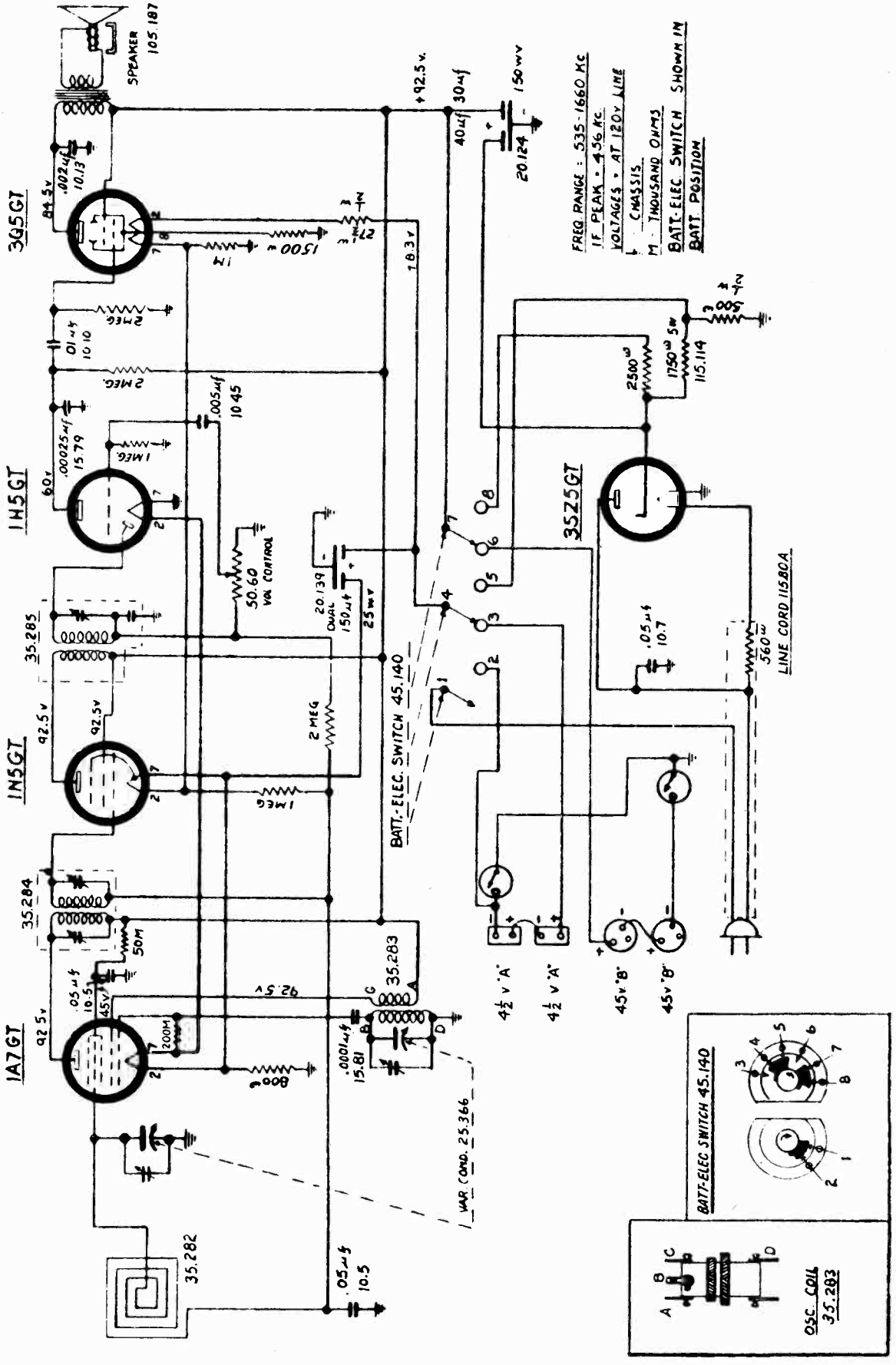
NOTE E: Peak for greatest deflection of output meter.

MODEL D-312

ALLIED RADIO CORP.

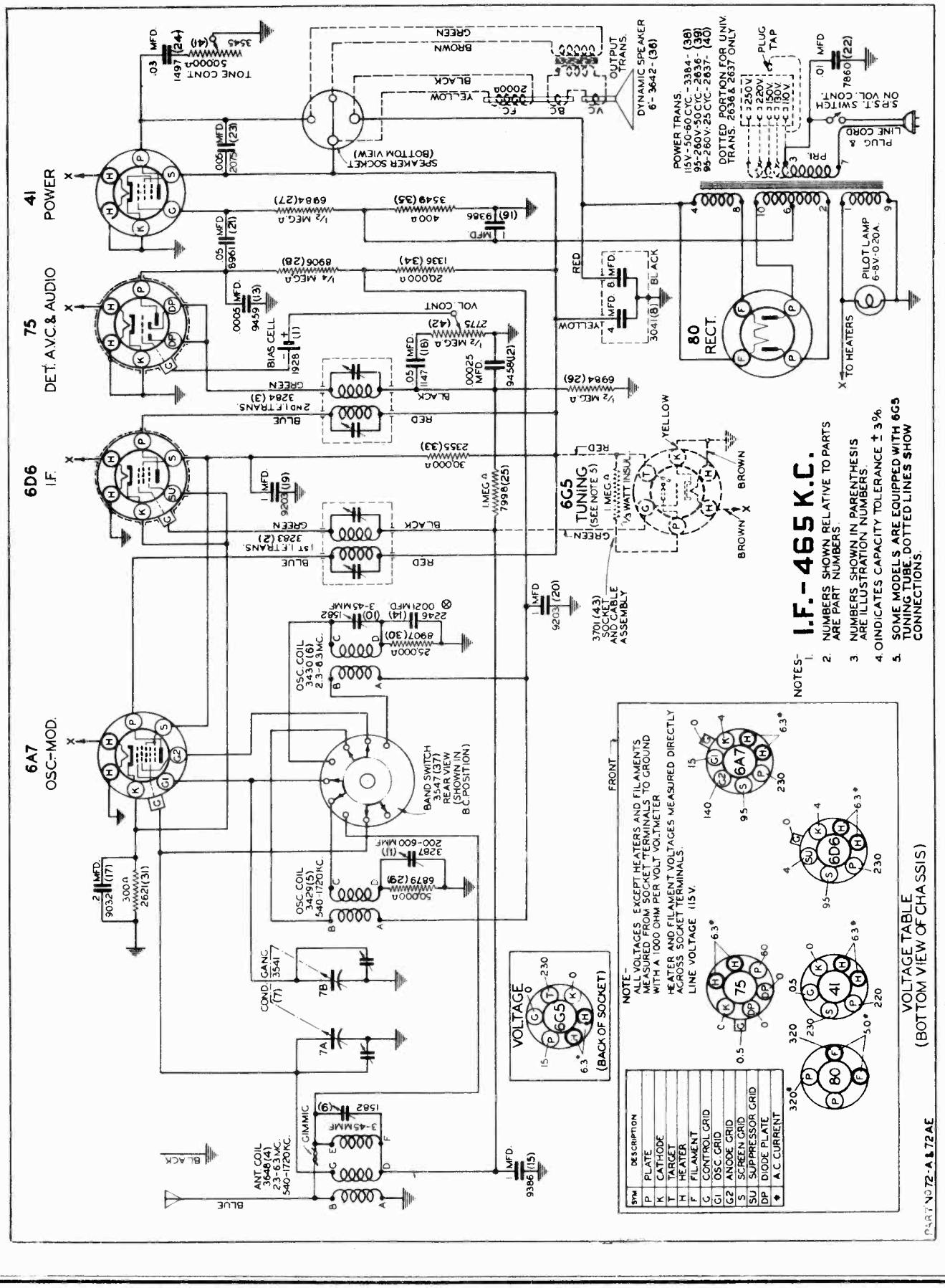


MODEL D-366, D-367



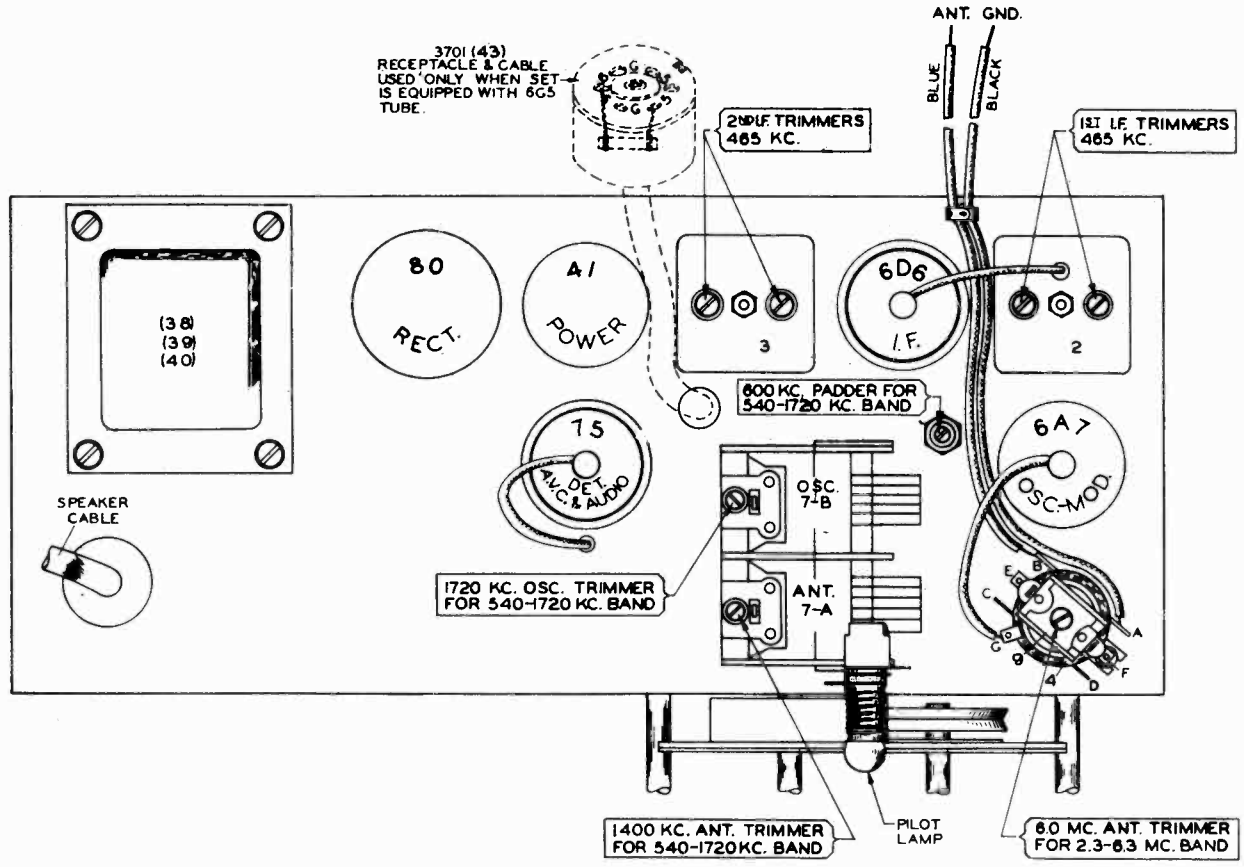
MODELS B10562, B10563, B10570

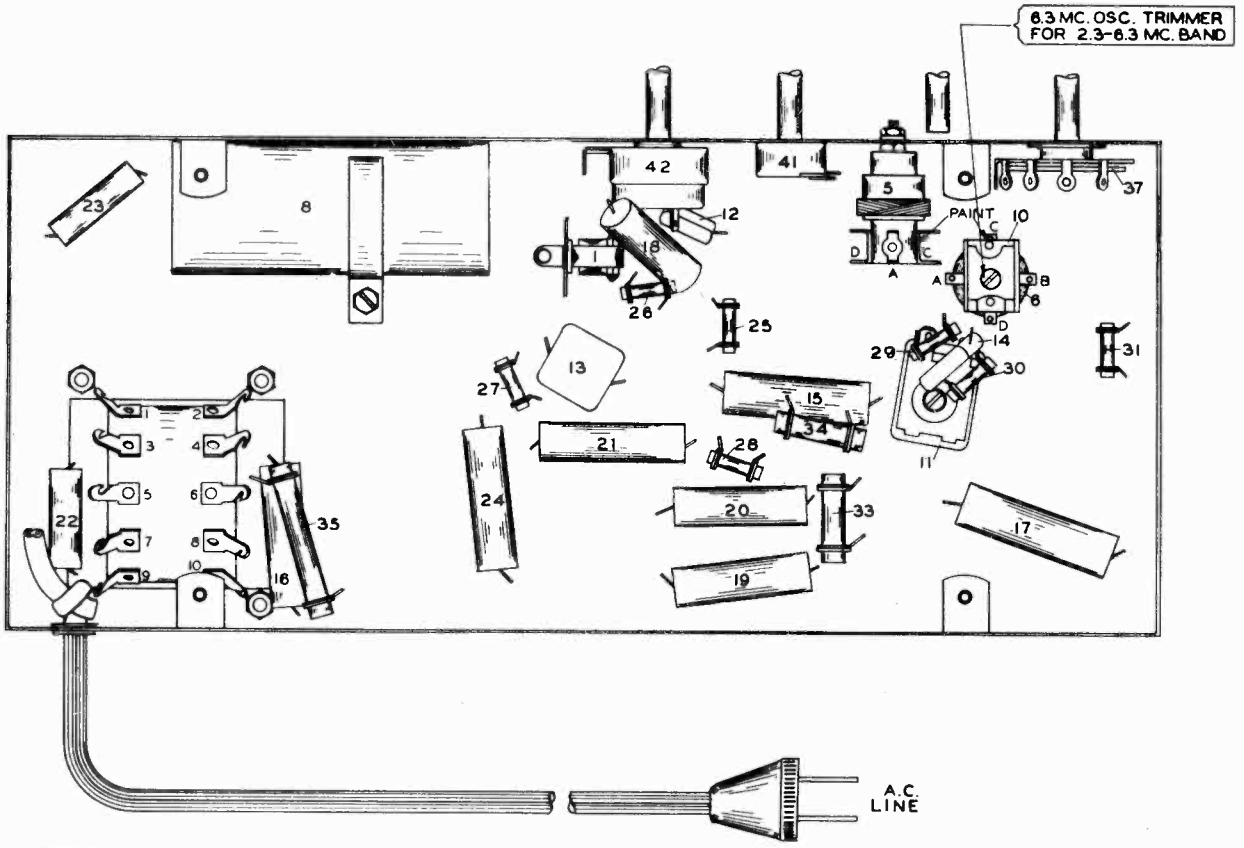
ALLIED RADIO CORP.



MODELS B10562, B10563, B10570

ALLIED RADIO CORP.





AC OPERATED SUPERHETERODYNE RECEIVER

Some of these models are equipped with a 6G5 Cathode ray visual tuning indicator tube. The parts and connections shown in dotted lines on the circuit and parts layout diagrams are used only when the 6G5 tube is incorporated in the receiver.

ALIGNMENT PROCEDURE:

Lack of sensitivity, selectivity or poor tone quality may be due to any one or a combination of causes such as weak or defective tubes or speaker, open or grounded bias resistor, bypass condenser, inadequate or excessively long antenna, etc. Never attempt to realign set until all other possible sources of trouble have been first thoroughly investigated and definitely proven not to be the cause.

NOTE: BE SURE TO FOLLOW PROCEDURE CAREFULLY WHEN ALIGNING, OTHERWISE THE RECEIVER WILL BE INSENSITIVE AND THE DIAL CALIBRATION WILL BE INCORRECT. THE TRIMMERS AND PADDING CONDENSER WILL BE REFERRED TO BY THEIR FUNCTION AS INDICATED ON THE PARTS DIAGRAM.

IT IS ABSOLUTELY NECESSARY THAT AN ACCURATELY CALIBRATED TEST OSCILLATOR WITH SOME TYPE OF OUTPUT MEASURING DEVICE BE USED WHEN ALIGNING THE RECEIVER.

ALIGNING I.F. STAGE AT 465 KILOCYCLES:

(a) Connect the ground lead of the test oscillator to the chassis or set ground lead. Connect the other lead of the test oscillator to the grid cap of the 6A7 tube through a .02 Mfd. series condenser. DO NOT REMOVE GRID CLIP.

(b) Set test oscillator to EXACTLY 465 kilocycles and turn receiver volume control on full.

(c) Peak each of the second I.F. transformer trimmers.

(d) Peak each of the first I.F. transformer trimmers.

To assure most accurate trimmer setting repeat above adjustment several times always using lowest possible test oscillator output consistent with readable output meter scale deflection.

ALIGNING 1720-540 KILOCYCLE BAND:

(a) Remove test oscillator lead from grid of the 6A7 tube and attach it to the receiver antenna lead through a .00025 Mfd. series condenser.

(b) Check tuning dial adjustment by turning gang condenser until plates touch maximum capacity stop (completely in mesh), at which point the dial needle must be exactly even with the last line at the low frequency end of the dial calibration. If the dial needle does not point exactly to the last line move needle to correct position.

(c) Set receiver dial and test oscillator frequency to EXACTLY 1720 kilocycles.

(d) Bring in 1720 KC test oscillatoi signal to maximum output by adjusting the trimmer condenser mounted on top of the oscillator section of the gang condenser.

Looking at the front of the receiver the rear section of the gang condenser is the oscillator section.

(e) Tune receiver dial and set test oscillator frequency to EXACTLY 1400 kilocycles.

(f) Adjust trimmer on top of the front section gang condenser (antenna section) for maximum 1400 kilocycle test signal response.

(g) Tune receiver dial and set test oscillator frequency to approximately 600 kilocycles.

(h) While rocking the tuning condenser back and forth adjust 600 KC oscillator padder condenser which is accessible through the hole in the top of the chassis adjacent to the gang condenser for maximum 600 kilocycle signal response.

ALIGNING 2.3-6.3 MEGACYCLE BAND:

(a) Replace .00025 Mfd. Test oscillator antenna lead series condenser with a 400 ohm resistor.

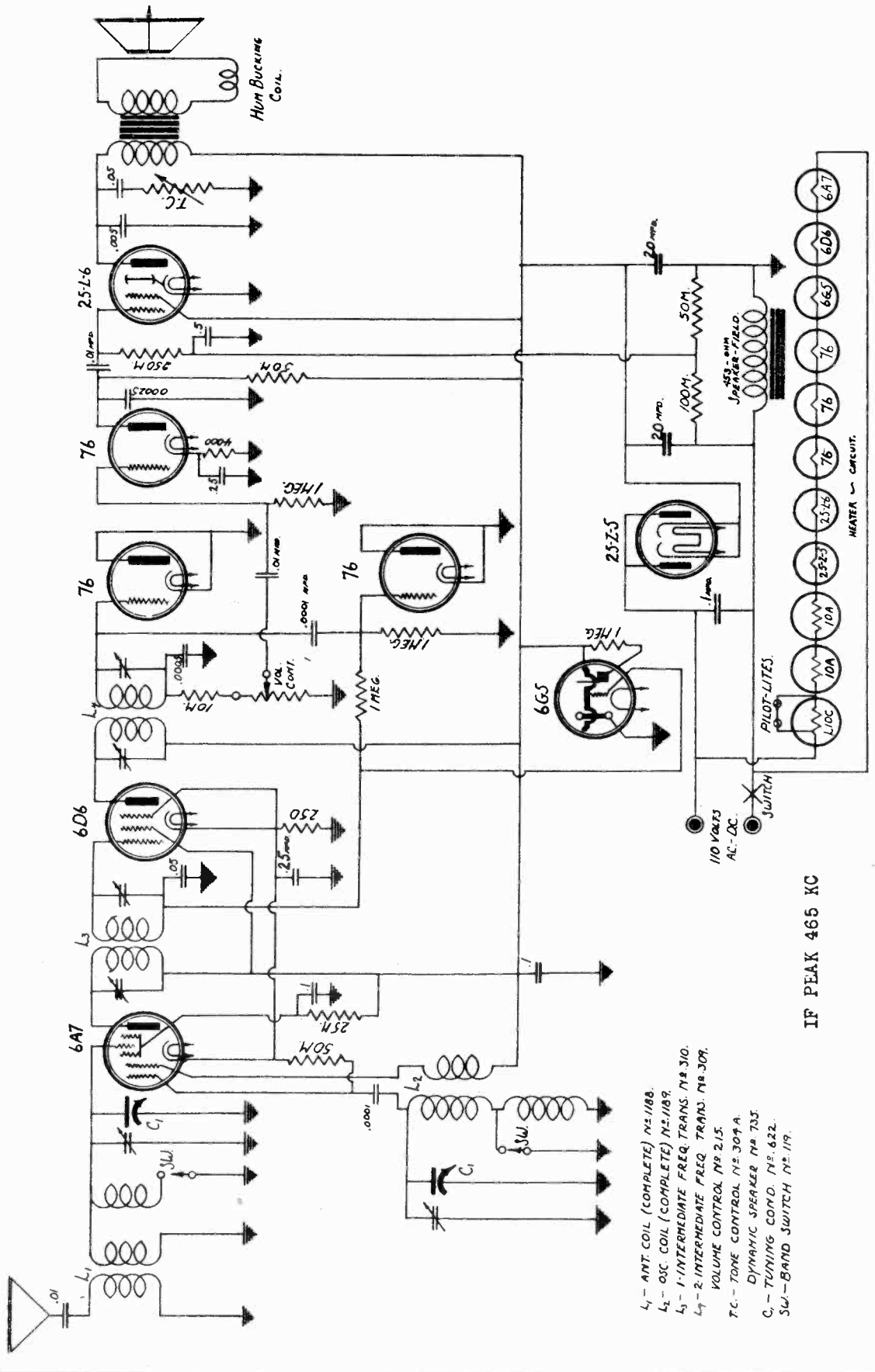
(b) Adjust band selector switch for 2.3-6.3 megacycles band operation, tune receiver dial and set test oscillator frequency to EXACTLY 6.3 megacycles.

(c) Bring in 6.3 megacycle test oscillator signal to maximum output by adjusting 6.3 M.C. oscillator trimmer.

(d) Tune receiver dial and test oscillator frequency to EXACTLY 6 megacycles, and adjust 6 M.C. antenna trimmer for maximum sensitivity.

MODEL B-10620, B-10621

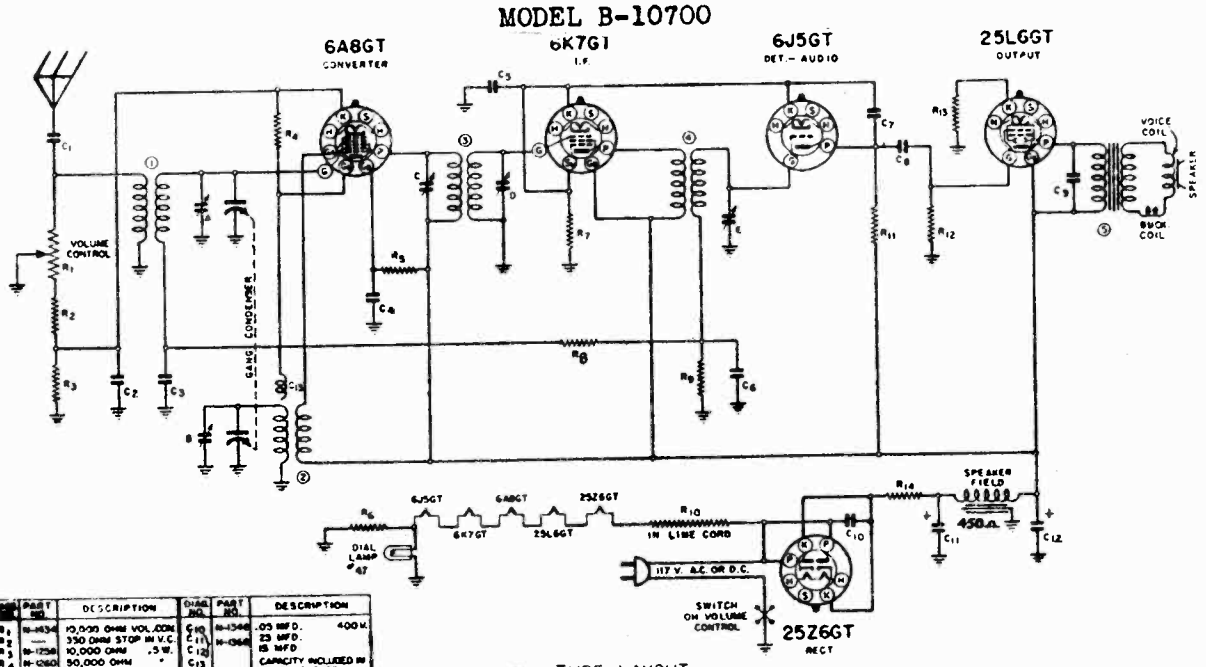
ALLIED RADIO CORP.



MODEL B-10700,
B-10702 LATE

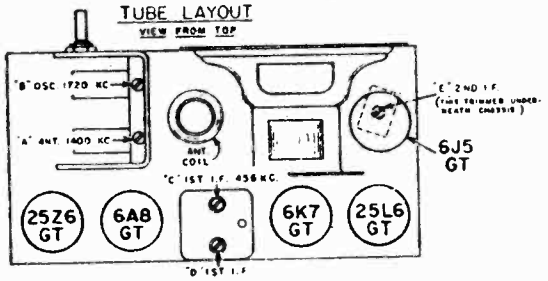
ALLIED RADIO CORP.

MODEL B-10700



DIAG. NO.	PART NO.	DESCRIPTION	DIAG. NO.	PART NO.	DESCRIPTION
R1	N-1434	10,000 OHM VOL. CONT.	C10	N-1346	.05 MFD. 400 V.
R2	—	350 OHM STOP IN V.C.	C11	N-1368	25 MFD. 15 MFD
R3	N-1258	10,000 OHM .5 W.	C12		CAPACITY INCLUDED IN OSCILLATOR COIL
R4	N-1260	50,000 OHM "	C13		
R5	N-1400	30,000 OHM "	"E"	N-1453	2ND I.F. TRIMMER
R6	N-1415	30 OHM 1.0 W.			
R7	N-1459	800 OHM .5 W			
R8	N-1262	1.0 MEGOHM "			
R9	N-1370	2.0 MEGOHM "			
R10	N-1436	150 OHM IN LINE CORD	①	N-1451	ANTENNA COIL
R11	N-1377	20,000 OHM .5 W	②	N-1452	OSCILLATOR COIL
R12	N-1264	500,000 OHM "	③	N-1453	1ST I.F. TRANS.
R13	N-1457	125 OHM "	④	N-1432	2ND I.F. TRANS.
R14	N-1458	25 OHM "	⑤	N-1370	3" SPK. & TRANS.
C1	N-1344	.01 MFD. 400 V.		N-1431	GANG CONDENSER
C2	N-1345	.05 MFD. 200 V.			
C3	N-1345	.05 MFD. "			
C4	N-1345	.05 MFD. "			
C5	N-1351	.00 MFD. "			
C6	N-1344	.01 MFD. 400 V.			
C7	N-1346	.0005 MFD. "			
C8	N-1346	.01 MFD. "			
C9	N-1344	.01 MFD. "			

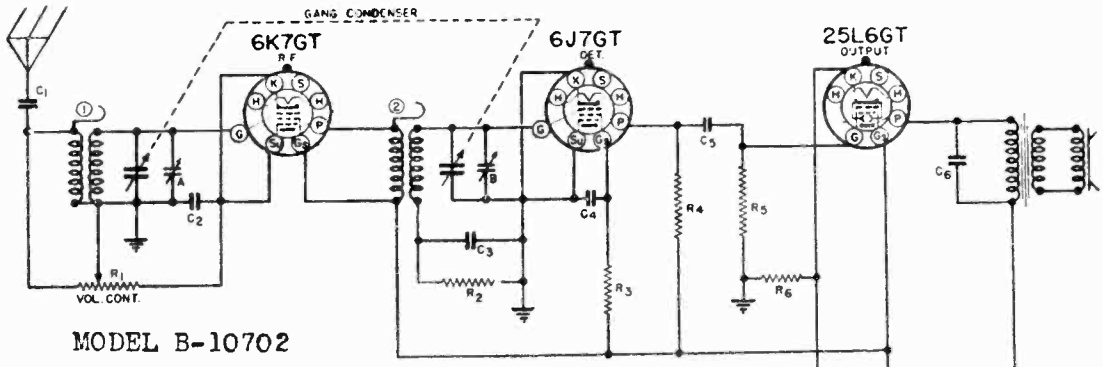
TUBE LAYOUT
VIEW FROM TOP

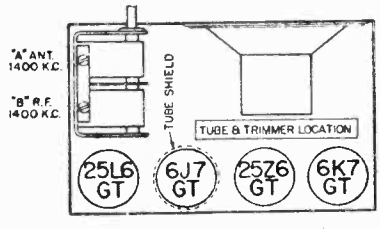


I.F. 456 KC.

5 TUBE A.C.-D.C.
SUPERHETERODYNE
SINGLE BAND

MODEL B-10702



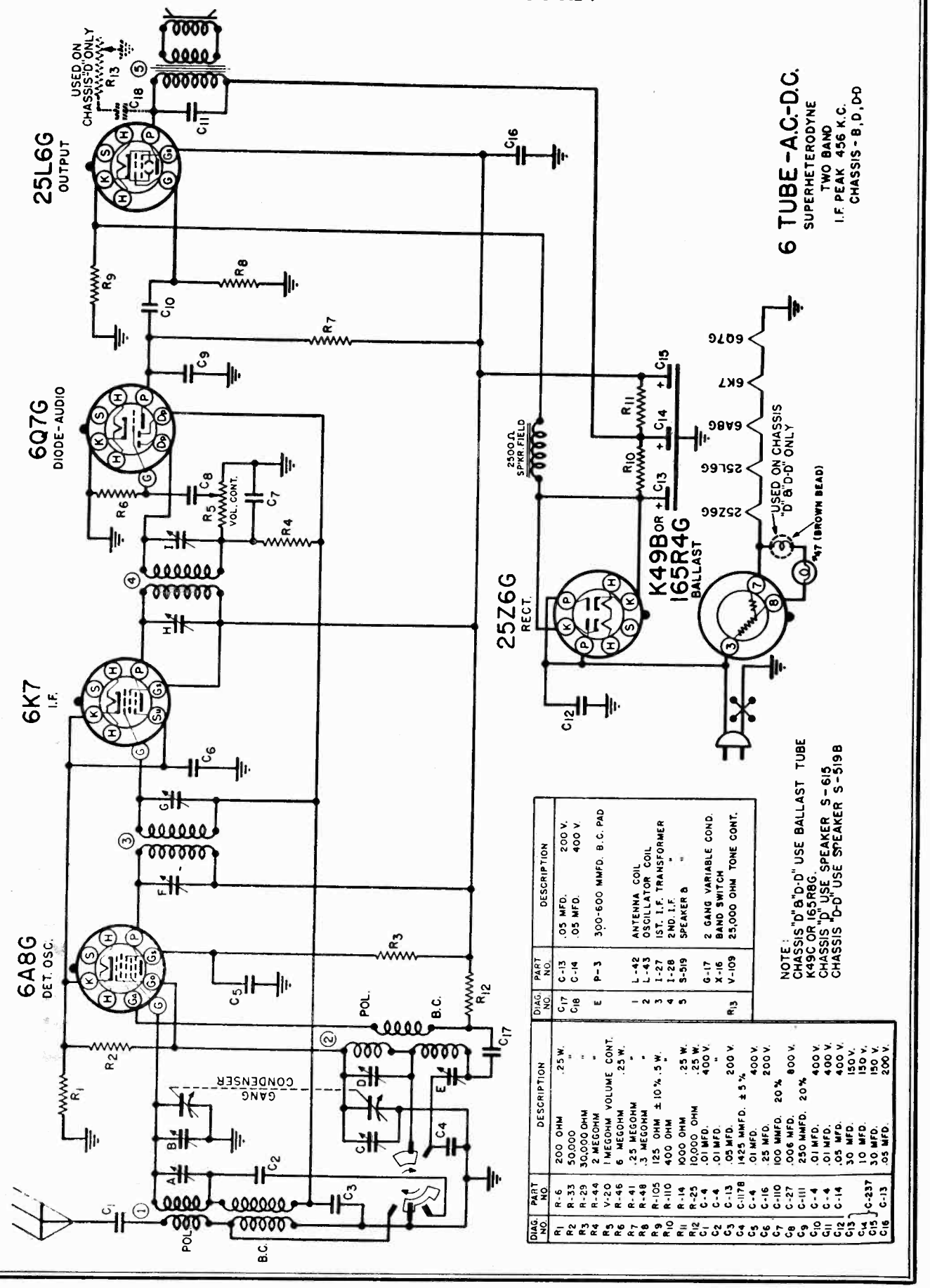


4 TUBE T.R.F.

DIAG NO.	PART NO.	DESCRIPTION	DIAG NO.	PART NO.	DESCRIPTION
C1	N-1344	.01 MFD 400 V.	R1	V-23	25,000 OHM VOL.
C2	N-1345	.05 MFD. 200 V.	R2	N-1418	3.5 MEG. .5 W.
C3	N-1345	.05 MFD 200 V.	R3	N-1419	6 MEG. .5 W.
C4	N-1344	.01 MFD. 400 V.	R4	N-1262	1 MEG .5 W.
C5	N-1344	.01 MFD 400 V.	R5	N-1264	.5 MEG. .5 W.
C6	N-1344	.01 MFD 400 V.	R6	N-1416	125 OHM ±10% .5 W.
C7	N-1346	.05 MFD 400 V.	R7	N-1420	125 OHM 1 W.
C8	C-233	16 MFD 150 W V.	R8	N-1417	3,000 OHM .5 W.
C9	C-233	8 MFD. 150 W V.	R9	N-1415	30 OHM 1.0 W.
C10	C-233	6 MFD 150 W V.	R10	N-1251	25 OHM 1 W.
	S-300	SPEAKER	1	L-110	ANTENNA COIL
	G-25	GANG CONDENSER	2	L-111	R.F. COIL

MODELS E-10704, E-10800
MODELS E-10803, E-10818

ALLIED RADIO CORP.



DIAG. NO.	PART NO.	DESCRIPTION
R1	R-6	200 OHM .25 W.
R2	R-33	50,000 "
R3	R-29	30,000 OHM "
R4	R-44	2 MEGOHM "
R5	V-20	1 MEGOHM VOLUME CONT.
R6	R-46	6 MEGOHM .25 W.
R7	R-41	.25 MEGOHM "
R8	R-48	.3 MEGOHM "
R9	R-105	125 OHM ±10% .5 W.
R10	R-110	400 OHM "
R11	R-14	1000 OHM .25 W.
R12	R-25	10,000 OHM .25 W.
C1	C-4	.01 MFD. 400 V.
C2	C-4	.01 MFD. "
C3	C-13	.05 MFD. 200 V.
C4	C-1178	1425 MMFD. ±5%
C5	C-4	.01 MFD. 400 V.
C6	C-16	.25 MFD. 200 V.
C7	C-110	100 MMFD. 20%
C8	C-27	.006 MFD. 600 V.
C9	C-111	250 MMFD. 20%
C10	C-4	.01 MFD. 400 V.
C11	C-4	.01 MFD. 400 V.
C12	C-14	.05 MFD. 400 V.
C13	C-237	30 MFD. 150 V.
C14		10 MFD. 150 V.
C15		30 MFD. 150 V.
C16	C-13	.05 MFD. 200 V.

DIAG. NO.	PART NO.	DESCRIPTION
C17	C-13	.05 MFD. 200 V.
C18	C-14	.05 MFD. 400 V
E	P-3	300-600 MMFD. B.C. PAD
1	L-42	ANTENNA COIL
2	L-43	OSCILLATOR COIL
3	I-27	IST. I.F. TRANSFORMER
4	I-28	2ND. I.F. "
5	S-519	SPEAKER "
	G-17	2 GANG VARIABLE COND.
	X-16	BAND SWITCH
R13	V-109	25,000 OHM TONE CONT.

NOTE:
CHASSIS "D" & "D-D" USE BALLAST TUBE K49C OR I65R8G.
CHASSIS "D" USE SPEAKER S-615
CHASSIS "D-D" USE SPEAKER S-519B

ALLIED RADIO CORP.

ALIGNMENT DATA AND SERVICING

MODELS E-10704, E-10800; MODELS E-10803, E-10818

GENERAL DATA. The alignment of this receiver requires the use of a test oscillator that will cover the frequencies of 456, 600, 1500, 2500 and 6000 KC and an output meter to be connected across the primary or secondary of the output transformers. If possible, all alignments should be made with the volume control on maximum and the test oscillator output as low as possible to prevent the AVC from operating and giving false readings.

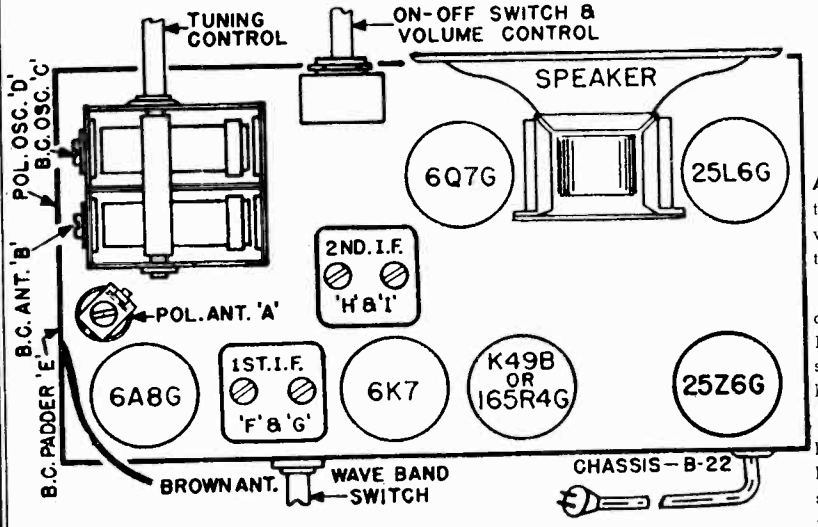
CORRECT ALIGNMENT PROCEDURE. The intermediate frequency (I.F.) stages should be aligned properly as the first step. After the I.F. transformers have been properly adjusted and peaked, the Broadcast and Police bands in the order given, should be the next procedure.

I. F. ALIGNMENT. With the wave switch in the Broadcast Band and the gang condenser set at minimum, adjust the test oscillator to 456 KC and connect the output to the grid of the first detector tube (6A8G) through a .05 or .1 mfd. condenser. The ground on the test oscillator should be connected to the chassis ground. Align all four I.F. trimmers to peak or maximum reading on the output meter.

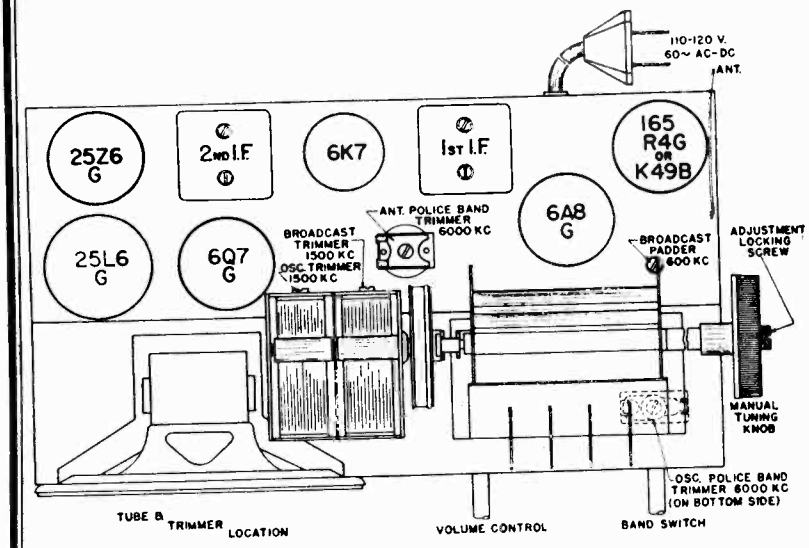
BROADCAST BAND ALIGNMENT. With the switch turned to the broadcast position, connect the antenna to the generator through a 200 MMF dummy and set the dial and generator at 1500 KC. Align the BC oscillator trimmer first and then the BC antenna trimmer. Set the generator at 600 KC and adjust the BC pad by rocking the gang back and forth while adjusting the pad until the maximum output is obtained. Recheck the adjustment at 1500 KC as the pad adjustment may have caused misalignment.

POLICE BAND ALIGNMENT. Change the band switch to the police position and with a 400 ohm dummy antenna instead of the 200 MMF dummy, align the police oscillator and antenna trimmers with the generator set at 6000 KC and the dial set at the same frequency. Next set the generator at 2500 KC and tune in the signal to check sensitivity. The pad is fixed and alignment at the point will be correct unless the pad or either of the coils have been damaged.

MODELS E-10803, E-10818



MODELS E-10704, E-10800



PUSH-BUTTON ADJUSTMENT
MODELS E-10704, E-10800

ADJUSTMENT. It is well to remember at this time that the accuracy of Automatic Station Selection depends wholly on the care exercised by the individual setting up the stations.

The first procedure in setting up stations is to loosen the adjustment locking screw by turning 3 or 4 turns to the left. Any coin may be used for this purpose. The locking screw is located in the center of the Manual Tuning control knob at the right side of the cabinet.

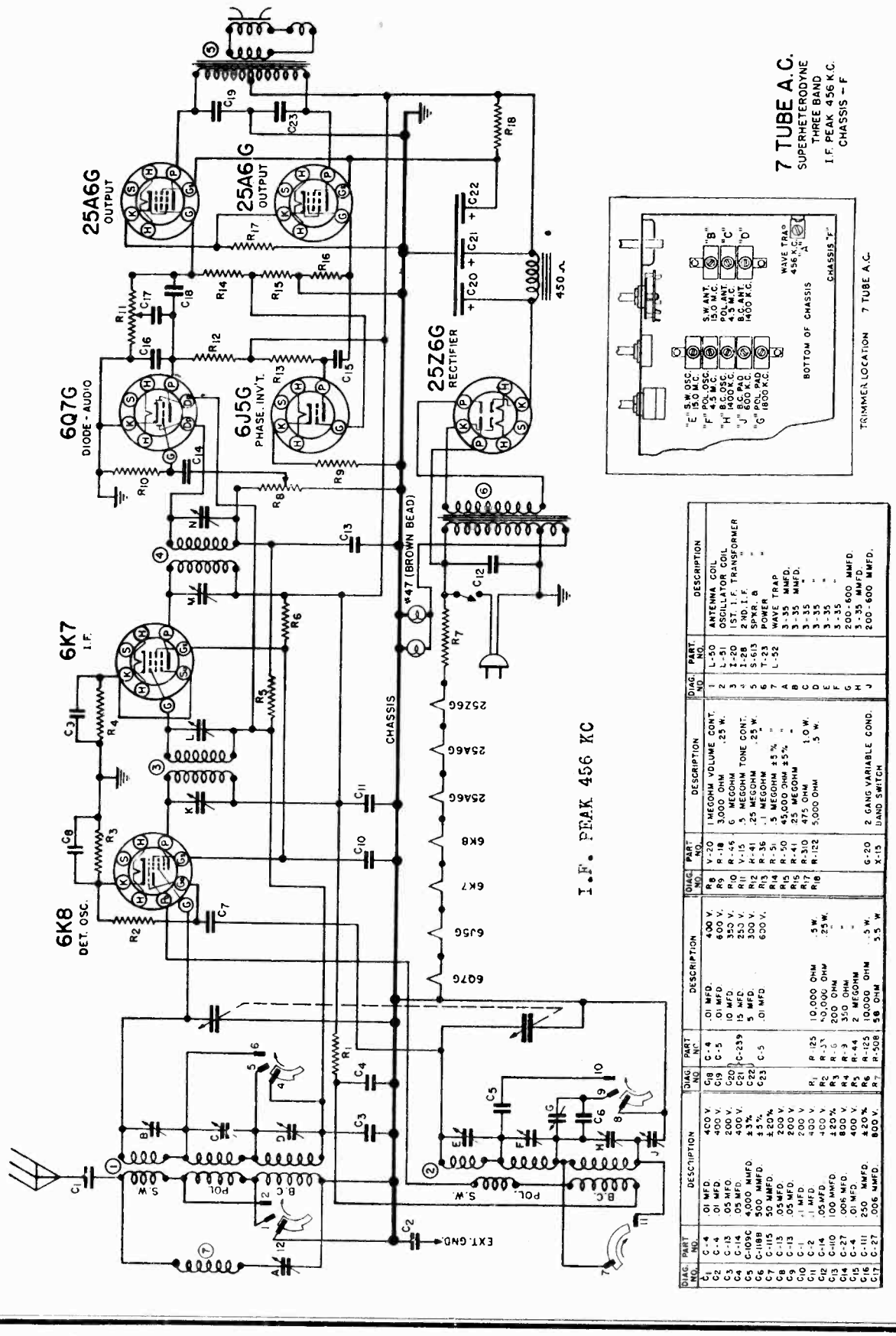
With the set in operation, fully depress any one push button and hold down while tuning any station desired to be automatically operated from this button. When the station is tuned to resonance, that is, maximum clarity and volume, release push button. Depress a second button and tune to another station while holding the push button depressed. Release push button and repeat procedure for the remaining two push buttons.

The settings should now be locked by securely tightening the locking screw, meanwhile hold the manual tuning knob to prevent turning.

A set of station call letter tabs and celluloid cover discs is furnished to mark each push button. Remove tabs from perforated sheet with station call letters corresponding to stations set up. Insert tab in recessed top of push button and cover with the celluloid discs which snap in place.

MODELS E-10707,
E-10870 LATE

ALLIED RADIO CORP.

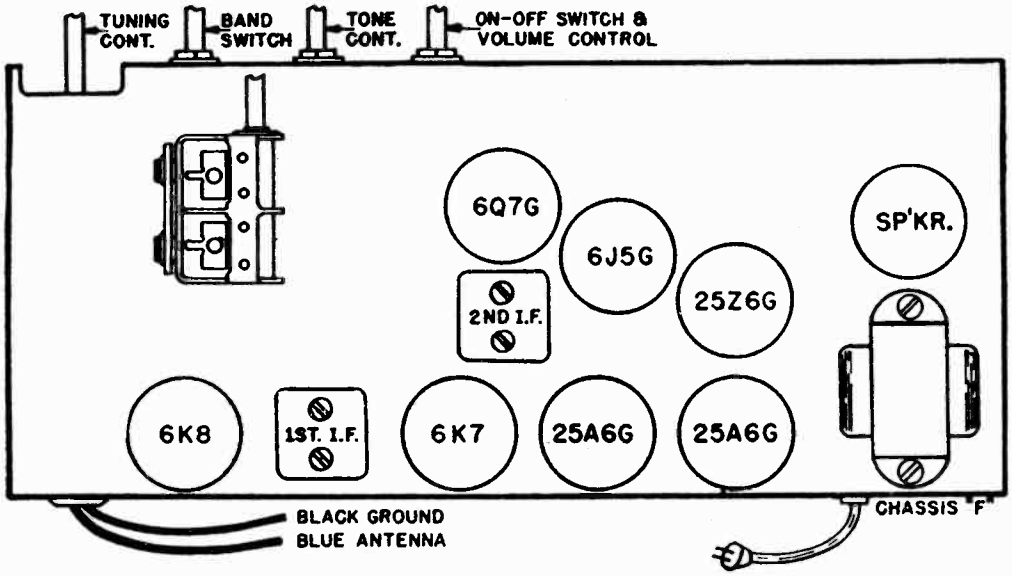


DIAG. NO.	PART NO.	DESCRIPTION
C1	C-4	.01 MFD. 400 V.
C2	C-4	.01 MFD. 400 V.
C3	C-13	.05 MFD. 200 V.
C4	C-14	.05 MFD. 400 V.
C5	C-109C	4,000 MMFD. ±3%
C6	C-118B	500 MMFD. ±1%
C7	C-115	50 MMFD. ±20%
C8	C-13	.05 MFD. 200 V.
C9	C-13	.05 MFD. 200 V.
C10	C-1	.1 MFD. 200 V.
C11	C-2	.1 MFD. 400 V.
C12	C-14	.05 MFD. 400 V.
C13	C-110	100 MMFD. ±20%
C14	C-27	.006 MFD. 800 V.
C15	C-4	.01 MFD. 400 V.
C16	C-111	250 MMFD. ±20%
C17	C-27	.006 MMFD. 800 V.
C18	C-4	.01 MFD. 400 V.
C19	C-5	.01 MFD. 600 V.
C20	C-239	10 MFD. 450 V.
C21		15 MFD. 350 V.
C22		5 MFD. 300 V.
C23	C-5	.01 MFD. 600 V.
R1	R-125	10,000 OHM .5 W.
R2	R-137	10,000 OHM .25 W.
R3	R-6	200 OHM -
R4	R-9	350 OHM -
R5	R-44	2 MEGOHM -
R6	R-125	10,000 OHM .5 W.
R7	R-508	58 OHM 3.5 W.
R8	V-20	1 MEGOHM VOLUME CONT.
R9	R-18	3,000 OHM .25 W.
R10	R-45	6 MEGOHM
R11	V-15	.5 MEGOHM TONE CONT.
R12	R-41	.25 MEGOHM .25 W.
R13	R-36	.1 MEGOHM
R14	R-51	.5 MEGOHM ±5% "
R15	R-50	45,000 OHM ±5% "
R16	R-41	.25 MEGOHM
R17	R-310	475 OHM 1.0 W.
R18	R-122	5,000 OHM .5 W.
G-20		2 GANG VARIABLE COND.
X-15		BAND SWITCH

DIAG. NO.	PART NO.	DESCRIPTION
1	L-50	ANTENNA COIL
2	L-51	OSCILLATOR COIL
3	I-20	1ST. I.F. TRANSFORMER
4	I-28	2 ND. I.F. "
5	S-615	SPKR. & "
6	T-23	POWER "
7	L-52	WAVE TRAP
A		3-35 MMFD.
B		3-35 MMFD.
C		3-35 "
D		3-35 "
E		3-35 "
F		3-35 "
G		200-600 MMFD.
H		3-35 MMFD.
J		200-600 MMFD.

MODELS E-10707, E-10870

ALLIED RADIO CORP.



ALIGNMENT DATA AND SERVICING

GENERAL DATA. The alignment of this receiver requires the use of a test oscillator that will cover the frequencies of 456, 600, 1400, 1800, 4500, 6000 and 15000 KC and an output meter to be connected across the primary or secondary of the output transformers. If possible, all alignments should be made with the volume control on maximum and the test oscillator output as low as possible to prevent the AVC from operating and giving false readings.

CORRECT ALIGNMENT PROCEDURE. The intermediate frequency (I.F.) stages should be aligned properly as the first step. After the I.F. transformers have been properly adjusted and peaked, the wave trap and then the Short Wave, Police and Broadcast bands in the order given, should be the next procedure.

I. F. AND WAVE TRAP ALIGNMENT. With the wave switch in the Broadcast Band and the gang condenser set at minimum, adjust the test oscillator to 456 KC and connect the output to the grid of the first detector tube (6K8) through a .05 or .1 mfd. condenser. The ground on the test oscillator should be connected to the chassis ground. Align all four I.F. trimmers to peak or maximum reading on the output meter. After aligning the I.F.'s, have the band switch in the broadcast band and the generator set at 456 KC. Connect the antenna lead to the generator through a 200 MMF condenser. Adjust the wave trap trimmer to give a minimum signal. It will be necessary to increase the output of the generator to secure an accurate minimum with the wave trap. (A)

SHORT WAVE BAND ALIGNMENT. Change the band switch to the S. W. position and connect the generator to the antenna with a 400 ohm dummy. Adjust the S. W. oscillator to give a maximum output with the dial at 1500 KC. Next adjust the S. W. antenna to give a maximum peak and check dial to prevent alignment on the image frequency. With a strong signal input turn the dial to approximately 1 M. C. lower in frequency and pick up the image frequency. If the image is not received, it will be necessary to return the dial to 15000 KC to reduce the capacity in the oscillator trimmer until a second signal is received. Proceed as before with the alignment of the antenna and recheck for image frequency. Check the sensitivity at 6000 KC to determine if the coils and mica pad are not defective.

POLICE BAND ALIGNMENT. Change the band switch to the police position and, with the same dummy antenna, line up the police oscillator trimmer and police antenna trimmer in the same way as for the short wave band, setting the dial at 4500 KC and the generator at the same frequency. Check for image frequency at approximately 1 MC lower on the dial as described for the short wave band. Next, set the generator at 1800 KC and tune in the signal with the dial. Adjust the police pad by rocking the gang back and forth while adjusting the pad until maximum output is attained. Recheck the adjustment at 4500 KC as the pad adjustment may have caused misalignment.

BROADCAST BAND ALIGNMENT. With the switch turned to the broadcast position, connect the antenna to the generator through a 200 MMF dummy and set the dial and generator at 1400 KC. Align the BC oscillator trimmer and BC antenna trimmer. Set the generator at 600 KC and adjust the BC pad as described for the police band. Return to 1400 KC and recheck alignment at this point.

PUSH-BUTTON ADJUSTMENT

ADJUSTMENT. All adjustments are simply made from the front of the cabinet without the use of tools since the push-button knobs serve this purpose.

To make adjustments, turn each knob to the left about 1 complete turn. The knob is knurled to provide a positive grip for this purpose. A groove is also provided across the knob for use of a small coin to lock each setting with ease and surety.

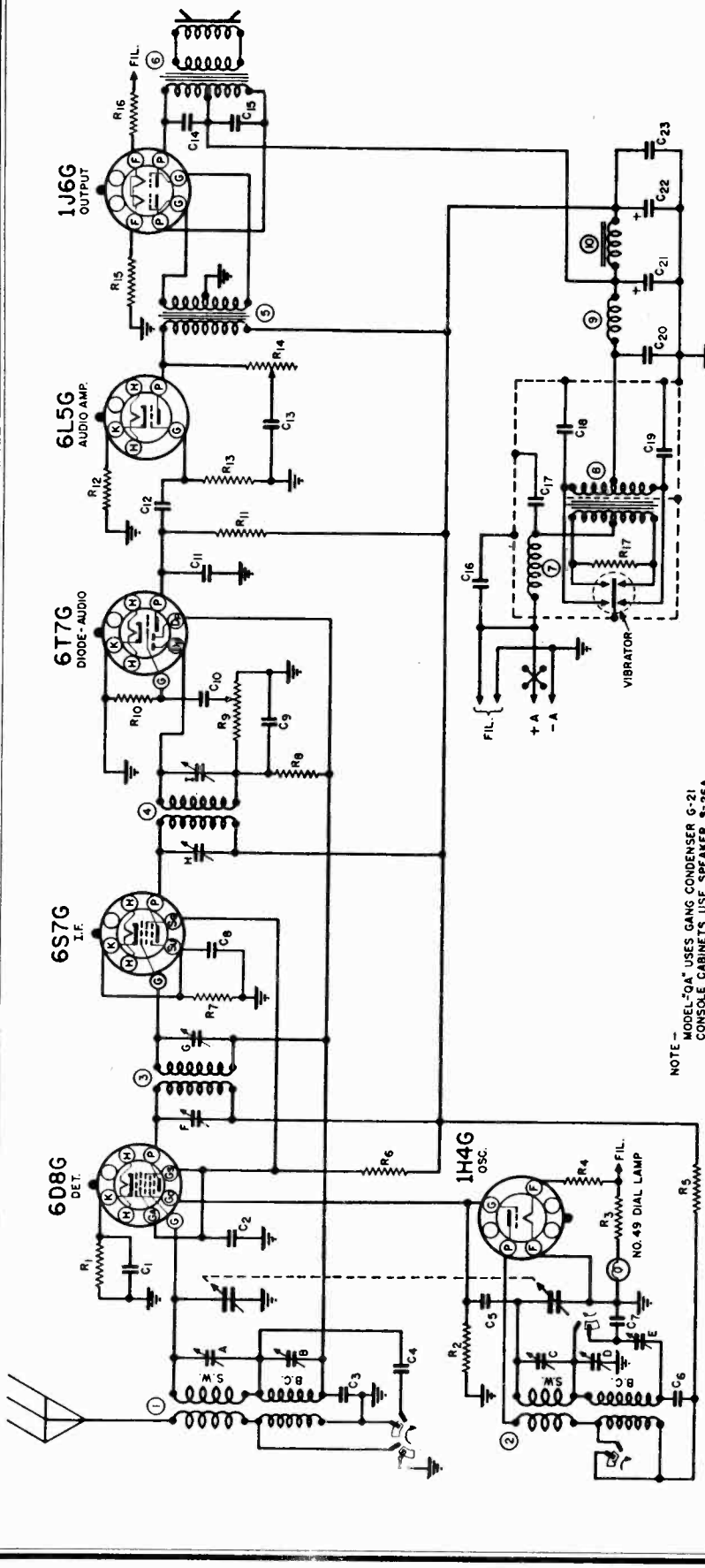
With the knob turned free, depress as far as possible and hold down, meanwhile tune to any desired station with the manual tuning control. At this point, the automatic push button knob should be turned to the right until securely tightened. Be sure the knob is being held down in position while it is being tightened. To assure accurate adjustment, the volume control should be set at a moderate level and the station tuned in slowly to a point of maximum volume and clarity.

It is not necessary to follow any particular sequence of stations since each button is adjustable to any station.

With each button definitely set and securely tightened to the selected stations, the tuner is ready for operation.

MODELS E-10720, E-10825,
E-10826, E-10827,
E-10828, E-10829

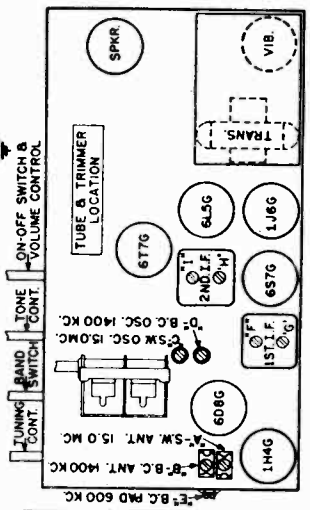
ALLIED RADIO CORP.



DIAG. NO.	PART NO.	DESCRIPTION
C1	C-13	.05 MFD. 200 V.
C2	C-1	.1 MFD. 200 V.
C3	C-13	.05 MFD. 200 V.
C4	C-4	.01 MFD. 400 V.
C5	C-115	50 MMFD.
C6	C-4	.01 MFD. 400 V.
C7	C-109C	4,000 MMFD. 3%
C8	C-13	.05 MFD. 200 V.
C9	C-110	100 MMFD.
C10	C-27	.006 MFD. 800 V.
C11	C-111	250 MMFD
C12	C-4	.01 MFD. 400 V.
C13	C-27	.006 MFD. 800 V.
C14	C-5	.01 MFD. 600 V.
C15	C-5	.01 MFD. 600 V.
C16	C-22	.5 MFD. 50 V.
C17	C-22	.5 MFD. 50 V.
C18	C-74	.01 MFD. (OIL) 1000V.
C19	C-71	.01 MFD. (OIL) 1000 V.
C20	C-5	.01 MFD. 600 V.
C21	C-242	.10 MFD. 250 V.
C22		15 MFD. 250 V.
C23	C-1	.1 MFD. 200 V.
R1	R-12	500 OHM .25 W.
R2	R-33	50,000 OHM .25 W.
R3	R-511	67.0 OHM .5 W.
R4	R-511	67.0 OHM .5 W.
R5	R-25	10,000 OHM .25 W.
R6	R-26	15,000 OHM .25 W.
R7	R-13	750 OHM .25 W.
R8	R-44	2 MEGOHM .25 W.
R9	V-20	1 MEG. VOLUME CONT.
R10	R-55	10 MEGOHM .25 W.
R11	R-41	.25 MEGOHM .25 W.
R12	R-16	2,000 OHM .25 W.
R13	R-42	.5 MEGOHM .25 W.
R14	V-110	.1 MEG. TONE CONT.
R15	R-510	8.3 OHM 5% .5 W.
R16	R-510	8.3 OHM 5% .5 W.
R17	R-107	200 OHM .5 W.
X	X-17	BAND SWITCH
Y	G-20	GANG CONDENSER
Z	F-4	SYN. VIBRATOR
	W-207	BATTERY CABLE

NOTE — MODEL "QA" USES GANG CONDENSER G-21
CONSOLE CABINETS USE SPEAKER S-26A

DIAG. NO.	PART NO.	DESCRIPTION
1	L-44	ANTENNA COIL
2	L-63	OSCILLATOR COIL
3	I-20	1ST. I.F. TRANS.
4	I-28	2ND. I.F. "
5	T-103	AUDIO "
6	S-26	SPKR. "
7	H-206	"A" CHOKE
8	T-26	POWER TRANS.
9	H-207	R.F. CHOKE
10	H-9	AUDIO CHOKE
A		2-35 MMFD. "
B		" "
C		" "
D		" "
E	P-2	200-750 MMFD.



PUSH-BUTTON ADJUSTMENT. All adjustments are simply made from the front of the cabinet without the use of tools since the push-button knobs serve this purpose.

To make adjustments, turn each knob to the left about 1 complete turn. The knob is knurled to provide a positive grip for this purpose. A groove is also provided across the knob for use of a small coin to lock each setting with ease and surety.

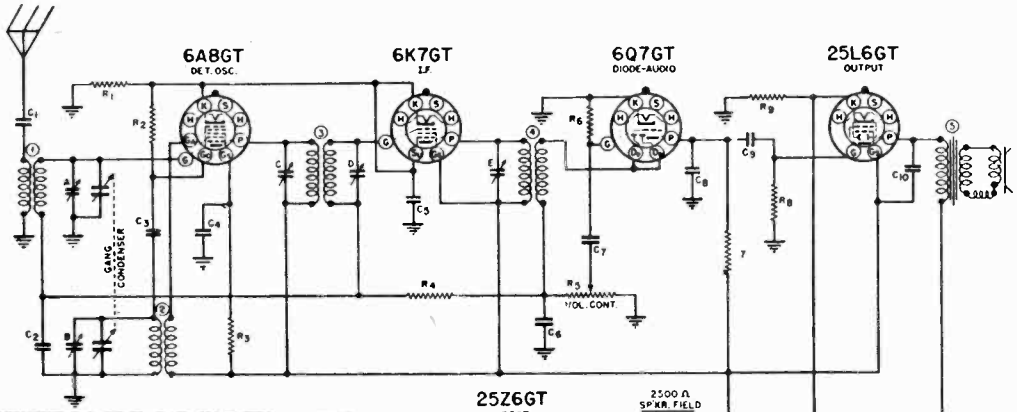
With the knob turned free, depress as far as possible and hold down, meanwhile tune to any desired station with the manual tuning control. At this point, the automatic push button knob should be turned to the right until securely tightened. Be sure the knob is being held down in position while it is being tightened. To assure accurate adjustment, the volume control should be set at a moderate level and the station tuned in slowly to a point of maximum volume and clarity.

It is not necessary to follow any particular sequence of stations since each button is adjustable to any station.

With each button definitely set and securely tightened to the selected stations, the tuner is ready for operation.

MODELS E-10801, E-10802
MODEL E-10806

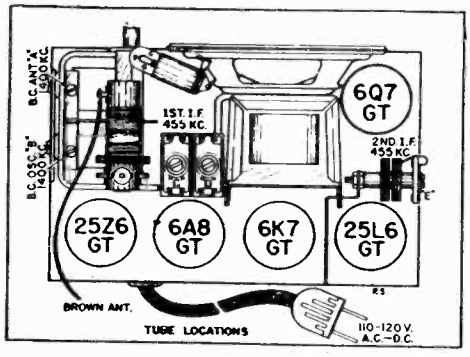
ALLIED RADIO CORP.



DIAG. NO.	PART NO.	DESCRIPTION		DIAG. NO.	PART NO.	DESCRIPTION
C_1	C-24	.01 MFD.	400 V.	R_6	R-52	15 MEGOHM .25 W.
C_2	C-24	.01 MFD.	400 V.	R_7	R-42	.5 MEGOHM .25 W.
C_3	C-115	50 MMFD.	±20%	R_8	R-42	.5 MEGOHM .25 W.
C_4	C-24	.01 MFD.	400 V.	R_9	R-105	125 OHM .5 W.
C_5	C-1	.1 MFD.	200 V.	R_{10}	R-15	1500 OHM .5 W.
C_6	C-110	100 MMFD.	±20%	R_{11}	R-250	50 OHM 10 W.
C_7	C-27	.006 MFD.	800 V.			
C_8	C-110	100 MMFD.	±20%			
C_9	C-24	.01 MFD.	400 V.	1	L-54	ANTENNA COIL
C_{10}	C-10	.02 MFD.	400 V.	2	L-55	OSCILLATOR COIL
C_{11}	C-13	.05 MFD.	200 V.	3	I-29	1ST I.F. TRANS.
C_{12}	C-230	8 MFD.	150 V.	4	I-30	2ND I.F. TRANS.
C_{13}	C-240	16 MFD.	150 W.	5	S-301	SPEAKER & TRANS.
C_{14}	C-240	16 MFD.	150 W.		G-23	GANG CONDENSER
					W-3	LINE CORD
R_1	R-4	100 OHM	.25 W.			
R_2	R-33	50,000 OHM	.25 W.			
R_3	R-28	25,000 OHM	.25 W.			
R_4	R-43	1 MEGOHM	.25 W.			
R_5	V-13	5 MEG VOL. CONT.				

MODELS E-10801, E-10802

ALIGNMENT DATA AND SERVICING

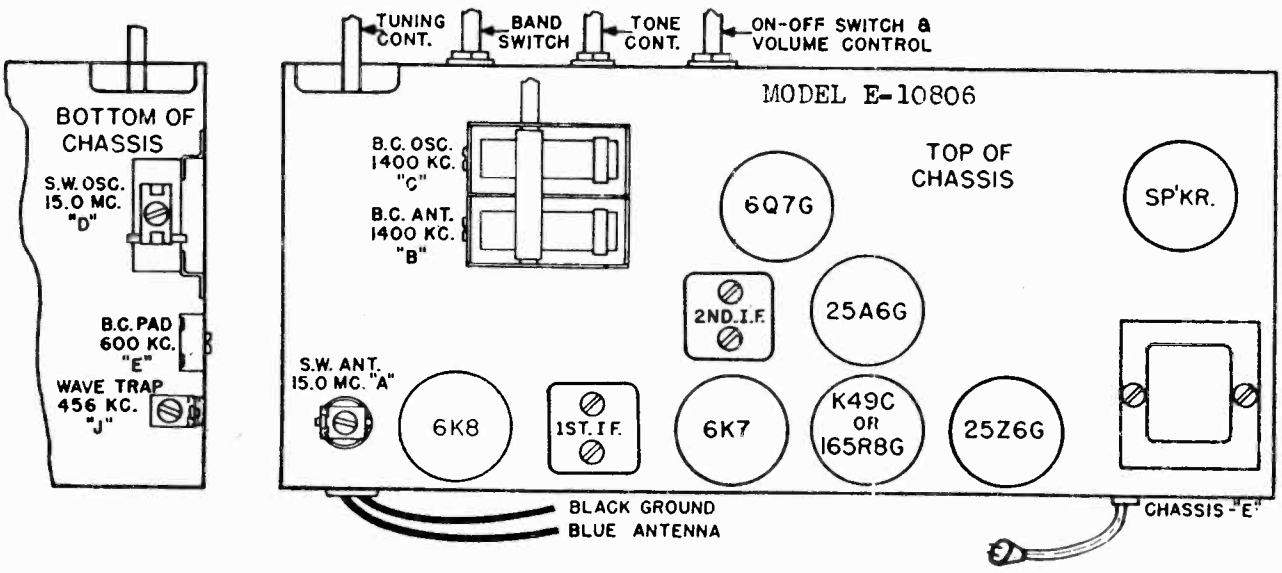


GENERAL DATA. The alignment of this receiver requires the use of a test oscillator that will cover the frequencies of 455 and 1400 KC and an output meter to be connected across the primary or secondary of the output transformers. If possible, all alignments should be made with the volume control on maximum and the test oscillator output as low as possible to prevent the AVC from operating and giving false readings.

CORRECT ALIGNMENT PROCEDURE. The intermediate frequency (I.F.) stages should be aligned properly as the first step. After the I.F. transformers have been properly adjusted and peaked, the Broadcast should be aligned.

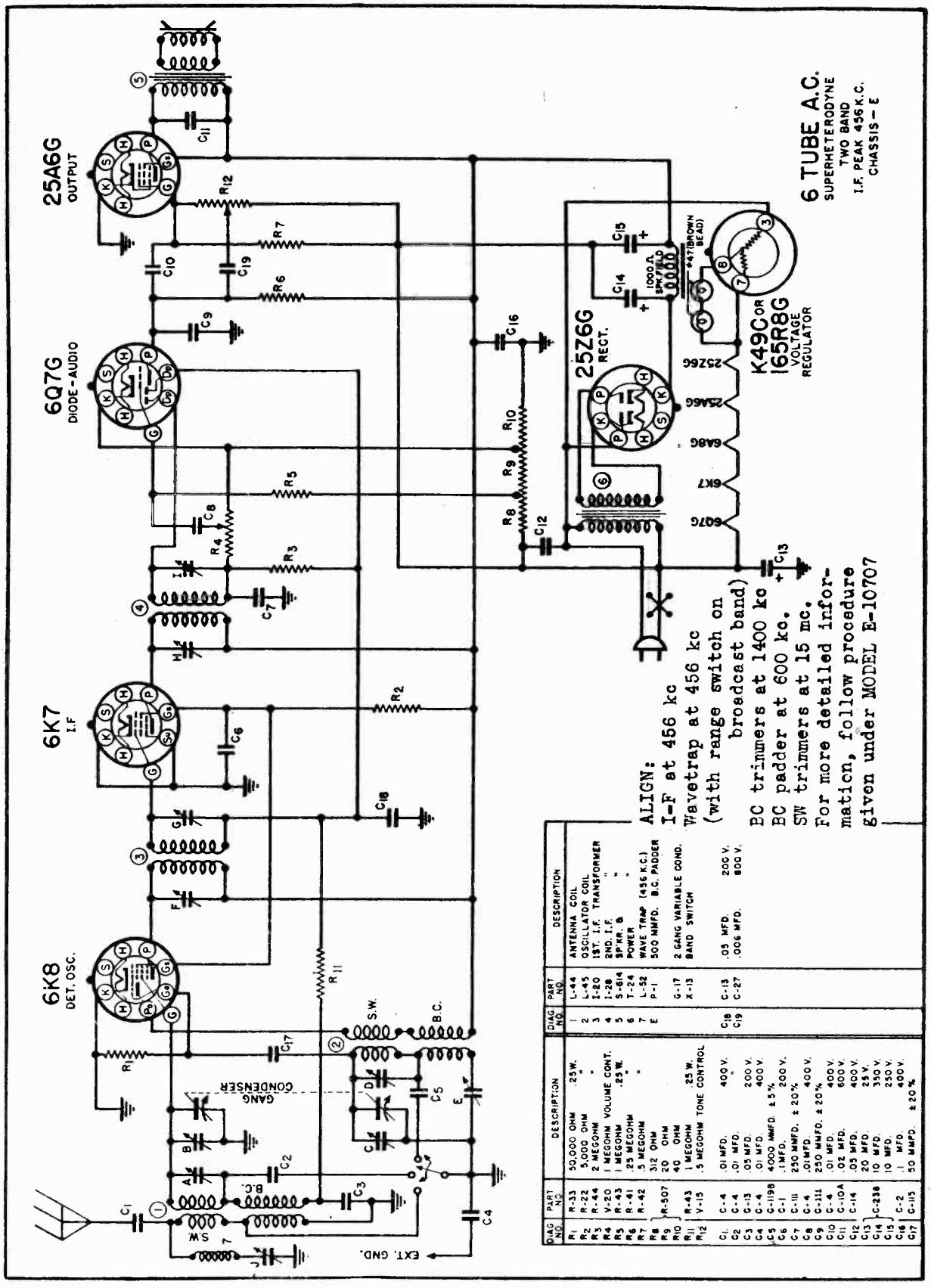
I. F. ALIGNMENT. With [redacted] the gang condenser set at minimum, adjust the test oscillator to 455 KC and connect the output to the grid of the first detector tube (6A8GT) through a .05 or .1 mfd. condenser. The ground on the test oscillator should be connected to the chassis ground. Align all four I. F. trimmers to peak or maximum reading on the output meter.

BROADCAST BAND ALIGNMENT. [redacted] connect the antenna to the generator through a 100 MMF dummy and set the dial and generator at 1400 KC. Align the BC oscillator trimmer first and then the BC antenna trimmer.



MODEL E-10806

ALLIED RADIO CORP.

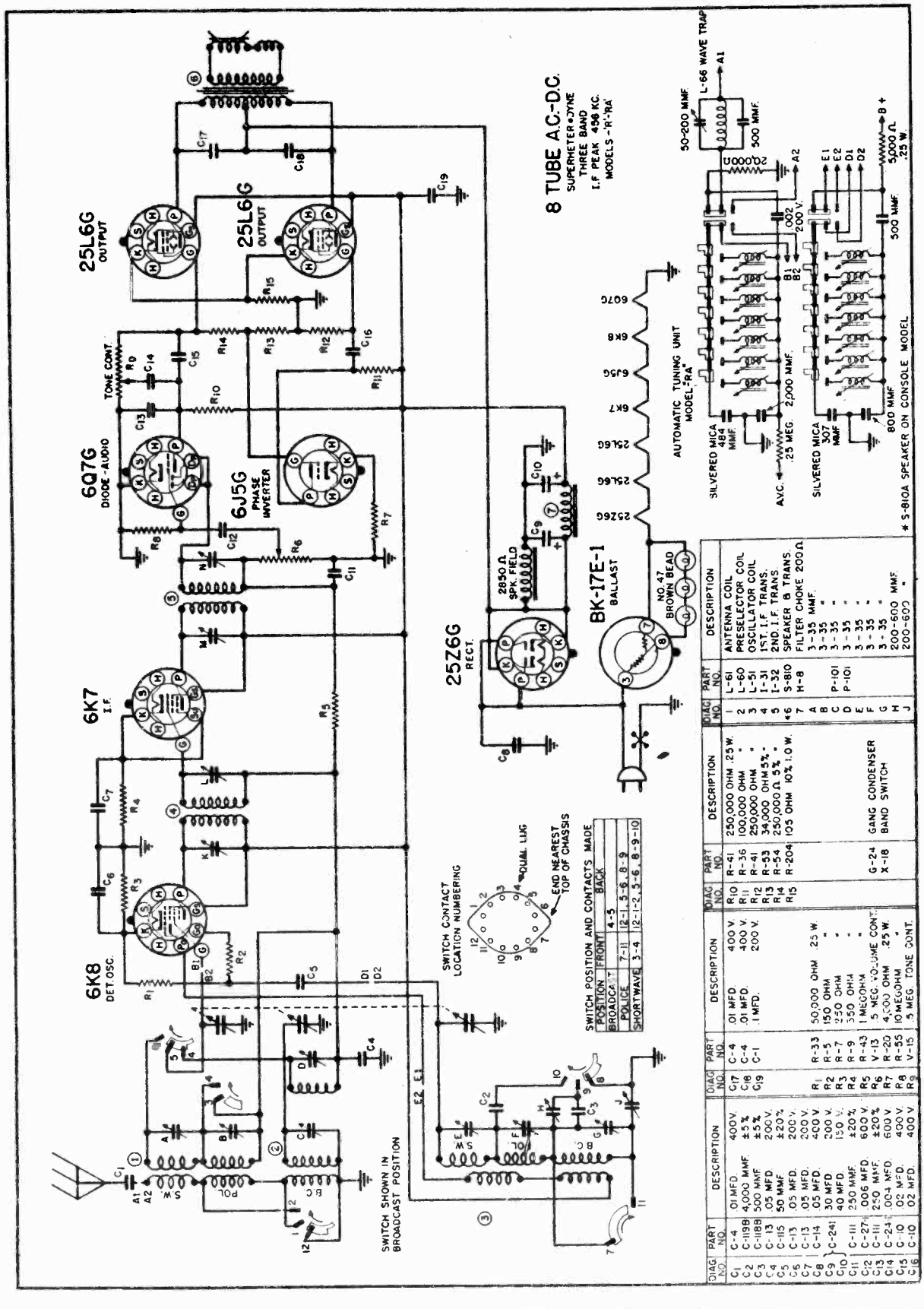


DIAG NO	PART NO	DESCRIPTION
R_1	R-33	50,000 OHM .25 W.
R_2	R-22	5,000 OHM "
R_3	R-44	2 MEGOHM "
R_4	V-20	1 MEGOHM VOLUME CONT.
R_5	R-43	1 MEGOHM .25 W.
R_6	R-41	.25 MEGOHM "
R_7	R-42	.5 MEGOHM "
R_8		3/2 OHM
R_9	R-507	20 OHM
R_{10}		40 OHM
R_{11}	R-43	1 MEGOHM .25 W.
R_{12}	V-15	.5 MEGOHM TONE CONTROL
C_1	C-4	.01 MFD. 400 V.
C_2	C-4	.01 MFD. "
C_3	C-13	.05 MFD. 200 V.
C_4	C-4	.01 MFD. 400 V.
C_5	C-119B	4000 MMFD. ±5% 200 V.
C_6	C-1	.1 MFD. "
C_7	C-111	250 MMFD. ±20% 400 V.
C_8	C-4	.01 MFD. "
C_9	C-111	250 MMFD. ±20% "
C_{10}	C-4	.01 MFD. 400 V.
C_{11}	C-10A	.02 MFD. 600 V.
C_{12}	C-14	.05 MFD. 400 V.
C_{13}	C-23B	20 MFD. 25 V.
C_{14}		10 MFD. 350 V.
C_{15}		10 MFD. 250 V.
C_{16}	C-2	.1 MFD. 400 V.
C_{17}	C-115	50 MMFD. ±20%

DIAG NO	PART NO	DESCRIPTION
1	L-44	ANTENNA COIL
2	L-45	OSCILLATOR COIL
3	I-20	1ST. I.F. TRANSFORMER
4	I-28	2ND. I.F. "
5	S-614	SP'KR. 6 "
6	T-24	POWER "
7	L-52	WAVE TRAP (456 K.C.)
E	P-1	500 MMFD. B.C. PADDER
	G-17	2 GANG VARIABLE COND.
	X-13	BAND SWITCH
C_{18}	C-13	.05 MFD. 200 V.
C_{19}	C-27	.006 MFD. 600 V.

MODEL E-10807

ALLIED RADIO CORP.



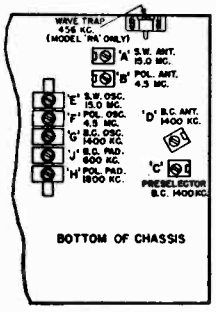
SWITCH POSITION AND CONTACTS MADE		
POSITION	FRONT	BACK
BROADCAST		4-5
POLICE	7-11	12-1, 5-6, 8-9
SHORTWAVE	3-4	12-1-2, 5-6, 8-9-10

DIAG NO.	PART NO.	DESCRIPTION
C1	C-4	.01 MFD. 400 V.
C2	C-1198	4,000 MMF ±5%
C3	C-1188	500 MMF ±5%
C4	C-13	.05 MFD 200 V.
C5	C-115	50 MMF ±20%
C6	C-13	.05 MFD. 200 V.
C7	C-13	.05 MFD. 200 V.
C8	C-14	.05 MFD 400 V
C9	C-241	30 MFD 200 V.
C10	C-14	40 MFD. 150 V.
C11	C-111	250 MMF ±20%
C12	C-27	.006 MFD 600 V
C13	C-111	250 MMF ±20%
C14	C-24	.004 MFD 600 V
C15	C-10	.02 MFD. 400 V
C16	C-10	.02 MFD. 400 V
C17	C-4	.01 MFD. 400 V.
C18	C-4	.01 MFD. 400 V.
C19	C-1	1 MFD. 200 V.
R1	R-33	50,000 OHM .25 W.
R2	R-5	150 OHM "
R3	R-7	250 OHM "
R4	R-9	350 OHM "
R5	R-43	1 MEGOHM "
R6	V-13	.5 MEG. VOLUME CONT.
R7	R-20	4,500 OHM .25 W.
R8	R-55	10 MEGOHM "
R9	V-15	.5 MEG. TONE CONT.
R10	R-41	250,000 OHM .25 W.
R11	R-36	100,000 OHM "
R12	R-41	250,000 OHM "
R13	R-53	34,000 OHM 5% "
R14	R-54	250,000 Ω 5% "
R15	R-204	105 OHM 10% 1.0 W.
G-24	GANG CONDENSER	
X-18	BAND SWITCH	

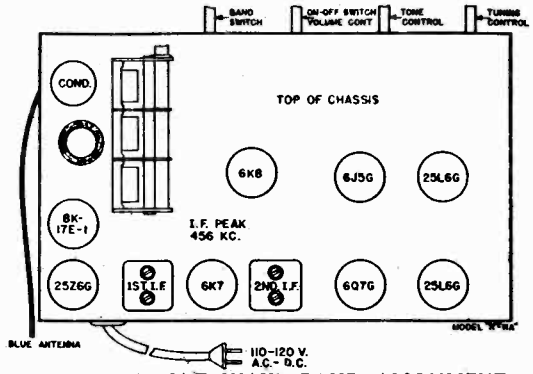
DIAG NO.	PART NO.	DESCRIPTION
1	L-61	ANTENNA COIL
2	L-60	PRESELECTOR COIL
3	L-51	OSCILLATOR COIL
4	I-31	1ST. I.F. TRANS.
5	I-32	2ND. I.F. TRANS.
*6	S-810	SPEAKER & TRANS.
7	H-8	FILTER CHOKE 200 Ω
A		3-35 MMF. "
B		3-35 " "
C	P-101	3-35 " "
D	P-101	3-35 " "
E		3-35 " "
F		3-35 " "
G		3-35 " "
H		200-600 MMF
J		200-600 "

MODEL E-10807

ALLIED RADIO CORP.



TRIMMER



GENERAL DATA. The alignment of this receiver requires the use of a test oscillator that will cover the frequencies of 456, 600, 1400, 2200, 5000, 6000 and 15000 KC and an output meter to be connected across the primary or secondary of the output transformers. If possible, all alignments should be made with the volume control on maximum and the test oscillator output as low as possible to prevent the AVC from operating and giving false readings. (All adjustments on Model "RA" must be made with "Manual" button depressed.)

CORRECT ALIGNMENT PROCEDURE. The intermediate frequency (I.F.) stages should be aligned properly as the first step. After the I.F. transformers have been properly adjusted and peaked, the wave trap and then the Short Wave, Police and Broadcast bands in the order given, should be the next procedure. (Wave trap is not used on Model "R".)

I. F. AND WAVE TRAP ALIGNMENT. With the wave switch in the Broadcast Band and the gang condenser set at minimum, adjust the test oscillator to 456 KC and connect the output to the grid of the first detector tube (6K8) through a .05 or .1 mfd. condenser. The ground on the test oscillator should be connected to the chassis ground. Align all four I.F. trimmers to peak or maximum reading on the output meter. After aligning the I.F.'s, have the band switch in the broadcast band and the generator set at 456 KC. Connect the antenna lead to the generator through a 200 MMF condenser. Adjust the wave trap trimmer to give a minimum signal. It will be necessary to increase the output of the generator to secure an accurate minimum with the wave trap. (Wave trap data applies to Model "RA" only.)

SHORT WAVE BAND ALIGNMENT. Change the band switch to the S. W. position and connect the generator to the antenna with a 400 ohm dummy. Adjust the S. W. oscillator to give a maximum output with the dial at 15000 KC. Next adjust the S. W. antenna to give a maximum peak and check dial to prevent alignment on the image frequency. With a strong signal input turn the dial to approximately 1 M. C. lower in frequency and pick up the image frequency. If the image is not received, it will be necessary to return the dial to 15000 KC to reduce the capacity in the oscillator trimmer until a second signal is received. Proceed as before with the alignment of the antenna and recheck for image frequency. Check the sensitivity at 6000 KC to determine if the coils and mica pad are not defective.

POLICE BAND ALIGNMENT. Change the band switch to the police position and, with the same dummy antenna, line up the police oscillator trimmer and police antenna trimmer in the same way as for the short wave band, setting the dial at 5000 KC and the generator at the same frequency. Check for image frequency at approximately 1 MC lower on the dial as described for the short wave band. Next, set the generator at 2200 KC and tune in the signal with the dial. Adjust the police pad by rocking the gang back and forth while adjusting the pad until maximum output is attained. Recheck the adjustment at 5000 KC as the pad adjustment may have caused misalignment.

BROADCAST BAND ALIGNMENT. With the switch turned to the broadcast position, connect the antenna to the generator through a 200 MMF dummy and set the dial and generator at 1400 KC. Align the BC oscillator trimmer and the two BC antenna trimmers. Set the generator at 600 KC and adjust the BC pad as described for the police band. Return to 1400 KC and recheck alignment at this point.

PUSH-BUTTON ADJUSTMENT

SETTING-UP PROCEDURE. To set up a list of stations on the automatic tuner proceed as follows:

(1) Make a list of the stations you listen to most frequently.

(2) Determine their frequencies from a station list or by adding a zero to their position on the dial, thus: 56 is 560 KC.

(3) Arrange them in order, starting with the lowest frequency first; then the next highest and so on until not more than seven of your favorite stations have been selected.

(4) Select the proper button for each station, starting at the top of your list (the lowest frequency station) and determine if it is within the required range of button No. 1 as shown on the button diagram below. If it is in this range assign button No. 1 to this station. If not, assign this station to the next button to the right that has the required range to accommodate this station. Take the second station on your list and determine if it can be assigned to the button to the right of the one already assigned. If it can be applied, proceed to the next button. If not, go to the next button to the right which has the proper range to accommodate the station. Proper assigning of stations to buttons will make it possible to set up the buttons to all the principal stations in every locality.

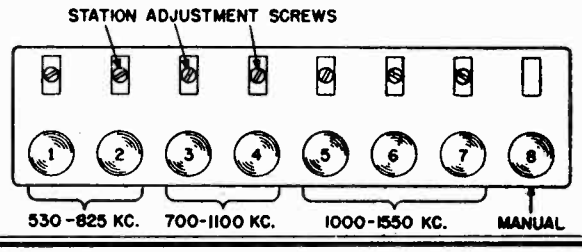
(5) Turn the band switch to the broadcast position and depress button No. 8 (manual button at extreme right); then tune in with the manual tuning control, the station on the top of your list (the lowest frequency station).

(6) Depress the button assigned to this station and with a screw driver carefully turn the screw head above the depressed button until the station you desire is tuned in. **Never try to turn the screw past the ends of its travel as you will damage the tuner.** The screw has approximately twenty complete turns.

(7) When the station is picked up adjust the screw carefully for maximum volume and least noise. Push the manual button and the same station will be heard if you have tuned in the correct station.

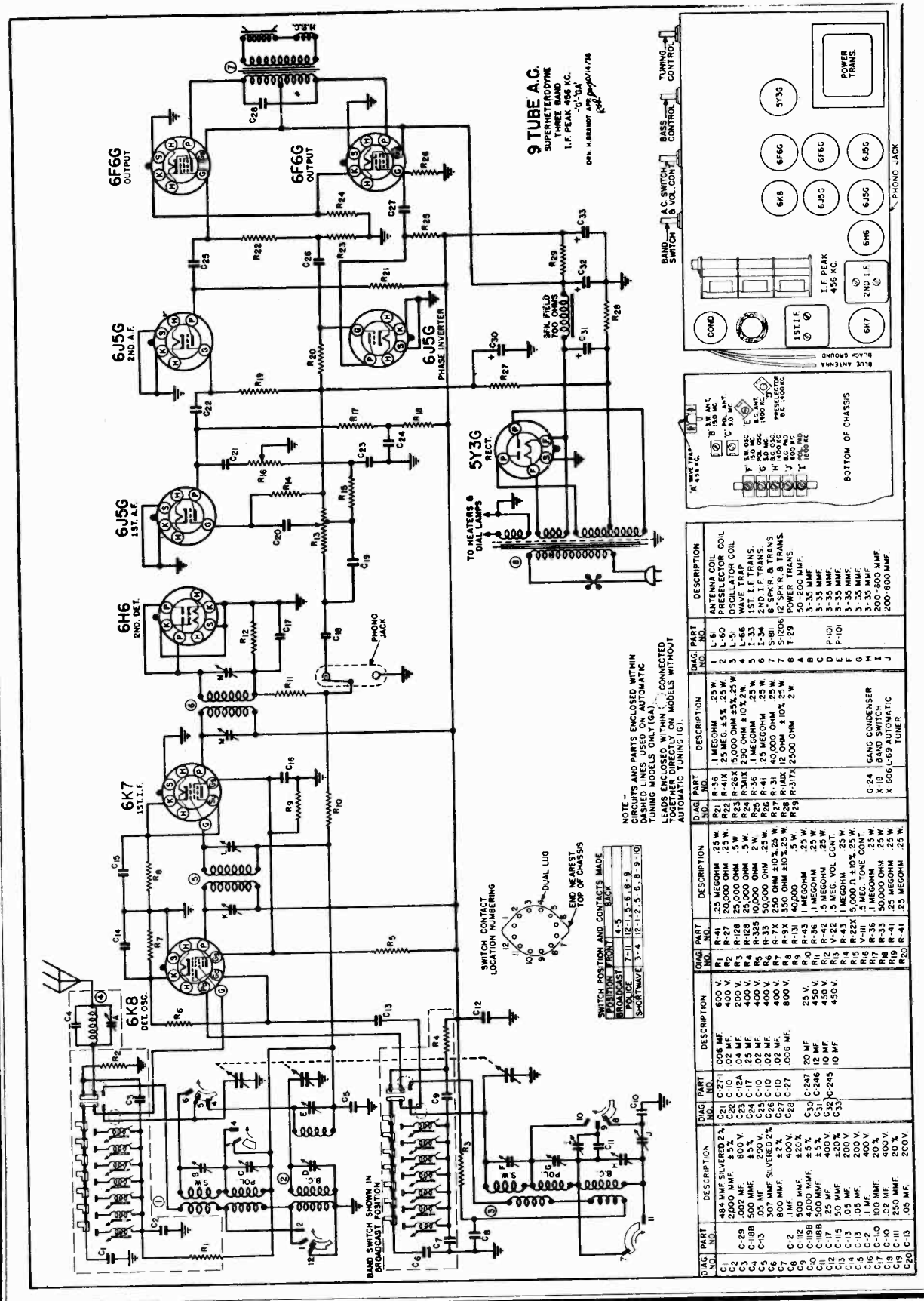
(8) Select a tab with the proper call letters, insert in slot above push button and then cover with celluloid tab.

PUSH BUTTON ARRANGEMENT



MODELS E-10813, E-10814
E-10815

ALLIED RADIO CORP.



SWITCH POSITION AND CONTACTS MADE

POSITION	FRONT	BACK
BROADCAST	1-2	4-5
POLICE	7-11	12-1, 5-6, 8-9-10
SHORTWAVE	3-4	12-1, 2-5-6, 8-9-10

DIAG. NO.	PART NO.	DESCRIPTION
C1		484 MMF SILVERED 2%
C2		2000 MMF ±5%
C3	C-29	.002 MF. 600 V.
C4	C-118B	500 MMF. ±5%
C5	C-13	.01 MF. 200 V.
C6		307 MMF SILVERED 2%
C7		800 MMF ±2%
C8	C-2	.1 MF. 400 V.
C9	C-112	500 MMF. ±20%
C10	C-119B	4000 MMF. ±5%
C11	C-118B	500 MMF ±5%
C12	C-17	.25 MF. 400 V.
C13	C-115	50 MMF ±20%
C14	C-13	.05 MF. 200 V.
C15	C-13	.05 MF. 200 V.
C16	C-2	.1 MF. 400 V.
C17	C-110	.01 MF. 20%
C18	C-10	.02 MF. 400 V.
C19	C-111	.250 MF. 20%
C20	C-13	.05 MF. 200 V.
C21	C-27-1	.006 MF. 600 V.
C22	C-10	.02 MF. 400 V.
C23	C-12A	.04 MF. 200 V.
C24	C-17	.25 MF. 400 V.
C25	C-10	.02 MF. 400 V.
C26	C-10	.02 MF. 400 V.
C27	C-10	.02 MF. 400 V.
C28	C-27	.006 MF. 600 V.
C30	C-247	20 MF. 25 V.
C31	C-246	12 MF. 450 V.
C32	C-245	10 MF. 450 V.
C33		10 MF. 450 V.

DIAG. NO.	PART NO.	DESCRIPTION
R1	R-41	.25 MEGOHM .25 W.
R2	R-27	20,000 OHM .25 W.
R3	R-128	25,000 OHM .5 W.
R4	R-128	25,000 OHM .5 W.
R5	R-325	10,000 OHM 2 W.
R6	R-33	50,000 OHM .25 W.
R7	R-7X	290 OHM ±10% .25 W.
R8	R-9X	350 OHM ±10% .25 W.
R9	R-131	40,000 .5 W.
R10	R-43	1 MEGOHM .25 W.
R11	R-36	1 MEGOHM .25 W.
R12	V-22	.5 MEGOHM .25 W.
R13	V-22	.5 MEG. VOL. CONT.
R14	R-43	1 MEGOHM .25 W.
R15	R-22X	5,000 Ω ±10% .25 W.
R16	V-111	.5 MEG. TONE CONT.
R17	R-36	.1 MEGOHM .25 W.
R18	R-33	50,000 OHM .25 W.
R19	R-41	.25 MEGOHM .25 W.
R20	R-41	.25 MEGOHM .25 W.
R21	R-36	.1 MEGOHM .25 W.
R22	R-41X	.25 MEG. ±5% .25 W.
R23	R-28X	15,000 OHM ±5% .25 W.
R24	R3AIX	290 OHM ±10% 2 W.
R25	R-36	.1 MEGOHM .25 W.
R26	R-41	.25 MEGOHM .25 W.
R27	R-31	40,000 OHM .25 W.
R28	R-IAX	12 OHM ±10% 2 W.
R29	R-317X	2500 OHM 2 W.

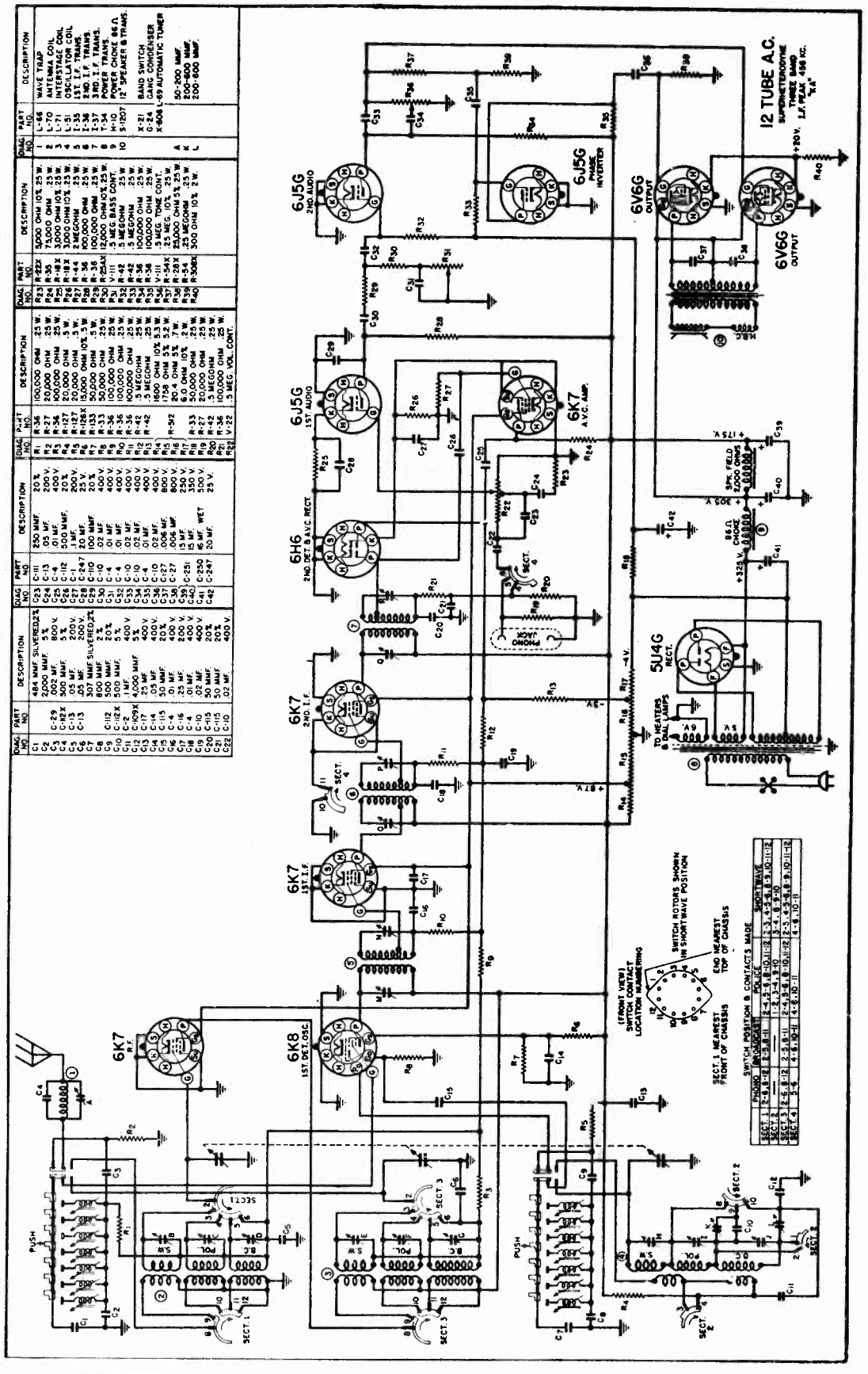
DIAG. NO.	PART NO.	DESCRIPTION
G-24		GANG CONDENSER
X-18		BAND SWITCH
X-606	L-69	AUTOMATIC TUNER

DIAG. NO.	PART NO.	DESCRIPTION
1	L-61	ANTENNA COIL
2	L-60	PRESELECTOR COIL
3	L-51	OSCILLATOR COIL
4	L-66	WAVE TRAP
5	T-33	1ST I.F. TRANS.
6	T-34	2ND I.F. TRANS.
7	T-81	6" SPKR. & TRANS
	S-1206	12" SPKR. & TRANS.
8	T-29	POWER TRANS.
A		50-200 MMF.
B		3-35 MMF.
C		3-35 MMF.
D	P-101	3-35 MMF.
E	P-101	3-35 MMF.
F		3-35 MMF.
G		3-35 MMF.
H		3-35 MMF.
I		200-600 MMF.
J		200-600 MMF.

FOR MORE DATA ON ALIGNMENT AND PUSH-BUTTON ADJUSTMENT
SEE MODEL E-10807

MODELS E-10821, E-10822

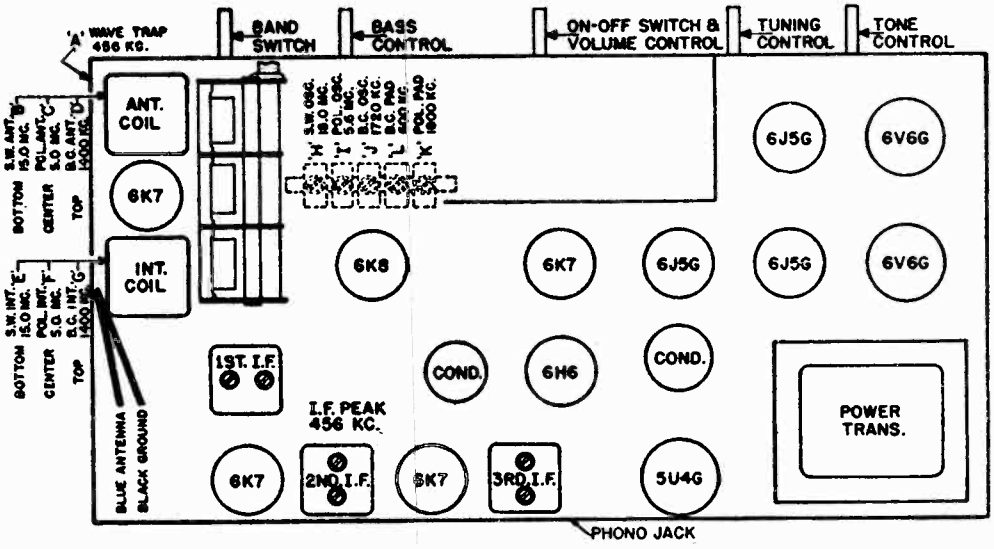
ALLIED RADIO CORP.



DIAG NO	PART NO	DESCRIPTION	DIAG NO	PART NO	DESCRIPTION	DIAG NO	PART NO	DESCRIPTION	DIAG NO	PART NO	DESCRIPTION	DIAG NO	PART NO	DESCRIPTION
C1		484 MMF SILVERED 2%	C23	C-111	250 MMF 20%	R1	R-36	100,000 OHM .25 W.	R23	R-232	5000 OHM 10% .25 W.	1	L-66	WAVE TRAP
C2	C-29	2,000 MMF 5%	C24	C-13	.05 MF 200 V.	R2	R-27	20,000 OHM .25 W.	R24	R-35	75,000 OHM .25 W.	2	L-70	ANTENNA COIL
C3	C-112X	500 MMF 5% 500 V.	C25	C-14	.01 MF 400 V.	R3	R-34	100,000 OHM .25 W.	R25	R-182	3,000 OHM 10% .25 W.	3	L-71	INTERSTAGE COIL
C4	C-112X	500 MMF 5% 500 V.	C26	C-12	500 MMF 5% 500 V.	R4	R-127	250,000 OHM .5 W.	R26	R-182	3,000 OHM 10% .25 W.	4	L-81	OSCILLATOR COIL
C5	C-13	.05 MF. 200 V.	C27	C-11	.1 MF. 200 V.	R5	R-127	250,000 OHM .5 W.	R27	R-44	2 MEGOHM .25 W.	5	L-35	1ST I.F. TRANS.
C6	C-13	.05 MF. 200 V.	C28	C-247	20 MF. 25 V.	R6	R-128X	15,000 OHM 10% .5 W.	R28	R-36	100,000 OHM .25 W.	6	L-36	2ND I.F. TRANS.
C7		307 MMF SILVERED 2%	C29	C-110	100 MMF 20%	R7	R-133	50,000 OHM .5 W.	R29	R-36	100,000 OHM .25 W.	7	L-37	3RD. I.F. TRANS.
C8	C-112	500 MMF 5%	C30	C-10	.02 MF 400 V.	R8	R-33	50,000 OHM .25 W.	R30	R-254X	12,000 OHM 10% .25 W.	8	T-34	POWER TRANS.
C9	C-112X	500 MMF 5%	C31	C-4	.01 MF 400 V.	R9	R-36	100,000 OHM .25 W.	R31	V-111	.5 MEG BASS CONT.	9	H-10	POWER CHOKE 86 Ω.
C10	C-112X	500 MMF 5%	C32	C-4	.01 MF 400 V.	R10	R-36	100,000 OHM .25 W.	R32	R-42	.5 MEGOHM .25 W.	10	S-1207	12" SPEAKER & TRANS.
C11	C-2	.1 MF. 400 V.	C33	C-10	.02 MF. 400 V.	R11	R-42	.5 MEGOHM .25 W.	R33	R-42	.5 MEGOHM .25 W.			
C12	C-109X	4,000 MMF 5%	C34	C-10	.02 MF. 400 V.	R12	R-42	.5 MEGOHM .25 W.	R34	R-36	100,000 OHM .25 W.		X-21	BAND SWITCH
C13	C-17	.25 MF. 400 V.	C35	C-4	.01 MF. 400 V.	R13	R-42	.5 MEGOHM .25 W.	R35	R-36	100,000 OHM .25 W.		G-24	GANG CONDENSER
C14	C-15	.05 MF. 400 V.	C36	C-10	.02 MF. 400 V.	R14		1600 OHM 10% 5.3 W.	R36	V-111	.5 MEG. TONE CONT.		X-606	L-69 AUTOMATIC TUNER
C15	C-115	50 MMF 20% 400 V.	C37	C-27	.006 MF 800 V.	R15	R-92	158 OHM 5% 5.2 W.	R37	R-34X	.25 MEG. 10% .25 W.			
C16	C-4	.01 MF. 400 V.	C38	C-27	.006 MF 800 V.	R16		20.4 OHM 5% 2 W.	R38	R-34X	25,000 OHM 5% .25 W.	A		50-200 MMF
C17	C-16	.25 MF. 200 V.	C39	C-251	.15 MF 250 V.	R17		6.0 OHM 10% 2 W.	R39	R-34X	25,000 OHM .25 W.	B		200-600 MMF.
C18	C-4	.01 MF. 400 V.	C40	C-250	15 MF. 350 V.	R18	R-33	50,000 OHM .25 W.	R40	R-300X	300 OHM 10% 2 W.	K		
C19	C-10	.02 MF. 400 V.	C41	C-250	15 MF. WET 300 V.	R19	R-27	20,000 OHM .25 W.				L		
C20	C-115	50 MMF 20% 400 V.	C42	C-247	20 MF. 25 V.	R20	R-42	.5 MEGOHM .25 W.						
C21	C-115	50 MMF 20%				R21	R-42	.5 MEGOHM .25 W.						
C22	C-10	.02 MF. 400 V.				R22	V-22	.5 MEG. VOL. CONT.						

SWITCH POSITION & CONTACTS MADE			
	PHONO	BROADCAST	POLICE	SHORTWAVE
SECT. 1	7-8, 9-10	7-8, 9-10	1-2, 3-4, 5-6, 7-8, 9-10, 11-12	1-2, 3-4, 5-6, 7-8, 9-10, 11-12
SECT. 2	1-2, 3-4	1-2, 3-4	3-4, 5-6, 9-10	3-4, 5-6, 9-10
SECT. 3	2-3, 5-6, 12	2-3, 5-6, 11	2-3, 5-6, 11	2-3, 5-6, 9-10, 11-12
SECT. 4	3-4	4-6, 10-11	4-6, 10-11	4-6, 10-11

ALLIED RADIO CORP.



ALIGNMENT PROCEDURE

GENERAL DATA. The alignment of this receiver requires the use of a test oscillator that will cover the frequencies of 456, 600, 700, 1400, 1720, 1800, 5000, 5600, 6000, 15000 and 18100 KC and an output meter to be connected across the primary or secondary of the output transformer. If possible, all alignments should be made with the volume control on maximum and the test oscillator output as low as possible to prevent the AVC from operating and giving false readings. (All adjustments on sets with automatic tuning must be made with "Manual" button depressed.)

CORRECT ALIGNMENT PROCEDURE. The intermediate frequency (I.F.) stages should be aligned properly as the first step. After the I.F. transformers have been properly adjusted and peaked, the wave trap and then the Short Wave, Police and Broadcast bands in the order given, should be the next procedure.

I. F. AND WAVE TRAP ALIGNMENT. With the wave switch in the Broadcast Band and the gang condenser set at minimum, adjust the test oscillator to 456 KC and connect the output to the grid of the first detector tube (6K8) through a .05 or .1 mfd. condenser. The ground on the test oscillator should be connected to the chassis ground. Align all six I.F. trimmers to peak or maximum reading on the output meter. After aligning the I.F.'s, have the band switch in the broadcast band and the generator set at 456 KC. Connect the antenna lead to the generator through a 200 MMF condenser. Adjust the wave trap trimmer to give a minimum signal. It will be necessary to increase the output of the generator to secure an accurate minimum with the wave trap.

SHORT WAVE BAND ALIGNMENT. Change the band switch to the S. W. position and connect the generator to the antenna with a 400 ohm dummy. Adjust the S. W. oscillator to give a maximum output at 18100 KC with the dial at the extreme left. Set the signal generator and receiver dials to 15000 KC and adjust the S.W. antenna and R. F. trimmers (bottom row) to give a maximum peak and check dial to prevent alignment on the image frequency. With a strong signal input turn the dial to approximately 1 M. C. lower in frequency and pick up the image frequency. If the image is not received, it will be necessary to return the dial to 18100 KC to reduce the capacity in the oscillator trimmer until a second signal is received. Proceed as before with the alignment of the antenna and recheck for image frequency. Check the sensitivity at 6000 KC to determine if the coils and mica pad are not defective.

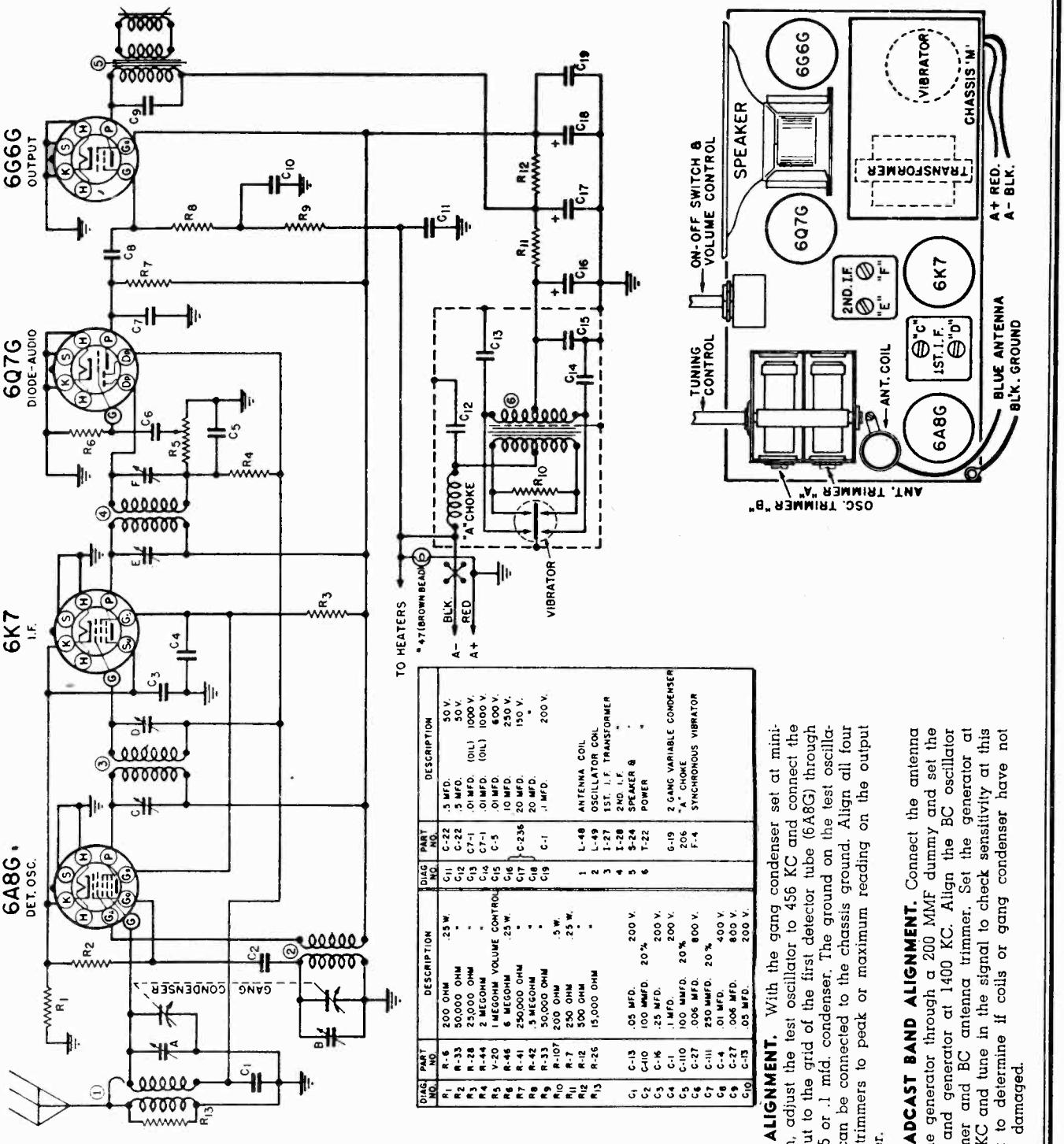
POLICE BAND ALIGNMENT. Change the band switch to the police position and, with the same dummy antenna, line up the police oscillator trimmer at 5600 KC with the receiver pointer at the extreme left end of the dial and then adjust the police antenna and R. F. trimmers (center row) in the same way as for the short wave band, setting the dial at 5000 KC and the generator at the same frequency. Check for image frequency at approximately 1 MC lower on the dial as described for the short wave band. Next, set the generator at 1800 KC and tune in the signal with the dial. Adjust the police pad by rocking the gang back and forth while adjusting the pad until maximum output is attained. Recheck the adjustment at 5000 KC as the pad adjustment may have caused misalignment.

BROADCAST BAND ALIGNMENT. With the switch turned to the broadcast position, connect the antenna to the generator through a 200 MMF dummy and set the dial to the extreme left and the generator at 1720 KC. Align the BC oscillator trimmer for maximum output, then set the generator to 1400 KC, tune in the signal on the receiver and adjust the BC antenna and R.F. trimmers (top row). Set the generator at 600 KC and adjust the BC pad as described for the police band. Return to 1400 KC and recheck alignment at this point. Next tune in a signal from a station of known frequency close to 700 KC. If the dial does not indicate correctly, set your signal generator to 700 KC, tune in the signal and after loosening the dial drum by releasing the set screws, adjust the drum so that the pointer indicates 700 KC. Tighten the set screws and check on the station near that frequency to see whether the calibration is satisfactory, then check on several other stations as a final check.

FOR DATA ON PUSH-BUTTON ADJUSTMENT, SEE MODEL E-10807.

MODELS E-10831, E-10832

ALLIED RADIO CORP.



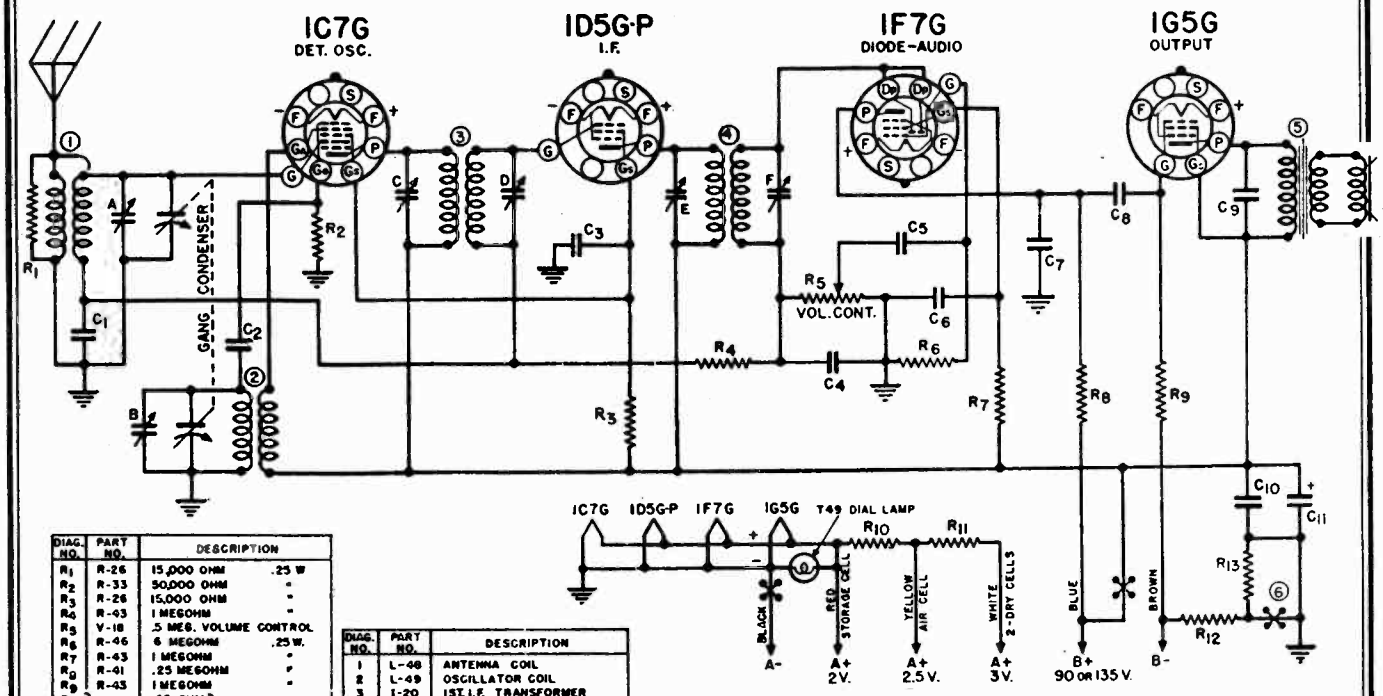
DIAG. NO.	PART NO.	DESCRIPTION	DIAG. NO.	PART NO.	DESCRIPTION
R_1	R-6	200 OHM .25 W.	C_{11}	C-22	.5 MFD. 50 V.
R_2	R-33	50,000 OHM -	C_{12}	C-22	.5 MFD. 50 V.
R_3	R-28	23,000 OHM -	C_{13}	C7-1	.01 MFD. (OIL) 1000 V.
R_4	R-44	2 MEGOHM -	C_{14}	C7-1	.01 MFD. (OIL) 1000 V.
R_5	V-20	1 MEGOHM VOLUME CONTROL	C_{15}	C-5	.01 MFD. 600 V.
R_6	R-46	6 MEGOHM .25 W.	C_{16}		10 MFD. 250 V.
R_7	R-41	250,000 OHM -	C_{17}	C-235	20 MFD. 150 V.
R_8	R-42	.5 MEGOHM -	C_{18}		20 MFD. "
R_9	R-33	50,000 OHM -	C_{19}	C-1	.1 MFD 200 V.
R_{10}	R-107	200 OHM .5 W.	1	L-48	ANTENNA COIL
R_{11}	R-7	250 OHM 25 W.	2	L-49	OSCILLATOR COIL
R_{12}	R-12	500 OHM -	3	I-27	1ST. I.F. TRANSFORMER
R_{13}	R-26	15,000 OHM -	4	I-28	2ND. I.F. "
C_1	C-13	.05 MFD. 200 V.	5	S-24	SPEAKER & "
C_2	C-110	100 MMFD. 20% 200 V.	6	T-22	POWER "
C_3	C-16	.25 MFD. 200 V.		G-19	2 GANG VARIABLE CONDENSER
C_4	C-1	.1 MFD. 200 V.		206	"A" CHOKE
C_5	C-110	100 MMFD. 20%		F-4	SYNCHRONOUS VIBRATOR
C_6	C-27	.006 MFD. 600 V.			
C_7	C-111	250 MMFD. 20%			
C_8	C-4	.01 MFD. 400 V.			
C_9	C-27	.006 MFD. 600 V.			
C_{10}	C-13	.05 MFD. 200 V.			

I.F. ALIGNMENT. With the gang condenser set at minimum, adjust the test oscillator to 456 KC and connect the output to the grid of the first detector tube (6A8G) through a .05 or .1 mfd. condenser. The ground on the test oscillator can be connected to the chassis ground. Align all four I.F. trimmers to peak or maximum reading on the output meter.

BROADCAST BAND ALIGNMENT. Connect the antenna to the generator through a 200 MMF dummy and set the dial and generator at 1400 KC. Align the BC oscillator trimmer and BC antenna trimmer. Set the generator at 600 KC and tune in the signal to check sensitivity at this point to determine if coils or gang condenser have not been damaged.

MODELS E-10835, E-10836

ALLIED RADIO CORP.

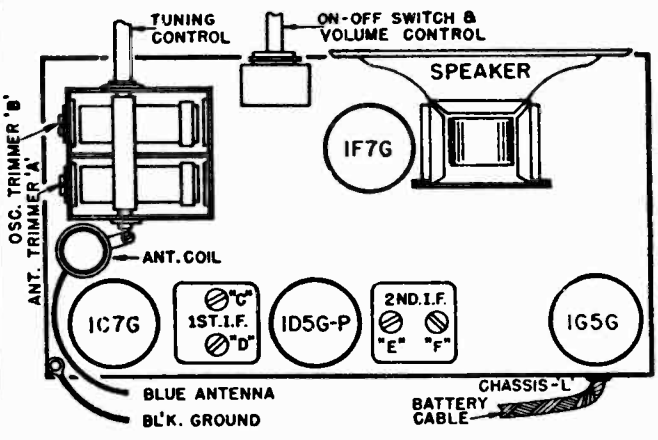


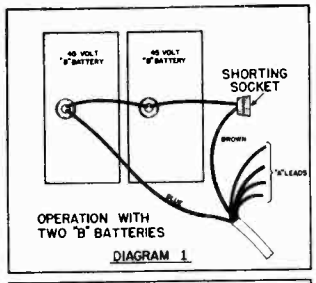
DIAG. NO.	PART NO.	DESCRIPTION
R_1	R-26	15,000 OHM .25 W
R_2	R-33	50,000 OHM "
R_3	R-26	15,000 OHM "
R_4	R-43	1 MEGOHM "
R_5	V-18	.5 MEG. VOLUME CONTROL
R_6	R-46	6 MEGOHM .25 W.
R_7	R-43	1 MEGOHM "
R_8	R-41	.25 MEGOHM "
R_9	R-43	1 MEGOHM "
R_{10}	R-506	.66 OHM } CANDOHM
R_{11}		1.20 OHM }
R_{12}	R-10	400 OHM 10% .25 W.
R_{13}	R-10	400 OHM 10% .25 W.
C_1	C-13	.05 MFD. 200 V.
C_2	C-110	100 MMFD. 20%
C_3	C-1	.1 MFD. 200 V.
C_4	C-112	500 MMFD. 20%
C_5	C-27	.006 MFD. 600 V.
C_6	C-4	.01 MFD. 400 V.
C_7	C-111	250 MMFD. 20%
C_8	C-4	.01 MFD. 400 V.
C_9	C-27	.006 MFD. 600 V.
C_{10}	C-13	.05 MFD. 200 V.
C_{11}	C-230	8 MFD. 150 V.

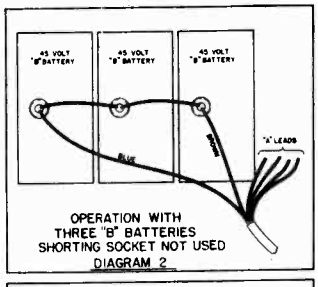
DIAG. NO.	PART NO.	DESCRIPTION
1	L-48	ANTENNA COIL
2	L-49	OSCILLATOR COIL
3	I-20	1ST I.F. TRANSFORMER
4	I-21	2ND I.F. "
5	S-25	5" P.M. SP'KR. & TRANS.
6	X-103	BATTERY ECONOMY SWITCH
	S-19	2 GANG VARIABLE COND.
	W-208	BATTERY CABLE

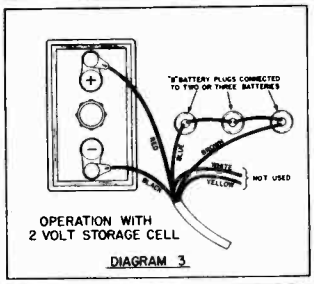
4 TUBE - 2 VOLT

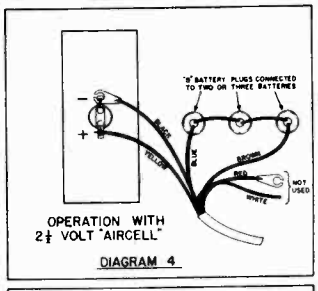
SUPERHETERODYNE
SINGLE BAND
I.F. PEAK 456 K.C.
CHASSIS -L

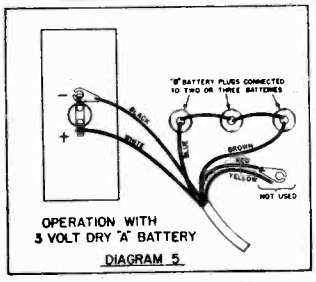


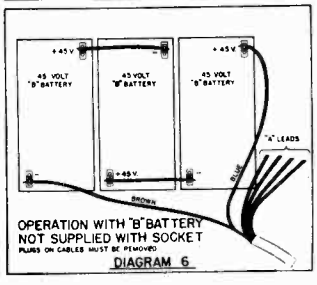










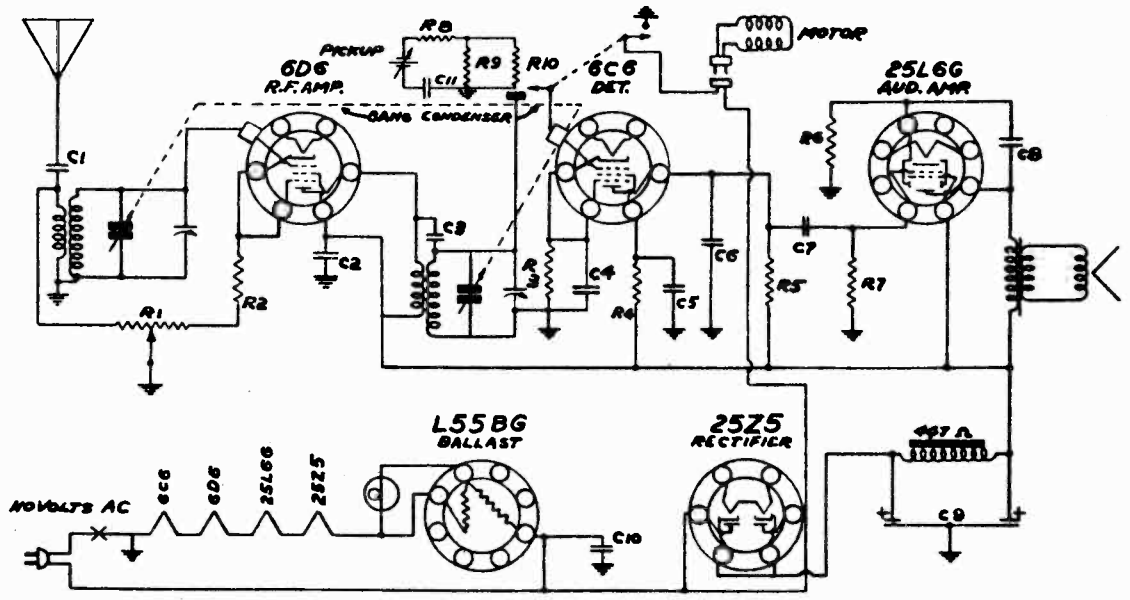


I. F. ALIGNMENT. With the gang condenser set at minimum, adjust the test oscillator to 456 KC and connect the output to the grid of the first detector tube (1C7G) through a .05 or .1 mfd. condenser. The ground on the test oscillator should be connected to the chassis ground. Align all four I.F. trimmers to peak or maximum reading on the output meter.

BROADCAST BAND ALIGNMENT. Connect the antenna to the generator through a 200 MMF dummy and set the dial and generator at 1400 KC. Align the BC oscillator trimmer and BC antenna trimmer. Set the generator at 600 KC and tune in the signal to check sensitivity at this point to determine if coils or gang condenser have not been damaged.

MODEL E-10863

ALLIED RADIO CORP.

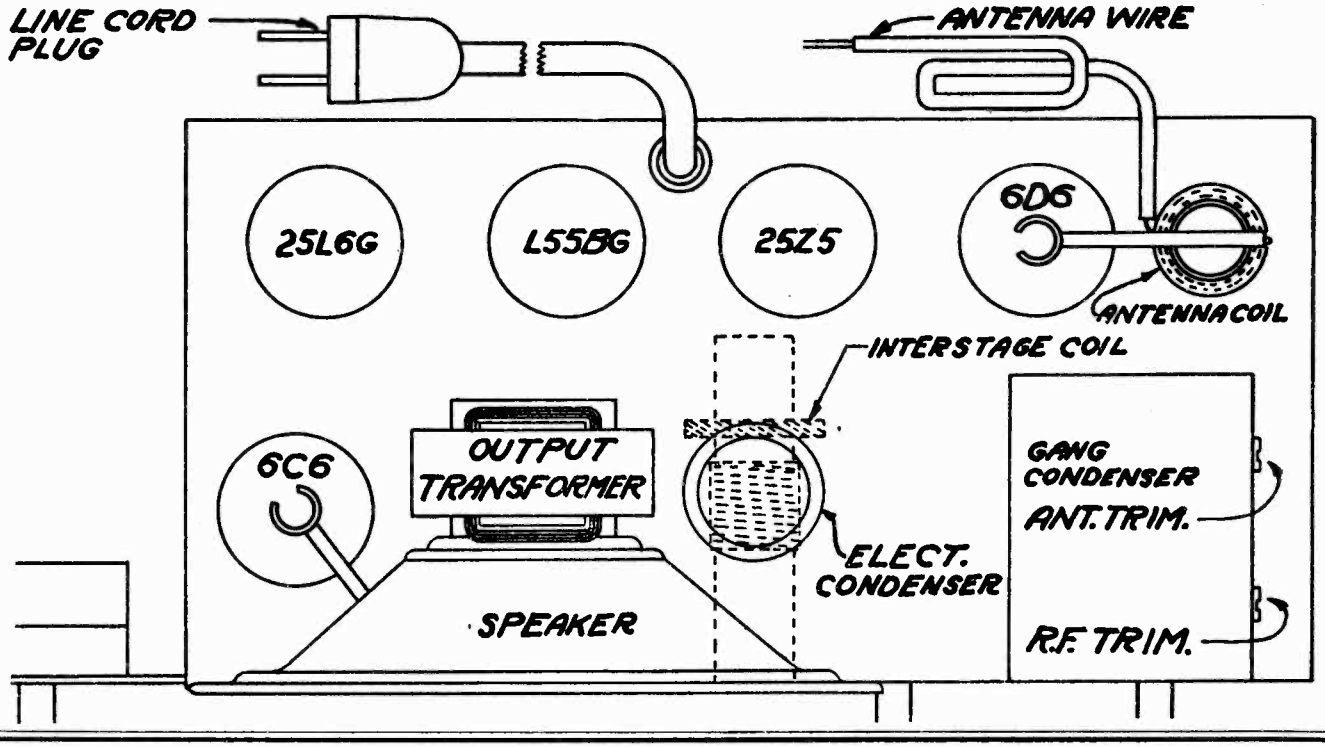


CONDENSERS		
NO.	CAPACITY	TYPE
C1	.002 MFD.	400 V.
C2	.1 "	200 V.
C3	1.5 mmf.	GIMMIK
C4	.25 MFD.	200 V.
C5	.1 "	200 V.
C6	.0002 "	600 V.
C7	.01 "	400 V.
C8	.02 "	400 V.
C9	16-16 "	150 V. ELECT.
C10	.1 "	400 V.
C11	.005 "	600 V.

RESISTORS			
NO.	OHMS	WATTS	
R1	15,000		VOL. CONT.
R2	250	½	
R3	25,000	½	
R4	2,000,000	½	
R5	500,000	½	
R6	110	½	WIRE WOUND
R7	500,000	½	
R8	1,000,000	½	
R9	250,000	½	
R10	500,000		PHONO VOL. CONT.

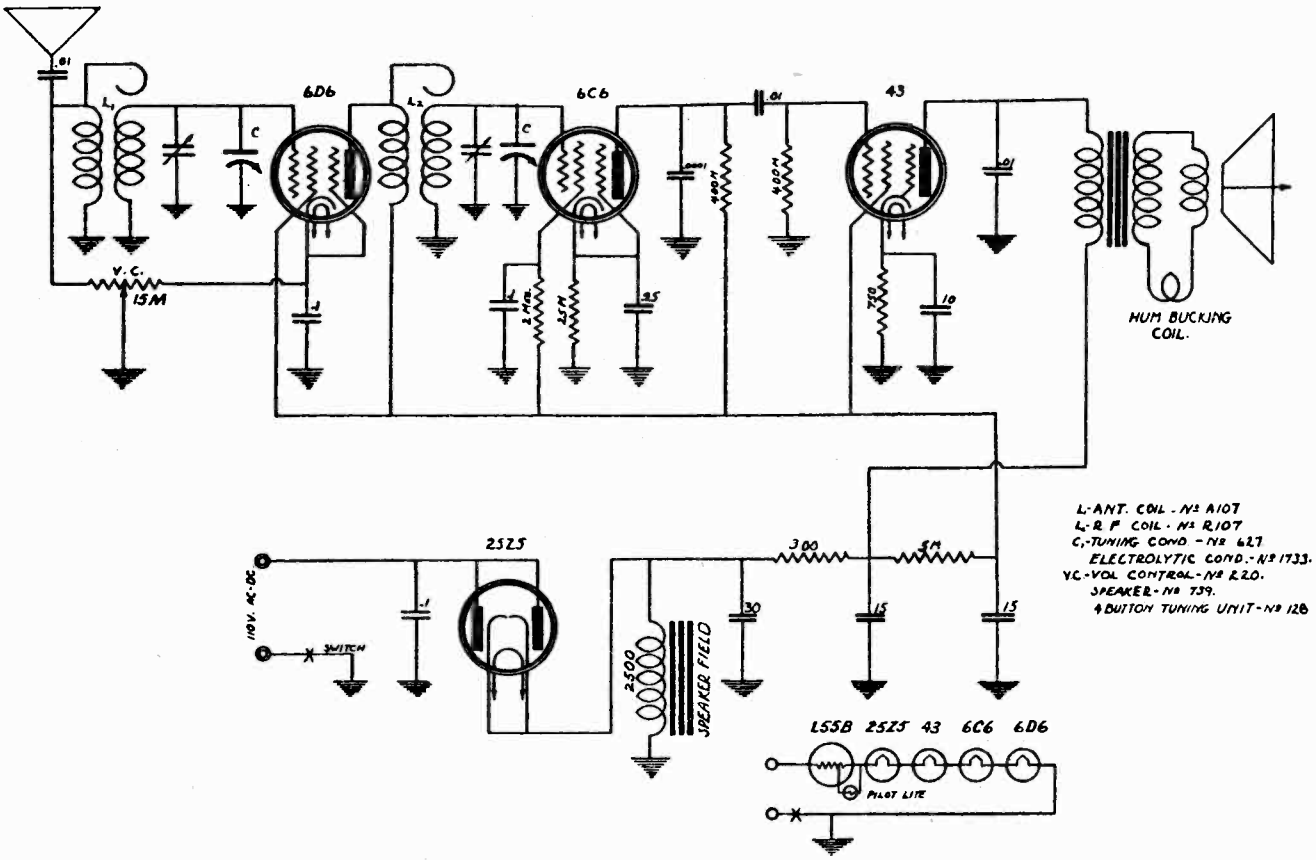
ALIGNMENT DATA AND SERVICING

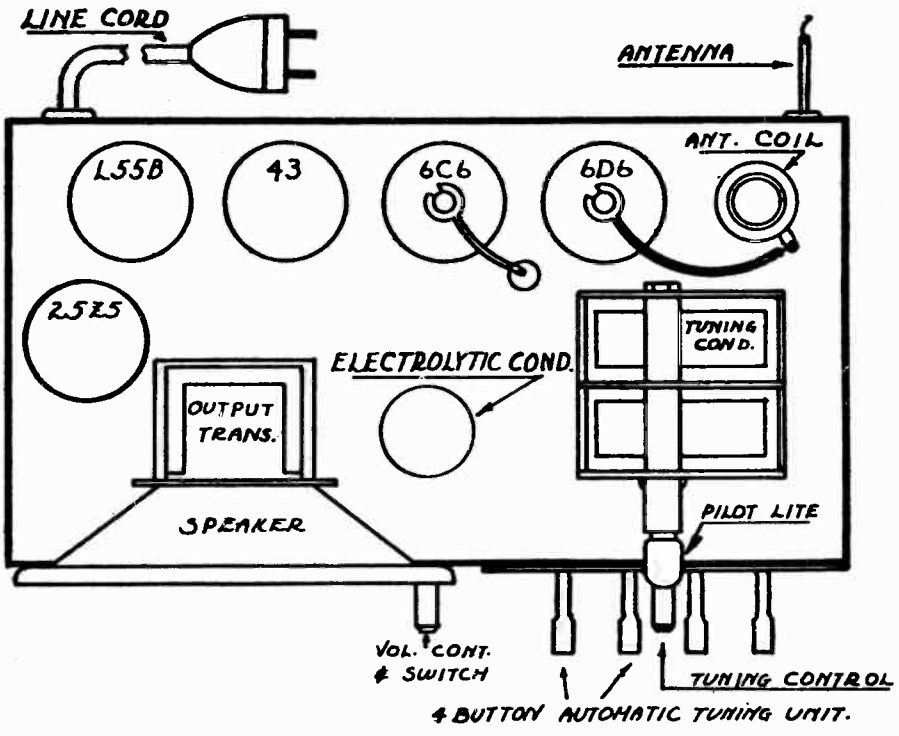
Connect a signal generator to the antenna lead of the receiver through a 100 Mmf. condenser. Set the dial pointer at 1400 KC. Set the generator at 1400 KC. Now adjust the antenna and RF trimmers of the gang condenser to maximum output.



MODEL E-10893

ALLIED RADIO CORP.





ALIGNMENT

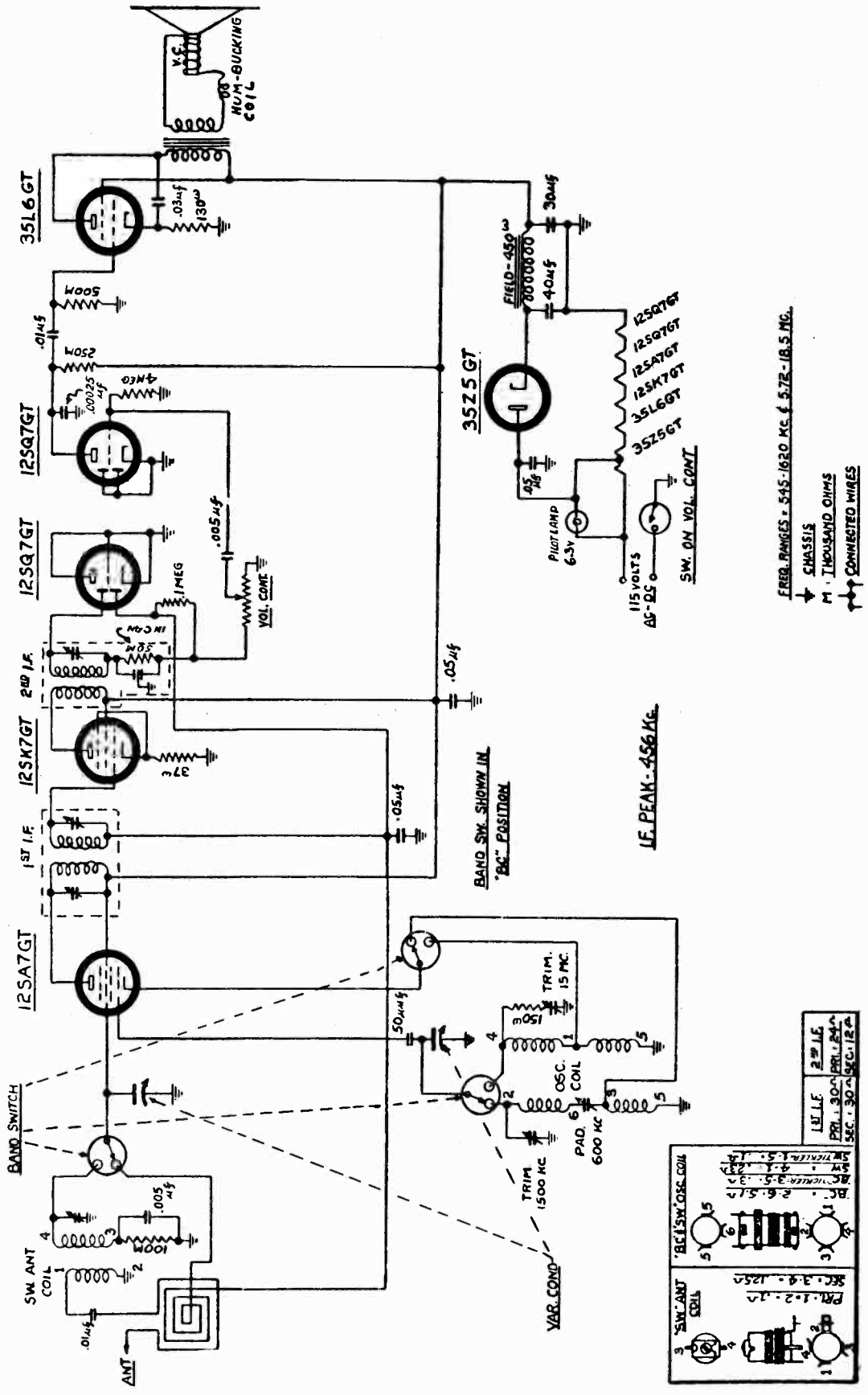
A dummy antenna of approximately 180 mmfd. should be used and connected to antenna with aerial coil left unwound.

Align at 1400 kc with dial set at 1400 and volume control at maximum. Check the alignment at 1000 kc and at 600 kc. The receiver should check OK at these points.

It is only necessary to adjust at one point on the dial.

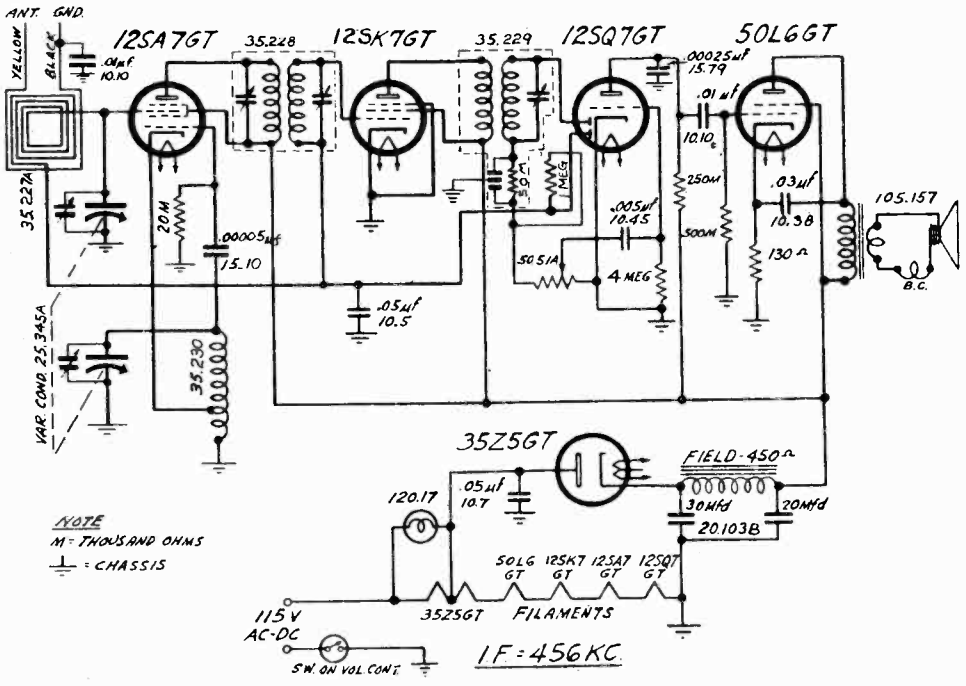
MODEL B-17100

ALLIED RADIO CORP.

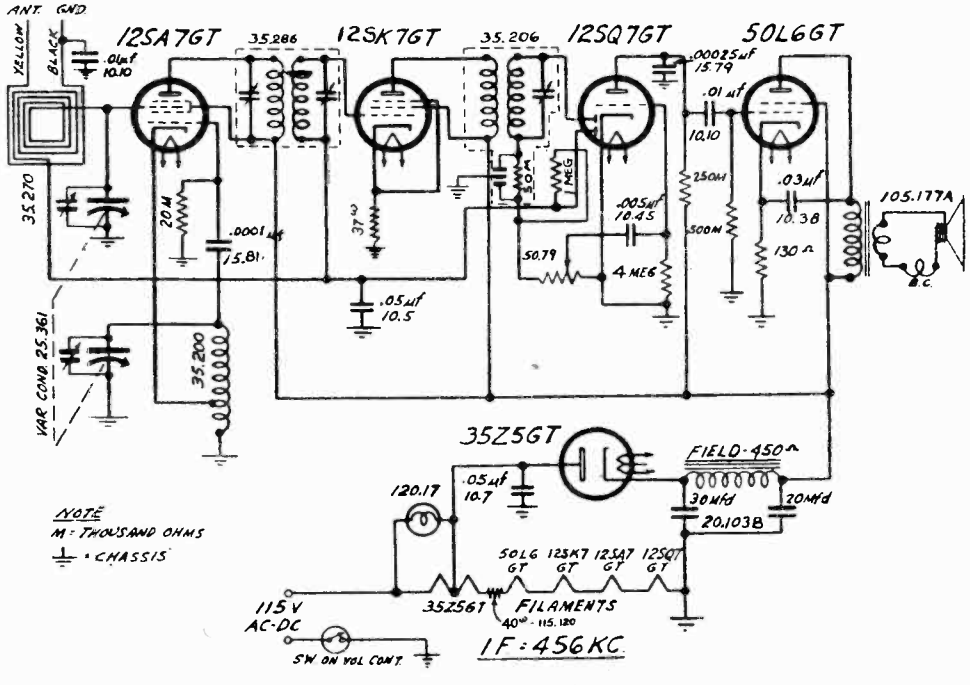


ALLIED RADIO CORP.

MODEL B 17101

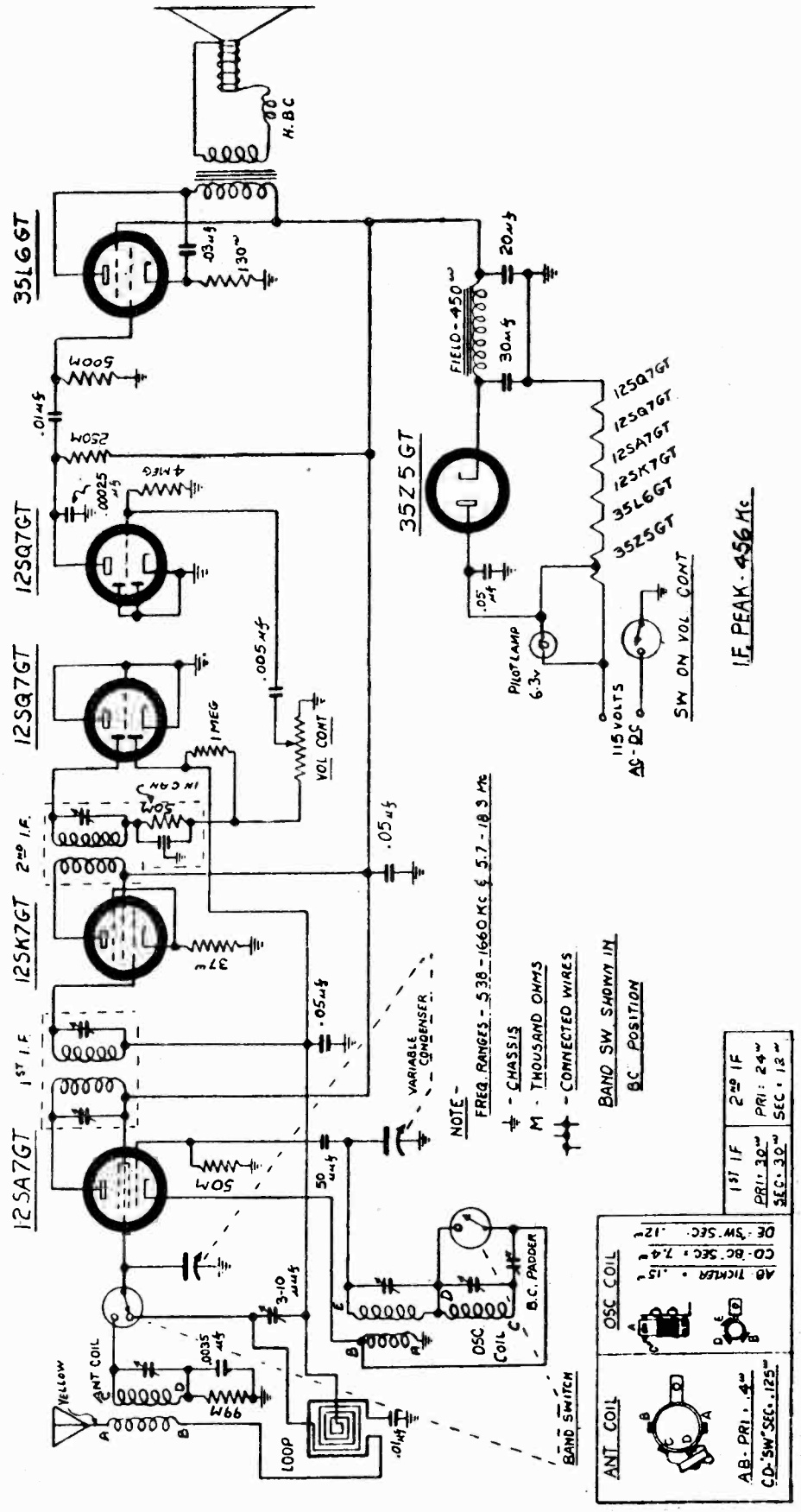


MODEL B17102



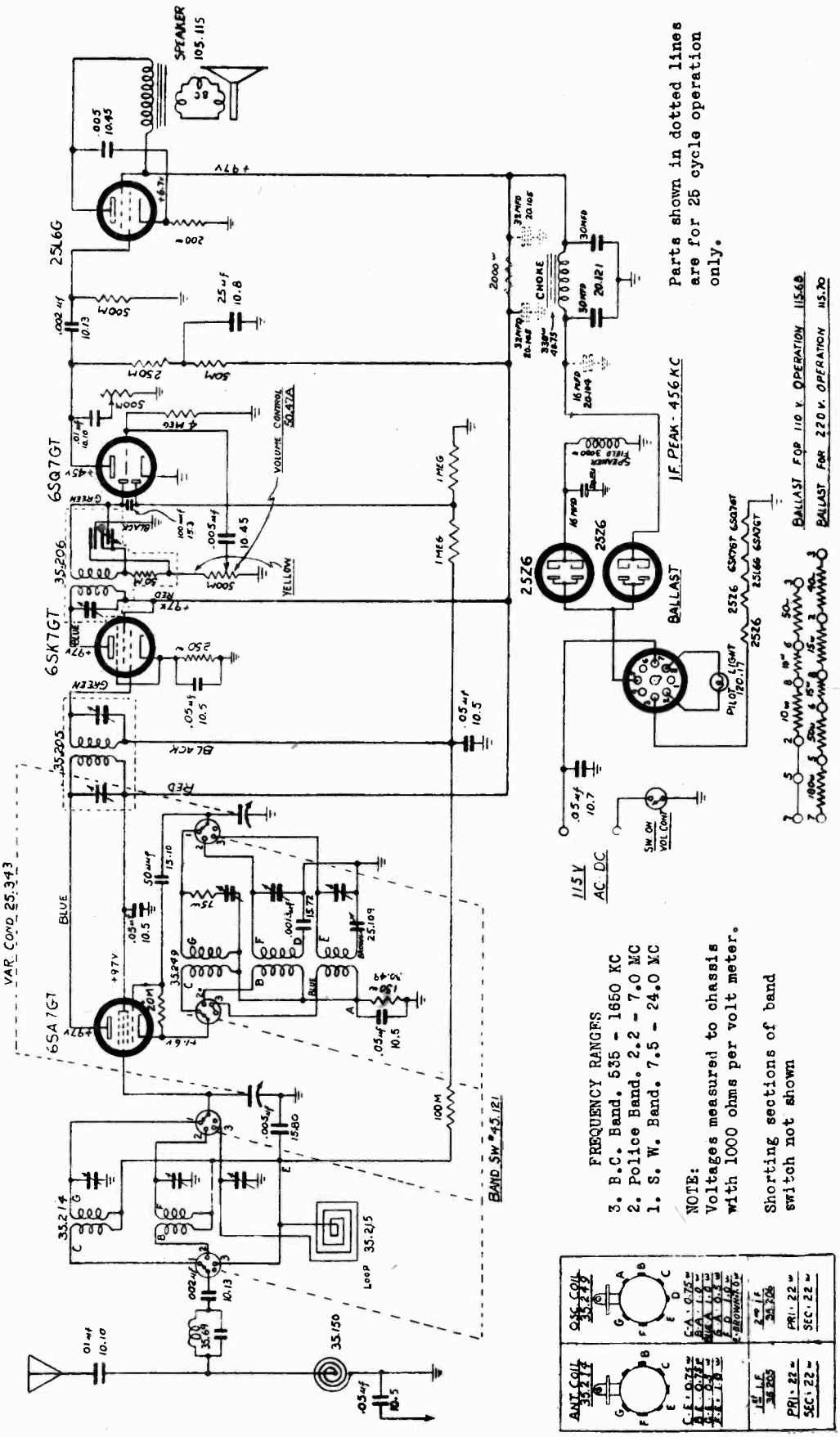
MODELS B-17103, B-17104

ALLIED RADIO CORP.



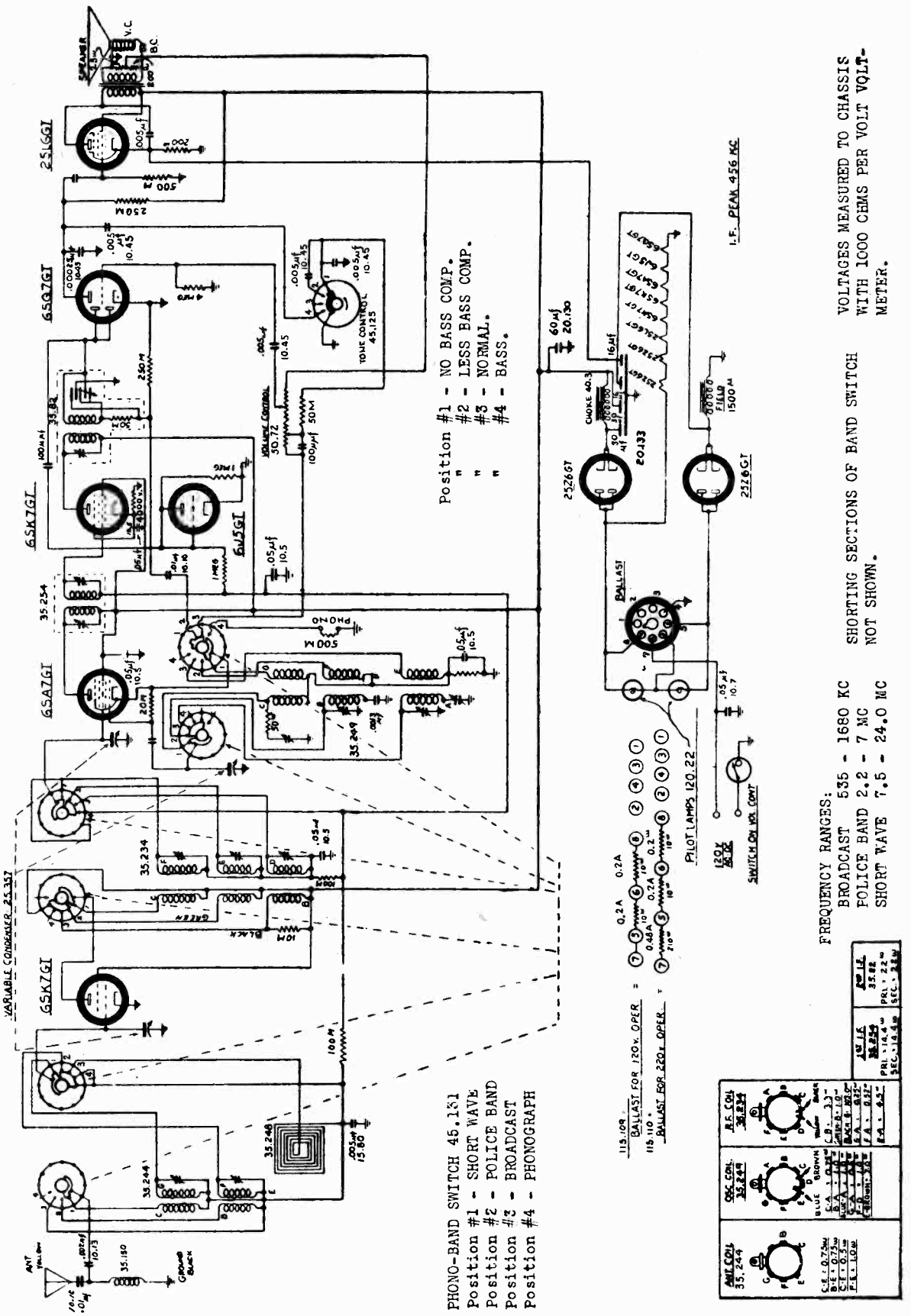
ALLIED RADIO CORP.

MODEL B-17105



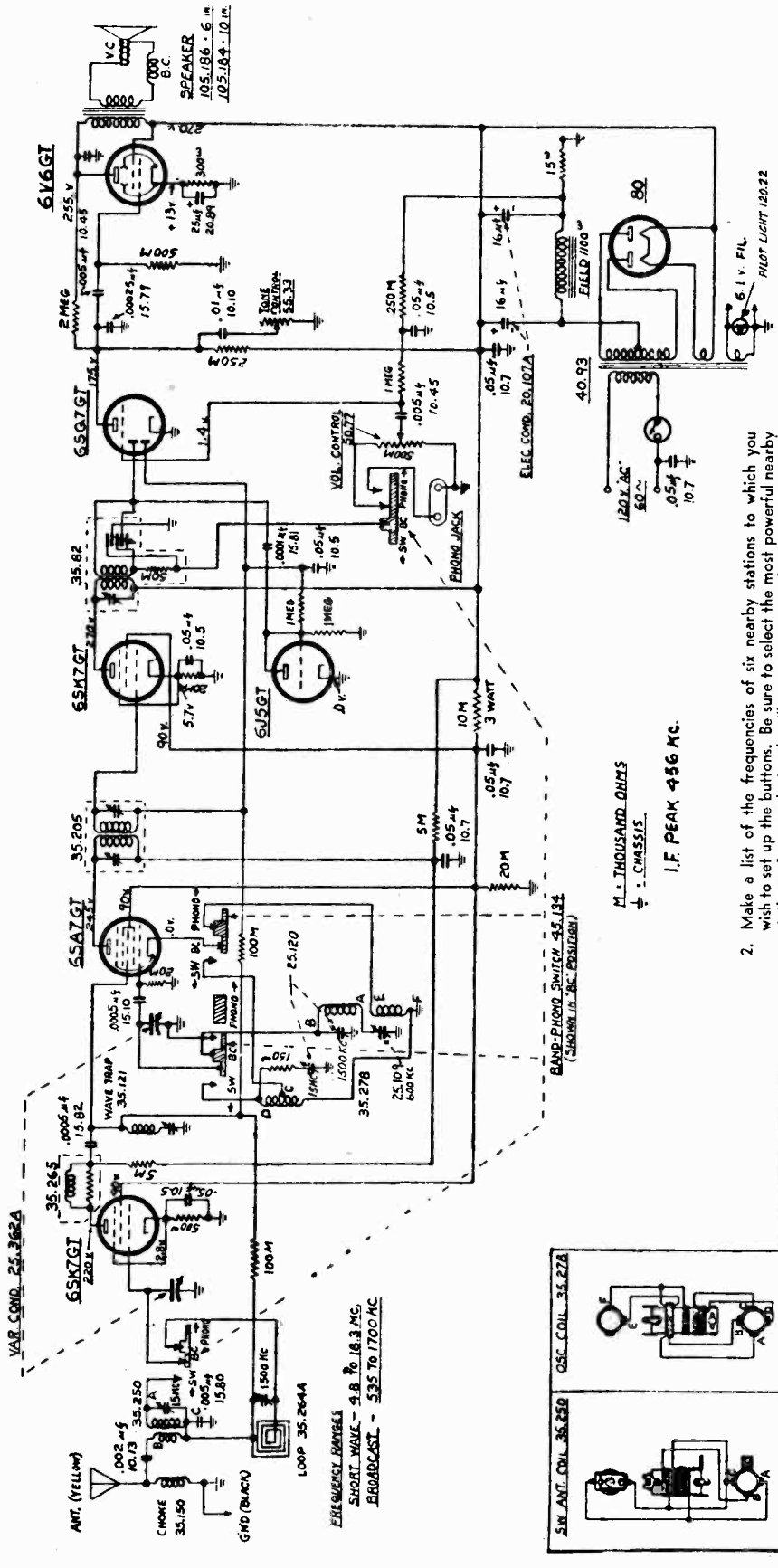
MODEL B-17106

ALLIED RADIO CORP.



ALLIED RADIO CORP.

MODELS B-17110, B-17185
B-17186



INSTRUCTIONS FOR SETTING BUTTONS

Setting up the stations to be tuned in automatically by the Station Selector buttons has been made extremely easy. Follow these instructions carefully:

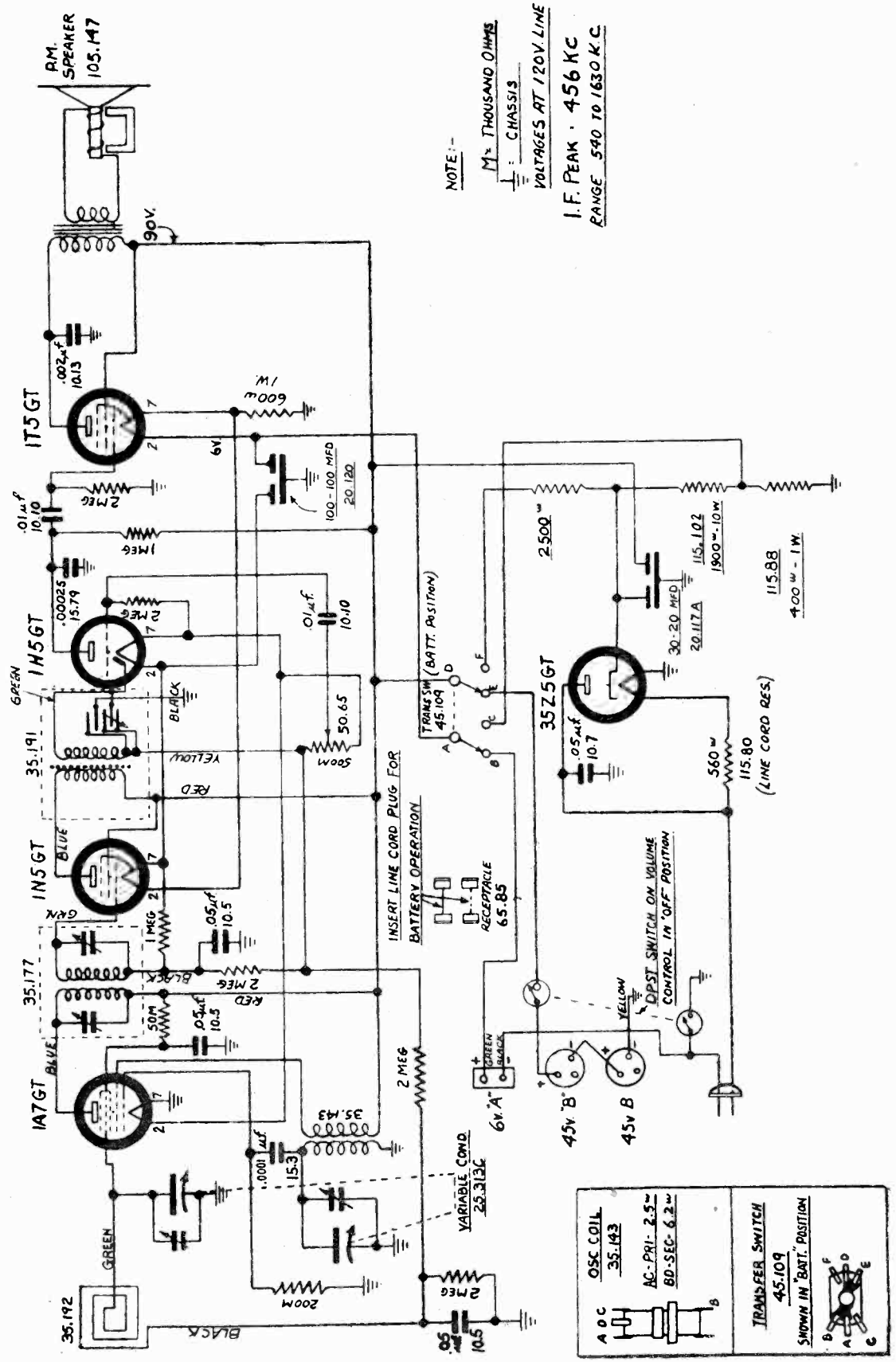
1. Turn the set on and allow it to operate at least fifteen minutes before attempting to set up button.
2. Make a list of the frequencies of six nearby stations to which you wish to set up the buttons. Be sure to select the most powerful nearby stations, since weak signals will not give as satisfactory results.
3. Push up button to be adjusted. There will then be exposed a screwdriver slot recessed in the plunger button. This screw when rotated counter-clockwise by means of a small screwdriver, unlocks the tuner setting for that particular button. The plunger for the button to be set up is then held in a fully depressed position (by the screwdriver) while the desired station is tuned by means of the Vernier Dial Tuning Control. The plunger is then released and the lockup screw is rotated in a clockwise direction, with the screwdriver in order to lock the station permanently in tune.

Repeat the above for each of the other five buttons.

It is advisable to set the lowest frequency station on the left-hand button and the rest in ascending order.

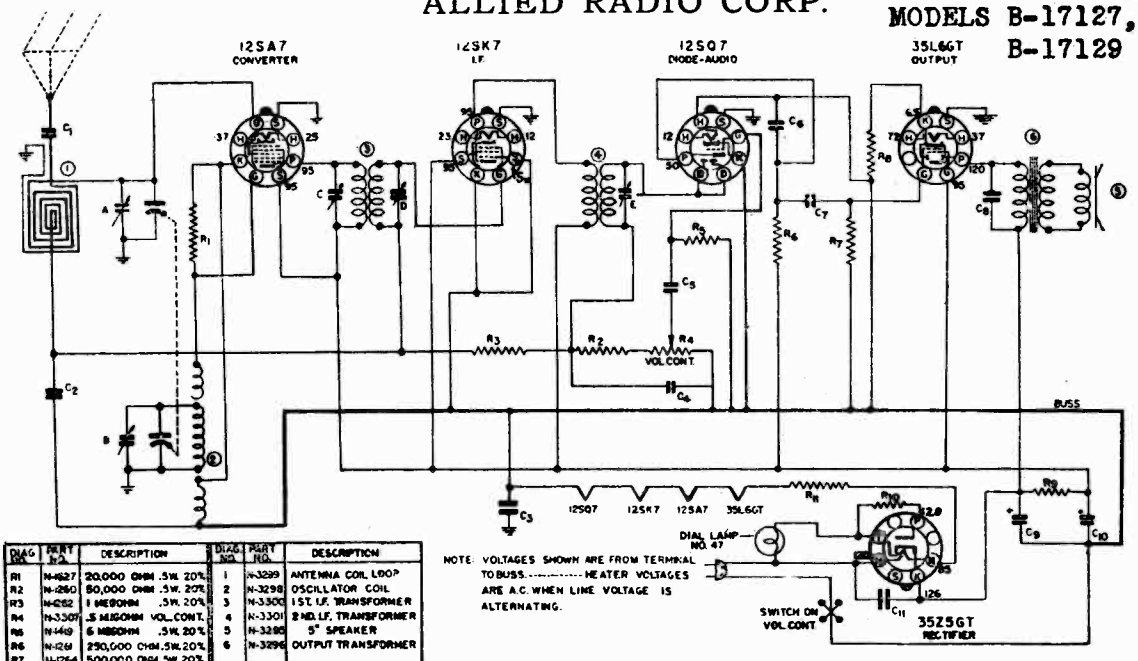
MODELS B-17111, B-17112

ALLIED RADIO CORP.



ALLIED RADIO CORP.

MODELS B-17125, B-17126
MODELS B-17127, B-17128
B-17129

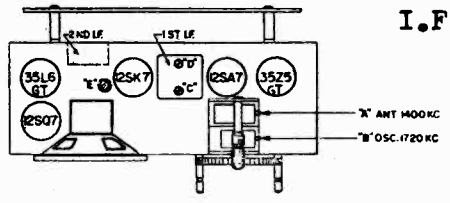


DIAG NO	PART NO	DESCRIPTION
R1	N-1627	20,000 OHM .5W 20%
R2	N-1260	50,000 OHM .5W 20%
R3	N-1262	1 MEGOHM .5W 20%
R4	N-3307	.5 MEGOHM VOL. CONT.
R5	N-1419	6 MEGOHM .5W 20%
R6	N-1261	250,000 OHM .5W 20%
R7	N-1264	500,000 OHM .5W 20%
R8	N-1416	250 OHM .5W 10%
R9	N-3341	1000 OHM .5W 20%
R10	N-1742	25 OHM .5W 20%
R11	N-1418	80 OHM .5W. 10%
C1	N-1344	.01 MFD. 400V.
C2	N-1345	.05 MFD. 200V.
C3	N-3080	.22 MFD. 200V.
C4	N-1374	100 MMFD.
C5	N-2712	.004 MFD. 400V.
C6	N-1447	.0005 MFD. 400V.
C7	N-1344	.01 MFD. 400V.
C8	N-1376	.02 MFD. 400V.
C9	N-3302	35 MFD. 150V. ELECT
C10		30 MFD. 50V.
C11	N-1346	.05 MFD. 400V.

DIAG NO	PART NO	DESCRIPTION
1	N-3299	ANTENNA COIL LOOP
2	N-3298	OSCILLATOR COIL
3	N-3300	1ST I.F. TRANSFORMER
4	N-3301	2ND I.F. TRANSFORMER
5	N-3295	5" SPEAKER
6	N-3296	OUTPUT TRANSFORMER
	N-3297	2 GANG CONDENSER

NOTE: VOLTAGES SHOWN ARE FROM TERMINAL TO BUSS. ---------- HEATER VOLTAGES ARE A.C. WHEN LINE VOLTAGE IS ALTERNATING.

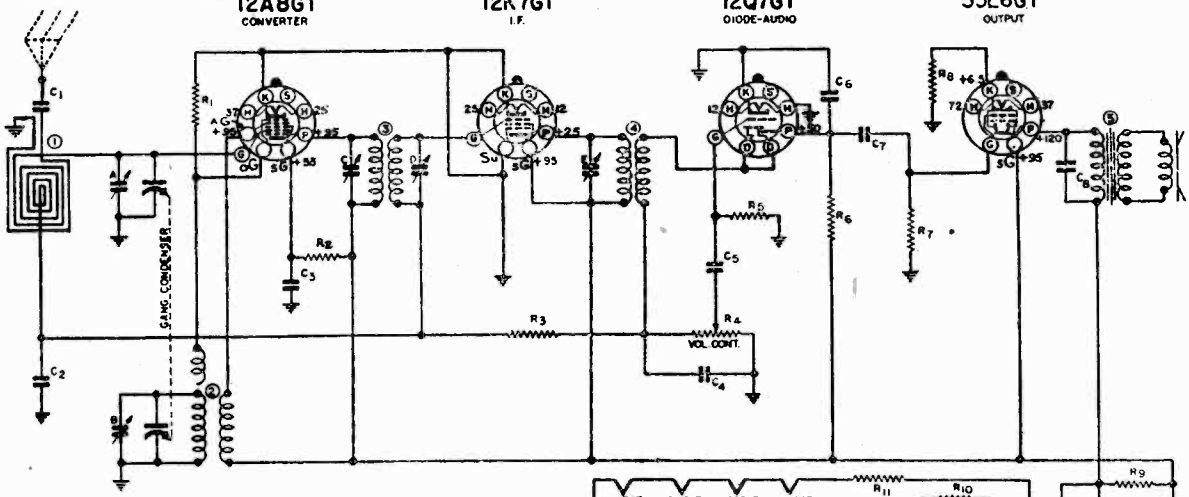
I.F. - 456 KC



TUBE AND TRIMMER LOCATIONS

MODELS B-17125,
B-17126 .

12A8GT CONVERTER
12K7GT I.F.
12Q7GT DIODE-AUDIO
35L6GT OUTPUT

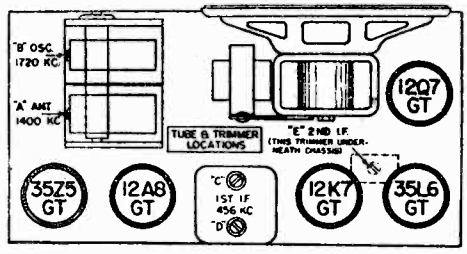


DIAG NO	PART NO	DESCRIPTION
R1	N-1260	50,000 OHM .5W 20%
R2	N-1259	15,000 OHM .5W 20%
R3	N-1262	1 MEGOHM .5W 20%
R4	N-2886	.5 MEGOHM VOL. CONT.
R5	N-1263	10 MEGOHM .5W 20%
R6	N-1377	200,000 OHM .5W 20%
R7	N-1264	500,000 OHM .5W 20%
R8	N-1616	250 OHM .5W 10%
R9	N-1257	2,000 OHM .5W 20%
R10	N-1742	25 OHM .5W 20%
R11	N-1618	80 OHM 2 W 10%
C1	N-1344	.01 MFD. 400 V.
C2	N-1345	.05 MFD. 200 V.
C3	N-1345	.05 MFD. 200 V.
C4	N-1374	100 MMFD.
C5	N-1344	.01 MFD. 400 V.
C6	N-1447	.0005 MFD. 400 V.
C7	N-1344	.01 MFD. 400 V.
C8	N-1376	.02 MFD. 400 V.
C9	N-1366	30 MFD. 150 V. ELECTRO.
C10		15 MFD. 150 V
C11	N-1346	.05 MFD. 400 V.

DIAG NO	PART NO	DESCRIPTION
1	N-2902	ANTENNA COIL LOOP
2	N-1452	OSCILLATOR COIL
3	N-1598	1ST I.F. TRANSFORMER
4	N-2890	2ND I.F. TRANSFORMER
5	N-2889	4-1/2" SPEAKER & TRANS.
E	N-1597	2ND I.F. TRIMMING COND.
	N-2901	2 GANG CONDENSER

NOTE: VOLTAGES SHOWN ARE FROM TERMINAL TO CHASSIS BASE. HEATER VOLTAGES ARE A.C. WHEN LINE VOLTAGE IS ALTERNATING.

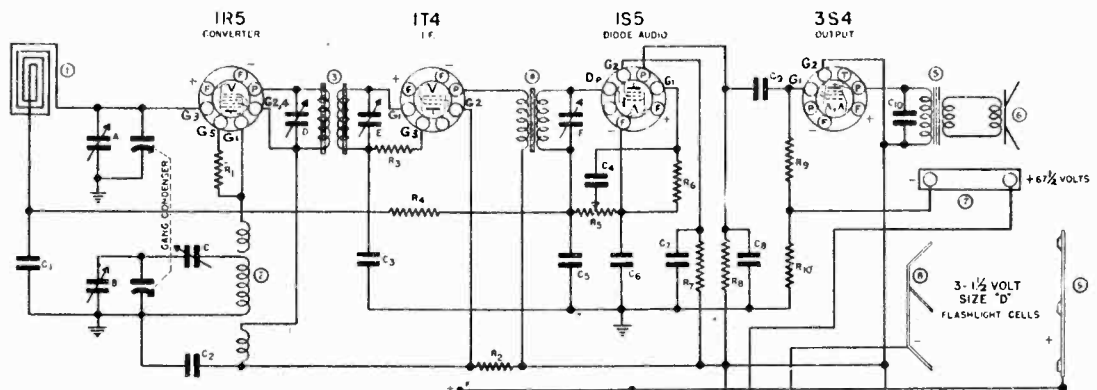
I.F. 456 KC.



MODELS B-17127,
B-17128,
B-17129

MODELS B-17132, B-17133
B-17134

ALLIED RADIO CORP.



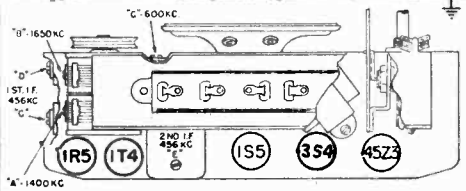
DIAG NO	PART NO	DESCRIPTION
R_1	N-1778	100,000 OHM .5W 20%
R_2	N-4278	4,700 OHM .5W 10%
R_3	N-1263	10 MEGOHM .5W 20%
R_4	N-4277	2.2 MEGOHM .5W 20%
R_5	N-4213	1 MEGOHM VOLUME CONTROL
R_6	N-4028	6.8 MEGOHM .5W 20%
R_7	N-4062	5.3 MEGOHM .5W 20%
R_8	N-1262	1 MEGOHM .5W 20%
R_9	N-4277	2.2 MEGOHM .5W 20%
R_{10}	N-4279	820 OHM .5W 10%
R_{11}	N-4228	680 OHM .5W 10%
R_{12}	N-4280	56 OHM .5W 10%
R_{13}	N-4281	1800 OHM .5W 10%
R_{14}	N-4065	2200 OHM .5W 10%
R_{15}	N 4252	1870 OHM 4.8W 5%
R_{16}		82 OHM 1.3 W 10%
R_{17}		1000 OHM 5.6W 10%
	N-4185	2 GANG CONDENSER
1	N-4296	LOOP ANTENNA (WOOD)
	N-4253	LOOP ANTENNA (PLASTIC)
2	N-4257	OSCILLATOR COIL
3	N-4470	1 ST I.F. TRANSFORMER
4	N-4259	2 ND I.F. TRANSFORMER
5	N-4256	OUTPUT TRANSFORMER
6	N-4255	5½" P.M. SPEAKER
7	N-4274	B BATTERY CONNECTOR
8	N-4220	A BATTERY SPRING CONTACT (NEGATIVE)
9	N-4222	A BATTERY CONTACT STRIP (POSITIVE)
	N-4215	CHANGEOVER SWITCH

SWITCH SHOWN IN COUNTER CLOCKWISE (AC-DC) POSITION.
(BOTH VIEWS AS SEEN FROM SHAFT END)

POS	CONTACTS MADE FRONT	CONTACTS MADE REAR
AC-DC	8-9, 11-12	2-3, 8-10
OFF	NONE	2-3-4, 8-10-11
BATTERY	2-3, 8-10	1-4-5-6, 8-9-10-12-2

I.F. 456 KC

DIAG NO	PART NO	DESCRIPTION	
C_1	N-1345	.05 MFD.	200 V.
C_2	N-1345	.05 MFD.	200 V.
C_3	N-1344	.01 MFD.	400 V.
C_4	N-2712	.004 MFD.	400 V.
C_5		.0001 MFD. (IN 2nd I.F. CAN)	
C_6	N-1551	.1 MFD.	200 V.
C_7	N-1344	.01 MFD.	400 V.
C_8	N-1342	50 MMFD.	MICA
C_9	N-1344	.01 MFD.	400 V.
C_{10}	N-2712	.004 MFD.	400 V.
C_{11}		100 MFD. 12V	
C_{12}	N-4206	30 MFD. 150V.	ELECTROLYTIC
C_{13}		30 MFD. 150V.	
C_{14}	N-1346	.05 MFD.	400 V.

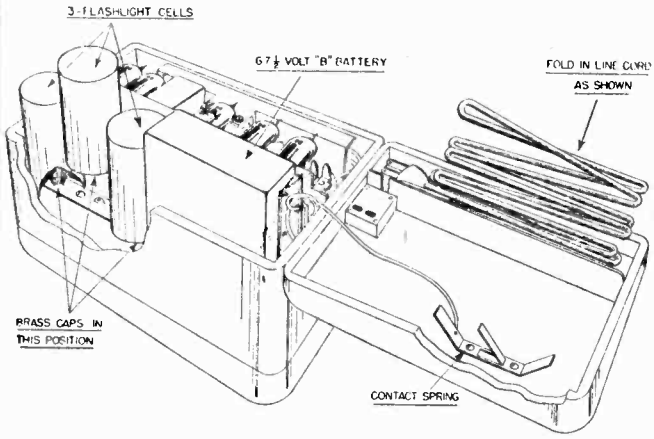


TUBE AND TRIMMER LOCATIONS

4523 RECTIFIER

LINE CORD DISCONNECTS WHEN BACK IS REMOVED

5 TUBE - 3 WAY PORTABLE
BATTERY, 110-120 VOLTS AC OR DC
SUPERHETERODYNE
SINGLE BAND



BATTERIES. The receiver requires three standard flashlight cells for the "A" battery and one 67½ volt "B" battery. The three "A" cells will give 25 hours of service and the "B" battery will give 50 hours of service. Use two sets of these "A" cells during the life of one "B" battery for the most economical operation.

The "A" cells are standard flashlight cells which are 2-5/16" long and 1-5/16" in diameter and are usually marked size D. These cells can be purchased from any store that handles flashlights. The cells should not be older than the date limit stamped on the case by the manufacturer if satisfactory life is to be expected from them.

The 67 volt "B" battery is approximately $2\frac{5}{8}$" x $1\frac{5}{16}$" x $3\frac{19}{32}$". This battery can be obtained from most radio stores and will have the numbers indicated below for the various manufacturers.

Manufacturer	Designation
Burgess	XX45
Eveready	467
General Dry Battery	W45A
Ray-O-Vac	P4367

CAUTION. Never leave dead batteries in the receiver or store the receiver with the batteries in it for long periods as the batteries are apt to swell and damage the radio.

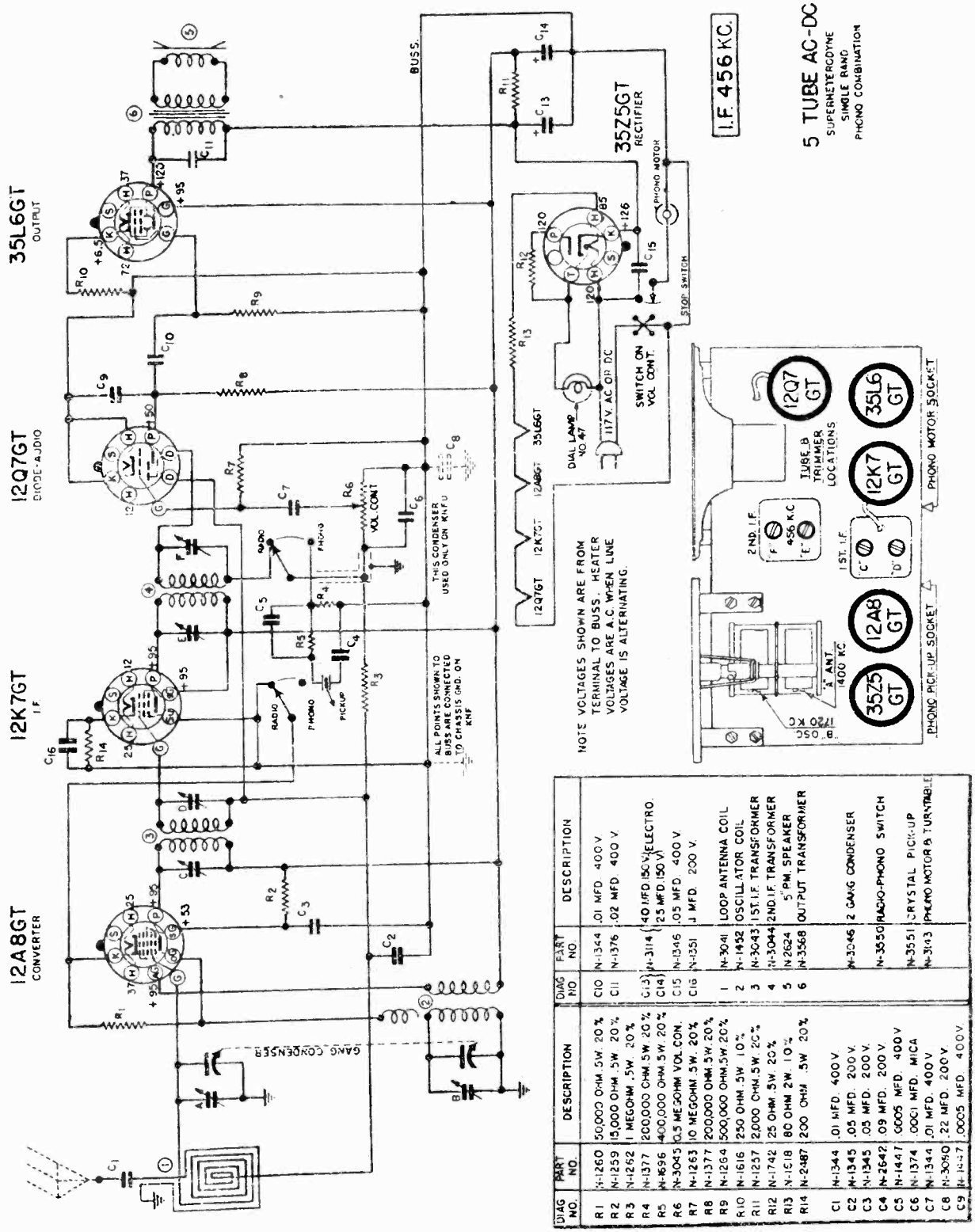
BROADCAST BAND ALIGNMENT. Make a loop consisting of two turns of wire approximately one foot in diameter and connect across the generator terminals. Place this loop parallel to the loop antenna and about six inches away from it.

Set the dial and generator at 1650 KC (gang at minimum capacity). Adjust the oscillator trimmer for maximum output. Set the generator at 1400 KC and tune in the signal. Adjust the antenna trimmer for maximum output. Next set the test oscillator at 600 KC and tune in the signal with the dial. Adjust the 600 KC padder for maximum output while slowly rocking the gang at the 600 KC position on the dial. If this padder is badly out of adjustment it is necessary to repeat the 1650 and 1400 KC adjustments.

I. F. ALIGNMENT. Remove the chassis and loop antenna from the cabinet and set them up on the bench so that they occupy exactly the same respective positions on the bench as they did in the cabinet. Care should be taken to have no iron or other metal near the loop. Do not make this set-up on a metal bench. With the gang condenser set at minimum, adjust the test oscillator to 456 KC and connect the output to the grid of the first detector tube (1R5) through a .05 or .1 mfd. condenser. The ground on the test oscillator should be connected to the chassis ground. Align all three I.F. trimmers to peak or maximum reading on the output meter.

MODEL B-17135

ALLIED RADIO CORP.

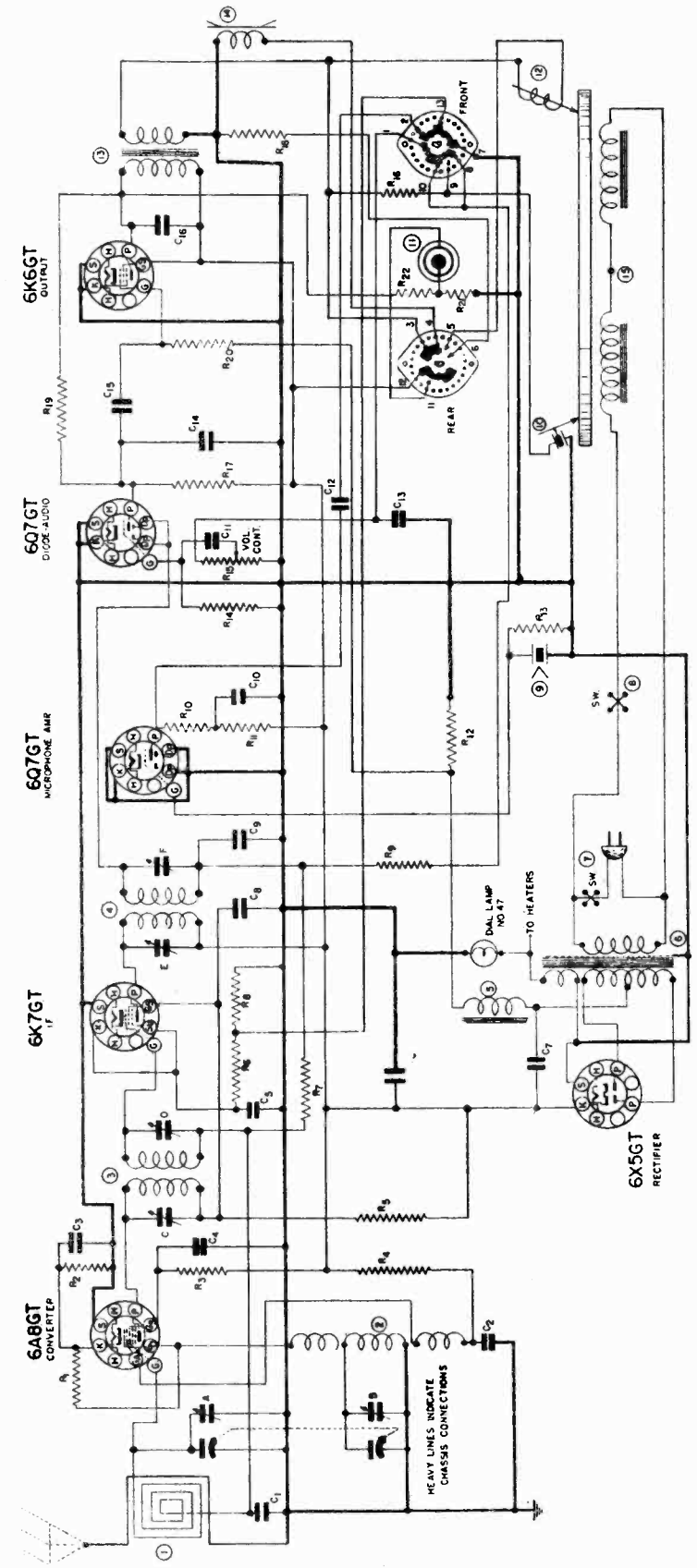


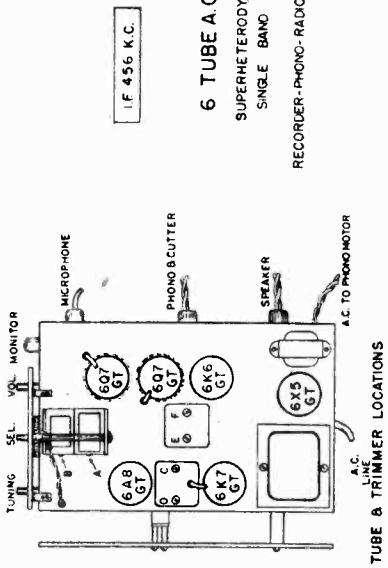
DIAG NO.	PART NO.	DESCRIPTION
R1	N-1260	50,000 OHM .5W 20%
R2	N-1259	15,000 OHM .5W 20%
R3	N-1262	1 MEGOHM .5W 20%
R4	N-1377	200,000 OHM .5W 20%
R5	N-1696	400,000 OHM .5W 20%
R6	N-3045	0.5 MEGOHM VOL.CON.
R7	N-1263	10 MEGOHM .5W 20%
R8	N-1377	200,000 OHM .5W 20%
R9	N-1264	500,000 OHM .5W 20%
R10	N-1616	250 OHM .5W 10%
R11	N-1237	2,000 OHM .5W 20%
R12	N-1742	25 OHM .5W 20%
R13	N-1518	80 OHM 2W 10%
R14	N-2487	200 OHM .5W 20%
C1	N-1344	.01 MFD. 400 V
C2	N-1345	.05 MFD. 200 V.
C3	N-1345	.05 MFD. 200 V.
C4	N-2642	.09 MFD. 200 V.
C5	N-1447	.0005 MFD. 400 V
C6	N-1374	.001 MFD. MICA
C7	N-1344	.01 MFD. 400 V.
C8	N-3060	.22 MFD. 200 V.
C9	N-1447	.0005 MFD. 400 V.

DIAG NO.	PART NO.	DESCRIPTION
C10	N-1344	.01 MFD. 400 V.
C11	N-1376	.02 MFD. 400 V.
C12	N-3114	40 MFD 150 V. ELECTRO
C13		25 MFD 150 V.
C14		
C15	N-1346	.05 MFD. 400 V.
C16	N-1351	.1 MFD. 200 V.
1	N-3041	LOOP ANTENNA COIL
2	N-1432	OSCILLATOR COIL
3	N-3043	1ST I.F. TRANSFORMER
4	N-3044	2ND I.F. TRANSFORMER
5	N-2624	5" PM. SPEAKER
6	N-3568	OUTPUT TRANSFORMER
	N-3046	2 GANG CONDENSER
	N-3550	RADIO-PHONO SWITCH
	N-3551	CRYSTAL PICK-UP
	N-3143	PHONO MOTOR & TURNTABLE

MODEL B-17136

ALLIED RADIO CORP.





TUBE & TRIMMER LOCATIONS

SELECTOR SWITCH CONTACTS	
POSITION VIEWED FROM SHAFT END	CONTACTS CLOSED
PHONO	3-4, 4-9-NO. 2-3-5-7
RADIO	3-4, 4-5
RADIO RECORDING	3-4, 4-5, 1-2, 7-8-10
MICRO. RECORDING	3-4, 4-5, 1-2-10
HOME BROADCASTING	3-4, 7-8, 11-12

DIAG. NO.	PART NO.	DESCRIPTION	DIAG. NO.	PART NO.	DESCRIPTION
R1	N-1269	50,000 OHM .5W 20%			
R2	N-4121	270 OHM .5W 10%			
R3	N-4120	68,000 OHM .5W 20%			
R4	N-4063	47,000 OHM .5W 20%			
R5	N-4064	33,000 OHM .5W 20%			
R6	N-4056	470 OHM .5W 10%	C 1	N-1345	.05 MFD. 200V.
R7	N-1262	1 MEGOHM .5W 20%	C 2	N-1345	.05 MFD. 200V.
R8	N-1257	2000 OHM .5W 20%	C 3	N-1479	.25 MFD. 200V.
R9	N-1474	25,000 OHM .5W 20%	C 4	N-1351	.1 MFD. 200V.
R10	N-1778	130,000 OHM .5W 20%	C 5	N-1479	.25 MFD. 200 V.
R11	N-1779	130,000 OHM .5W 20%	C 6	N-3440	.15 MFD. 300 V. ELECTRO
R12	N-3495	325 OHM 1 W 10%	C 7	N-1351	.15 MFD. 300 V.
R13	N-2189	4 MEGOHM .5W 20%	C 8	N-1351	.1 MFD 200V.
R14	N-1419	6 MEGOHM .5W 20%	C 9	N-1343	.00025 MFD. MICA
R15	N-3065	500,000 OHM VOL. CONT.	C10	N-1479	.25 MFD. 200 V.
R16	N-4086	2.2 MEGOHM 1 W 20%	C11	N-1344	.01 MFD. 400 V.
R17	N-1377	200,000 OHM .5W 20%	C12	N-1344	.01 MFD. 400 V.
R18	N-4238	1 OHM .5W 10%	C13	N-1342	.00005 MFD. MICA
R19	N-2189	4 MEGOHM .5W 20%	C14	N-1374	.0001 MFD. MICA
R20	N-2684	500,000 OHM .2W 20%	C15	N-1344	.01 MFD. 400 V.
R21	N-1450	1.5 MEGOHM .5W 20%	C16	N-1347	.006 MFD. 600 V.
R22	N-1778	100,000 OHM .5W 20%			

DIAG. NO.	PART NO.	DESCRIPTION
1	N-4115	LOOP ANTENNA COIL
2	N-3555	OSCILLATOR COIL
3	N-2938	1ST I.F. TRANSFORMER
4	N-3657	2ND I.F. TRANSFORMER
5		SPEAKER FIELD (1200 OHMS)
6	N-3438	POWER TRANSFORMER
7		SWITCH ON VOLUME CONTROL
8	N-980	PHONO MOTOR SWITCH
9	N-3458	MICROPHONE
10		PICK-UP (ON N-4237)
11	N-3389	NEON MONITOR (GE NE-7)
12		CUTTING HEAD (ON N-4237)
13	N-3437	OUTPUT TRANSFORMER
14	N-3436	5" DYNAMIC SPEAKER
15	N-4237	PHONO MOTOR AND TURNTABLE

ALLIED RADIO CORP.

FIGURE 1

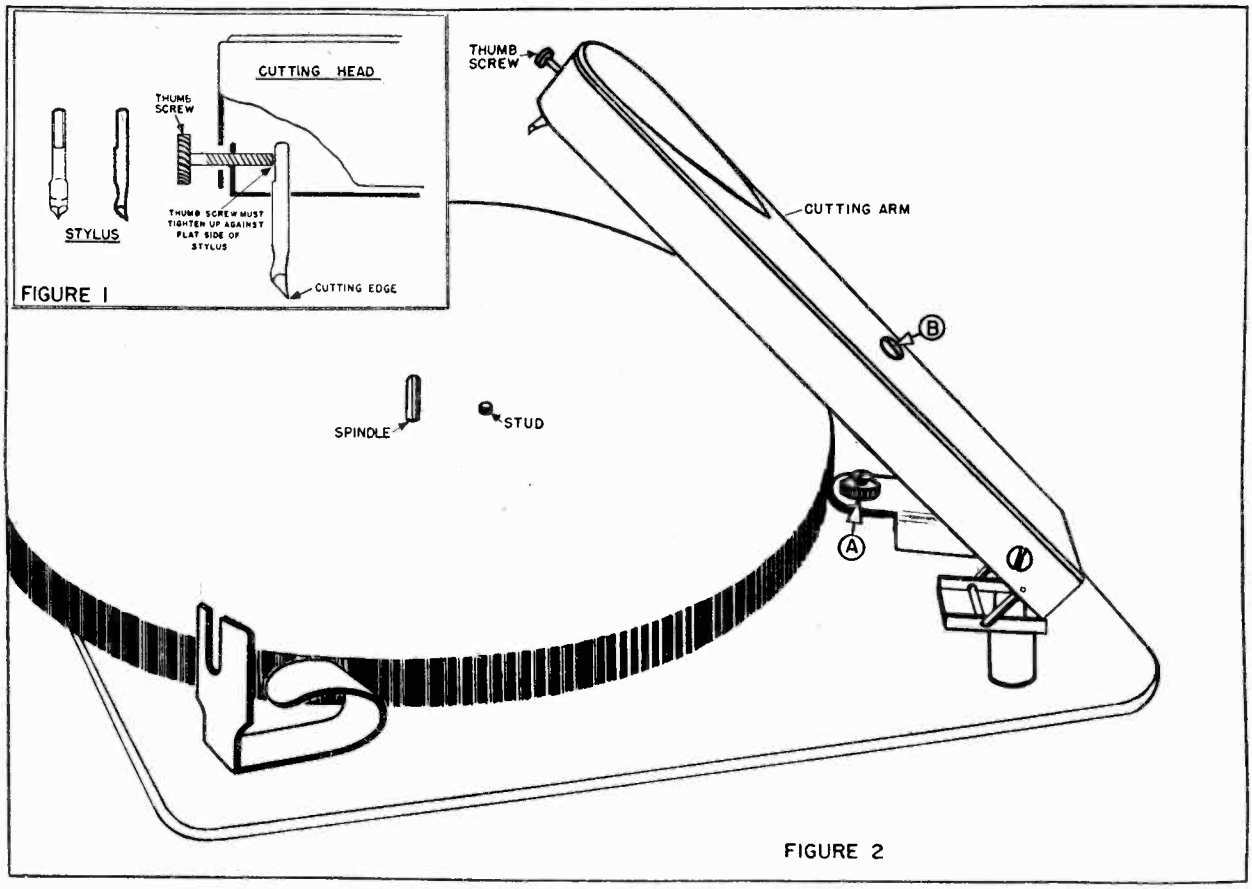


FIGURE 2

GENERAL INFORMATION FOR MAKING RECORDINGS

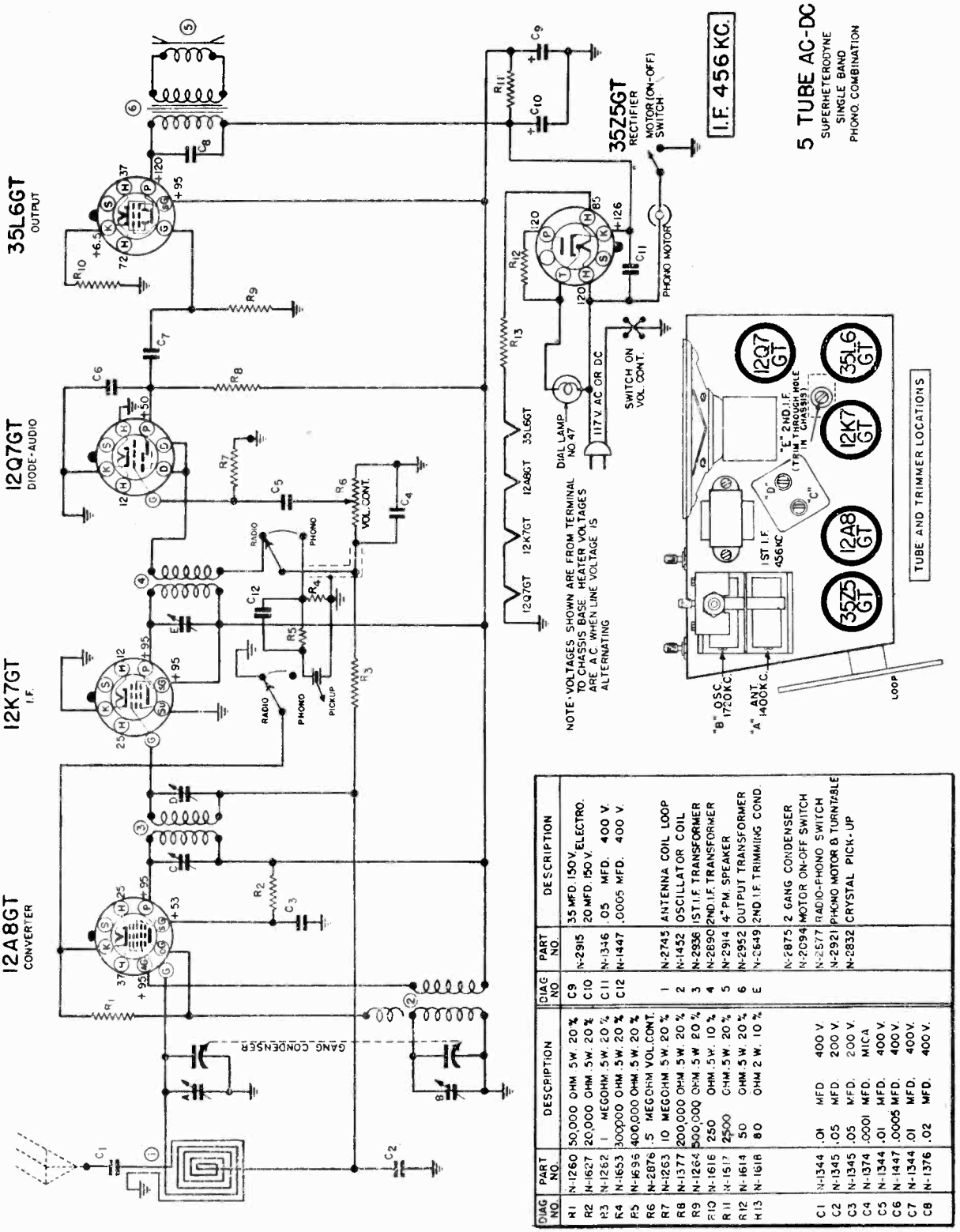
STYLUS. Before cutting a record the stylus should be tightened, as it has a tendency to work loose due to the vibration of the cutting head. The fine point of the stylus should not be touched against any metal or otherwise abused, as it is liable to lose its cutting qualities. Only the best grade of stylus should be used for this purpose, as the success of recording depends to a large extent on the condition of the stylus point. Your dealer will be glad to supply the proper stylus for this recorder as recommended by the manufacturer. Be sure the stylus you buy is the same length as the one now used, otherwise it may be necessary to change the cutting arm or head adjustment as described in the following paragraph. If the stylus is cutting properly, it will throw out a fine shaving towards the center of the record, and will cut quietly, without any scratching noise. The resulting grooves will be shiny, not dull, and the background noise when playing the record back will be very low.

CUTTING ARM AND HEAD ADJUSTMENT. The recorder unit was properly adjusted and records were cut on it at the factory, but there is a possibility that this equipment may be thrown out of adjustment due to shipping, and the following information is given so that you may determine if the head is properly adjusted for satisfactory recording. Place a blank record on the turntable without the motor running. Lower the cutting head to this record and note if the set screw which holds the stylus in place is in the center of the slot on the end of the cutting head. If this condition exists, the cutting head is in the correct position. If not, adjust screw A (figure 2), which is located near the pivot of the cutting arm and becomes exposed when the arm is lifted to a vertical position. To make the correct adjustment, this screw should be raised or lowered as required, and its lock nut tightened. Next, make a short blank recording to determine if the correct spring tension is applied to the cutting head. After this blank cutting is made, examine the record to see if the grooves are of the same width as the space between the grooves. If the groove is found to be too shallow (not as wide as the space), turn screw B (figure 2), which is located on the top of the cutting arm, in a clockwise direction. This will increase the depth of cut. If, on the other hand, you find the groove is too deep (wider than the space), turn this screw to the left and make another test cutting to determine if the correct spring adjustment has been made. The proper adjustment is one in which the groove is exactly as wide as the uncut portion between grooves. Successful recordings cannot be made unless the cutting head is correctly adjusted.

When placing the cutting head on a record, lift the head to a 45-degree position and move the head over the starting position on the record. Lower the head slowly to the record. If the stylus is not over the correct starting position, raise the head to 45-degrees before moving to a new position. Never move the cutting head until it is raised to a 45-degree position.

MODELS B-17137, B-17138

ALLIED RADIO CORP.

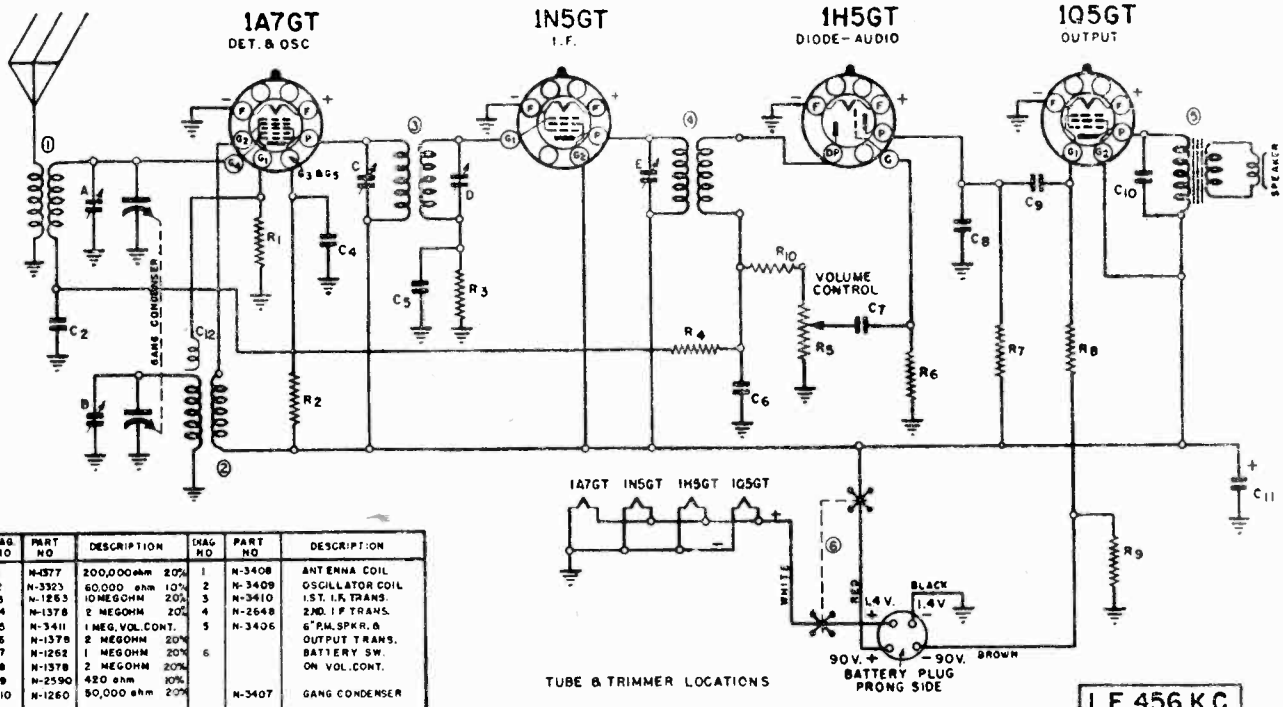


DIAG NO	PART NO.	DESCRIPTION		DIAG NO	PART NO.	DESCRIPTION
R1	N-1260	50,000 OHM 5W. 20 %		C9	N-2915	35 MFD. 150 V. ELECTRO.
R2	N-1627	20,000 OHM 5W. 20 %		C10		20 MFD. 150 V.
R3	N-1262	1 MEGOHM 5W. 20 %		C11	N-1346	.05 MFD. 400 V.
R4	N-1653	300000 OHM 5W. 20 %		C12	N-1447	.0005 MFD. 400 V.
R5	N-1695	400,000 OHM 5W. 20 %				
R6	N-2876	.5 MEGOHM VOL CONT.				
R7	N-1263	10 MEGOHM 5W. 20 %		1	N-2745	ANTENNA COIL LOOP
R8	N-1377	200,000 OHM 5W. 20 %		2	N-1432	OSCILLATOR COIL
R9	N-1264	500,000 OHM 5W 20 %		3	N-2936	1ST I.F. TRANSFORMER
R10	N-1616	250 OHM 5W. 10 %		4	N-2890	2ND I.F. TRANSFORMER
R11	N-1517	2500 OHM 5W. 20 %		5	N-2914	4" P.M. SPEAKER
R12	N-1614	50 OHM 5W 20 %		6	N-2952	OUTPUT TRANSFORMER
R13	N-1618	80 OHM 2 W. 10 %		E	N-2649	2ND I.F. TRIMMING COND.
					N-2875	2 GANG CONDENSER
C1	N-1344	.01 MFD 400 V.			N-2094	MOTOR ON-OFF SWITCH
C2	N-1345	.05 MFD 200 V.			N-2577	RADIO-PHONO SWITCH
C3	N-1345	.05 MFD. 200 V.			N-2921	PHONO MOTOR & TURNTABLE
C4	N-1374	.0001 MFD. MICA			N-2832	CRYSTAL PICK-UP
C5	N-1344	.01 MFD. 400 V.				
C6	N-1447	.0005 MFD. 400 V.				
C7	N-1344	.01 MFD. 400 V.				
C8	N-1376	.02 MFD. 400 V.				

MODELS B-17141, B-17142
MODEL B-17145

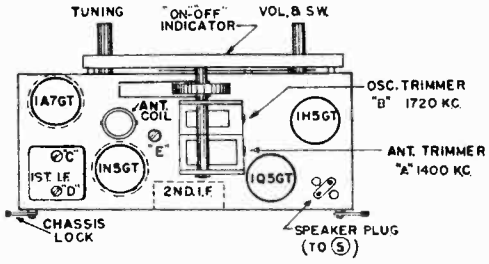
ALLIED RADIO CORP.

MODELS B-17141, B-17142



DIAG NO	PART NO	DESCRIPTION	DIAG NO	PART NO	DESCRIPTION
R1	N-1377	200,000 ohm 20%	1	N-3408	ANTENNA COIL
R2	N-3323	60,000 ohm 10%	2	N-3409	OSCILLATOR COIL
R3	N-1263	10 MEGOHM 20%	3	N-3410	I.S.T. I.F. TRANS.
R4	N-1378	2 MEGOHM 20%	4	N-2648	2ND. I.F. TRANS.
R5	N-3411	1 MEG. VOL. CONT.	5	N-3406	6" P.M. SPKR. & OUTPUT TRANS.
R6	N-1378	2 MEGOHM 20%			
R7	N-1262	1 MEGOHM 20%	6		BATTERY SW. ON VOL. CONT.
R8	N-1378	2 MEGOHM 20%			
R9	N-2590	420 ohm 10%			
R10	N-1260	50,000 ohm 20%		N-3407	GANG CONDENSER
		(all resistors are .5 watt size.)		N-1525	BATTERY CABLE
C2	N-1345	.05 MFD. 200V.			
C4	N-1345	.05 MFD. 200V.			
C5	N-1378	.02 MFD. 400V.			
C6	N-1342	50 MMFD. 20%.			
C7	N-2712	.004 MFD. 400V.			
C8	N-1342	50 MMFD. 20%			
C9	N-1344	.01 MFD. 400V.			
C10	N-2712	.004 MFD. 400V.			
C11	N-1367				
C12	——	CAPACITY IN OSCILLATOR COIL			

TUBE & TRIMMER LOCATIONS

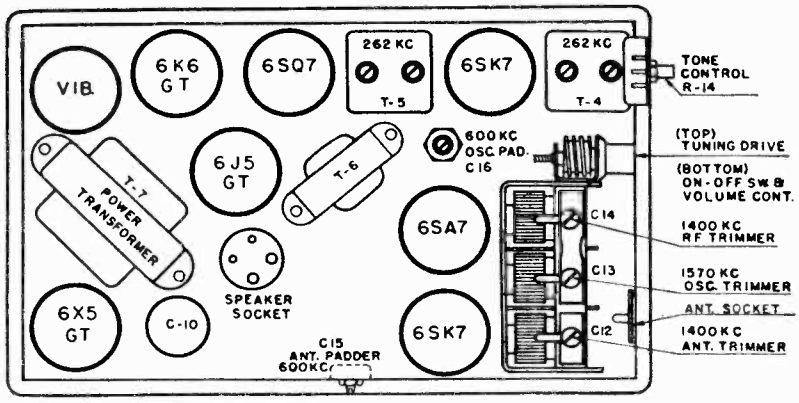


I.F. 456 K.C.

NOTE: TUBE SOCKETS SHOWN FROM WIRING SIDE.

4 TUBE - 1½ VOLT
SUPERHETERODYNE SINGLE BAND

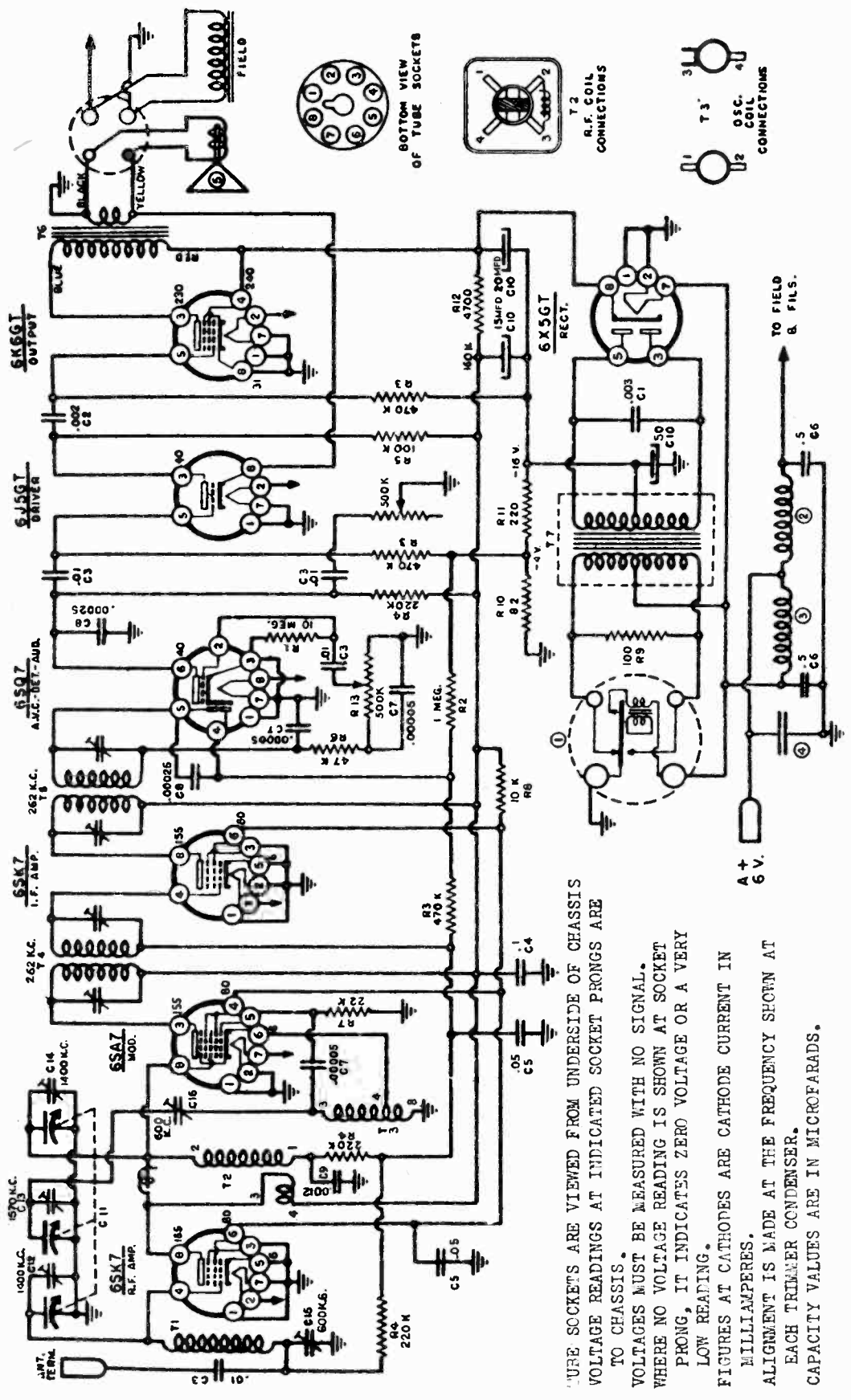
MODEL B-17145



LOCATION OF PARTS ON TOP OF CHASSIS FIG. 6

MODEL B-17145

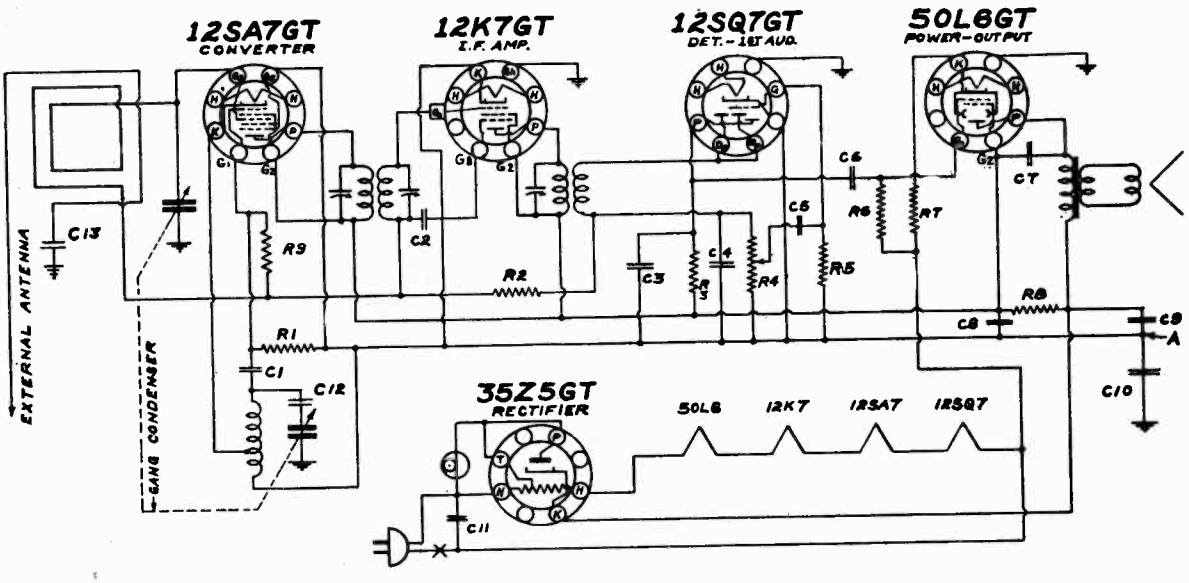
ALLIED RADIO CORP.



TUBE SOCKETS ARE VIEWED FROM UNDERSIDE OF CHASSIS
VOLTAGE READINGS AT INDICATED SOCKET PRONGS ARE TO CHASSIS.
VOLTAGES MUST BE MEASURED WITH NO SIGNAL.
WHERE NO VOLTAGE READING IS SHOWN AT SOCKET PRONG, IT INDICATES ZERO VOLTAGE OR A VERY LOW READING.
FIGURES AT CATHODES ARE CATHODE CURRENT IN MILLIAMPERES.
ALIGNMENT IS MADE AT THE FREQUENCY SHOWN AT EACH TRIMMER CONDENSER.
CAPACITY VALUES ARE IN MICROFARADS.

MODEL B-17150

ALLIED RADIO CORP.



RESISTORS					
NO	OHMS	WATTS	NO	OHMS	WATTS
R1	20,000	½	R6	500,000	½
R2	2 MEG.	½	R7	150 ± 10%	½
R3	250,000	½	R8	1,000	1
R4	500,000	V.C.	R9	15 MEG.	½
R5	5 MEG.	½			

CAPACITORS					
NO	MFD.	VOLTS	NO	MFD.	VOLTS
C1	.0001	MICA	C7	.01	400
C2	.02	400	C8	20.0	150
C3	.0005	MICA	C9	30.0	150
C4	.00025	MICA	C10	.25	200
C5	.01	400	C11	.05	400
C6	.002	600	C12	.02	400
			C13	.001	600

I.F. 455 K.C.

TUBES SHOW BOTTOM VIEW

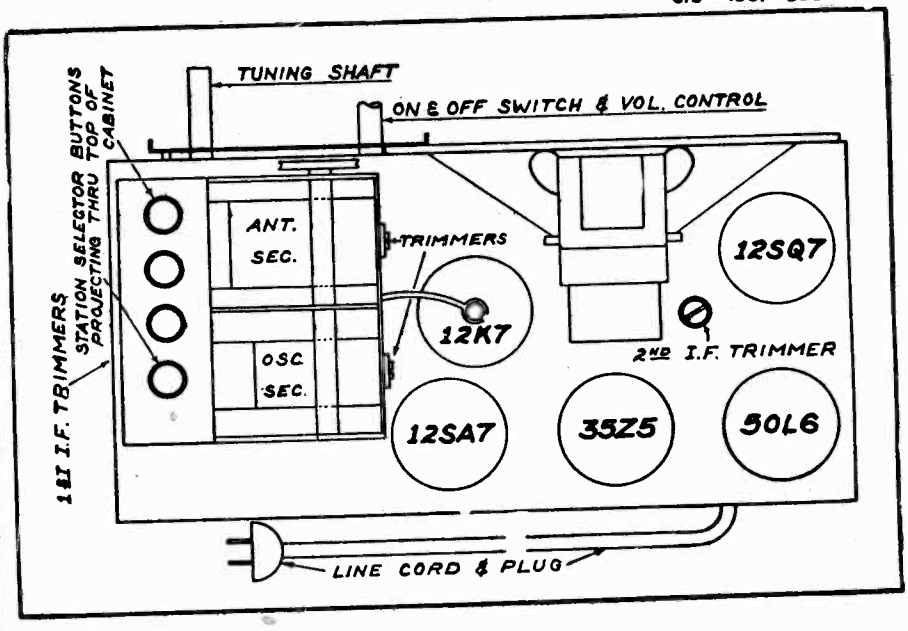


Fig. 1—Top View

BROADCAST BAND ALIGNMENT

Adjust the signal generator to 1730 KC and connect the output to the antenna lead, through a .0001 mfd. mica condenser. Set the gang condenser to minimum capacity and adjust the oscillator trimmer to receive this signal. After this has been carefully done, the next step is to set the signal generator to 1400KC and after tuning in the signal adjust the antenna trimmer to peak. This is all that is necessary for the alignment unless the plates of the gang condenser have been bent out of shape. In case of bent plates, set the signal generator and the receiver to 600 KC and bend the plates into the position for maximum output.

ALIGNMENT

If possible, all alignments should be made with the volume control on maximum and the signal generator output as low as possible, to prevent the AVC from operating and giving false readings.

I-F ALIGNMENT. Adjust the signal generator to 455 kc and connect the output to the grid of the first detector tube (12SA7) through a .05 or .1 mfd. condenser. Connect ground of signal generator to chassis ground through a .1 mfd. condenser. On models which include condenser C10, connect ground of signal generator to floating ground or point "A" on schematic thru a .1 mfd. condenser. Align all i-f trimmers to peak or maximum reading on output meter.

PROCEDURE FOR SETTING UP PUSH BUTTONS

There are four push buttons located on the top by means of which four stations may be selected (See Fig. 1). Make a list of four stations tuned in regularly. Loosen one of the push buttons by turning the push button knob counter clockwise a turn or less and push it in; while holding the button in, tune in a desired station by means of the station selector. Turn the selector very slowly back and forth until the signal is clearest. Now while holding the push button in, tighten it by turning clockwise. Release the push button and turn the station selector to one end of the dial; then check the button by pushing it in and if the station is tuned to the center of the area on the dial covered by the station the adjustment is correct.

Release the push button and loosen another push button and repeat the above procedure, doing this for the remaining buttons.

If it is desired to change a button to a different station simply loosen the push button and re-set.

The dial is now set up for quick tuning and all that is necessary is to push the button of the desired station all the way in and then release.

PILOT LIGHT The intensity of the pilot light will vary slightly with different stations; strong stations will cause it to dim slightly, but when the radio is set at high volume the pilot light will become slightly brighter. If the pilot light burns out, it should be replaced as soon as possible.

SERVICE INFORMATION

Voltages—Line 115 Volts AC—Power Consumption 30 Watts.
Volume Control maximum. Antenna shorted to ground. Meter 1000 ohms per volt, 150 volt scale.

Plate (P) of 12SA7 and 12K7 tubes to point "A"	80 volts
Screen (G2) of 12SA7 and 12K7 tubes to point "A"	82 volts
Plate (P) of 50L6 tube to point "A"	97 volts
Screen (G2) of 50L6 tube to point "A"	82 volts
Cathode (K) of 50L6 tube to point "A"	5.5 volts
Cathode (K) of 35Z5 tube to point "A"	102 volts

Speaker (Part No. P3553) 5" PM Type

D.C. voice coil resistance	3.4 ohms
Voice coil impedance at 400 cycles	3.8 ohms

Oscillator Coil (Part No. P3347)
Looking at the connection end in a clockwise direction starting at the chassis the terminals are No. 1, end of winding; No. 2, start of winding; No. 3, tap.
No. 2 and No. 1—Resistance 4.8 ohms.
No. 3 and No. 1—Resistance 4.2 ohms.

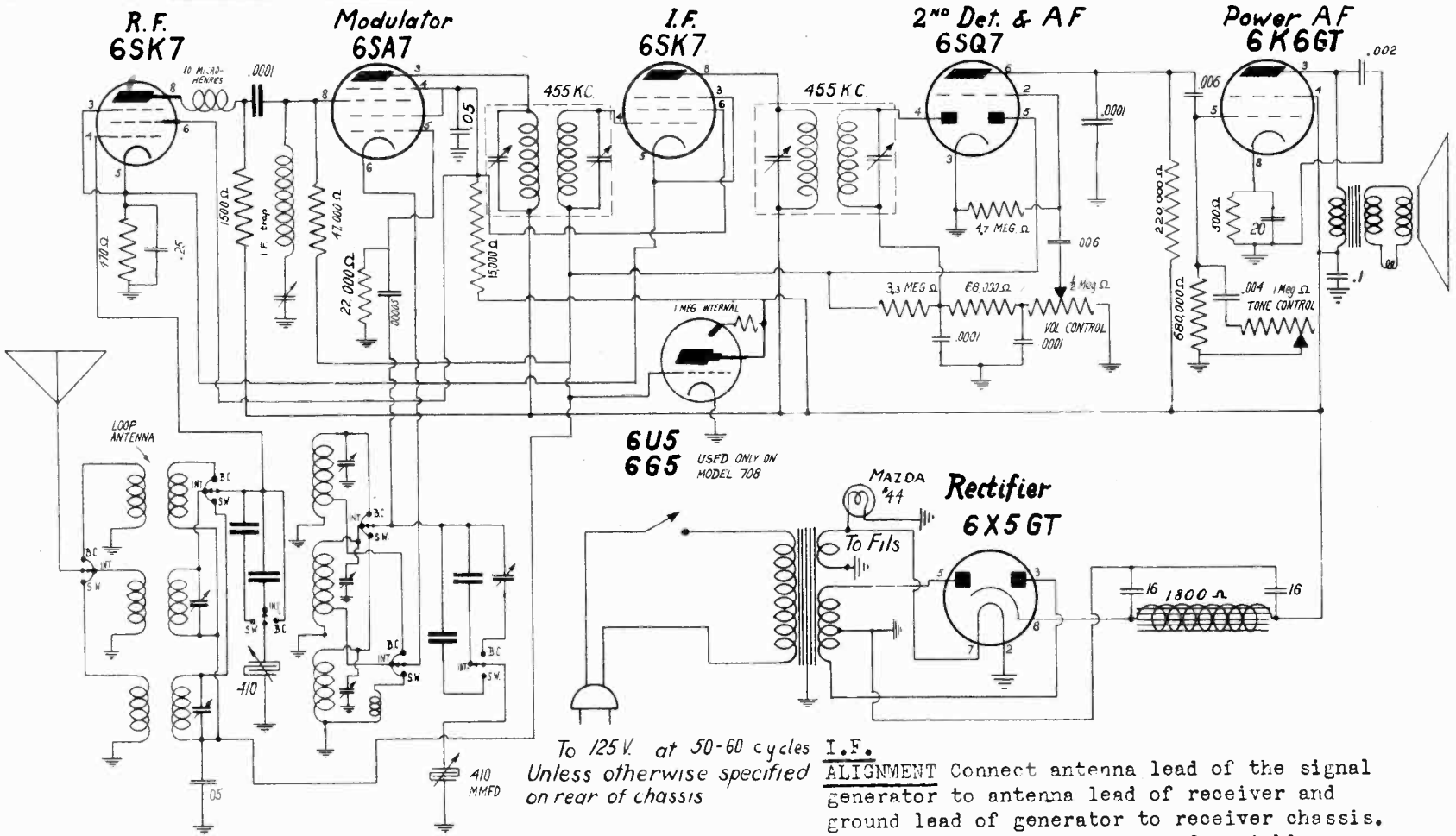
First I.F. Transformer (Part No. P3345)
Primary—Blue, plate; red, B+—Resistance 32.1 ohms.
Secondary—White, grid; black, AVC—Resistance 33.2 ohms.

Second I.F. Transformer (Part No. P3364)
Primary—Blue, plate; red B+—Resistance 24.2 ohms.
Secondary—White, grid; black, AVC—Resistance 24.1 ohms.

Electrolytic Condenser (Part No. P3355)
Red, 30 mfd., 150 volt; green, 20 mfd., 150 volt; black, negative for both sections.

Loop Antenna
Since the loop antenna acts also as the antenna coil the set will not operate with the loop antenna disconnected.

In some of these receivers the condensers C10 and C12 are omitted. The point "A" on the schematic is then connected to the chassis.



To 125 V. at 50-60 cycles
Unless otherwise specified
on rear of chassis

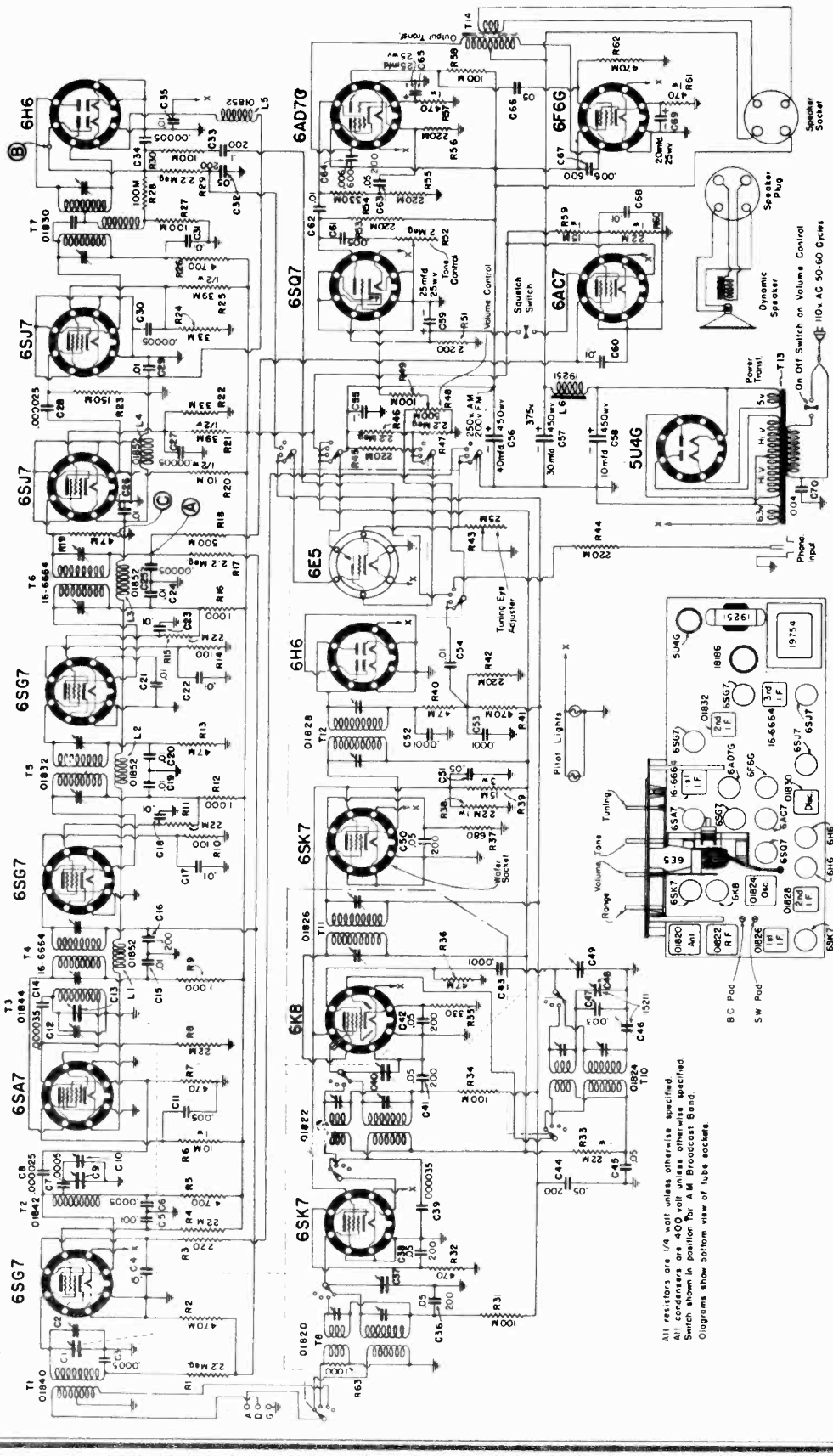
SHORT WAVE
ALIGNMENT For 4.7-10 mc. Turn wave band switch knob to this band. Adjust the generator and receiver to 10 mc. and peak the trimmers for maximum signal. The low frequency is automatically adjusted by a fixed calibrated padder For 11.5 - 24 mc. Turn wave band switch knob to this band. Adjust the generator and receiver to 22 mc. Peak trimmers for maximum signal. The low frequency is automatically adjusted by a fixed calibrated padder.

I.F.
ALIGNMENT Connect antenna lead of the signal generator to antenna lead of receiver and ground lead of generator to receiver chassis. Short circuit front section of variable condenser. Adjust generator to 455 kc. and peak I.F. trimmers for maximum signal.

BROADCAST
ALIGNMENT Remove short from variable condenser. Have the wave band switch on broadcast position. Adjust the generator and receiver to 1500 kc. Peak trimmers for maximum signal. Adjust generator and receiver to 600 kc and peak the broadcast padder for maximum signal. The variable condenser should be "rocked" during this operation.

MODEL B-17170

ALLIED RADIO CORP.



TUNING INDICATOR ADJUSTMENT

A control is provided on the back of the chassis for this adjustment. It is the short shaft with the screw-driver slot. To make the necessary adjustment, first turn the band switch to the F-M position. Remove the 6SJ7 second-limiter tube from its socket and turn the control shaft on the rear of the chassis until the eye is just closed, but is not overlapped. The receiver should, of course, be turned on for this adjustment. This completes the adjustment and the 6SJ7 tube may be replaced in its socket. This adjustment once properly set will retain its correct setting for long periods of time, but should be checked periodically to insure the best operation of the eye.

ANTENNA SYSTEM

This receiver is designed to use the same antenna on all three bands, and may be used with either a dipole (doublet) antenna or with a regular broadcast antenna having a single lead-in wire.

The dipole antenna lead-in (consisting of two wires) should be connected to the terminals marked "A" and "D" on the terminal strip on the back of the chassis.

If a regular broadcast antenna with a single lead-in wire is used, this wire should be connected to the terminal marked "A". The terminal marked "D" is then left unconnected.

A satisfactory dipole antenna can be made as follows: Take 12 feet of No. 12 or No. 14 bare copper wire, either solid or stranded, cut in the middle and connect to a low-loss twisted lead-in. This lead-in should be 65 to 75 feet long for proper impedance matching.

ALIGNMENT PROCEDURE

The minimum of equipment required for correctly aligning this receiver is listed below.

A modulated service oscillator or signal generator capable of generating the frequencies 456 KC, 600 KC, 1400 KC, 6.0 MC, 16.0 MC and 46.0 MC.

An output meter.

A 0-200 or a 0-100 microampere meter.

An oscilloscope with vertical and horizontal amplifiers.

A wide-band frequency-modulated generator or "wobbulator" covering the intermediate frequency of 4.3 MC and with either 400-cycle or 60-cycle modulation. It must be capable of producing a deviation frequency of 150 KC. (Total frequency swing of 300 KC.)

While this instruction sheet describes the use of a generator for F-M alignment which has 400-cycle modulation and which has provision for bringing out the 400-cycle voltage for application to the horizontal plates of the oscilloscope, it is also possible to use a generator with 60-cycle modulation, and to use the 60-cycle sweep which is built into the oscilloscope, instead of obtaining the synchronizing voltage from the generator. If the service man has been using such a generator for A-M visual alignment he will be familiar with his instrument and will be able to adapt it to this alignment procedure.

Although it is possible to align this receiver wtih a generator or wobbulator not having quite as great a total frequency swing as 300 KC, it will be difficult to get satisfactory results. Note that the I-F response curve in Figure 1 is flat over a region about 150 KC wide. An unsymmetrical response curve in an F-M receiver quite seriously affects its performance at low signal levels. It is therefore essential to have proper equipment for alignment in order to get the best results.

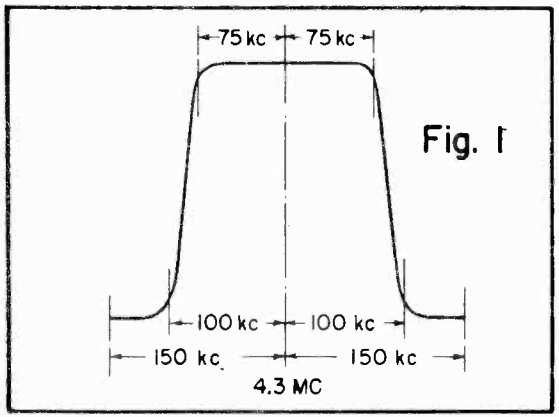


Fig. 1

A-M ALIGNMENT

The alignment of the A-M portion of this receiver is conventional and should be carried out as follows:

Connect the output meter to the receiver by any of the usual methods.

Connect the A-M signal generator between the chassis and the grid of the 6K8 tube, using a .0005-mfd. to .25-mfd. condenser between the grid and the high side of the generator output. Do not remove the grid clip for this operation. The range switch should be turned to the Broadcast band and the dial pointer set near 600 KC. Tune the signal generator to 456 KC and proceed to align the four I-F trimmers for maximum output. On this and on all following adjustments turn the audio control on full and use as weak a signal from the generator as will give a satisfactory indication on the output meter.

The generator should now be connected to the antenna-and-ground terminal strip. Leave "D" unconnected. Use a proper dummy antenna in series with the high side of the generator output (200-mmf. for Broadcast; 400-ohms for Short-Wave).

SHORT-WAVE BAND

Turn the range switch to the Short-Wave position and set the tuning dial and the signal generator to 16.0 MC. Adjust the oscillator trimmer (top trimmer in oscillator coil) to maximum response. If two responses of nearly equal intensity are found, adjust for the one with the trimmer farthest open. Now adjust the top trimmers in the Antenna and R-F coils for maximum response. Since, at this frequency, the R-F tuning slightly affects the oscillator frequency, it will be necessary to rock the tuning condenser slightly while adjusting the R-F trimmer in order to keep the signal tuned in.

Set the signal generator to 6.0 MC and tune in this signal with the receiver dial. Now, while rocking the tuning condenser back and forth, adjust the S-W oscillator padding condenser. (The rear section of the dual padder located in the top of the chassis over the range switch) for maximum output. This adjustment is not critical and the tuning of the S-W padder will be found to be quite broad.

BROADCAST BAND

Turn the range switch to the Broadcast position and substitute the 200-mmf. dummy antenna for the 400 ohms. Set the dial and the generator to 1400 KC and adjust the oscillator trimmer (bottom trimmer on oscillator coil) to maximum response. Next adjust the bottom trimmers of the Antenna and R-F coils for maximum response.

Now set the generator to 600 KC and tune in the signal with the dial. Rocking the gang condenser slightly, adjust the oscillator padder (front section of the dual padder) for maximum response. This adjustment will be much sharper than the padding adjustment on the short-wave band.

This completes the alignmcnt of the A.M. portion of the receiver.

F-M ALIGNMENT

The F-M alignment is made in three major steps: namely, I-F alignment, discriminator alignment and R-F alignment.

For the first operation, I-F alignment, connect the output of the frequency-modulated generator between the grid of the 6SG7 2nd IF stage and chassis, using an .05-mfd. condenser in series with the high side of the generator output and connecting this condenser to the 6SG7 grid. Leave the grid lead of the 6SG7 tube connected. Now connect the synchronizing voltage output from the generator to the input of the horizontal amplifier of the oscilloscope. Note: The ground lead from the generator should always be connected to the chassis near the tube to whose grid the generator is connected to avoid spurious regeneration phenomena which change the shape of the IF curve.

Now connect the input to the oscilloscope vertical amplifier between chassis and the low potential end of the last I-F transformer (point "A" in circuit diagram) using a 100,000-ohm resistor in series with the high side. This resistor should be located at the receiver end of the connecting wires and should be connected with a short lead to the Point "A".

Having made the set-up, turn on the oscilloscope and the frequency-modulated generator. Turn down the receiver volume control. Set the generator to 4.3 MC and the deviation frequency (if calibrated on the generator) to 150 KC. Turn the vertical gain control of the oscilloscope well up and the horizontal gain control just high enough to give almost full-screen deflection of the horizontal pattern. Using just enough output from the generator to give good deflection on the screen adjust the trimmers of the last I-F transformer for the greatest gain and to give a pattern that is centered in the screen and that is symmetrical. This pattern should be similar to the one shown in Figure 2

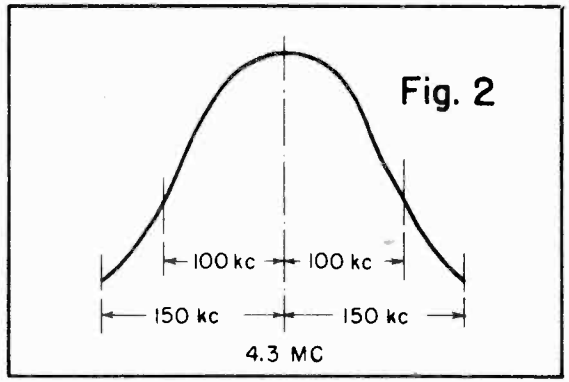


Fig. 2

Now without changing the generator frequency, remove the generator connection from the grid of the 6SG7 2nd I.F. amplifier and place it on the grid of the 6SG7 1st I.F. amplifier, using the .05-mfd. condenser as before, and changing the position of the ground lead as described above. Again use only enough output from the generator to give good vertical deflecton on the screen, and adjust the trimmers of the second I-F transformer in the same manner as before. The curve shape should remain practically the same as it was before.

Now remove the generator connections (ground as well as "hot") from the 6SG7 first I-F amplifier and place them on the signal grid and ground of the 6SA7, again using the .05-mfd. condenser. Proceed as before, turning down the output from the generator until there is just enough for good vertical deflection on the oscilloscope screen. Adjust the trimmers of the first I-F transformer for the greatest gain and to give a pattern similar to the one shown in Figure 2.

FM ALIGNMENT - continued

In all of the foregoing adjustments note that the oscilloscope vertical amplifier gain control has been turned well toward maximum gain, and that a low input from the generator has been used. The reason for this is that, as higher signal-input levels are used, the response curve of the I-F amplifier stages will change shape. If the symmetry of the response curve is kept good at low input levels, then any dissymmetry occurring at high input levels will be unimportant, since at high input levels the limiter tube will level out the response before the signal reaches the discriminator.

Should the I-F circuits for any reason be badly misaligned, the first 6SG7 I-F stage may oscillate when the input from the generator is placed on the grid of the 6SG7 second I-F tube, making it difficult to get a readable pattern on the oscilloscope screen. Should this condition occur, the remedy is to remove the 6SG7 first I-F tube from its socket until the last I-F stage has been aligned.

This completes the alignment of the I-F stages and the alignment of the discriminator comes next. Before proceeding with the discriminator alignment, however, it will be necessary to balance the tuning-eye circuit. With the 6SJ7 second-limiter tube removed from its socket, adjust the eye balance control, which is the short shaft with the screw driver slot on the back of the chassis, until the eye just closes but does not overlap. Now replace the 6SJ7 second-limiter tube.

DISCRIMINATOR ALIGNMENT

Leaving the set up as it was when the I-F alignment was completed, adjust the generator frequency until the I F response pattern on the oscilloscope screen is centered and is symmetrical.

Now remove the connection to the low-potential side of the 1st I-F coil, which is the lead containing the 100,-000-ohm resistor, and move this connection to the 6H6 discriminator cathode marked "B" in the circuit diagram. The pattern on the oscilloscope screen will go off scale and the input from the generator will have to be decreased. If the generator leakage is bad and its output cannot be turned down to a sufficiently low level, the oscilloscope vertical amplifier gain control may be turned down. With the set up made as described and with the generator deviation frequency still set at 150 KC, adjust the trimmer on th primary side of the discriminator coil (The red Trimme Screw) for greatest vertical deflection on the oscilloscope screen.

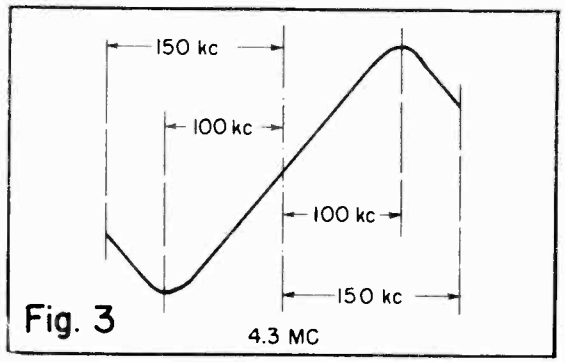


Fig. 3

Next adjust the trimmer on the secondary side of this coil until a pattern similar to the one shown in Figure 3 is obtained. This adjustment is quite critical and should be made so that the pattern is as near symmetrical as possible. If the portion of the pattern in Figure 3 which appears straight, is not quite straight on the oscilloscope screen it may be made so by a slight readjustment of the trimmer on the primary side of the coil. Before leaving the adjustment of the discriminator coil a further refinement in the adjustment of the secondary trimmer should be made as follows: Decrease the frequency deviation of the generator from 150 KC to about 100 KC, or until the pattern on the oscilloscope screen just takes in the straight portion of the curve. Now, watching the action of the tuning eye, make a very slight readjustment of the secondary trimmer of the discriminator coil until the eye just closes but does not overlap. This completes two steps in the I-F alignment and the connections to the frequency-modulated generator and the oscilloscope may now be removed.

ANTENNA, R-F AND OSCILLATOR

In order to align the R-F Antenna and Oscillator circuits, an amplitude-modulated signal generator covering the range of 42-50 MC and a 0-200 microampere meter may be used. The signal generator need not be modulated.

Connect the meter in series with the ground end of the grid resistor of the 6SJ7 first-limiter tube, with the positive side of the meter to ground. This point is marked "C" in the circuit diagram. Now apply the output of the signal generator to the antenna and ground posts of the terminal strip on the back of the chassis which are marked "A" and "G". Leave "D" unconnected. Set the receiver dial and the signal generator to 46 MC and adjust the oscillator trimmer, which is the air trimmer mounted on top of the middle section of the tuning condenser, for maximum deflection on the 0-200 microampere meter. If two positions of the oscillator trimmer give almost equal deflection on the meter, select the point with the trimmer farthest in mesh, since the oscillator on this band operates below the signal frequency. Keep the generator output adjusted to such a value that about one quarter of full scale deflection is obtained on the meter. Next adjust the R-F trimmer, mounted on the front section of the tuning condenser, for maximum deflection of the meter; then perform the same operation for the antenna trimmer, which is mounted on the back section of the tuning condenser. The adjustment of the R-F trimmer affects the oscillator frequency slightly and the tuning condenser should be rocked back and forth when making this adjustment in order to keep the oscillator tuned to the signal frequency. If two points of response are found on the R-F or antenna trimmers, the point which requires the least amount of capacity in these trimmers should be selected.

As a final check of antenna, R-F and oscillator adjustment, signals from the generator should be tuned in at various points on the band to see that the sensitivity is equal over the band

SERVICE DATA FOR PROFESSIONAL SERVICE MEN

Power Supply: 110-125 Volts, 50-60 Cycles.

Intermediate Frequency: A-M, 456 KC. F-M, 4.3 MC.

The socket voltages are given in the voltage chart at the right. Variations of line voltage, variations, between tubes, and tolerances allowed on components will cause these voltages to vary somewhat. The chart is given only as a guide, and should be recognized as such.

In replacing parts or in making adjustments, care should be exercised to see that all connections are made to the same points from which they were removed, and that components and leads occupy the same original positions. Lead lengths, and ground return paths are quite critical in some parts of this receiver, and trouble will be avoided by adhering strictly to the original layout.

NOTES ON VOLTAGE CHART

* These voltages are AC and should not be measured with a DC Voltmeter.

a These points show a slight voltage indication due to the thermal noise of the receiver unless one of the limiter tubes is removed from its socket.

b This voltage must be measured with the Interstation Noise Silencer Switch in the "on" position.

N A varying negative voltage of 15 to 20 volts may be measured at this point, depending upon the setting of the tuning condenser.

All voltages indicated above are measured with a 1000-ohms-per-volt meter with a line voltage of 117 volts.

NORMAL OPERATING VOLTAGES

On Tube Socket Terminals Designated by RMA Number

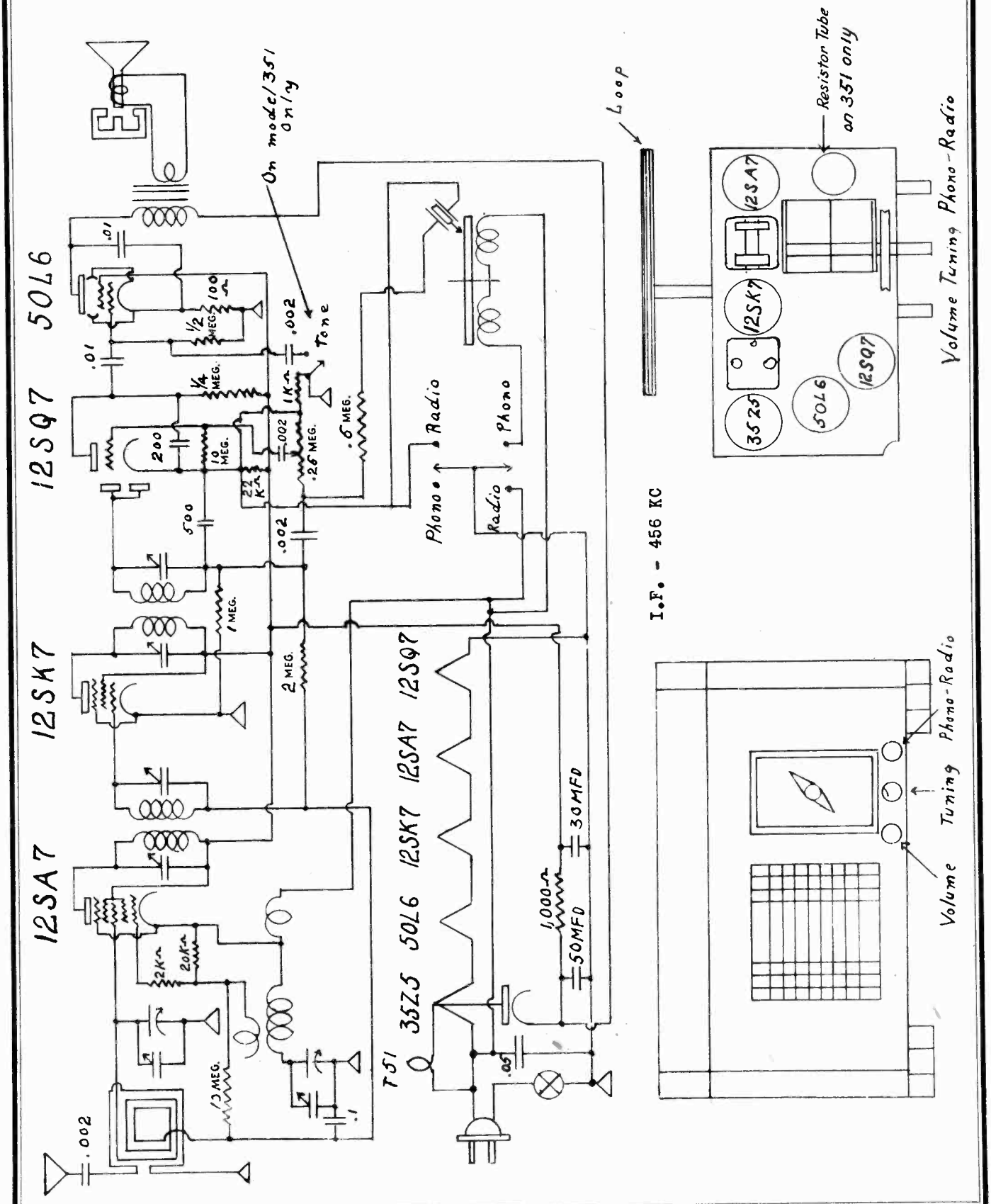
Voltages shown below are measured with Range Switch turned to F-M Position.

Tube	Use	1	2	3	4	5	6	7	8
6SG7	FM RF Amp.	0	0	2.1	0	2.1	120	6.3*	145
6SA7	FM Converter	0	6.3*	185	95	0	0	0	0
6SG7	FM 1st I-F	0	0	1.3	0	1.3	105	6.3*	175
6SG7	FM 2nd I-F	0	0	1.2	0	1.2	105	6.3*	175
6SJ7	FM 1st Lim.	0	6.3*	0	0	0	65	0	135
6SJ7	FM 2nd Lim.	0	6.3*	0	0	0	65	0	165
6H6	FM Discrim.	0	6.3*	0a	0a	0a	0	0	0
6AC7	Silencer	0	0	0	0	3b	110	6.3*	185

Voltages shown below are measured with Range Switch turned to Broadcast Position.

Tube	Use	1	2	3	4	5	6	7	8
6SK7	AM RF Ampl.	0	6.3*	0	0	3.5	90	0	250
6K8	AM Converter	0	0	250	90	N	150	6.3*	2.7
6SK7	AM I-F Ampl.	0	0	0	0	3.5	90	6.3*	2.7
6H6	AM Detector	0	0	0	0	0	0	6.3*	0
6SQ7	Audio Ampl.	0	0	1.0	0	0	90	6.3*	0
6AD7G	Audio Ampl.	0	6.3*	350	250	0	85	0	16.5
6F6G	Power Ampl.	0	0	350	250	0	0	6.3*	16.5
5U4G	Rectifier	0	400	0	380*	0	380*	0	400
6E5	Tuning Ind.	–	–	–	–	–	–	–	–

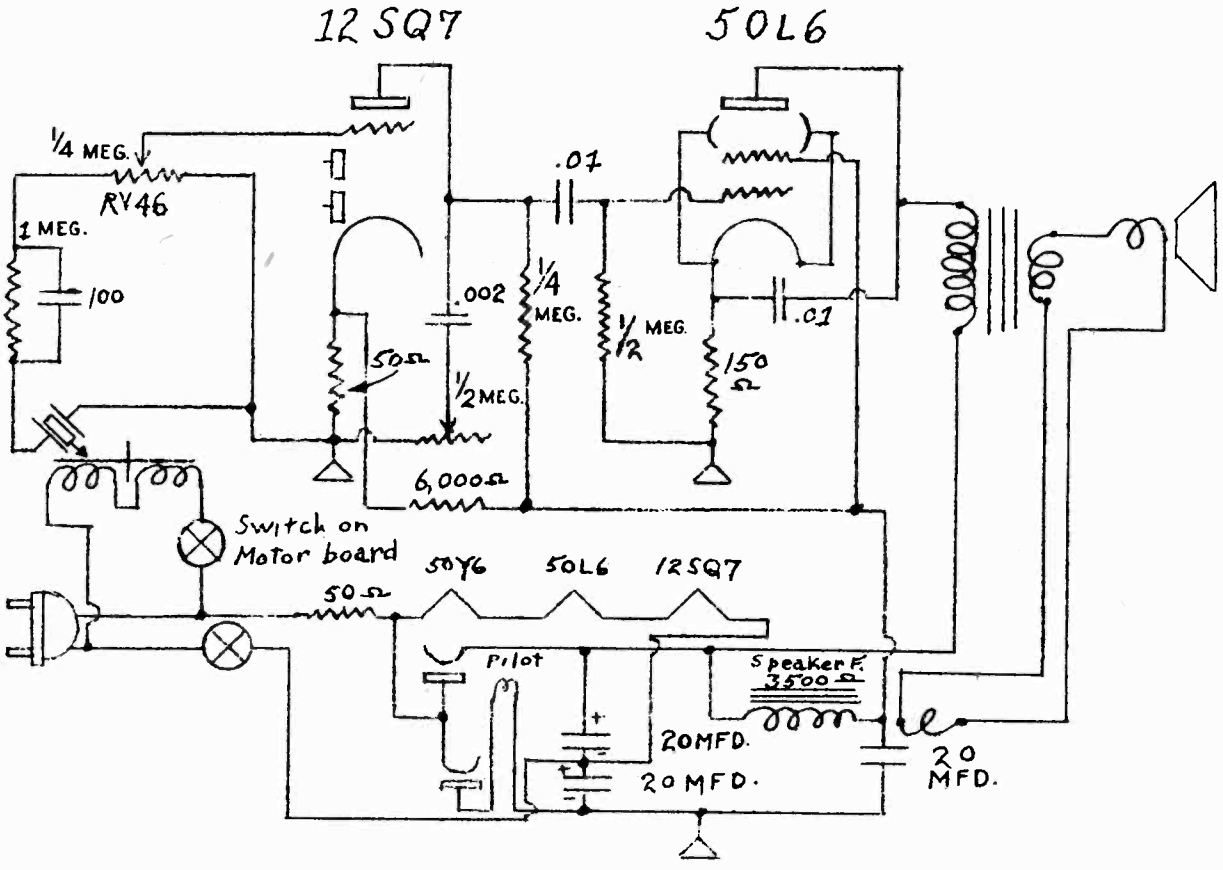
AUTOMATIC RADIO & TELEV. CO., INC.

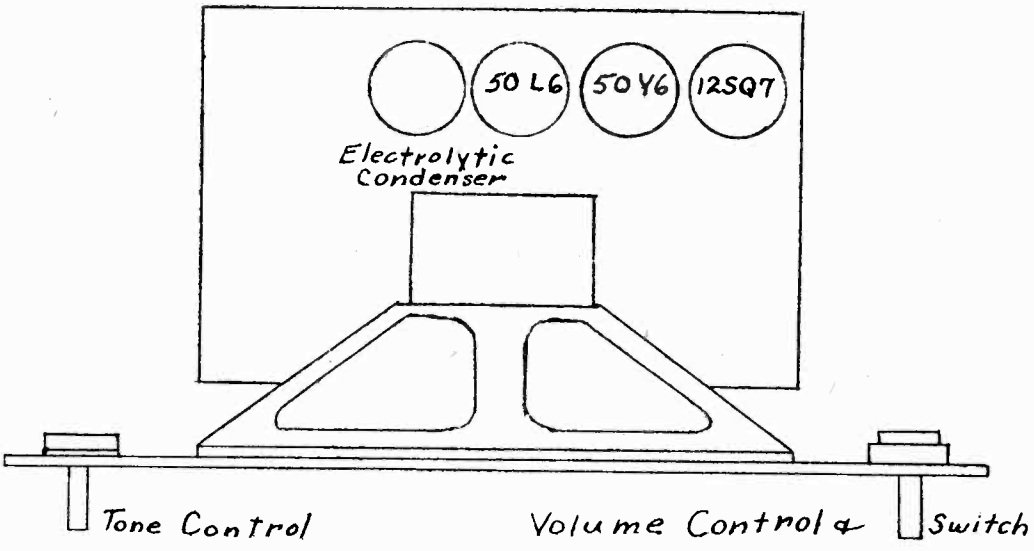


MODELS 265, 362

AUTOMATIC RADIO & TELEV. CO., INC.

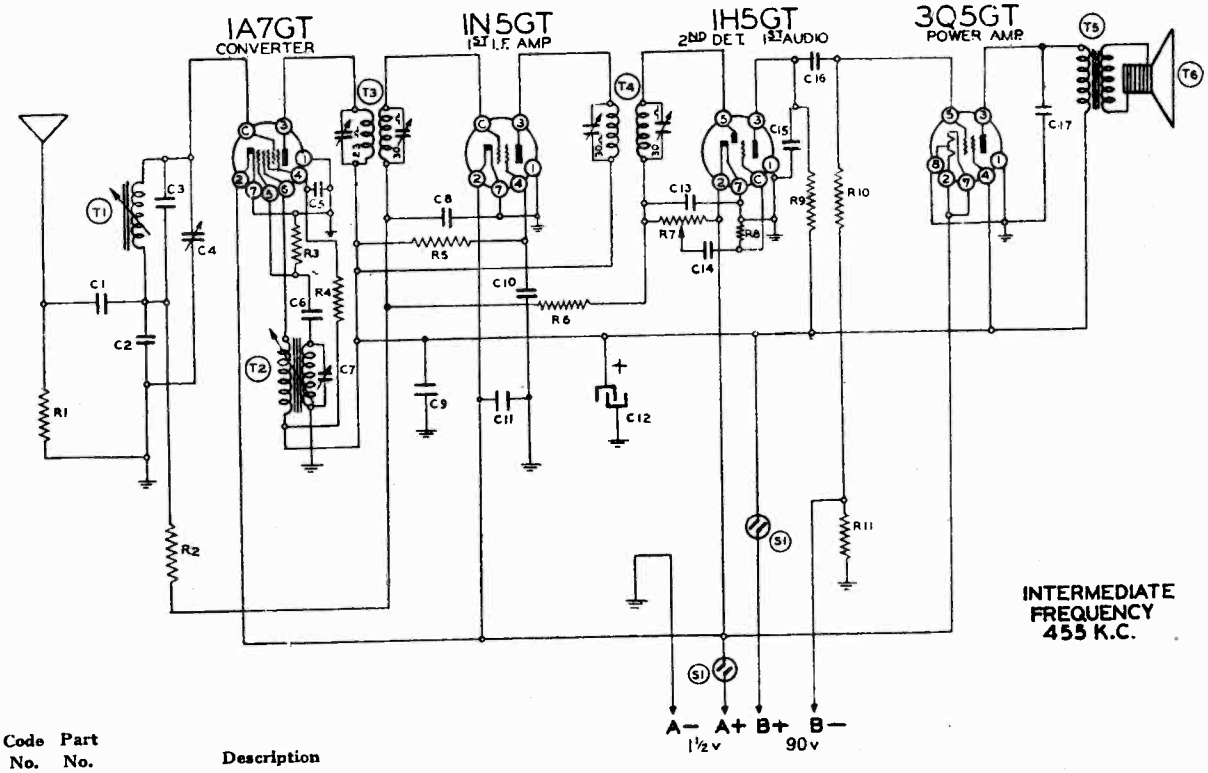
MODEL 265. FOR SEEBURG "C" RECORD CHANGER, SEE RIDER'S "AUTOMATIC RECORD CHANGERS AND RECORDERS"





MODEL 4B16, Series A

BELMONT RADIO CORP.



INTERMEDIATE FREQUENCY 455 K.C.

Code No.	Part No.	Description

RESISTORS

R1	13017	10M ohm—⅓ w.
R2	1304	3 megohm—⅓ w.
R3	1309	200M ohm—⅓ w.
R4	130194	35M ohm—⅓ w.
R5	13094	50M ohm—⅓ w.
R6	1304	3 megohm—⅓ w.
R7	101250	1 megohm—Volume control and switch—⅓ w.
R8	130257	5 megohm—⅓ w.
R9	13019	1 megohm—⅓ w.
R10	130146	2 megohm—⅓ w.
R11	13079	400 ohm—⅓ w.

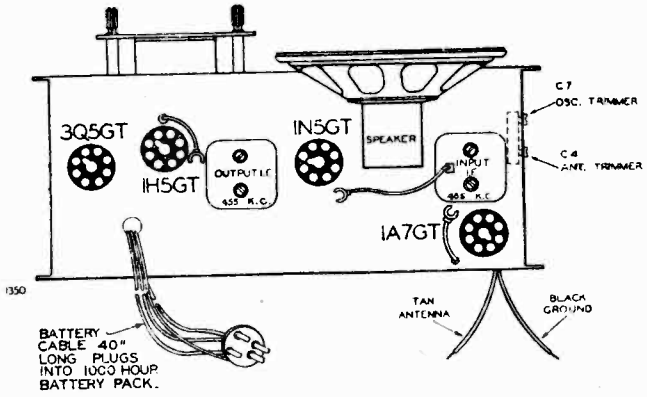
CONDENSERS

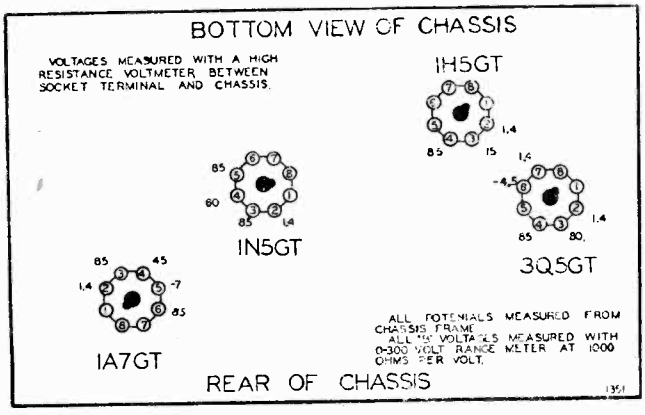
C1	12936	.0003 mica
C2	100112	.001 x 200 v.
C3	129177	.000045—Ceramicon
C4	124165	Antenna trimmer
C5	1009	.05 x 200 v.—Condenser
C6	12912	.00025 mica
C7	124165	Oscillator trimmer
C8	1009	.05 x 200 v. Condenser
C9	1006	.25 x 200 v. Condenser
C10	10020	.1 x 200 v.
C11	10017	.5 x 120 v.
C12	119117B	10 mfd. x 150 v. Lytic
C13	1295	.0001 mica
C14	10012	.003 x 600 v. Condenser
C15	1295	.0001 mica
C16	10026	.02 x 400 v. Condenser
C17	1907	.005 x 600 v.

C4 and C7 are in same unit.

PARTS

T1	1364	Antenna Coil
T2	1364	Oscillator Coil Permeability tuning assem. Complete.
T3	108202	Input I. F. Coil 455 Kc.
T4	108153B	Output I. F. Coil 455 Kc.
T5	10591B	Output transformer
T6	114238	5" P.M. speaker
S1		Switch-on Volume Control





MODEL 4B16, Series A
MODEL 6A27, Series A

BELMONT RADIO CORP.

TECHNICAL DATA MODEL 4B16, SERIES A

Power Consumption - - - A—250 Amp. B .014 Amps.
Power Output - - - - - - - 160 Milliwatts Undistorted
Sensitivity for 50 Milliwatt Output: 45 Microvolts Average
Selectivity - 48 KC at 1000 Times Signal at 1000 KC
Tuning Frequency Range - - - - - 540 to 1700 KC

ALIGNMENT PROCEDURE

The following equipment is required for aligning.

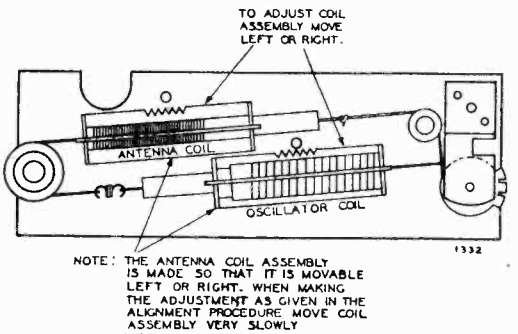
- Dummy antenna. 1 mfd. and 200 mmf.
- Volume control—Maximum all adjustments.
- Connect ground lead of radio chassis to ground post of signal generator.

BAND	SIGNAL GENERATOR Frequency Setting	Dummy Antenna	Connection to Radio	Position of Iron Cores (Dial Setting)	Trimmers Adjusted (In Order Shown)	Trimmer Function	Adjustment
455 Kc. I. F.	455 Kc.	.1 MFD.	Connect to Grid of 1A7	Iron Cores All the way out	Two trimmers on top of output I. F. can	Output I. F.	maximum output
	455 Kc.	.1 MFD.	Connect to Grid of 1A7	Iron Cores All the way out	Two trimmers on top of input I. F. can	Input I. F.	maximum output
BROAD-CAST BAND	1700 Kc.	.1 MFD.	Connect to Grid of 1A7	Iron Cores All the way out	Trimmer (C7) (See chassis view)	Oscillator	maximum output
	1700 Kc.	200 MMF.	Connect to Antenna Clip	Iron Cores All the way out	Trimmer (C4) (See chassis view)	Antenna	maximum output
	1400 Kc.	200 MMF.	Connect to Antenna Clip	Turn Dial to 1400 Kc.	Adjust position of antenna coil (See coil assembly view)	Antenna Coil Adjustment	maximum output (See Note "A")
	1700 Kc.	200 MMF.	Connect to Antenna Clip	Turn Dial to 1700 Kc.	Adjust trimmer (C4) (See chassis view)	Antenna	Check for tracking (See Note "B")

NOTE "A"—The antenna coil assembly is made so that it is movable. When making the adjustment as given in the alignment procedure move the coil assembly very slowly. It can be moved by hand or by pivoting one edge of the blade of a screwdriver in the hole and engaging the blade in the gear teeth of the coil form.

NOTE "B"—After the antenna coil has been tracked at 1400 Kc. it is necessary to check the antenna trimmer (C4) adjustment again at 1700 Kc. If no appreciable change in trimmer adjustment is made the coil is in track, if the trimmer requires considerable change it will be necessary to again adjust the position of the antenna coil at 1400 Kc. These two adjustments should be tried several times until no change of trimmer adjustment is required at 1700 Kc.

MODEL 4B16, SERIES A



NOTE: THE ANTENNA COIL ASSEMBLY IS MADE SO THAT IT IS MOVABLE LEFT OR RIGHT. WHEN MAKING THE ADJUSTMENT AS GIVEN IN THE ALIGNMENT PROCEDURE MOVE COIL ASSEMBLY VERY SLOWLY

COIL ASSEMBLY VIEW

TECHNICAL DATA—Model No. 6A27

SERIES A

Power Consumption Radio Only - - - - - 70 Watts
Motor Only - - - - - 20 Watts
Power Output - - - - - - - - 2.1 Watts Undistorted
Sensitivity for 500 Milliwatt Output: 15 Microvolts Average
Selectivity - 51 KC Broad at 1000 Times Signal at 1000 KC
Tuning Frequency Range Broadcast Band - 530 to 1600 KC
Shortwave Band - 5.46 to 18.3 MC
Intermediate Frequency - - - - - - - - - 455 KC
Speaker - - - - - - - - - 10 in. Electro Dynamic

ALIGNMENT PROCEDURE MODEL 6A27, SERIES A

- Volume control—Maximum all adjustments.
- Connect radio ground to ground post of signal generator with a short heavy lead.
- Connect dummy antenna value in series with generator output lead.
- Connect output meter across primary of output transformer.
- Allow chassis and signal generator to "heat up" for several minutes.

The following equipment is required for aligning:

- An all wave signal generator which will provide an accurately calibrated signal at the test frequencies as listed.
- Output indicating meter.
- Non-metallic screwdriver.
- Dummy antennas—.1—mf., 200 mmf., 400 ohms.

BAND	SIGNAL GENERATOR Frequency Setting	Dummy Antenna	Connection to Radio	Position of Band Switch	Variable Condenser Setting	Trimmers Adjusted (In Order Shown)	Trimmer Function	Adjustment
I. F.	455 Kc.	.1 MFD	Grid of 6SA7 Mixer	Broadcast	Rotor full open (Plates out of mesh)	Trimmers on top (See Top View)	Input and Output I. F.	Adjust to maximum output
SHORT WAVE BAND (See Note A)	17 Mc.	400 Ohms	External Antenna and Ground	Short Wave	Set Dial at 17 Mc.	Trimmer C4	Short Wave oscillator	Adjust to maximum output
	17 Mc.	400 Ohms	External Antenna and Ground	Short Wave	Set Dial at 17 Mc.	Trimmer C1	Short Wave antenna	Adjust to maximum output
	6 Mc.	400 Ohms	External Antenna and Ground	Short Wave	Set Dial at 6 Mc.	Trimmer C7	Short Wave oscillator series pad	Adjust to maximum rock dial. (See note "C")
BROAD-CAST BAND (See Note A)	1600 Kc.	200 mmf.	Grid of 6SA7	Broadcast	Rotor full open (Plates out of mesh)	Trimmer C5	Broadcast oscillator	Adjust to maximum output
	530 Kc.	200 mmf.	Grid of 6SA7	Broadcast	Rotor full closed	Trimmer C6	Broadcast oscillator series pad	Adjust to maximum output
LOOP ALIGN-MENT (See Note B)	1400 Kc.	200 mmf.	External Antenna and Ground	Broadcast	Set Dial at 1400 Kc.	Trimmer C2 (See Top View)	Broadcast antenna	Adjust to maximum output
	600 Kc.	200 mmf.	External Antenna and Ground	Broadcast	Set Dial at 600 Kc.	Trimmer C6 (See Top View)	Broadcast oscillator series pad	Adjust to maximum output

NOTE "A"—The signal generator is connected to the "ANT." and "GND" leads when aligning the Short Wave Band and to the grid of the 6SA7 tube and ground terminal when setting the Broadcast Band oscillator end frequencies. (1600 and 530 K. C.).

The loop antenna should be connected to the radio when making these adjustments.

NOTE "B"—Loop alignment is made with the chassis mounted in the cabinet and the loop antenna connected. The signal generator is connected to the "ANT." and "GND." leads.

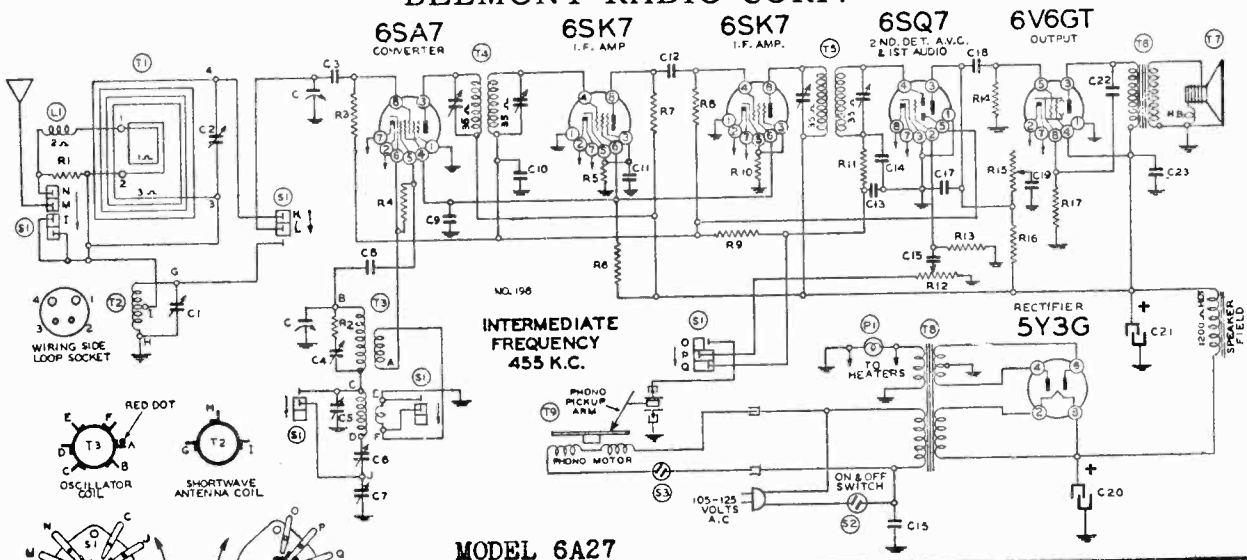
NOTE "C"—Turn the dial back and forth slightly (rock) and adjust trimmer until the peak of greatest intensity is obtained.

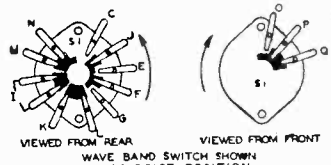
Attenuate the signal from the signal generator to prevent the leveling-off action of the AVC.

After each band is completed, repeat the procedure as a final check.

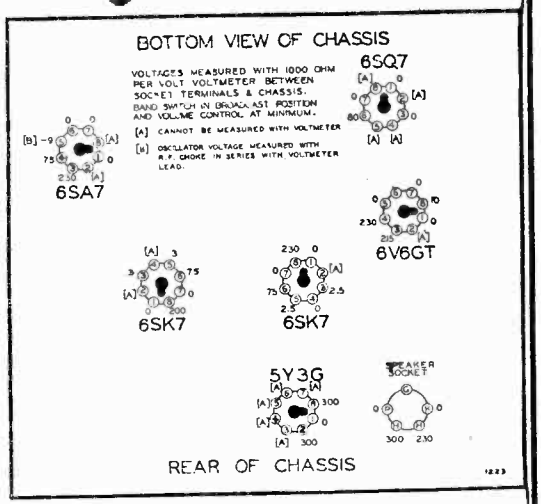
MODEL 6A27, Series A

BELMONT RADIO CORP.





MODEL 6A27
Series A



Code No.	Part No.	Description
		RESISTORS
R1	13071	4000 ohm—⅓ w.
R2	130128	20 ohm—⅓ w.
R3	13019	1 megohm—⅓ w.
R4	130236	30M ohm—⅓ w.
R5	130283	750 ohm—⅓ w.
R6	130324	18M ohm—1 watt
R7	130218	5M ohm—½ w.
R8	13020	100M ohm—⅓ w.
R9	130170	3 megohm—⅓ w.
R10	130222	350 ohm—⅓ w.
R11	13012	50M ohm—⅓ w.
R12	101232	1 megohm volume control
R13	130223	10 megohm—⅓ w.
R14	1303	500M ohm—⅓ w.
R15	101231	1 megohm tone control
R16	130172	250M ohm—½ w.
R17	130323	270 ohm—1 watt

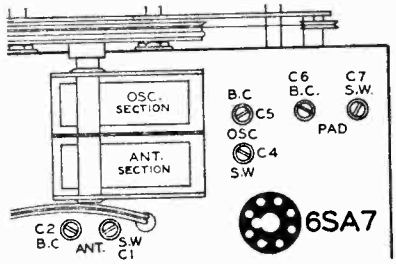
CONDENSERS

C	102137	Two gang variable condenser
C1	124149	S. W. Antenna trimmer
C2	124149	B. C. Antenna trimmer
C3	1292	.0005 mica
C4	124142	S. W. Oscillator trimmer
C5	124142	B. C. Oscillator trimmer
C6	124146	B. C. Padding Condenser
C7	124146	S. W. Padding Condenser
C8	12960	150 mmfd. mica
C9	10013	.05 x 400 v.
C10	10022	.05 x 200 v.
C11	1009	.05 x 200 v.
C12	1292	.0005 mica
C13	129161	.0001 mica
C14	129161	.0001 mica
C15	10061	.02 x 600 v.
C16	10025	.002 x 600 v.
C17	12912	.00025 mica
C18	10026	.02 x 400 v.
C19	10071	.004 x 600 v.
C20	119115	16 mfd. x 400 w. v. lytic
C21	119115	16 mfd. x 400 w. v. lytic
C22	10019	.006 x 600 v.
C23	1001	.1 x 400 v.

C1 and C2 are in same unit C4 and C5 in same unit
C6 and C7 are in same unit C13 and C14 in same unit
C20 and C21 are in same unit

PARTS

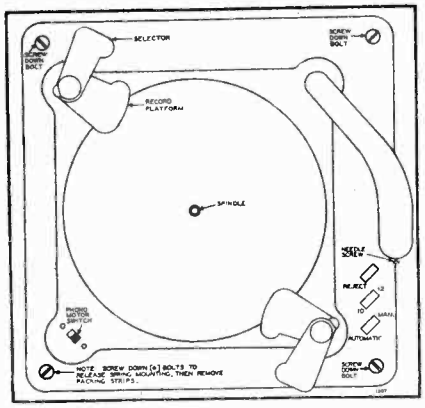
T1	111208	Loop antenna assembly
T2	111184	S. W. Antenna Coil
T3	110154	B. C. and S. W. Oscillator Coil
T4	108169E	Input I. F. Coil—455 kc.
T5	108106U	Output I.F. Coil—455 kc.
T6	105118	Output Transformer
T7	114222	10" Electro Dynamic Speaker
T8	104225B and 104238B	60 cycle power transformer 25 cycle power transformer
T9	104306	60 cycle Record Changer and Phono Assembly
S1	125132	Phono-band switch
S2		Switch on volume control
S3		Switch on record changer
L1	12312	R. F. Choke coil
P1	10794	Pilot light bulb No. T-44



TRIMMER VIEW

MODEL 6A27 Series A; MODEL 671, SERIES C

Automatic Record Changer--Operating Instructions



Setting for Record Size

This mechanism plays up to twelve 10" or ten 12" records at one set-up. All records must be of the same size for each set-up. To set for record size it is necessary to move the 10"-12" button so that it will indicate correct size record and the auto-manual button to indicate automatic

Loading

See that both lower shelf plates are turned toward center of turntable. If they are not, grasp the post just below the shelf plate and rotate post until it falls into proper position, with both shelf plates correctly turned toward center of turntable. Place the stack of records over center pin so they will rest on the two shelf plates.

To Turn The Phonograph On

Push the motor switch to "on" position. Motor will then start.

Push the button marked "Reject." This will release the first record and start the record changing mechanism.

Rejecting A Record

Press the button marked "Reject." This can be done any time after the needle has come in contact with the record. The mechanism will immediately start the change cycle.

Removing Played Records

First switch off motor. Then take hold of both posts, just below the shelf plates, and turn them out of the way. Place pick-up in position on arm rest. Lift the played records from the turntable. Taking hold of posts as before move plates until post again falls into playing position. The changer may then be loaded with a new stack of records see directions above for loading.

Manual Operation and Tone Arm

The tone arm should not be handled while in automatic position. If it is desired to remove the tone arm from a record, the Automatic and Manual button should be placed in the Manual position.

If Changer is Left Running

No damage will be done if you forget to turn off Changer after it has played its entire load of records. It will simply repeat the last record until stopped or reloaded.

Oiling

Normally, this mechanism should require no additional lubrication. However, a drop of any good machine oil on all friction surfaces, and to the oil wicks on both ends of the motor shaft, may be applied about once a year, or more often if used extensively.

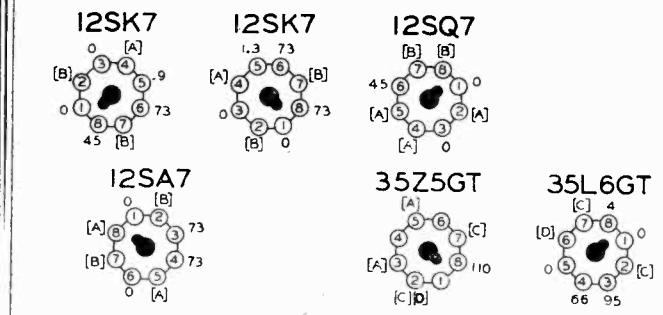
MODELS 6D18,6D19
Series A

BELMONT RADIO CORP.

BOTTOM VIEW OF CHASSIS

VOLTAGES MEASURED WITH 1000 OHM PER VOLT VOLTMETER BETWEEN SOCKET TERMINALS AND B— WITH A LINE VOLTAGE OF 117 VOLTS.

[A] CANNOT BE READ WITH VOLTMETER.
[B] 12 VOLTS A.C. BETWEEN PINS 8 & 8.
[C] 32 VOLTS A.C. BETWEEN PINS 2 & 7.
[D] 117 VOLTS A.C. BETWEEN PINS 5 & 5.



REAR OF CHASSIS

To check for open by-pass condensers, shunt each condenser with another condenser of the same capacity and voltage rating which is known to be good, until the defective unit is located.

Excessive hum, stuttering, low volume and a reduction in all D. C. voltages is usually caused by a shorted electrolytic condenser; open by-pass condensers frequently cause oscillation and distorted tone.

It is important during alignment that the same distance between the loop antenna and the chassis be maintained as when the chassis is installed in the cabinet.

Slight adjustments to the oscillator and antenna circuits can be made without removing the chassis from the cabinet through two holes which are provided on the bottom of the cabinet

The two adjustments on the variable gang condenser can be reached with a long insulated type screw driver through these two holes.

ALIGNMENT PROCEDURE

IMPORTANT:—See alignment instructions

- Volume control—Maximum all adjustments.
- Connect B— of radio chassis to ground post of signal generator through .1 Mfd. condenser.
- Connect dummy antenna value in series with generator output lead.
- Connect output meter across primary of output transformer.
- Allow chassis and signal generator to "heat up" for several minutes.

The following equipment is required for aligning:

- An all wave signal generator.
- Output indicating meter.
- Non-metallic screwdriver
- Dummy antennas—.1 Mfd

BAND	SIGNAL GENERATOR Frequency Setting	Dummy Antenna	Connection to Radio	Variable Condenser Setting	Trimmers Adjusted (In Order Shown)	Trimmer Function	Adjustment
I. F.	455 Kc.	.1 MFD.	Grid of 12SA7	Rotor full open (Plates out of mesh)	Four Trimmers on Top (See Fig. 1)	Output and Input I. F.	Adjust to maximum output
BROAD-CAST BAND	1650 Kc.	.1 MFD.	Grid of 12SA7	Rotor full open (Plates out of mesh)	Trimmer bottom of rear section of gang. (See bottom of radio)	Broadcast Oscillator	Adjust to maximum output
	1400 Kc.	See Note "A"		Set dial at 1400 Kc.	Trimmer bottom of front section of gang. (See bottom of radio)	Broadcast Antenna	Adjust to maximum output

NOTE "A" Lay the output lead from the generator in back of the loop antenna. Turn up the output of the generator, picking up the energy in the loop antenna without any electrical connection from the generator.

FREQUENCY RANGE 530 to 1650 K.C.

Power Consumption ..... 35 Watts
Power Output ..... 1 Watt Undistorted, 1.7 Watts Maximum
Intermediate Frequency ..... 455 K.C.

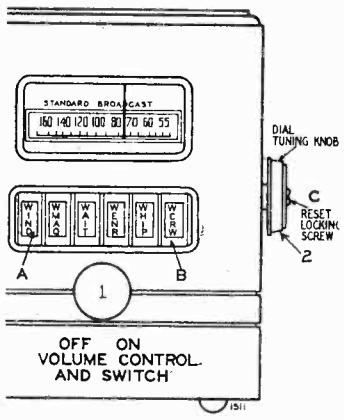


FIG. 2

PROCEDURE FOR SETTING THE AUTOMATIC TUNER PUSH BUTTONS

1. Make a list of six stations you tune in regularly. There are six push buttons on the front of the radio by means of which six stations may be tuned automatically. (See "B," Fig. 2.)

2. Punch out the call letters of the stations you have selected from the set of station call letter tabs supplied.

On the front of each automatic tuner button an opening is provided for inserting the call letter tabs, (See "A" Fig. 2).

Insert the call letter tabs in the rectangular openings in each of the automatic tuner push buttons.

3. Stations may be set up in any sequence desired. Press any one of the automatic tuner push buttons down all the way.

4. Hold the push button down firmly and tune set very carefully to station desired, until station is heard clearly and with maximum volume

Release the push button.

5. Press down another automatic tuner push button. Hold it down FIRMLY and carefully tune in next station desired. Release this push button.

Follow this procedure until you have selected all of your favorite stations.

6. Now rotate the tuning knob to the right (clockwise) as far as it will turn, and with a coin (quarter), tighten the special locking screw ("C") in the center of the tuning knob, (See Fig. 2).

It is VERY IMPORTANT that this locking screw is turned until it is ABSOLUTELY TIGHT.

This screw will lock in place all the stations you have selected on the automatic tuner push buttons. (Note: Locking screw "C" is loose when radio is shipped from factory.)

CHANGING STATIONS:

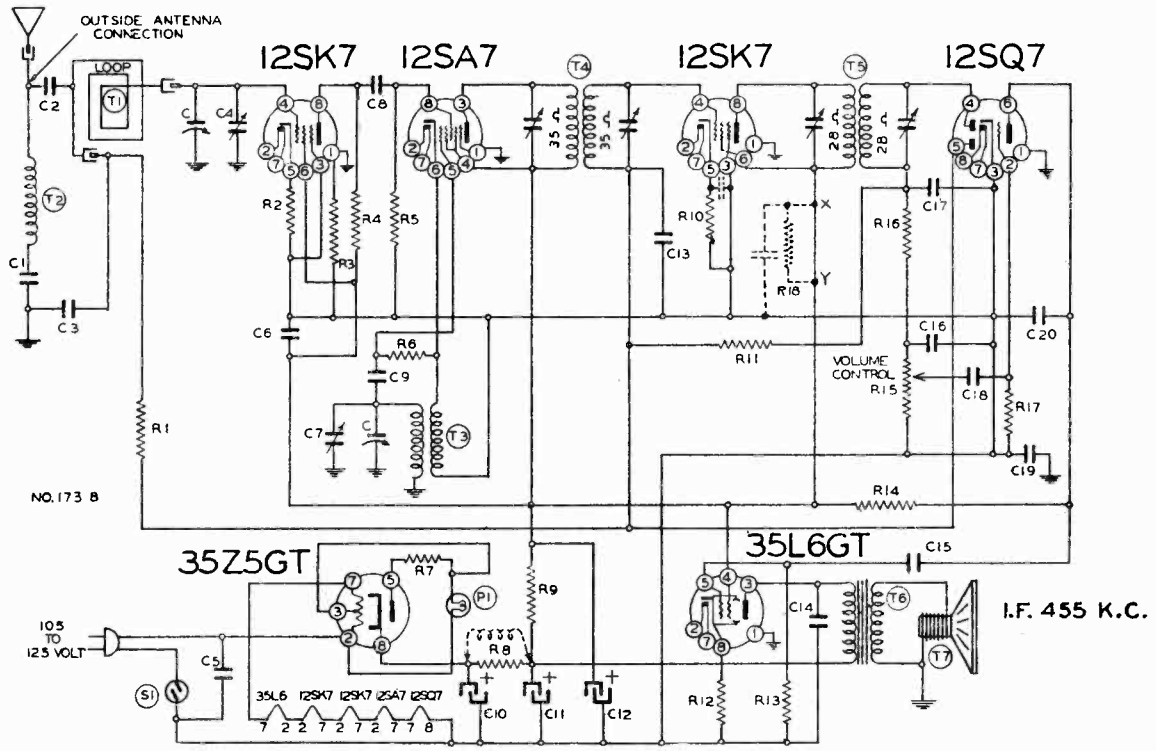
If you should desire to change any station you have selected to another, hold the tuning knob securely and with a coin loosen the locking screw "C" one or two turns. Hold down push button on which the station is to be changed and tune in new station desired. Release the push button.

Be sure to retighten the locking screw, otherwise the stations you have previously selected will not stay adjusted to the push buttons.

The set is now set up for automatic tuning.

BELMONT RADIO CORP.

MODELS 6D18, 6D19, Series A



Circuit Diagram Ref. | Part No. | Description

RESISTORS

R1	130100	150M ohms—½ w.
R2	130168	100 ohms—½ w.
R3	130100	150M ohms—½ w.
R4	130218	5M ohms—½ w.
R5	13020	100M ohms—½ w.
R6	13094	50M ohms—½ w.
R7	130215	25 ohms—½ w.
R8	130296	200 ohms—1 w.
R9	130287	1200 ohms—1 w.
R10	130166	150 ohms—½ w.
R11	1304	3 megohm—½ w.
R12	130166	150 ohm—½ w.
R13	1303	500M ohm—½ w.
R14	1309	200M ohm—½ w.
R15	101211	1 megohm—volume control and switch
R16	13012	50M ohm—½ w.
R17	130257	5 megohm—½ w.
R18	13064	3500 Ohm—½ w.

CONDENSERS

C	102116	Two gang variable condenser
C1	10011	.01 x 400 v.
C2	129132	.000125 mica
C3	10026	.02 x 400 v.
C4		B.C. antenna trimmer
C5	1001	.1 x 400 v.
C6	1006	.25 x 200 v.
C7		B.C. Oscillator Trimmer
C8	1295	.0001 mica
C9	1295	.0001 mica
C10	11994	40 mfd.—150 w.v. lytic
C11	11994	20 mfd.—150 w.v. lytic
C12	11994	20 mfd.—150 w.v. lytic
C13	1009	.05 x 200 v.
C14	10026	.02 x 400 v.
C15	100106	.004 x 600 v.
C16	12939	.00005 mica
C17	1295	.0001 mica
C18	10025	.002 x 600 v.
C19	100110	.2 x 400 v.
C20	1295	.0001 mica
C21	10020	.1 x 200 Volt
C22	10020	.1 x 200 Volt
		C10, C11, C12 are in same unit

PARTS

T1	111145	Loop Antenna Assembly
T2	1237	Loading Coil
T3	110128	Oscillator Coil
T4	108140G	Input I.F. Coil—455 kc.
T5	108145C	Output I.F. Coil—455 kc.
T6	10595B	Output Transformer
T7	114191	5" P.M. Speaker
		or
T7	114265	5" Electrodynamic Speaker
S1		On-off switch
P1	107249	T-47 Pilot light

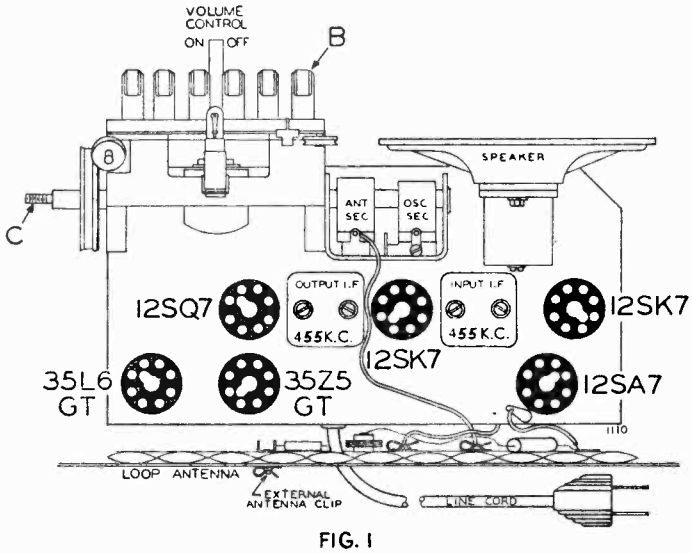


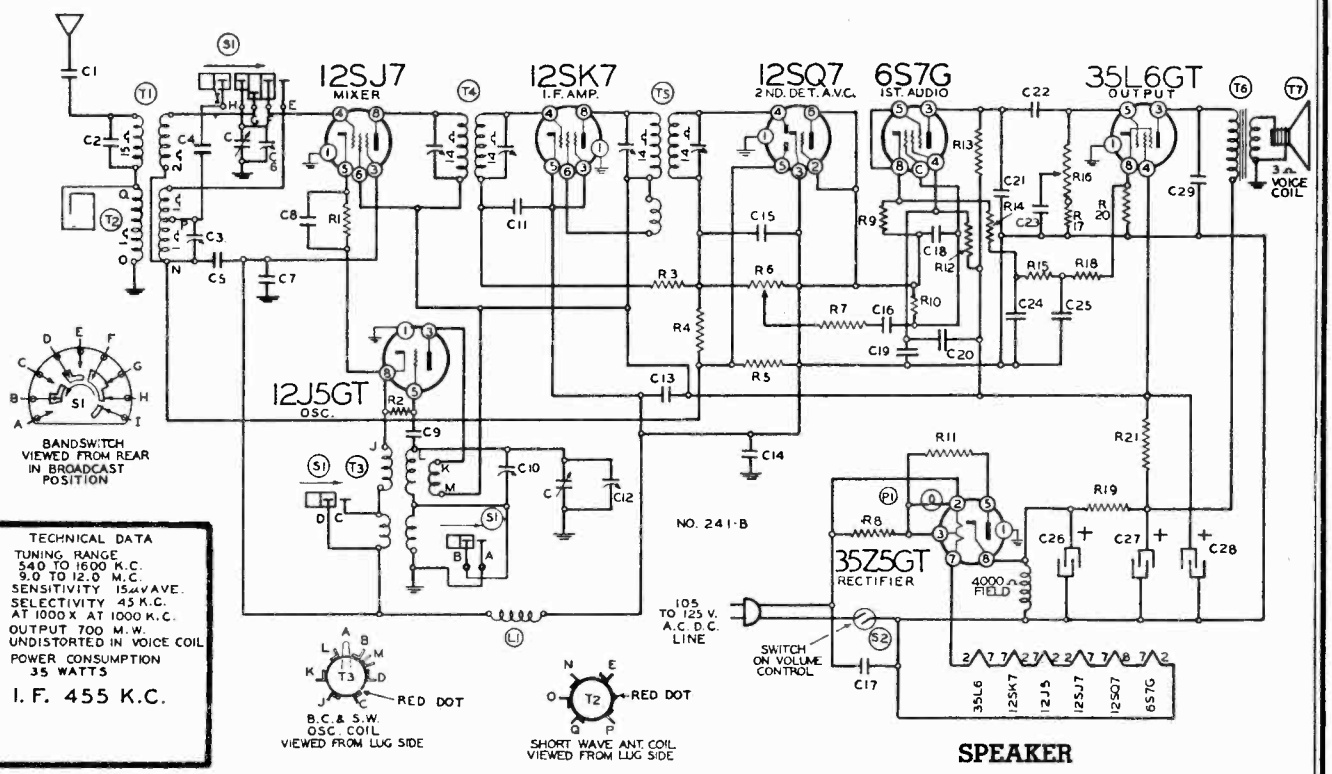
FIG. 1

NOTE: Some sets of this model were made for glass tubes only. Where glass tubes were used items C21—C22—R18 shown in dotted lines, were added to the circuit and the B + Line was opened between points X + 4.

On some sets R8 is replaced by a speaker field; R9 is also eliminated and C11 and C12 are connected in parallel.

MODEL 7D22, Series B

BELMONT RADIO CORP.



TECHNICAL DATA

TUNING RANGE
540 TO 1600 K.C.
9.0 TO 12.0 M.C.
SENSITIVITY 15μV AVE.
SELECTIVITY 45 K.C. AT 1000 K. AT 1000 K.C.
OUTPUT 700 M.W. UNDISTORTED IN VOICE COIL
POWER CONSUMPTION 35 WATTS

I. F. 455 K.C.

SPEAKER

114262	T7	Six Inch Electro Dynamic Speaker (Less Output Transformer) 1
105134	T6	Output Transformer for Speaker 1

Part No.	Schematic Diagram Reference	Description	No. Used In Set

CONDENSERS

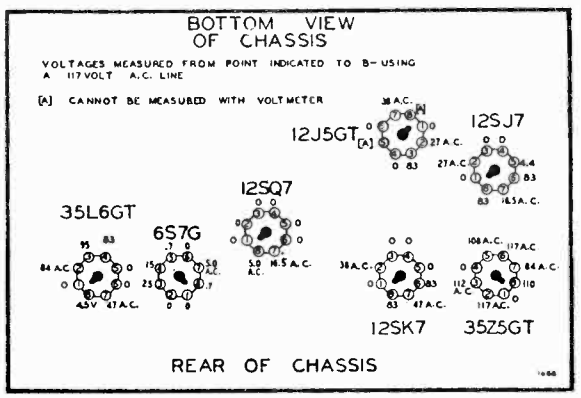
100128	C5	.05 x 120 Volt Tubular Condenser	1
100119	C7, C14	.1 x 400 Volt Tubular Condenser	2
100127	C8	.01 x 120 Volt Tubular Condenser	1
10020	C13, C19, C24, C25	.1 x 200 Volt Tubular Condenser	4
1009	C11	.05 x 200 Volt Tubular Condenser	1
100138	C17	.03 x 400 Volt Tubular Condenser	1
10019	C16, C23	.006 x 600 Volt Tubular Condenser	2
10037	C1	.003 x 600 Volt Tubular Condenser	1
100142	C20	.04 x 200 Volt Tubular Condenser	1
100130	C21, C22	Dual Condenser—.00025 x .02 x 400 Volt	1
10011	C29	.01 x 400 Volt Tubular Condenser	1
119129		Electrolytic Filter Cond. Added for 25 Cycle Only. 40 Mfd. x 150 Volts Across C22 and 20 Mfd. x 150 Volts Across C23	1
119128	C26, C27, C28	Electrolytic Filter Condenser. 40 Mfd.—20 Mfd.—20 Mfd. x 150 Volts, 50-60 Cycles	1
124139	C3, C10	S.W. Antenna and Oscillator Trimmer Condenser	2
129181	C4	.000445 Mica Type Condenser—3%	1
12921	C15	.0002 Mica Type Condenser—20%	1
1295	C9, C18	.0001 Mica Type Condenser—20%	2
12960	C2	.00015 Mica Type Condenser—20%	1
12912	C19	.00025 Mica Type Condenser—20%	1

RESISTORS

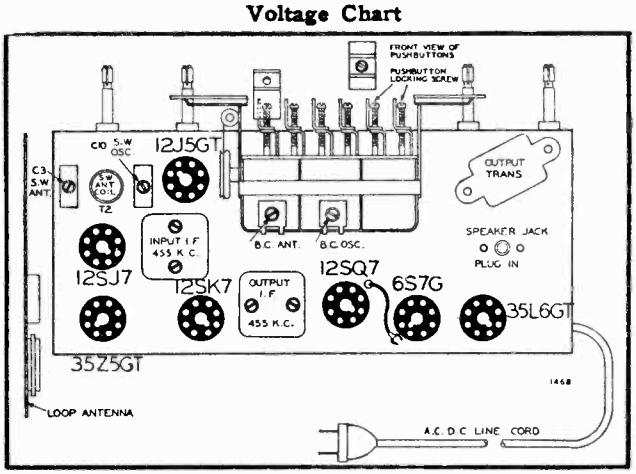
130218	R1	5M Ohm—⅓ Watt Resistor—10%	1
130166	R8, R20	150 Ohm—⅓ Watt Resistor—10%	2
13084	R19	200 Ohm—⅓ Watt Resistor—20%	1
130128	R11	20 Ohm—⅓ Watt Resistor—20%	1
13012	R2, R7	50M Ohm—⅓ Watt Resistor—20%	2
130287	R21	1200 Ohm—1 Watt Resistor—10%	1
130350	R3, R5	3.2 Megohm—⅓ Watt Resistor—20%	2
13038	R4	2 Megohm—⅓ Watt Resistor—20%	1
130257	R10	5 Megohm—⅓ Watt Resistor—25%	1
13092	R9	1M Ohm—⅓ Watt Resistor	1
130354	R12	525M Ohm—⅓ Watt Resistor	1
130103	R13	100M Ohm—⅓ Watt Resistor	1
130193	R14, R18	3M Ohm—⅓ Watt Resistor	2
130355	R15	8M Ohm—⅓ Watt Resistor	1
130100	R17	150M Ohm—⅓ Watt Resistor	1

COILS

108206	T4	Input I.F. Coil Complete in Can	1
108205	T5	Output I.F. Coil Complete in Can	1
110184	T3	B.C. S.W.—Oscillator Coil	1
111249	T2	S.W. Antenna Coil Complete	1
111251	T1	Loop Antenna Assembly	1
12316	L1	Choke Coil	



Voltage Chart



FOR ALIGNMENT, SEE INDEX

ALIGNMENT PROCEDURE MODEL 507, SERIES B

- Volume control—Maximum all adjustments.
- Connect generator ground to negative "B" at plug terminal (grey wire).
- Connect dummy antenna value in series with generator output lead.
- Connect output meter across primary of output transformer.
- Allow chassis and signal generator to "heat up" for several minutes.

The following equipment is required for aligning:

- An all wave signal generator which will provide an accurately calibrated signal at the test frequencies as listed.
- Output indicating meter.
- Non-metallic screwdriver.
- Dummy antennas—.1 Mfd., 200 Mmf.

BAND	SIGNAL GENERATOR Frequency Setting	Dummy Antenna	Connection to Radio	Variable Condenser Setting	Trimmers Adjusted (in Order Shown)	Trimmer Function	Adjustment
I. F.	465 Kc.	.1 MFD.	Grid of 1A7GT Tube	Rotor full open (Plates out of mesh)	Four trimmers on top (See Fig. 2)	Output and input I. F.	(See Note "A") Adjust to maximum output
BROAD-CAST BAND	1550 Kc.	.1 MFD.	Grid of 1A7GT Tube	Rotor full open (Plates out of mesh)	Trimmer Rear section of gang (See Fig. 2)	Oscillator	(See Note "A") Adjust to maximum output
	1400 Kc.	200 Mmf.	Antenna and Ground Terminals of Loop	Set dial at 1400 Kc.	Trimmer C16 (See Fig. 1)	Antenna	(See Note "B") Adjust to maximum output

NOTE "A"—The loop antenna need not be connected to the radio when making these adjustments. The ground of the signal generator is connected to the negative "B" wire of the radio and the other lead from the signal generator in series with .1 MFD. dummy to the grid of the 1A7GT tube.

NOTE "B"—This adjustment should be made with the ground lead of the signal generator connected to the ground terminal of the loop assembly. The other lead of the signal generator is connected in series with a 200 Mmf. dummy to the antenna terminal of the loop assembly.

It is important when making this adjustment that the same distance between the loop antenna and the chassis be maintained as when the chassis and loop are installed in the cabinet.

It is important during alignment that the same distance between the loop antenna and the chassis be maintained as when the chassis is installed in the cabinet.

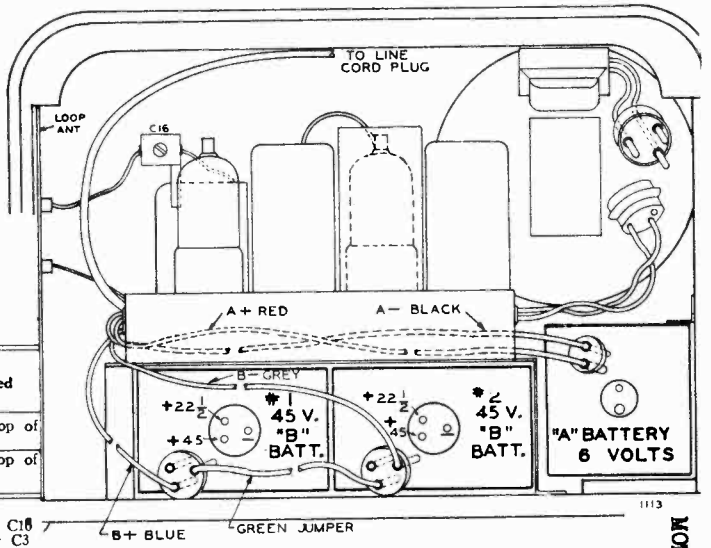
FREQUENCY RANGE
540 to 1550 KC.

Power Consumption.....(On A.C. or D.C.) 35 Watts
Power Output.....100 Milliwatts Undistorted, 200 Milliwatts Maximum
Intermediate Frequency.....465 KC.

MODEL 7D22, SERIES B
Setting the Pushbuttons

Make a list of your 6 favorite stations—push out the call letters of these stations from the call letter sheets supplied. Next insert a long slim screw driver into the hole in front of one of the pushbuttons and unscrew the pushbutton locking screw (to the left) several turns. Now with the screw driver still engaged in the locking screw slot push it all the way in. Hold it in this position and tune in the station you want with the tuning knob. Now tighten up the pushbutton locking screw by turning it to the right. Tighten firmly. Continue setting each button in the same way. When you have set your stations insert the call letter of each station in the front of the proper button and put one of the celluloid tabs over the station call letter.

To change stations simply repeat the above procedure.



ALIGNMENT PROCEDURE MODEL 7D22, SERIES B

- Volume control—Maximum all adjustments.
- Connect B—of radio chassis to ground post of signal generator through .1 Mfd. condenser.

BAND	SIGNAL GENERATOR Frequency Setting	Dummy Antenna	Connection to Radio	Position of Band Switch	Variable Condenser Setting	Trimmers Adjusted to Maximum
I. F.	455 Kc.	.1 MFD.	Grid of 12SK7 I. F.	Broadcast	Rotor full open (Plates out of mesh)	Two trimmers on top of Output I. F.
	455 Kc.	.1 MFD.	Grid of 12SJ7 Mixer	Broadcast	Rotor full open (Plates out of mesh)	Two trimmers on top of Input I. F.
SHORT WAVE BAND	12 Mc.	400 Ohms	External Antenna and B—	Short Wave	Set Dial at 12 Mc.	S.W. Osc. trimmer C18 S.W. Ant. trimmer C3
BROAD-CAST BAND	1600 Kc.	.1 mmf.	Grid of 12SJ7	Broadcast	Rotor full open (Plates out of mesh)	B.C. Osc. trimmer C12 on Gang
	1400 Kc.	200 mmf.	External Antenna and B—	Broadcast	Set Dial at 1400 Kc.	B.C. Ant. trimmer C6

NOTE: The Oscillator Frequency is lower than the signal frequency and should be aligned accordingly.

The loop antenna should be connected to the radio when making all adjustments.

MODEL 11A25, Series B
MODEL 11A25, Series C

BELMONT RADIO CORP.

Technical Data

Power Consumption - - Chassis Only 120 Watts Record Changer 20 Watts

Power Output - - - - - 5 Watts Undistorted

Sensitivity for 500 Milliwatt Output: 6 Microvolts Average

Selectivity - 36 KC Broad at 1000 Times Signal at 1000 KC

Tuning Frequency Range Broadcast Band - 540 to 1580 KC

Short Wave Band - - 5.5 to 18.5 MC

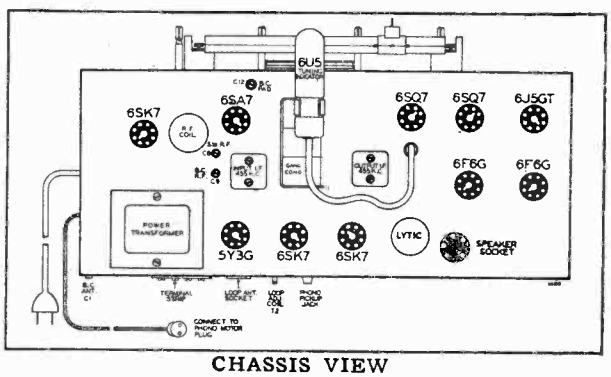
Alignment Procedure

- Volume control—Maximum all adjustments.
- Connect dummy antenna value in series with generator output lead.

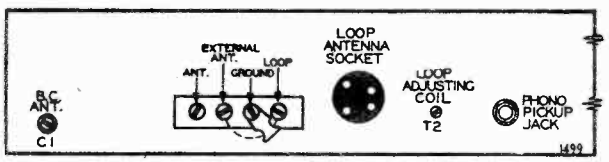
BAND	SIGNAL GENERATOR Frequency Setting	Dummy Antenna	Connection to Radio	Position of Band Switch	Variable Condenser Setting	Trimmers Adjusted to Maximum (in Order Shown)
I. F.	455 Kc	.1 MFD.	Grid of 6SK7 I. F.	Broadcast	Rotor full open (Plates out of mesh)	Two trimmers on top Output I. F.
	455 Kc	.1 MFD.	Grid of 6SA7 Mixer	Broadcast	Rotor full open (Plates out of mesh)	Two trimmers on top Input I. F.
SHORT WAVE BAND	17 Mc.	400 Ohms	External Antenna and Ground	Short Wave	Set Dial at 17 Mc.	C13, S.W. Osc.
	17 Mc.	400 Ohms	External Antenna and Ground	Short Wave	Set Dial at 17 Mc.	C8, S.W. R.F., C2 S.W. Antenna
	6 Mc.	400 Ohms	External Antenna and Ground	Short Wave	Set Dial at 6 Mc.	C11 S.W. Osc Series Pad See Note "A"
BROAD-CAST BAND	1580 Kc.	200 mmf.	Grid of 6SK7 R. F. Tube	Broadcast	Rotor full open (Plates out of mesh)	C14 B.C. Osc.
	540 Kc.	200 mmf.	Grid of 6SK7 R. F. Tube	Broadcast	Set Dial at 540 Kc. (Plates in Mesh)	C12 B.C. Osc. Series Pad
	1400 Kc.	200 mmf.	Grid of 6SK7 R. F. Tube	Broadcast	Set Dial at 1400 Kc.	C9 B.C R.F.
LOOP ALIGN-MENT	1400 Kc.	200 mmf.	External Antenna and Ground	Broadcast	Set Dial at 1400 Kc.	C1 B.C. Ant.
	600 Kc.	200 mmf.	External Antenna and Ground	Broadcast	Set Dial at 600 Kc.	T2 Iron Core Tracking Coil

NOTE "A"—Turn the dial back and forth slightly (rock) and adjust trimmer until the peak of greatest intensity is obtained

After each band is completed, repeat the procedure as a final check.



CHASSIS VIEW

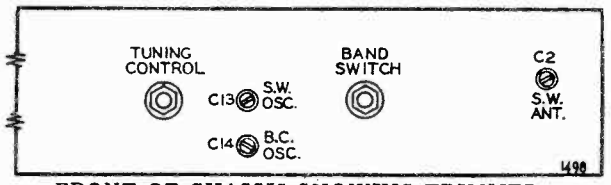


REAR OF CHASSIS

ANTENNA AND GROUND TERMINALS

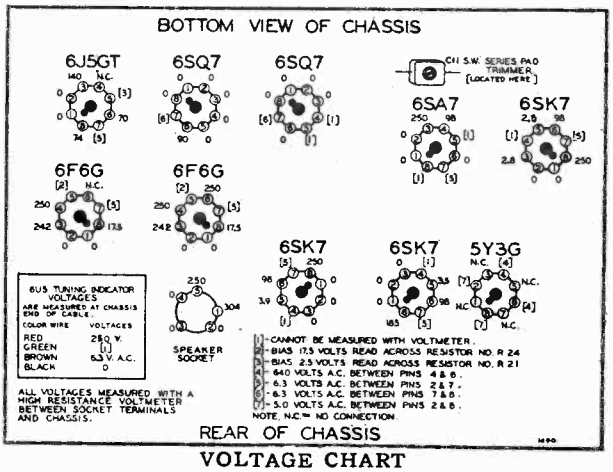
When using an external antenna and ground, move the metal strap (connector bar) from terminal marked LOOP and connect it to terminal marked EXTERNAL ANT.

The antenna and ground wires should then be connected to the terminals marked "Ant."—"Gnd."



FRONT OF CHASSIS SHOWING TRIMMERS

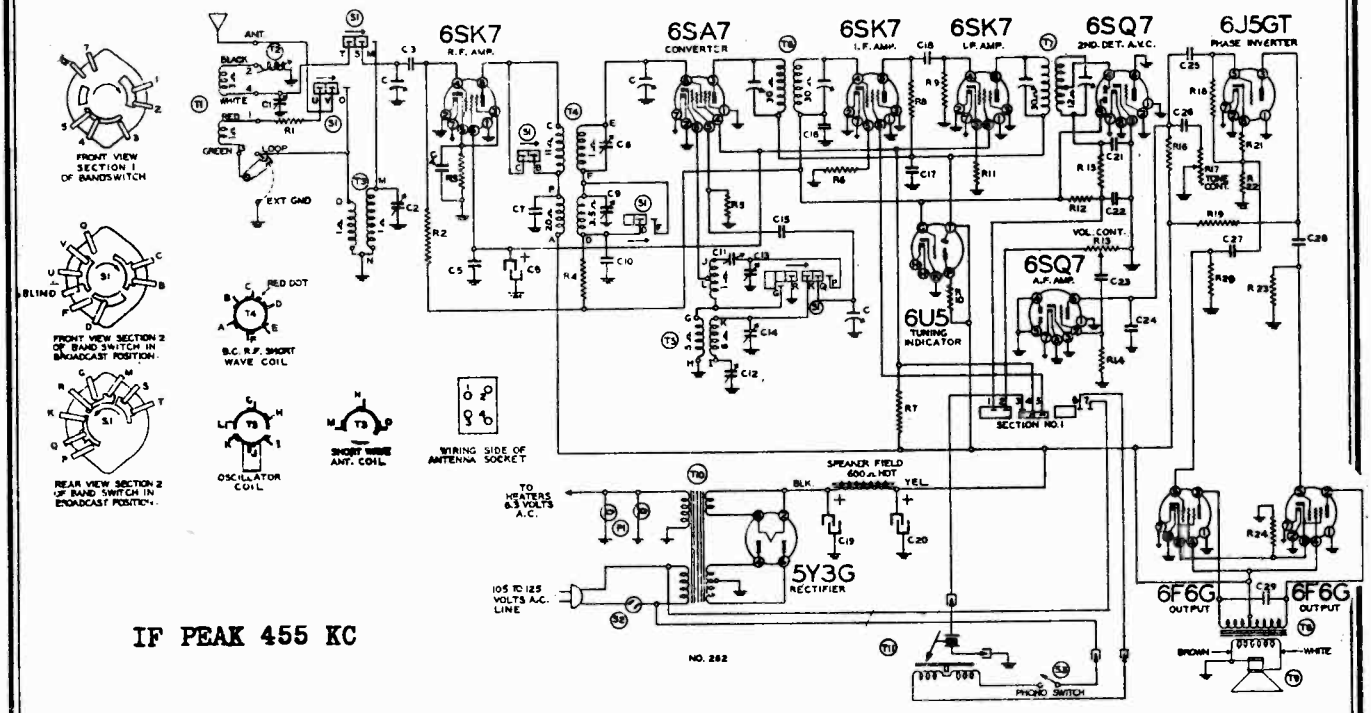
THE SERIES B IS EQUIPPED WITH A SEEBURG TYPE C RECORD CHANGER, SERIES C WITH AN OAK. SERVICE DATA ON THIS EQUIPMENT IS FOUND IN RIDER'S "AUTOMATIC RECORD CHANGERS AND RECORDERS".



VOLTAGE CHART

MODEL 11A25, Series B
MODEL 11A25, Series C

BELMONT RADIO CORP.



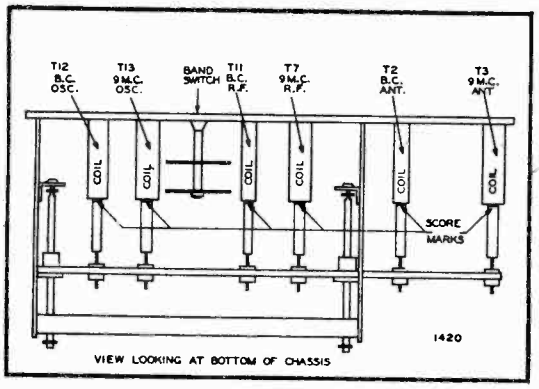
IF PEAK 455 KC

Part No.	Schematic Diagram Reference	Description	No Used In Set
		CONDENSERS	
102129B	C	Three Gang Variable Condenser	1
10020	C4	.1 x 200 Volt Tubular Condenser	1
10026	C10, C16, C25	.02 x 400 Volt Tubular Condenser	3
10025	C23	.002 x 600 Volt Tubular Condenser	1
1009	C27	.05 x 200 Volt Tubular Condenser	1
10013	C28	.05 x 400 Volt Tubular Condenser	1
10011	C26	.01 x 400 Volt Tubular Condenser	1
10071	C29	.004 x 600 Volt Tubular Condenser	1
100117	C5, C17	.25 x 400 Volt Tubular Condenser	2
119124	C6, C19, C20	Electrolytic Filter Condenser—10 Mfd. x 350 V.; 25 Mfd. x 450 V.; 25 Mfd. x 450 V.	1
124117	C2	S.W. Antenna Trimmer	1
124131	C8, C9	S.W. and B.C. R.F. Trimmer—Dual	1
124130	C13, C14	S.W. and B.C. Osc. Trimmer—Dual	1
124132	C1	B.C. Antenna Trimmer	1
129157	C12	.000525 Compression Cond.—B.C. Pad	1
1292	C3, C18	.0005 Mica Type Condenser—20%	2
129160	C7	.0004 Mica Type Condenser—20%	1
12939	C15	.00005 Mica Type Condenser—20%	1
1295	C21, C22	.0001 Mica Type Condenser—20%	2
129156	C11	.0024 Compression Mica Condenser	1
12912	C24	.00025 Mica Type Condenser—20%	1
		RESISTORS	
101278	R13, S2	Volume Control and Switch (500M Ohms) Less Shaft	1
101279	R17	Tone Control (1 Megohm) Less Shaft	1
115834		Shaft Only for Volume and Tone Controls	2
13019	R2, R18	1 Megohm—⅓ Watt Resistor—20%	2
1305	R4	300M Ohm—⅓ Watt Resistor—20%	1
130208	R5	40M Ohm—⅓ Watt Resistor—20%	1
13054	R6, R11	500 Ohm—⅓ Watt Resistor—20%	2
130263	R8	12M Ohm—⅓ Watt Resistor—20%	1
13020	R9, R19, R22	100M Ohm—⅓ Watt Resistor—20%	3
130304	R7	12M Ohm—2 Watt Resistor—10%	1
13012	R15	50M Ohm—⅓ Watt Resistor—20%	1
130170	R12	3 Megohm—⅓ Watt Resistor—25%	1
130257	R14	5 Megohm—⅓ Watt Resistor—30%	1
13043	R21	2500 Ohm—⅓ Watt Resistor—20%	1
1303	R20, R23	500M Ohm—⅓ Watt Resistor—20%	2
13011	R16	250M Ohm—⅓ Watt Resistor—20%	1
130311	R24	300 Ohm—1 Watt Resistor—20%	1
13099	R3	300 Ohm—⅓ Watt Resistor—20%	1
13024	R1	400 Ohm—⅓ Watt Resistor—20%	1
	R10	1 Megohm—In Eye Socket	1
		COILS	
108169K	T6	Input I.F. Coil Complete in Can	1
108130G	T7	Output I.F. Coil Complete in Can	1
10957	T4	B.C.—S.W. R.F. Coil Complete in Can	1
110149	T5	B.C.—S.W. Oscillator Coil	1
111176	T3	S.W. Antenna Coil	1
111153	T2	Loop Adjusting Coil With Iron Slug	1
111257	T1	Loop Antenna Assembly	1

Part No.	Schematic Diagram Reference	Description	No Used In Set
		SPEAKER	
114275	T9	Ten Inch Electrodynamic Speaker (Less Output Transformer)	1
		TRANSFORMERS	
10554B	T8	Output Transformer for Speaker	1
104202C	T10	Power Transformer, 50 to 60 Cycles 105-125 Volt Primary	1
104203C		Power Transformer 25 to 60 Cycles 105-125 Volt Primary	
		BANDSWITCH	
125186	S1	Radio-Phono-Band Switch Complete	1
		MISCELLANEOUS	
107266		Line Cord and Plug	1
13447		Rubber Cushions to Float Chassis	4
121308		Eight Prong Octal Molded Socket for Speaker	1
121210		Eight Prong Octal Molded Socket	10
107169		Socket and Cable Assembly for Tuning Eye	1
10794	P1	6-8 Volt Pilot Lite Bulb Type T-44	2
107403		Socket Assembly for Pilot Lite	2
11757A		Bracket for Tuning Eye	1
11757B		Clamp for Tuning Eye	1
11757C		Wing Bolt for Above	1
		DIAL AND TUNING PARTS	
1121042		Dial Scale	1
1121040-14		Escutcheon for Dial	2
1121036		Pointer	1
128787-14		Knob—"Tuning"	4
117930		Tuning Shaft	1
112954		Pulley with Bushing	1
1209		String for Dial	Yd.
120197		Coiled Tension Spring for Dial String	1
		RECORD CHANGER COMPARTMENT	
104301	S2	Automatic Record Changer Complete Seeburg "C" 115 Volts A.C. 60 Cycles N1 Cartridge	1
10794	P2	Indicator Light Bulb	1
107388		Socket Assembly for Pilot Lite	1

MODEL 11A55, Series A

BELMONT RADIO CORP



IRON CORE ADJUSTMENT VIEW

Setting the Pushbuttons

Make a list of your 6 favorite stations. Push out the call letters of these stations from the call letter sheets supplied. Insert a call letter in the slot on top of each pushbutton.

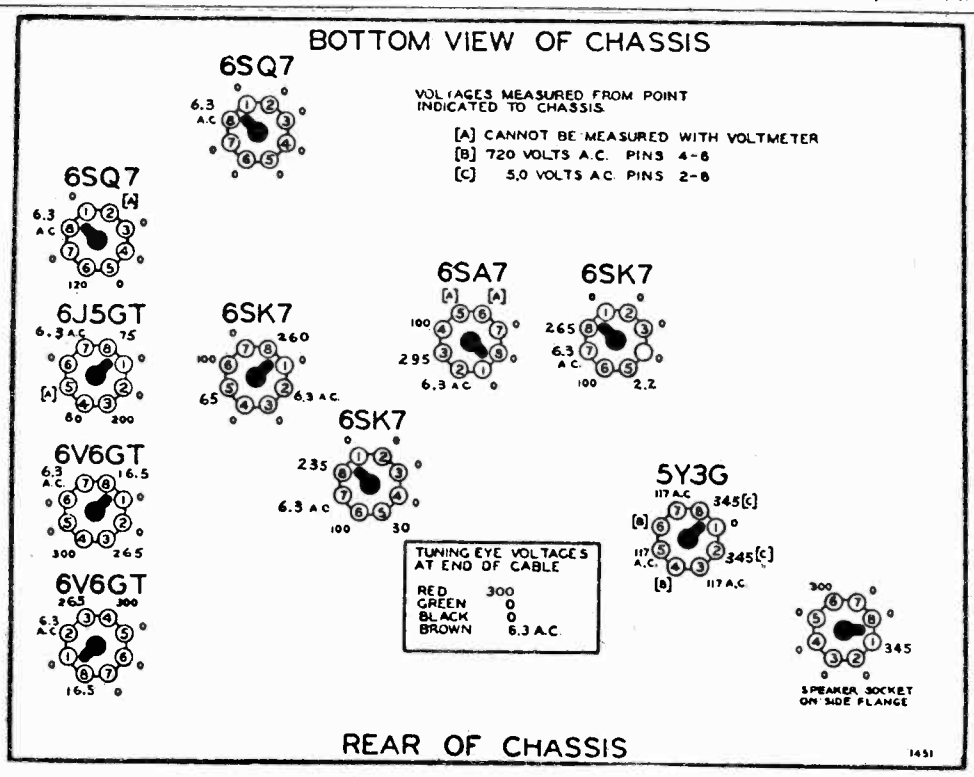
Next pull one of the pushbuttons all the way out as far as it will come. Now tune in the station you want with the tuning knob—Tune back and forth until the station is clear and distinct. Now push the button hard all the way in to lock the station in place. Continue setting each pushbutton in the same way. Pressing the proper button will now tune the station you want. If it does not do so you did not push the button hard enough to lock it in place when setting up the station.

IMPORTANT: Before removing chassis, remove the escutcheon and dial scale and then the pointer which is fastened to the pointer carriage by a small screw.

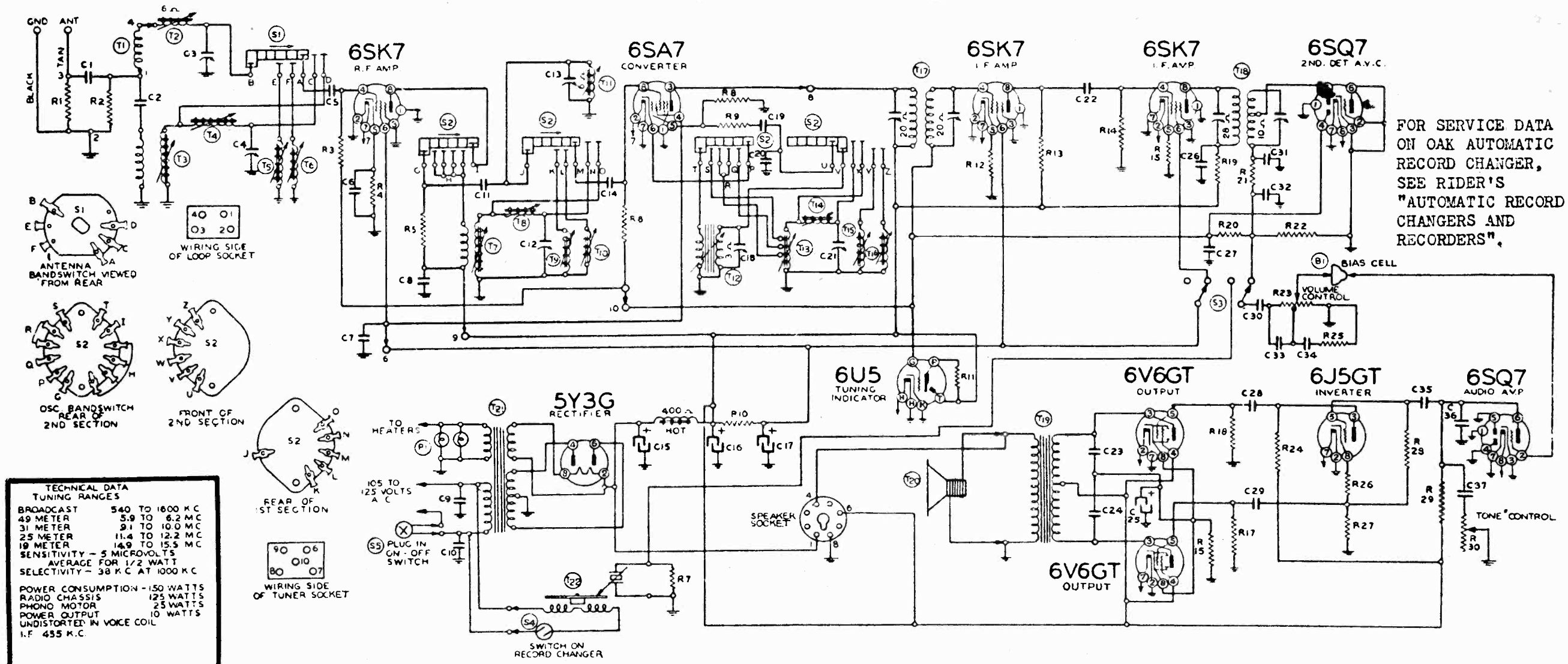
ALIGNMENT PROCEDURE

- Tone control—Treble.
- Volume control—Maximum all adjustments.
- Use an all wave signal generator which will provide an accurately calibrated signal at the test frequencies as listed.

BAND	SIGNAL GENERATOR Frequency Setting	Dummy Antenna	Connection to Radio	Position of Band Switch	Dial Pointer Setting	Trimmers Adjusted To Maximum
I. F.	455 Kc.	.1 MFD.	Grid of 6SK7 (I.F.)	Broadcast	Set Dial at 1600 Kc.	On Top of Output I. F.
	455 Kc.	.1 MFD.	Grid of 6SA7	Broadcast	Set Dial at 1600 Kc.	On Top of Input I.F.
31 METER BAND	9.6 Mc.	400 ohms	Antenna lead	31M	Set Dial at 9.6 Mc.	(See Trimmer View) C21—Osc. (See Trimmer View) C12—R.F. (See Chassis View) C4—Ant.
49 METER BAND	6.1 Mc.	400 ohms	Antenna lead	49M	Set Dial at 6.1 Mc.	(See Trimmer View) T14—Osc. (See Trimmer View) T8—R.F. (See Trimmer View) T4—Ant.
25 METER BAND	11.8 Mc.	400 ohms	Antenna lead	25M	Set Dial at 11.8 Mc.	(See Trimmer View) T15—Osc. (See Trimmer View) T9—R.F. (See Trimmer View) T5—Ant.
19 METER BAND	15.2 Mc.	400 ohms	Antenna lead	19M	Set Dial at 15.2 Mc.	(See Trimmer View) T16—Osc. (See Trimmer View) T10—R.F. (See Trimmer View) T6—Ant.
BROAD CAST BAND	1600 Kc.	200 mmf.	Antenna lead	Broadcast	Set Dial at 1600 Kc.	(See Trimmer View) C18—Osc. (See Trimmer View) C13—R.F. (See Chassis View) C3—Ant.
	1400 Kc.	300 mmf.	Antenna lead	Broadcast	Set Dial at 1400 Kc.	Rotate Core T11—R.F Rotate Core T2—Ant. (See Iron Core Adjustment View)



BELMONT RADIO CORP.



TECHNICAL DATA

TUNING RANGES

BROADCAST	540 TO 1600 KC
49 METER	5.9 TO 6.2 MC
31 METER	9.1 TO 10.0 MC
25 METER	11.4 TO 12.2 MC
19 METER	14.9 TO 15.5 MC

SENSITIVITY – 5 MICROVOLTS AVERAGE FOR 1/2 WATT
SELECTIVITY – 38 K.C. AT 1000 K.C.

POWER CONSUMPTION – 150 WATTS

RADIO CHASSIS	125 WATTS
PHONO MOTOR	25 WATTS
POWER OUTPUT	10 WATTS

UNDISTORTED IN VOICE COIL
I.F. 455 K.C.

MAIN CHASSIS PARTS LIST

CONDENSERS

1009	C29, C30	.05 x 200 Volt Tubular Condenser	2
10037	C37	.003 x 600 Volt Tubular Condenser	1
10013	C28, C35	.05 x 400 Volt Tubular Condenser	2
1001	C26	.1 x 400 Volt Tubular Condenser	1
10065	C23, C24	.015 x 600 Volt Tubular Condenser	2
10022	C27	.05 x 200 Volt Tubular Condenser	1
100134	C34	.006 x 120 Volt Tubular Condenser	1
10061	C9, C10	.02 x 600 Volt Bakelite Condenser	2
11969	C25	Electrolytic Filter Condenser. 16 Mfd. x 350 Volts	1
119112	C15, C16, C17	Electrolytic Filter Condenser. 30 Mfd.; 30 Mfd.; 10 Mfd. x 450 Volts or	1
119112B	C15, C16, C17	Electrolytic Filter Condenser 30 Mfd.; 30 Mfd.; 10 Mfd. x 450 Volts	1
1292	C1, C22	.0005 Mica Type Condenser—20%	2
12912	C36	.00025 Mica Type Condenser—20%	1
12939	C33	.00005 Mica Type Condenser—20%	1
129161	C31, C32	.0001 Mica Dual Condenser—10%	1

RESISTORS

101275	R23	Volume Control (2.8 Megohm)	1
125180	R30, S3	Tone Control and Phono-Radio Switch (1 Megohm)	1
13070	R12	500 Ohm—½ Watt Resistor—10%	1
13082	R13	10M Ohm—½ Watt Resistor—10%	1
130317	R16	250 Ohm—2 Watt Resistor—10%	1
13094	R21, R24, R27	50M Ohm—½ Watt Resistor—10%	3
130192	R19	2M Ohm—½ Watt Resistor—10%	1
130235	R15	1500 Ohm—½ Watt Resistor—10%	1
130218	R26	5M Ohm—½ Watt Resistor—10%	1
130172	R29	250M Ohm—½ Watt Resistor—10%	1
13019	R20	1 Megohm—½ Watt Resistor—20%	1
13020	R14	10M Ohm—½ Watt Resistor—20%	1
1307	R25	40M Ohm—½ Watt Resistor—10%	1
130238	R22	400M Ohm—½ Watt Resistor—20%	1
1303	R7, R17, R18, R28	500M Ohm—½ Watt Resistor—20%	4
130232	R1, R2	25M Ohm—½ Watt Resistor—10%	2
10667	R10	16M Ohm—3.5 Watt Resistor—10%	1

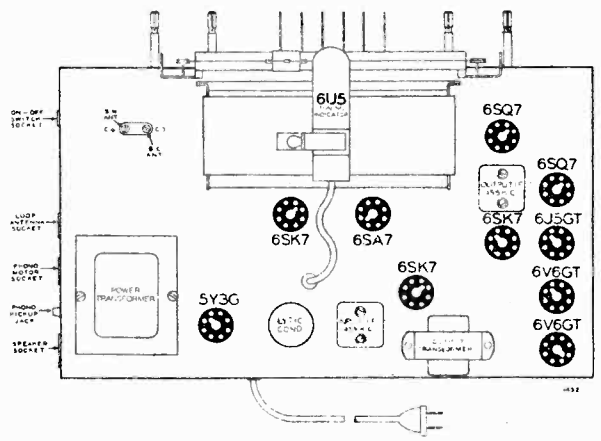
TUNER CHASSIS PARTS LIST

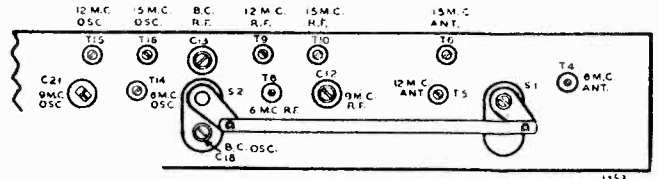
CONDENSERS

10020	C6	.1 x 200 Volt Tubular Condenser	1
10047	C2	.002 x 600 Volt Tubular Condenser	1
10074	C7, C8	.1 x 400 Volt Tubular Condenser	2
124138	C12	9 Mc., R.F. Adjustable Trimmer Condenser	1
124139	C13	B.C., R.F. Adjustable Trimmer Condenser	1
124113	C3, C4	B.C. and 9 Mc. Dual Adjustable Antenna Trimmer Condenser	1
124144	C18	B.C. Oscillator Adjustable Trimmer Condenser	1
124145	C21	9 Mc. Oscillator Adjustable Trimmer Condenser	1
1292	C5, C14	.0005 Mica Type Condenser—20%	1
129165	C19	.00005 Mica Type Condenser—10%	1
129168	C11	.00001 Mica Type Condenser—20%	1
129167	C20	.0002 Silver Mica Type Condenser—3%	1

RESISTORS

13019	R3, R6	1 Megohm—½ Watt Resistor—20%	2
130218	R5	5M Ohm—½ Watt Resistor—10%	1
130232	R8	25M Ohm—½ Watt Resistor—10%	1
130239	R4	250 Ohm—½ Watt Resistor—10%	1
	R11	1 Megohm—In Tuning Eye Cable	1
130174	R9	50 Ohm—½ Watt Resistor	1





TRIMMER VIEW

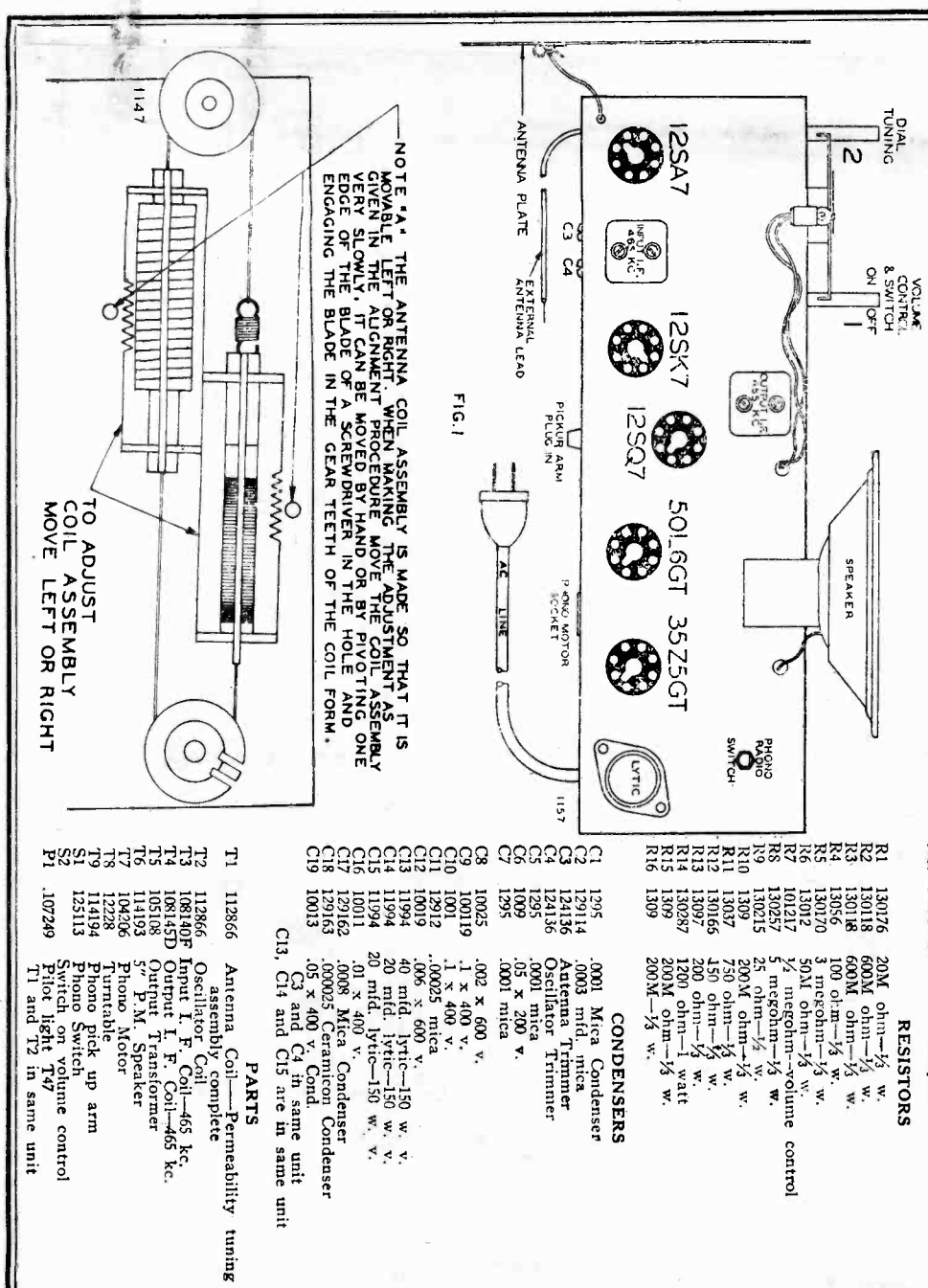


FIG. 1

NOTE "A" THE ANTENNA COIL ASSEMBLY IS MADE SO THAT IT IS MOVABLE LEFT OR RIGHT. WHEN MAKING THE ADJUSTMENT AS GIVEN IN THE ALIGNMENT PROCEDURE MOVE THE COIL ASSEMBLY VERY SLOWLY, IT CAN BE MOVED BY HAND OR BY PIVOTING ONE EDGE OF THE BLADE OF A SCREWDRIVER IN THE HOLE AND ENGAGING THE BLADE IN THE GEAR TEETH OF THE COIL FORM.

Circuit Ref. No.	Part No.	Description
		RESISTORS
R1	130176	20M ohm—½ w.
R2	130118	600M ohm—½ w.
R3	130118	600M ohm—½ w.
R4	130056	100 ohm—½ w.
R5	130170	3 megohm—½ w.
R6	13012	50M ohm—½ w.
R7	101217	½ megohm—volume control
R8	130257	5 megohm—½ w.
R9	130215	25 ohm—½ w.
R10	1309	200M ohm—½ w.
R11	13037	750 ohm—½ w.
R12	130165	150 ohm—½ w.
R13	13097	200 ohm—½ w.
R14	130287	1200 ohm—1 watt
R15	1309	200M ohm—½ w.
R16	1309	200M—½ w.
		CONDENSERS
C1	1295	.0001 Mica Condenser
C2	129114	.0003 mfd. mica
C3	124136	Antenna Trimmer
C4	124136	Oscillator Trimmer
C5	1295	.0001 mica
C6	1009	.05 x 200 v.
C7	1295	.0001 mica
C8	10025	.002 x 600 v.
C9	100119	.1 x 400 v.
C10	1001	.1 x 400 v.
C11	12912	.00025 mica
C12	10019	.006 x 600 v.
C13	11994	40 mfd. lytic—150 w. v.
C14	11994	20 mfd. lytic—150 w. v.
C15	11994	20 mfd. lytic—150 w. v.
C16	10011	.01 x 400 v.
C17	129162	.0008 Mica Condenser
C18	129163	.00025 Ceramicon Condenser
C19	10013	.05 x 400 v. Cond. C3 and C4 in same unit
		C13, C14 and C15 are in same unit
		PARTS
T1	112866	Antenna Coil—Permeability tuning assembly complete
T2	112866	Oscillator Coil
T3	108140F	Input I. F. Coil—465 kc.
T4	108145D	Output I. F. Coil—465 kc.
T5	105108	Output Transformer
T6	1141193	5" P.M. Speaker
T7	104206	Phono Motor
T8	12228	Turntable
T9	114194	Phono pick up arm
S1	125113	Phono Switch
S2		Switch on volume control
P1	.107249	Pilot light T47 T1 and T2 in same unit

ALIGNMENT PROCEDURE

- Volume control—Maximum all adjustments.
- Connect — B of radio chassis to ground post of signal generator through .1 Mfd. condenser.
- Connect dummy antenna value in series with generator output lead.
- Connect output meter across primary of output transformer.
- Allow chassis and signal generator to "heat up" for several minutes.

The following equipment is required for aligning.

- An all wave signal generator which will provide an accurately calibrated signal at the test frequencies as listed.
- Output indicating meter.
- Non-metallic screwdriver.
- Dummy antennas—.1 Mfd., and 200 Mmf.

BAND	SIGNAL GENERATOR Frequency Setting	Dummy Antenna	Connection to Radio	Position of Iron Cores (Dial Setting)	Trimmers Adjusted (in Order Shown)	Trimmer Function	Adjustment
I. F.	465 Kc.	.1 MFD.	Connect to Antenna Plate (See Fig. 4)	Iron Cores All the way out	Two trimmers on top (See Fig. 1)	Output I. F.	Adjust to maximum output
	465 Kc.	.1 MFD.	Connect to Antenna Plate (See Fig. 4)	Iron Cores All the way out	Two trimmers on top (See Fig. 1)	Input I. F.	Adjust to maximum output
BROAD-CAST BAND	1690 Kc.	.1 MFD.	Connect to Antenna Plate (See Fig. 4)	Iron Cores All the way out	Trimmer C4 (See Fig. 4)	Oscillator	Adjust to maximum output
	1690 Kc.	200 MMF.	Connect to Antenna Lead (See Fig. 4)	Iron Cores All the way out	Trimmer (C3) (See Fig. 4)	Antenna	Adjust to maximum output
	1400 Kc.	200 MMF.	Connect to Antenna lead (See Fig. 4)	Turn Dial to 1400 Kc.	Adjust position of antenna coil right or left.	Antenna Coil Adjustment	(See Note "A") Adjust to maximum output
	1690 Kc.	200 MMF.	Connect to Antenna lead (See Fig. 4)	Turn Dial to 1690 Kc.	Adjust trimmer (C3) (See Fig. 4)	Antenna	Check for tracking (See Note "B")

NOTE "A"—The antenna coil assembly is made so that it is movable right or left. When making the adjustment as given in the alignment procedure move the coil assembly very slowly. It can be moved by hand or by pivoting one edge of the blade of a screwdriver in the hole and engaging the blade in the gear teeth of the coil form.

NOTE "B"—After the antenna coil has been tracked at 1400 Kc. it is necessary to check the antenna trimmer (C3) adjustment again at 1690 Kc. If no appreciable change in trimmer adjustment is made the coil is in track, if the trimmer requires considerable change it will be necessary to again adjust the position of the antenna coil at 1400 Kc. These two adjustments should be tried several times until no change of trimmer adjustment is required at 1690 Kc.

FREQUENCY RANGE
535 to 1690 K.C.

Power Consumption ..... Radio Only 30 Watts
Power Output ..... 900 Milliwatts Undistorted, 1.7 Watts Maximum
Intermediate Frequency ..... 465 K.C.

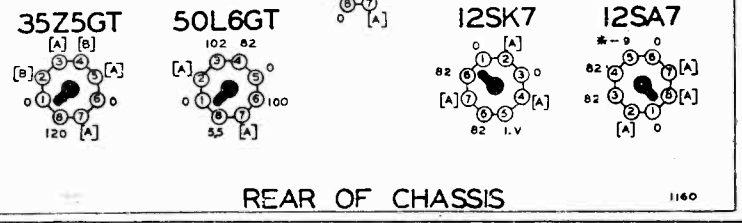
BOTTOM VIEW OF CHASSIS

VOLTAGES MEASURED WITH 1000 OHM PER VOLT VOLTMETER BETWEEN SOCKET TERMINALS AND B—

NOTE: SWITCH SHOULD BE IN RADIO POSITION AND SET CONNECTED TO 117 V. 60 CYCLE A.C. SUPPLY SOURCE. NO SIGNAL AND VOLUME CONTROL IN MINIMUM POSITION.

[A] CANNOT BE MEASURED WITH D.C. VOLTMETER.
[B] POINTS OF LINE CONTACT.

* OSC. VOLTAGE TO BE MEASURED WITH R.F. CHOKE IN SERIES WITH VOLTMETER LEAD.



REAR OF CHASSIS 1160

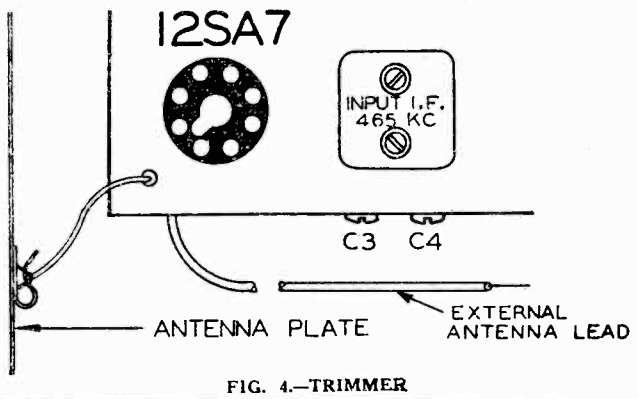


FIG. 4.—TRIMMER

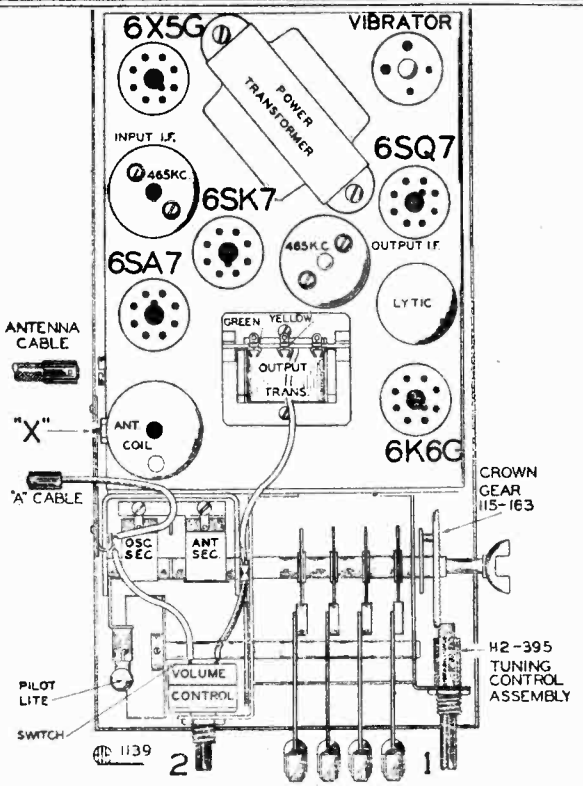


FIG. 3—TOP VIEW

ADJUST ANTENNA TRIMMER

Tune in a weak signal at approximately 600 K.C. with volume control about three-fourths on. Adjust trimmer screw "X" until maximum output is obtained. (See Fig. 1, Adjustment "X" on right side of radio).

I.F. ALIGNMENT: (485 K.C.)

1. With variable condenser in its minimum capacity position (plates entirely out of mesh) and with volume control full on, connect test oscillator set at 465 K.C. in series with I.F. dummy antenna, to grid of 6SK7 I.F. tube.
2. Adjust trimmer condensers of output I.F. transformer No. 108121 to resonance with oscillator.
3. Move test oscillator connection to grid of 6SA7 tube and adjust trimmer condensers of input I.F. transformer No. 108139 to resonance with oscillator. There are two adjustments on each and they are accessible from the top of the transformer shield and should be adjusted with an insulated screw driver. (See Fig. 3.

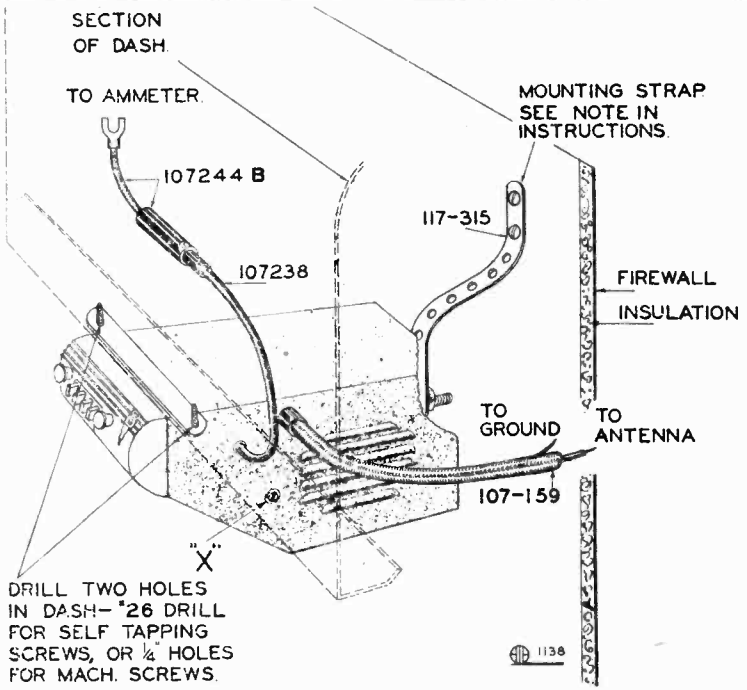


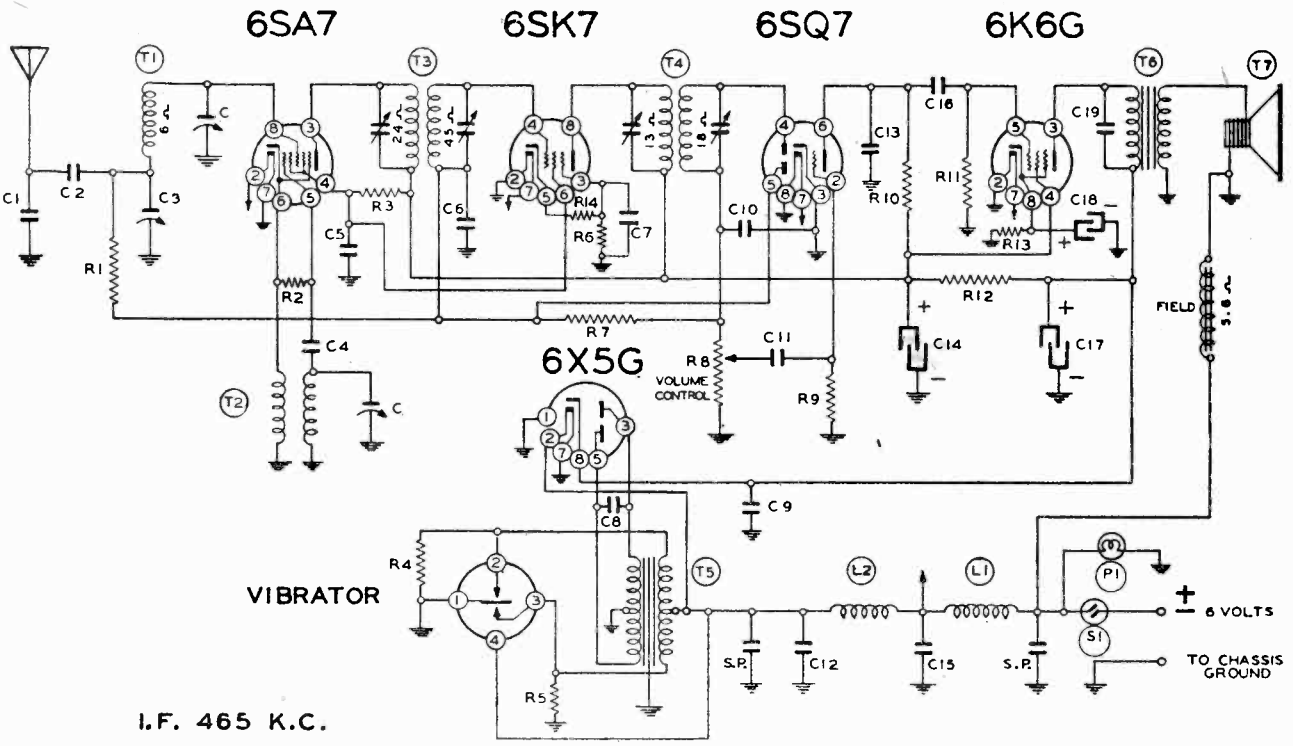
FIG. 1—GENERAL INSTALLATION VIEW

BROADCAST ALIGNMENT

1. With variable condenser in its minimum capacity position, connect test oscillator set at 1550 K.C. in series with broadcast dummy to the antenna lead of receiver.
2. Adjust oscillator trimmer of variable condenser to resonance. (This adjustment is the rear section of the two-gang condenser—see top view, Fig. 3).
3. Shift test oscillator to 1400 K.C. and pick up signal by rotating condenser and adjust antenna trimmer (front section of gang condenser) to resonance (see top view, Fig. 3).
4. Re-set test oscillator to 600 K.C. and rotate variable condenser to 600 K.C. Adjust series pad in the antenna circuit for maximum gain. This pad is mounted on the side of the antenna can, adjustment "X."
5. Go back and check 1400 K.C. If adjustment is made here, check 600 K.C. again.
6. Check for sensitivity at 1000 K.C. by setting test oscillator to this frequency and picking up the signal by rotating variable condenser. Under no circumstances bend plates of variable condenser sections to correct tracking.

MODEL 579, Series A
Ser. No. 225040 up

BELMONT RADIO CORP.



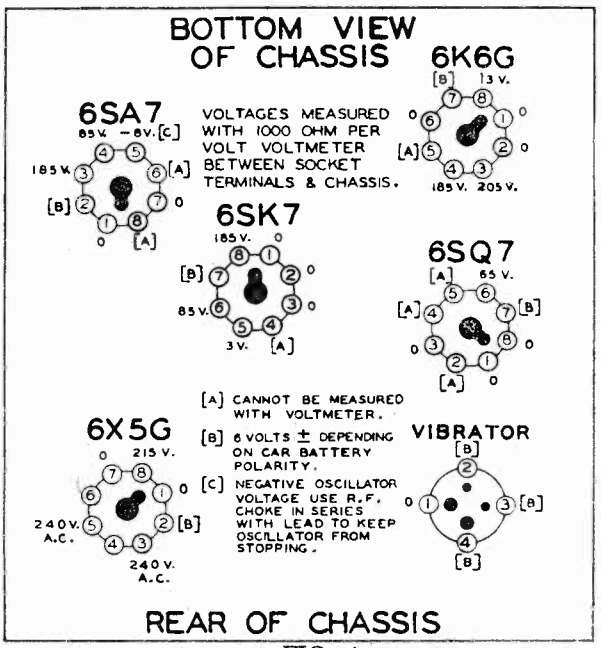
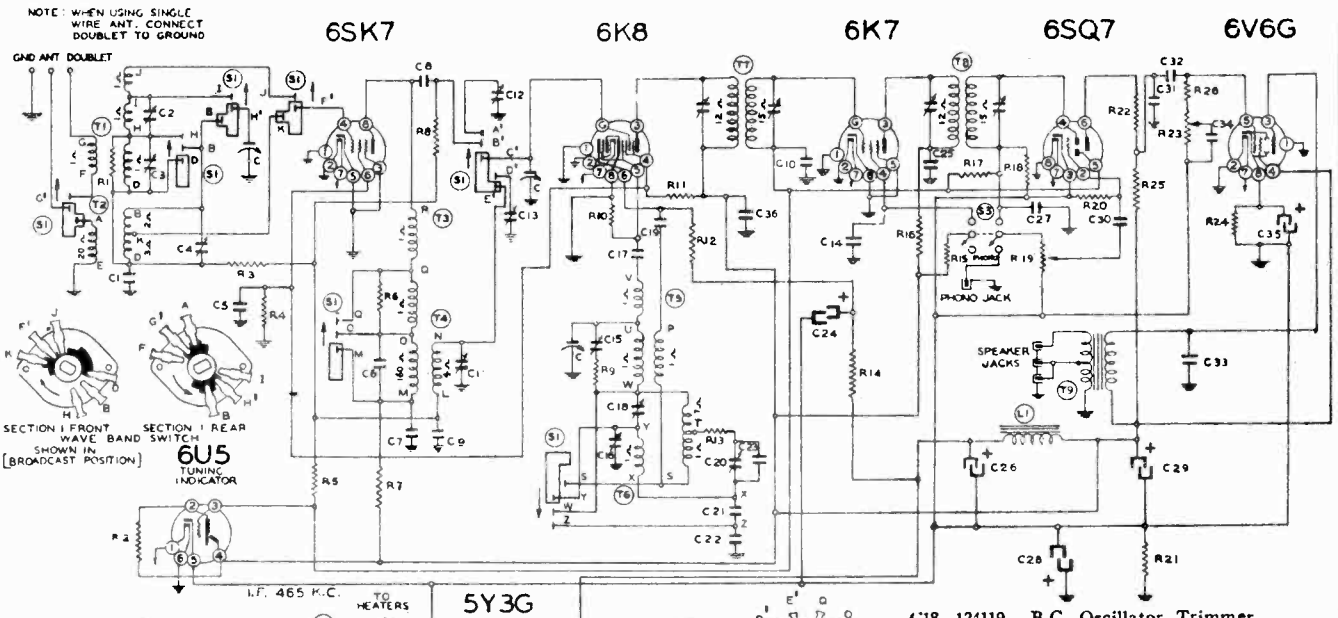


FIG. 4

Circuit Diagram Ref.	Part No.	Description
		RESISTORS
R1	13011	250M ohm—½ w.
R2	130236	30M ohm—½ w.
R3	130307	15M ohm—1 watt
R4	13060	100 ohm—½ w.
R5	13060	100 ohm—½ w.
R6	13070	500 ohm—½ w.
R7	1304	3 megohm—½ w.
R8	101110	1 megohm volume control
R9	130257	5 megohm—½ w.
R10	13011	250M ohm—½ w.
R11	1303	500M ohm—½ w.
R12	130199	1500 ohm—1 watt
R13	130101	600 ohm—½ w.
R14	130174	50 ohm—½ w.
		CONDENSERS
C	10269	2 gang variable condenser
C1	1293	.00002 mica
C2	10055	.01 x 400 volts
C3	12434	Adj. Antenna Trimmer
C4	12921	.0002 mica
C5	100115	.05 x 400 v.
C6	1009	.05 x 200 v.
C7	10020	.1 x 200 v.
C8	10034	.005 x 1200 v
C9	12912	.00025 mica
C10	1295	.0001 mica
C11	10025	.002 x 600 v.
C12	10031	.5 x 120 v.
C13	1292	.0005 mica
C14	119105	15 ufd. lytic x 350 w. v.
C15	10031	.5 x 120 v.
C16	10078	.01 x 200 v.
C17	119105	15 ufd. lytic x 350 w. v.
C18	119105	20 ufd. lytic x 25 w. v.
C19	10087	.01 x 600 v.
		C14, C17 and C18 in same unit

		PARTS
T1	11195B	Antenna Coil
T2	110146	Oscillator Coil
T3	108139	Input I. F. Coil—465 kc.
T4	108121B	Output I. F. Coil—465 kc.
T5	104131	Power Transformer
T6	10567	Output Transformer
T7	114114-R	5" Dynamic Speaker (5.6 ohm field)
L1	10568	"A" Choke
L2	10566	"A" Choke
S1		Switch on volume control
P1	10797	Pilot light (T51) 6-8 volts
S.P.	11749	(2) Spark Plates

BELMONT RADIO CORP. MODELS 708-391, 708-398, 708-378 etc
Chassis 708, Series C
Ser. No. 0C375300 up



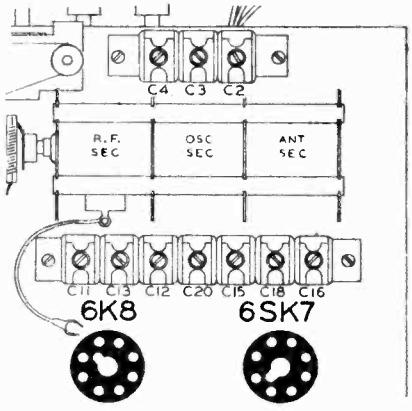


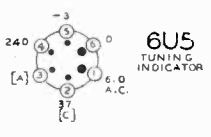
FIG. 3—TOP OF CHASSIS

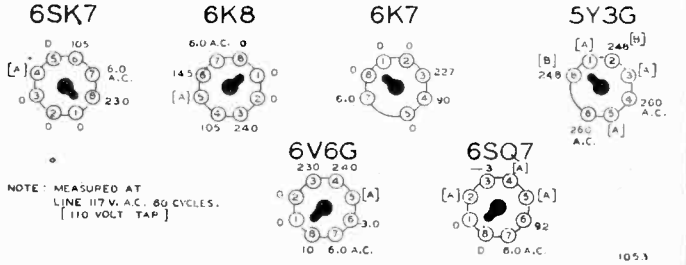
Circuit Diagram Ref. No.	Part No.	Description
		RESISTORS
R1	13094	50M ohm—⅓ w.—10%
R2	1303	500M ohm—⅓ w.
R3	13020	100M ohm
R4	13012	50M ohm—⅓ w.
R5	13026	1000 ohm—⅓ w.
R6	130232	25M ohm—⅓ w.
R7	13026	1000 ohm—⅓ w.
R8	13019	1 megohm—⅓ w.
R9	13097	200 ohm—⅓ w.
R10	13012	50M ohm—⅓ w.
R11	130304	12M ohm—2 watt
R12	13017	10M ohm—⅓ w.
R13	130299	10 ohm—⅓ w.
R14	13017	10M ohm—⅓ w.
R15	13020	100M ohm—⅓ w.
R16	13023	2M ohm—⅓ w.
R17	1304	3 megohm—⅓ w.
R18	1304	3 megohm—⅓ w.
R19	101205	1 megohm volume control
R20	130225	15 megohm—⅓ w.
R21	130303	35 ohm—⅓ w.
R22	13012	50M ohm—⅓ w.
R23	101206	150M ohm tone control
R24	130227	250 ohm—1 watt
R25	1302	75M ohm—⅓ w.
R26	13017	10M ohm—⅓ w.
		CONDENSERS
C	102121	3 gang variable condenser
C1	10090	.02 x 400 v.
C2	124118	S.W. Antenna Trimmer
C3	124118	M.W. Antenna Trimmer
C4	124118	B.C. Antenna Trimmer
C5	10013	.05 x 400 v.
C6	12938	.00005 mica
C7	10090	.02 x 400 v.
C8	10090	.02 x 400 v.
C9	10090	.02 x 400 v.
C10	1009	.05 x 200 v.
C11	124119	B.C. R.F. Trimmer
C12	124119	S.W. R.F. Trimmer
C13	124119	M.W. R.F. Trimmer
C14	10013	.05 x 400 v.
C15	124119	S.W. Oscillator Trimmer
C16	124119	M.W. Oscillator Trimmer
C17	12962	.00003 Mica
C18	124119	B.C. Oscillator Trimmer
C19	10025	.002 x 600 v.
C20	124119	B.C. Padding Condenser
C21	129149	.0028 Compression M.W. Pad
C22	129105	.0035 Compression S.W. Pad
C23	12959	.0003 mica
C24	11981	16 uf. lytic x 400 w. v.
C25	1001	.1 x 400 v.
C26	119100	30 uf. lytic x 450 w. v.
C27	1295	.0001 mica
C28	11991	40 uf. lytic x 25 w. v.
C29	119100	30 uf. lytic x 450 w. v.
C30	10025	.002 x 600 v.
C31	12912	.00025 mica
C32	10026	.02 x 400 v.
C33	10097	.02 x 600 v.
C34	10078	.01 x 200 v.
C35	119100	40 uf. lytic—25 w. v.
C36	10013	.05 x 400 v.
		C26, C29, and C35 in same unit.
T1	111156	S.W. M.W. Ant. Coil
T2	111158	B.C. Antenna Coil
T3	10955	S.W. M.W. R. F. Coil
T4	10956	B.C. R.F. Coil
T5	110140	B.C. S.W. Osc. Coil
T6	110138	M.W. Oscillator Coil
T7	108165	1st I. F. Input Coil
T8	108119	2nd I. F. Output Coil
T9	10598	Output Transformer
T10	104181	Universal Transformer
	114179	8" P. M. Speaker
		or
	114186	12" P. M. Speaker
L1	10597B	"B" Filter Choke
S1	12595	Wave Band Switch
S2		On & Off Switch
S3	12570	Radio Phono Switch
P1	10794	(2) Pilot Lights - T44

BOTTOM VIEW OF CHASSIS

VOLTAGES MEASURED WITH 1000 OHM PER VOLT VOLTMETER BETWEEN SOCKET TERMINALS AND CHASSIS.

[A] CANNOT BE READ WITH VOLTMETER.
[B] 5 VOLTS A.C. BETWEEN PINS 2 & 8
[C] USING 250 VOLT SCALE ON VOLTMETER





REAR OF CHASSIS

MODELS 708-391, 708-398, 708-378 etc BELMONT RADIO CORP.
Chassis 708, Series C
Ser. No. 0C375300 up
MODEL 716, Series A

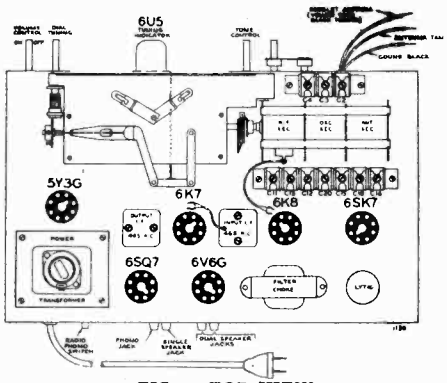


FIG. 1—TOP VIEW

MODEL 708, Series C

Serial No. 0C375300

and up.

SERVICE NOTES:

Voltages taken from different points of circuit to chassis are measured with volume control full on, all tubes in their sockets and speaker connected, with a volt meter having a resistance of 1000 ohms per volt.

IN ORDER TO PREVENT SIGNAL FROM ACTING UPON AVC AND AFFECTING ACCURACY OF VOLTAGE MEASURMENTS, AERIAL AND GROUND LEADS SHOULD BE SHORT CIRCUITED WHILE MAKING MEASUREMENTS.

Excessive hum, stuttering, low volume and a reduction in all D. C. voltages is usually caused by a shorted electrolytic condenser; open by-pass condensers frequently cause oscillation and distorted tone.

To check for open by-pass condensers, shunt each condenser with another condenser of the same capacity and voltage rating, which is known to be good, until the defective unit is located.

ALIGNMENT PROCEDURE

- Tone control—in treble position.
- Volume control—Maximum all adjustments.
- Connect radio chassis to ground post of signal generator with a short heavy lead.
- Connect dummy antenna value in series with generator output lead.
- Connect output meter across primary of output transformer.
- Allow chassis and signal generator to "heat up" for several minutes.

The following equipment is required for aligning.

- An all wave signal generator which will provide an accurately calibrated signal at the test frequencies as listed.
- Output indicating meter.
- Non-metallic screwdriver.
- Dummy antennas—.1 mf., 200 mmf. 400 ohms.

BAND	SIGNAL GENERATOR Frequency Setting	Dummy Antenna	Connection to Radio	Position of Band Switch	Variable Condenser Setting	Trimmers Adjusted (in Order Shown)	Trimmer Function	Adjustment
I. F.	465 Kc.	.1 MFD.	Grid of 6K7 I. F. Tube	Broadcast	Rotor full open (Plates out of mesh)	Two trimmers on top (See Fig. 1)	Output I. F.	Adjust to maximum output
	465 Kc.	.1 MFD.	Grid of 6K8	Broadcast (Extreme Left Rotation)	Rotor full open (Plates out of mesh)	Two trimmers on top (See Fig. 1)	Input I. F.	Adjust to maximum output
SHORT WAVE BAND	23 Mc.	400 ohms	Antenna lead	Short Wave (Extreme Right Rotation)	Set Dial at 23 MC	Trimmer (C15) (See Fig. 3)	Short wave oscillator	See Note "A" Adjust to maximum output
	23 Mc.	400 oh	Antenna lead	Short Wave (Extreme Right Rotation)	Dial Set at 23 MC	Trimmer (C2, C12) (See Fig. 3)	Short wave antenna and R. F.	See Note "B" Adjust to maximum output
MEDIUM WAVE BAND	6.5 Mc.	400 ohms	Antenna lead	Medium Wave	Set Dial at 6.5 MC	Trimmer (C16) (See Fig. 3)	Medium wave oscillator	Adjust to maximum output
	6.5 Mc.	400 ohms	Antenna lead	Medium Wave	Set Dial at 6.5 MC	Trimmer (C3, C13) (See Fig. 3)	Medium wave antenna and R. F.	Adjust to maximum output
BROAD-CAST BAND	2000 Kc.	200 mmf.	Antenna lead	Broadcast (Extreme Left Rotation)	Rotor full open (Plates out of mesh)	Trimmer (C18) (See Fig. 3)	Broadcast oscillator	Adjust to maximum output
	1800 Kc.	200 mmf.	Antenna lead	Broadcast	Set Dial at 1800 Kc.	Trimmer (C4, C11) (See Fig. 3)	Broadcast antenna and R. F.	Adjust to maximum output
	550 Kc.	200 mmf.	Antenna lead	Broadcast	Set Dial at 550 Kc.	Trimmer (C20) (See Fig. 3)	Broadcast oscillator series pad	Adjust to maximum rock dial. (See note "C")

NOTE "A"—It is extremely necessary when making this adjustment that the fundamental oscillator signal be tuned in and not the image frequency which will fall below the fundamental. As an example of this a fundamental 23 megacycle signal can be tuned in not only at 23 on the dial, but also at approximately 22 megacycles.

NOTE "B"—When adjusting the antenna and R.F. trimmers be sure and "follow" the signal to exact resonance by slight readjustment of the gang condenser as trimmer reaction on oscillator frequency is quite noticeable at high frequencies.

NOTE "C"—Turn the dial back and forth slightly (rock) and adjust trimmer until the peak of greatest intensity is obtained.

Attenuate the signal from the signal generator to prevent the leveling-off action of the AVC.

After each range is completed, repeat the procedure as a final check.

Test Frequencies Used.	Kilocycles	Meters
I. F.	465	645.1
Short Wave	23000	13
Medium Wave	6500	46.1
Broadcast	2000	150
	1800	166.6
	550	545.4

BAND	FREQUENCY RANGE
Broadcast	500—2,000 Kc. (600—150 Meters)
Medium	1.95—7.0 Mc. (153.8—42.8 Meters)
Short Wave	6.9—24.0 Mc. (43.4—12.5 Meters)
Power Consumption	65 Watts at 117 Volts
Power Output	4 Watts Undistorted, 6.5 Watt Maximum

MODEL 716, Series A

ALIGNMENT PROCEDURE

CAUTION: A—D.C. reading vacuum tube voltmeter must be used to make some of the following adjustments.

- Volume control—Minimum all adjustments.
- Connect radio chassis to ground post of signal generator with a short heavy lead.
- Connect dummy antenna value in series with generator output lead.
- Allow chassis and signal generator to "heat up" for several minutes.

The following equipment is required for aligning:

- An all wave signal generator which will provide an accurately calibrated signal at the test frequencies as listed.
- Vacuum tube voltmeter.
- Non-metallic screwdriver.
- Dummy antennas—.1 mf., 400 ohms.

BAND	SIGNAL GENERATOR Frequency Setting	Dummy Antenna	Connection to Radio	Dial Pointer Setting	Trimmers Adjusted In Order Shown	Trimmer Function	Adjustment
I. F.	4.3 Mc.	.1 MFD.	Grid of 6SK7 No. 2	45 Mc.	Two trimmers on top of T5	Limiter I. F.	Adjust to maximum voltage (See Note "A")
	4.3 Mc.	.1 MFD.	Grid of 6SA7	45 Mc.	Two trimmers on top of T3	Input I. F.	Adjust to maximum voltage (See Notes "A" and "B")
	4.3 Mc.	.1 MFD.	Grid of 6SK7 No. 1	45 Mc.	Two trimmers on top of T4	2nd I. F.	Adjust to maximum voltage (See Notes "A" and "C")
	4.3 Mc.	.1 MFD.	Grid of 6B8	45 Mc.	Trimmer with red dot on top of T6	Disc. I. F.	Adjust to zero signal (See Note "D")
	4225 Kc. and 4375 Kc.	.1 MFD.	Grid of 6B8	45 Mc.	Trimmer without red dot on top of T6	Disc. I. F.	See Notes "D" and "E"
R. F.	50.5 Mc.	400 Ohms	Antenna Lead	50.5 Mc.	CS C4	Osc. Ant.	Adjust to maximum voltage (See Note "A")

NOTE "A". Connect a D.C. reading vacuum tube voltmeter in parallel with C24. Use only enough signal to obtain a medium scale deflection. Use an unmodulated signal.

NOTE "B". Before aligning this stage one trimmer of T4 must be adjusted to maximum capacity and the other adjusted to minimum capacity.

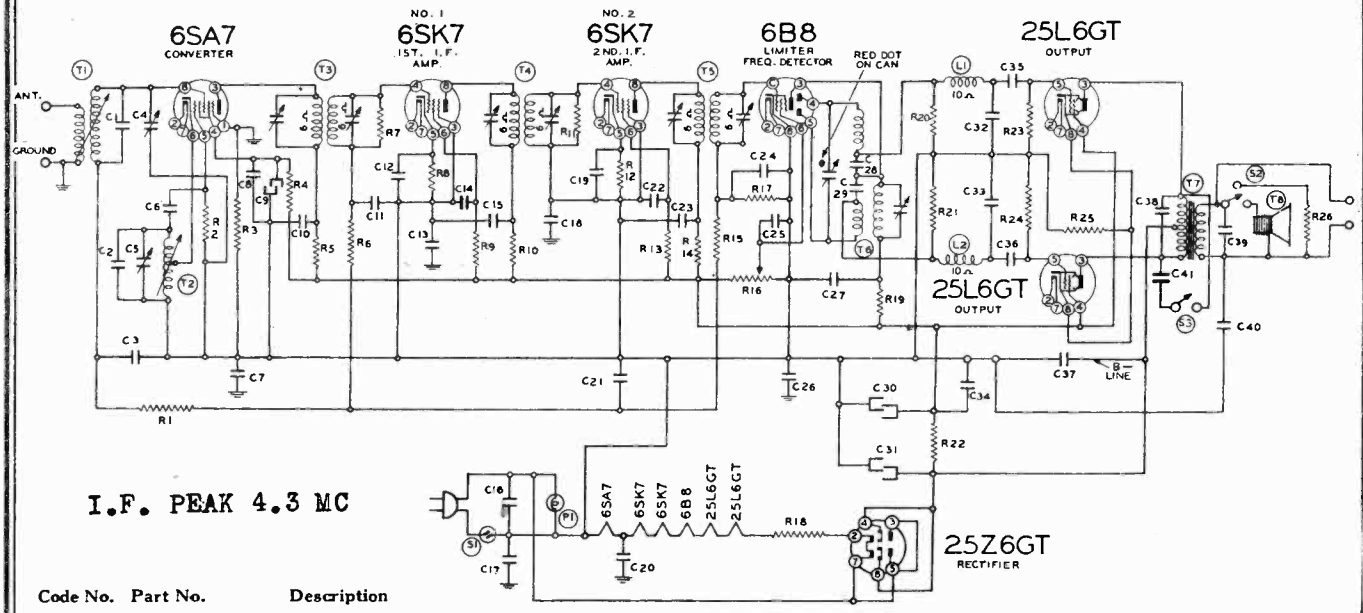
NOTE "C". Do not realign or "Go Over" the I.F. adjustments after the above procedure has been followed or unsymmetrical wave shape will result.

NOTE "D". Connect an output meter across the speaker voice coil. Use a modulated signal.

NOTE "E". Adjust trimmer so that the same output reading will be obtained with the signal generator set at both 4225 K.C. and 4375 K.C., that is, 75 K.C. each side of the I.F. frequency. Check adjustment of trimmer with red dot after this adjustment.

MODEL 716, Series A

BELMONT RADIO CORP.



I.F. PEAK 4.3 MC

Code No. Part No. Description

RESISTORS

R1	BE13020	100M ohm—⅓ w.
R2	BE1301	25M ohm—⅓ w.
R3	BE130100	150M ohm—⅓ w.
R4	BE13023	2M ohm—⅓ w.
R5	BE13023	2M ohm—⅓ w.
R6	BE13020	100M ohm—⅓ w.
R7	BE130337	110M ohm—⅓ w.
R8	BE130239	250 ohm—⅓ w.
R9	BE13023	2M ohm—⅓ w.
R10	BE13023	2M ohm—⅓ w.
R11	BE130338	175M ohm—⅓ w.
R12	BE130239	250 ohm—⅓ w.
R13	BE13023	2M ohm—⅓ w.
R14	BE13023	2M ohm—⅓ w.
R15	BE13019	1 megohm—⅓ w.
R16	BE101247	50M ohm—Volume control
R17	BE130341	200M ohm—⅓ w.
R18	BE10664	60 ohm—6 watt
R19	BE13023	2M ohm—⅓ w.
R20	BE130102	500M ohm—⅓ w.
R21	BE130102	500M ohm—⅓ w.
R22	BE130335	350 ohm—1 watt
R23	BE130102	500M ohm—⅓ w.
R24	BE130102	500M ohm—⅓ w.
R25	BE130336	75 ohm—1 watt
R26	BE10665	3 ohm—1 watt

CONDENSERS

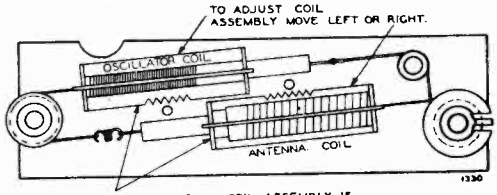
C1	BE129174	.00001 ceramicon
C2	BE129173	.000035 ceramicon
C3	BE10078	.01 x 200 v.
C4	BE124164	Antenna trimmer
C5	BE124164	Oscillator trimmer
C6	BE1295	.0001 mica
C7	BE10093	.05 x 200 v.
C8	BE10078	.01 x 200 v.
C9	BE119122	10 mfd. x 150 w. v. lytic
C10	BE10078	.01 x 200 v.
C11	BE10078	.01 x 200 v.
C12	BE10078	.01 x 200 v.
C13	BE10093	.05 x 200 v.
C14	BE10078	.01 x 200 v.
C15	BE10078	.01 x 200 v.
C16	BE1001	.1 x 400 v.
C17	BE10093	.05 x 200 v.
C18	BE10093	.05 x 200 v.
C19	BE10078	.01 x 200 v.
C20	BE10093	.05 x 200 v.
C21	BE10020	.1 x 200 v.
C22	BE10078	.01 x 200 v.
C23	BE10078	.01 x 200 v.
C24	BE1295	.0001 mica
C25	BE10020	.1 x 200 v.
C26	BE10093	.05 x 200 v.
C27	BE10078	.01 x 200 v.
C28	BE12921	.0002 mica
C29	BE12921	.0002 mica
C30	BE119121	60 mfd. x 150 w. v. lytic
C31	BE119121	40 mfd. x 150 w. v. lytic
C32	BE1295	.0001 mica
C33	BE1295	.0001 mica
C34	BE10078	.01 x 200 v.
C35	BE10078	.01 x 200 v.
C36	BE10078	.01 x 200 v.
C37	BE10093	.05 x 200 v.
C38	BE10011	.0. x 400 v.
C39	BE10078	.01 x 200 v.
C40	BE10078	.01 x 200 v.
C41	BE10026	.02 x 400 v.

C4 and C5 in same unit
C30 and C31 in same unit

PARTS

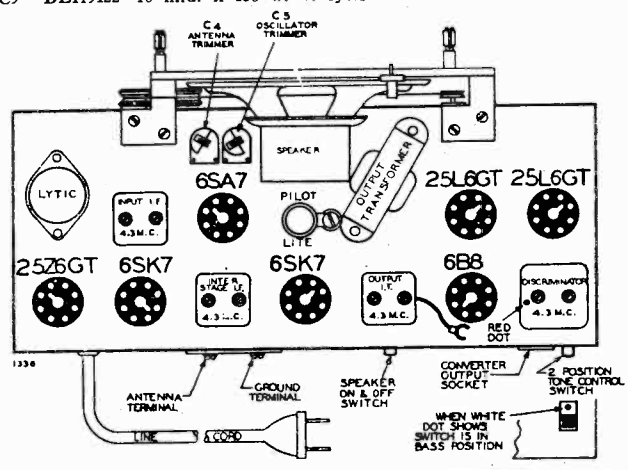
T1	BE1365	Antenna coil Permeability tuning Assembly complete
T2		Oscillator coil
T3	BE108189	Input I.F. coil
T4	BE108190	Interstage I.F. coil
T5	BE108191	Output I.F. coil
T6	BE108192	Discriminator coil
T7	BE105126	Output transformer
T8	BE114235	5" P.M. speaker
L1	BE12312	R.F. choke coil
L2	BE12312	R.F. choke coil
S1		On-off switch on volume control
S2	BE12561	On-off speaker switch
P1	BE107290	Pilot lite 110 v.—7½ watt
S3	BE12588B	Tone control switch

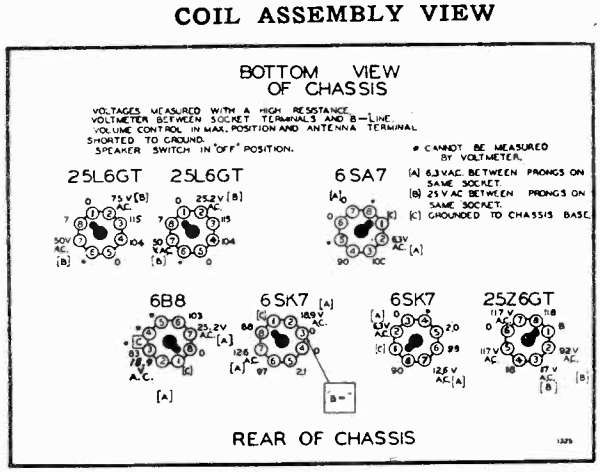
VIEW LOOKING AT BOTTOM OF CHASSIS



NOTE "A" THE ANTENNA COIL ASSEMBLY IS MADE SO THAT IT IS MOVABLE LEFT OR RIGHT. WHEN MAKING THE ADJUSTMENT AS GIVEN IN THE ALIGNMENT PROCEDURE MOVE THE COIL ASSEMBLY VERY SLOWLY.

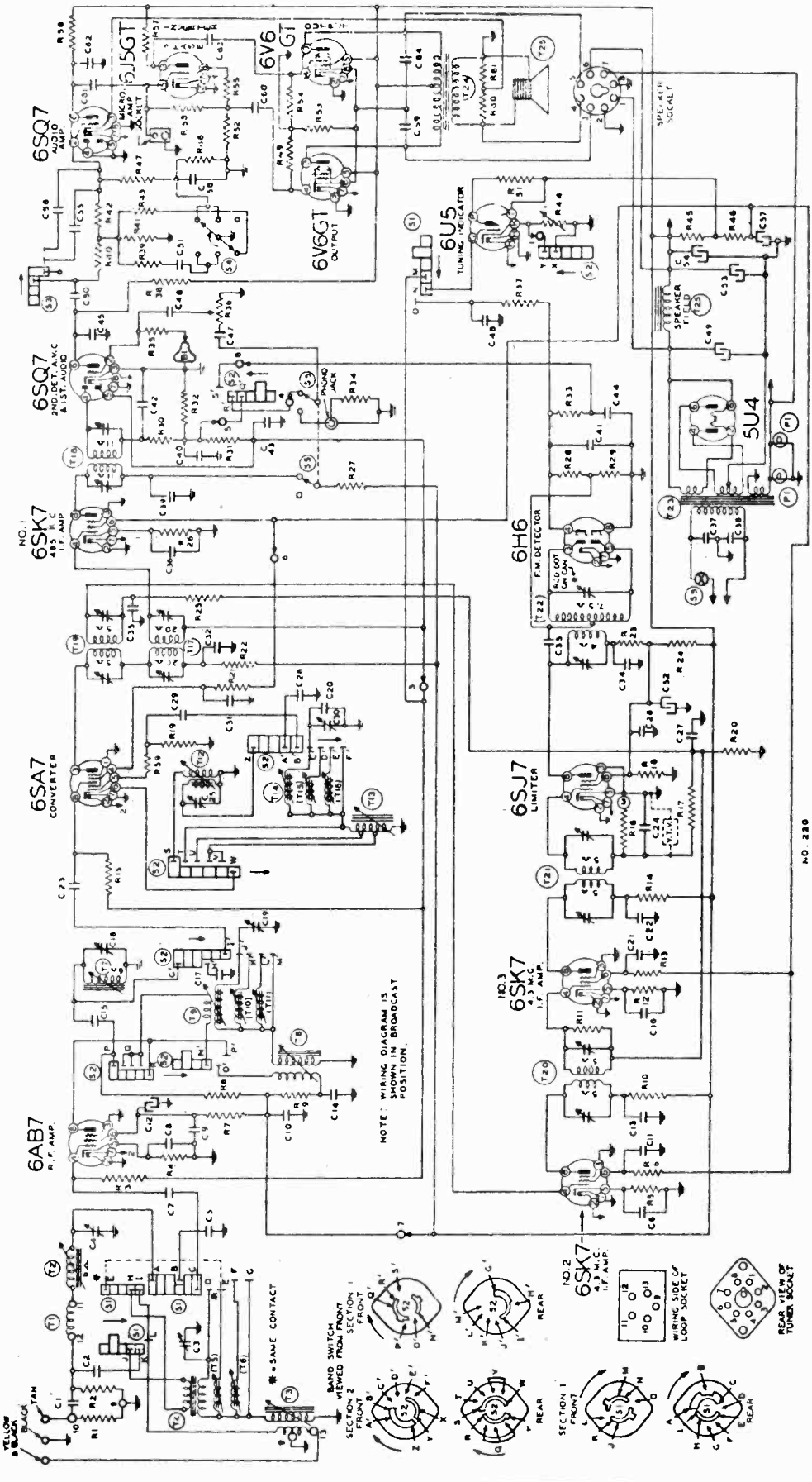
COIL ASSEMBLY VIEW





MODEL 1401, Series A
MODEL 1401, Series B

BELMONT RADIO CORP.



MODEL 1401, Series A
MODEL 1401, Series B

BELMONT RADIO CORP.

Code No.	Part No.	Description

PARTS

T1	BE111236	Loop antenna assembly
T2	BE111195	B.C. antenna coil
T3	BE111232	F.M. antenna coil
T4	BE111233	9 mc. antenna coil
T5	BE111234	12 mc. antenna coil
T6	BE111235	15 mc. antenna coil
T7	BE10962	B.C. R.F. coil
T8	BE10967	F.M. R.F. coil
T9	BE10964	9 mc. R.F. coil
T10	BE10966	12 mc. R.F. coil
T11	BE10965	15 mc. R.F. coil
T12	BE110161	B.C. oscillator coil
T13	BE110178	F.M. oscillator coil
T14	BE110175	9 mc. oscillator coil
T15	BE110177	12 mc. oscillator coil
T16	BE110176	15 mc. oscillator coil
T17	BE108177	455 kc. input I.F. transformer
T18	BE108176	455 kc. output I.F. transformer
T19	BE108197	1st F.M. I.F. transformer
T20	BE108198	2nd F.M. I. F. transformer
T21	BE108197B	Limiter I.F. transformer
T22	BE108199	Detector I.F. transformer
T23	BE104262	Power transformer
T24	BE105115	Output transformer
T25	BE114237	12" dynamic speaker
S1	BE125148	Antenna bandswitch
S2	BE125147	R.F., oscillator, audio bandswitch
S3	BE125149	Treble switch
S4	BE125123	Bass switch
S5	BE125125	Off-radio-phono switch
P1	BE10794	2 6-8 volts pilot light T44
B1	BE11622	Bias cell 1-252

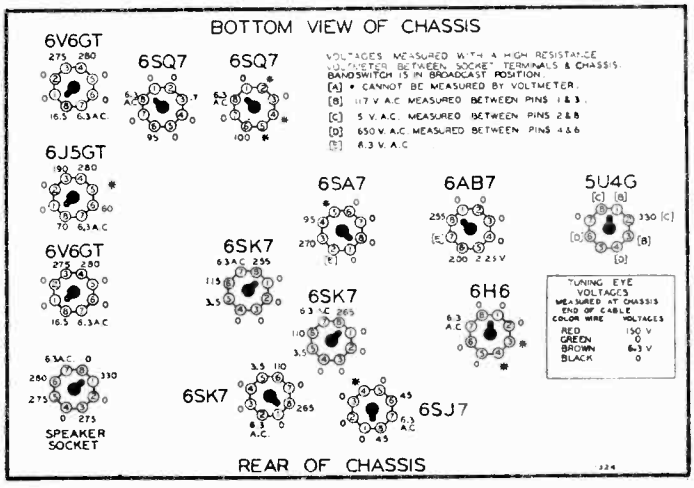
RESISTORS

R1	BE130232	25M ohm—½ w.
R2	BE130232	25M ohm—½ w.
R3	BE13019	1 megohm—½ w.
R4	BE13084	200 ohm—½ w.
R5	BE130339	350 ohm—½ w.
R6	BE13023	2M ohm—½ w.
R7	BE13076	30M ohm—½ w.
R8	BE130235	1500 ohm—½ w.
R9	BE13023	2M ohm—½ w.
R10	BE13023	2M ohm—½ w.
R11	BE130342	350M ohm—½ w.
R12	BE130339	350M ohm—½ w.
R13	BE13023	2M ohm—½ w.
R14	BE13023	2M ohm—½ w.
R15	BE13019	1 megohm—½ w.
R16	BE130172	250M ohm—½ w.
R17	BE13019	1 megohm—½ w.
R18	BE130149	15M ohm—½ w.
R19	BE130232	25M ohm—½ w.
R20	BE13020	100M ohm—½ w.
R21	BE13023	2M ohm—½ w.
R22	BE13023	2M ohm—½ w.
R23	BE13026	1M ohm—½ w.
R24	BE130291	50M ohm—1 w.
R25	BE130172	250M ohm—½ w.
R26	BE13081	250 ohm—½ w.
R27	BE13023	2M ohm—½ w.
R28	BE130163	400M ohm—½ w.
R29	BE130163	400M ohm—½ w.
R30	BE13094	50M ohm—½ w.
R31	BE13019	1 megohm—½ w.
R32	BE130172	250M ohm—½ w.
R33	BE13019	1 megohm—½ w.
R34	BE1303	500M ohm—½ w.
R35	BE13019	1 megohm—½ w.
R36	BE101249	1 megohm—volume control
R37	BE1304	3 megohm—½ w.
R38	BE130172	250M ohm—½ w.
R39	BE130232	25M ohm—½ w.
R40	BE13080	150M ohm—½ w.
R41	BE130172	250M ohm—½ w.
R42	BE130309	350M ohm—½ w.
R43	BE13066	75M ohm—½ w.
R44	BE101248	25M ohm—tuning eye control
R45	BE130319	10M ohm—2 w.
R46	BE130199	1500 ohm—1 w.
R47	BE13080	150M ohm—½ w.
R48	BE130146	2 megohm—½ w.
R49	BE1303	500M ohm—½ w.
R51		500M ohm—in tuning eye cable
R52	BE13094	50M ohm—½ w.
R53	BE130317	250 ohm—2 w.
R54	BE1303	500M ohm—½ w.
R55	BE130218	5M ohm—½ w.
R56	BE130172	250M ohm—½ w.
R57	BE13094	50M ohm—½ w.
R58	BE1303	500M ohm—½ w.
R59	BE130215	25 ohm—½ w.
R60	BE13082	10M ohm—½ w.
R61	BE130235	1500 ohm—½ w.

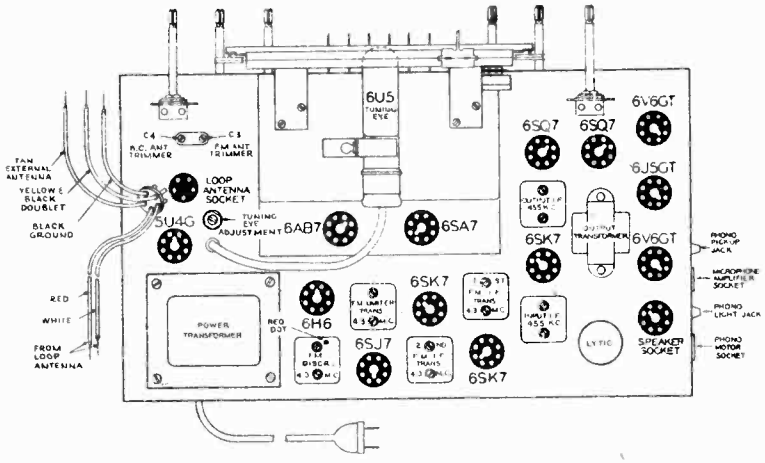
CONDENSERS

C1	BE1292	.0005 mica
C2	BE10047	.002-600 v.
C3	BE124163	F.M. antenna trimmer
C4	BE124163	B.C. antenna trimmer
C5	BE129167	.0003 silver mica
C6	BE10078	.01-200 v.
C7	BE1292	.0005 mica
C8	BE10020	.1-200 v.
C9	BE1001	.1-400 v.
C10	BE10074	.1-400 v.
C11	BE100-11	.01-400 v.
C12	BE119-69	16-350 v. lytic
C13	BE100-11	.01-400 v.
C14	BE100-26	.02-400 v.
C15	BE129168	.00001 mica
C16	BE10078	.01-200 v.
C17	BE129167	.0002 silver mica
C18	BE124139	B.C. R.F. trimmer
C19	BE124162	F.M. R.F. trimmer
C20	BE129168	.00001 mica
C21	BE10011	.01-400 v.
C22	BE10011	.01-400 v.
C23	BE1292	.0005 mica
C24	BE12938	.00005 mica
C25	BE124161	B.C. oscillator trimmer
C26	BE10020	.1-200 v.
C27	BE100-9	.05-200 v.
C28	BE129175	.000135 silver mica
C29	BE1295	.0001 mica
C30	BE124145	F.M. oscillator trimmer
C31	BE10074	.1-400 v.
C32	BE100-11	.01-400 v.
C33	BE1295	.0001 mica
C34	BE100123	.02-200 v.
C35	BE100123	.02-200 v.
C36	BE100-20	.1-200 v.
C37	BE10061	.02-600 v.
C38	BE10061	.02-600 v.
C39	BE1001	.1-400 v.
C40	BE129161	.0001 mica
C41	BE1295	.0001 mica
C42	BE129161	.0001 mica
C43	BE10020	.1-200 v.
C44	BE1295	.0001 mica
C45	BE12912	.00025 mica
C46	BE10019	.006-600 v.
C47	BE10020	.1-200 v.
C48	BE1009	.05-200 v.
C49	BE119112	30 mfd. x 450 w.v. lytic
C50	BE1001	.1-400 v.
C51	BE100118	.008-600 v.
C52	BE119112	10 mfd. x 350 w.v. lytic
C53	BE119-112	30 mfd. x 450 w.v. lytic
C54	BE119-73B	16 mfd. x 400 w.v. lytic
C55	BE12938	.00005 mica
C56	BE129166	.000125 mica
C57	BE119-69	16 mfd. x 350 w.v. lytic
C58	BE100-12	.003-600 v.
C59	BE100-65	.015-600 v.
C60	BE1009	.05-200 v.
C61	BE10013	.05-400 v.
C62	BE12912	.00025 mica
C63	BE10013	.05-400 v.
C64	BE10065	.015-600 v.

C12 and C57 are in same unit.
C49 and C52 and C53 are in same unit.



VOLTAGE CHART



SETTING PUSHBUTTONS

Make a list of your 6 favorite stations. Push out the call letters of these stations from the call letter sheets supplied. Insert a call letter in the slot on top of each pushbutton.

Next pull one of the pushbuttons all the way out as far as it will come (pull, with fingers on top and bottom of button). Now tune in the station you want with the tuning knob—Tune back and forth until the station is clear and distinct. Now push the button hard all the way in to lock the station in place. (push directly on front of button) Continue setting each pushbutton in the same way. Pressing the proper button will now tune the station you want. If it does not do so you did not push the button hard enough to lock in place when setting up the station.

To change stations simply repeat the procedure above.

FOR DATA ON SEEBURG TYPE B AUTOMATIC RECORD CHANGER, SEE RIDER'S "AUTOMATIC RECORD CHANGERS AND RECORDERS".

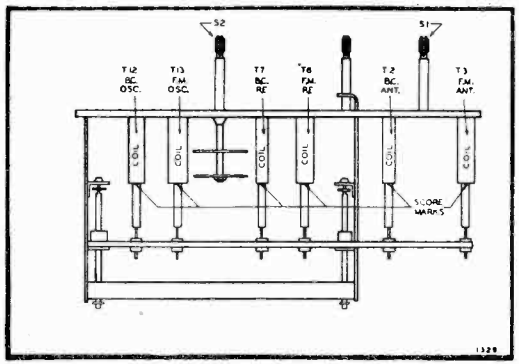
ALIGNING INSTRUCTIONS

CAUTION:—No aligning adjustments should be attempted without first thoroughly checking over all other possible causes of trouble, such as poor installations, open or grounded antenna systems, low line voltage, defective tubes, condensers and resistors. In order to properly align this radio, the chassis should be removed from the cabinet. Although the short wave bands on this radio are of the band spread type the Alignment Procedure is not difficult. However because each short wave scale covers only a small portion of the short wave spectrum you must do the work carefully and your oscillator must be accurate.

Do not realign the band spread scales unless you are positive they are out of adjustment. When adjustment is necessary proceed as follows.

Rotate each iron core until the fine score marks are even with the edge of the coil forms.

You are now ready to continue with the trimmer adjustments as shown on the alignment chart.



IRON CORE ADJUSTMENT VIEW

- Volume control—Minimum all adjustments.
- Connect radio chassis to ground post of signal generator with a short heavy lead.
- Connect dummy antenna value in series with generator output lead.
- Allow chassis and signal generator to "heat up" for several minutes.

The following equipment is required for aligning:
- An all wave signal generator which will provide an accurately calibrated unmodulated signal at the test frequencies as listed.
- Vacuum Tube Voltmeter.
- Non-metallic screwdriver.
- Dummy antennas—.1 mf. and 100 ohms.

BAND	SIGNAL GENERATOR Frequency Setting	Dummy Antenna	Connection to Radio	Position of Band Switch	Dial Pointer Setting	Trimmers Adjusted in Order Shown	Trimmer Function	Adjustment
F. M. I. F.	4.3 Mc.	.1 MFD.	Grid of 6SK7 No. 3	F.M.	45 Mc.	Two Trimmers on Top of T21	Limiter I. F. Coil	Adjust to Maximum Voltage (See Note "A")
	4.3 Mc.	.1 MFD.	Grid of 6SA7	F.M.	45 Mc.	Two Trimmers on Top of T19	Input I. F. Coil	Adjust to Maximum Voltage (See Note "A" and "B")
	4.3 Mc.	.1 MFD.	Grid of 6SK7 No. 2	F.M.	45 Mc.	Two Trimmers on Top of T20	2nd I. F. Coil	Adjust to Maximum Voltage (See Note "A" and "C")
	4.3 Mc.	.1 MFD.	Grid of 6SJ7	F.M.	45 Mc.	Trimmer with red dot on top of T22	Disc. I. F. Coil	Adjust to zero voltage (See Note "D")
	4225 and 4375 K.C.	.1 MFD.	Grid of 6SJ7	F.M.	45 Mc.	Trimmer without red dot on top of T22	Disc. I. F. Coil	See Notes "D" and "E"
F. M. R. F.	50.5 Mc.	100 ohms	Doublet Antenna Lead	F.M.	50.5 Mc.	(See Trimmer View) C30 (See Trimmer View) C19 (See Trimmer View) C3	Osc. R. F. Ant.	Adjust to Maximum Voltage (See Note "A")

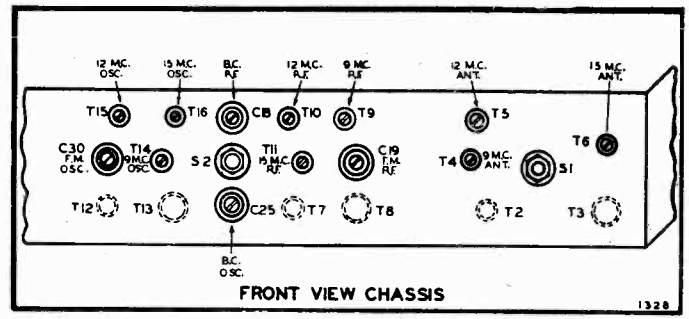
NOTE "A". Connect a D.C. reading vacuum tube voltmeter in parallel with C24. Use only enough signal to get a medium scale deflection.

NOTE "B". Before aligning this stage, one trimmer of T20 must be adjusted to maximum capacity and the other adjusted to minimum capacity.

NOTE "C". Do not realign or "Go over" the I.F. adjustments after the above procedure has been followed or an unsymmetrical wave shape will result.

NOTE "D". Connect across prongs 4 and 8 of 6H6 socket, a D.C. reading vacuum tube voltmeter.

NOTE "E". Adjust trimmer so that the same voltage reading will be obtained with the signal generator set at both 4225 K.C. and 4375 K.C. One of these frequencies will produce a negative voltage and the voltmeter leads must be reversed if a zero-center meter is not available.



TRIMMER VIEW

I. F.—R. F.—Alignment

CAUTION: A D.C. reading vacuum tube voltmeter must be used to make the following adjustments.

- Tone control—Treble
- Volume control—Maximum all adjustments.
- Connect radio chassis to ground post of signal generator with a short beavy lead.
- Connect dummy antenna value in series with generator output lead.
- Connect output meter across primary of output transformer.
- Allow chassis and signal generator to "heat up" for several minutes.

The following equipment is required for aligning:

- An all wave signal generator which will provide an accurately calibrated signal at the test frequencies as listed.
- Output indicating meter.
- Non-metallic screwdriver.
- Dummy antennas—.1 mf., 200 mmf., and 400 ohms.

BAND	SIGNAL GENERATOR Frequency Setting	Dummy Antenna	Connection to Radio	Position of Band Switch	Dial Pointer Setting	Trimmers Adjusted in Order Shown	Trimmer Function	Adjustment
I. F.	455 Kc.	.1 MFD.	Grid of 6SK7 No. 1	Broadcast	Set Dial at 1600 Kc.	Two Trimmers on Top of T18	Output I. F.	Adjust to maximum output
	455 Kc.	.1 MFD.	Grid of 6SA7	Broadcast	Set Dial at 1600 Kc.	Two Trimmers on Top of T17	Input I. F.	Adjust to maximum output
BROAD-CAST BAND	1600 Kc.	200 mmf.	Antenna lead	Broadcast	Set Dial at 1600 Kc.	(See Trimmer View) C25 (See Trimmer View) C18 (See Trimmer on Top) C4	Osc. R. F. Ant.	Adjust to maximum output
	1400 Kc.	200 mmf.	Antenna lead	Broadcast	Set Dial at 1400 Kc.	Rotate Core T7 Rotate Core T2 (See Iron Core Adjustment View)	R. F. Ant.	Adjust to maximum output

NOTE: The F. M., I. F. and R. F. band **MUST** be aligned before the three standard short wave bands can be properly aligned. The osc. and R. F. adjustments must be done simultaneously for each of the standard short wave bands.

31 METER BAND	9.6 Mc.	400 ohms	Antenna lead	31M	Set Dial at 9.6 Mc.	(See Trimmer View) T14 (See Trimmer View) T9 (See Trimmer on Top) T4	Osc. R. F. Ant.	Adjust to maximum output
25 METER BAND	11.8 Mc.	400 ohms	Antenna lead	25M	Set Dial at 11.8 Mc.	(See Trimmer View) T15 (See Trimmer View) T10 (See Trimmer View) T5	Osc. R. F. Ant.	Adjust to maximum output
19 METER BAND.	15.2 Mc.	400 ohms	Antenna lead	19M	Set Dial at 15.2 Mc.	(See Trimmer View) T16 (See Trimmer View) T11 (See Trimmer View) T6	Osc. R. F. Ant.	Adjust to maximum output

MODEL 507, Series B

BELMONT RADIO CORP.

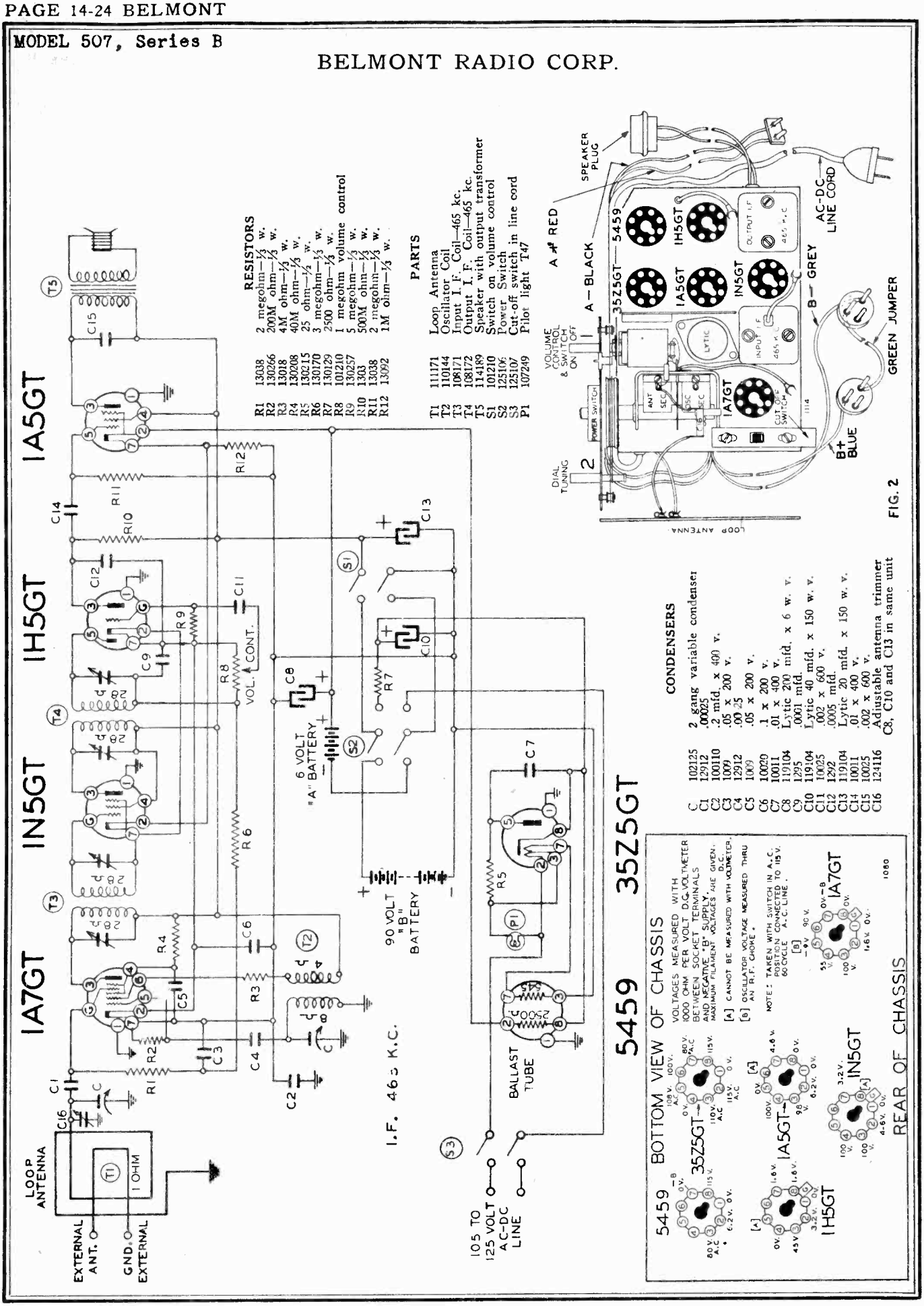


FIG. 2

RESISTORS

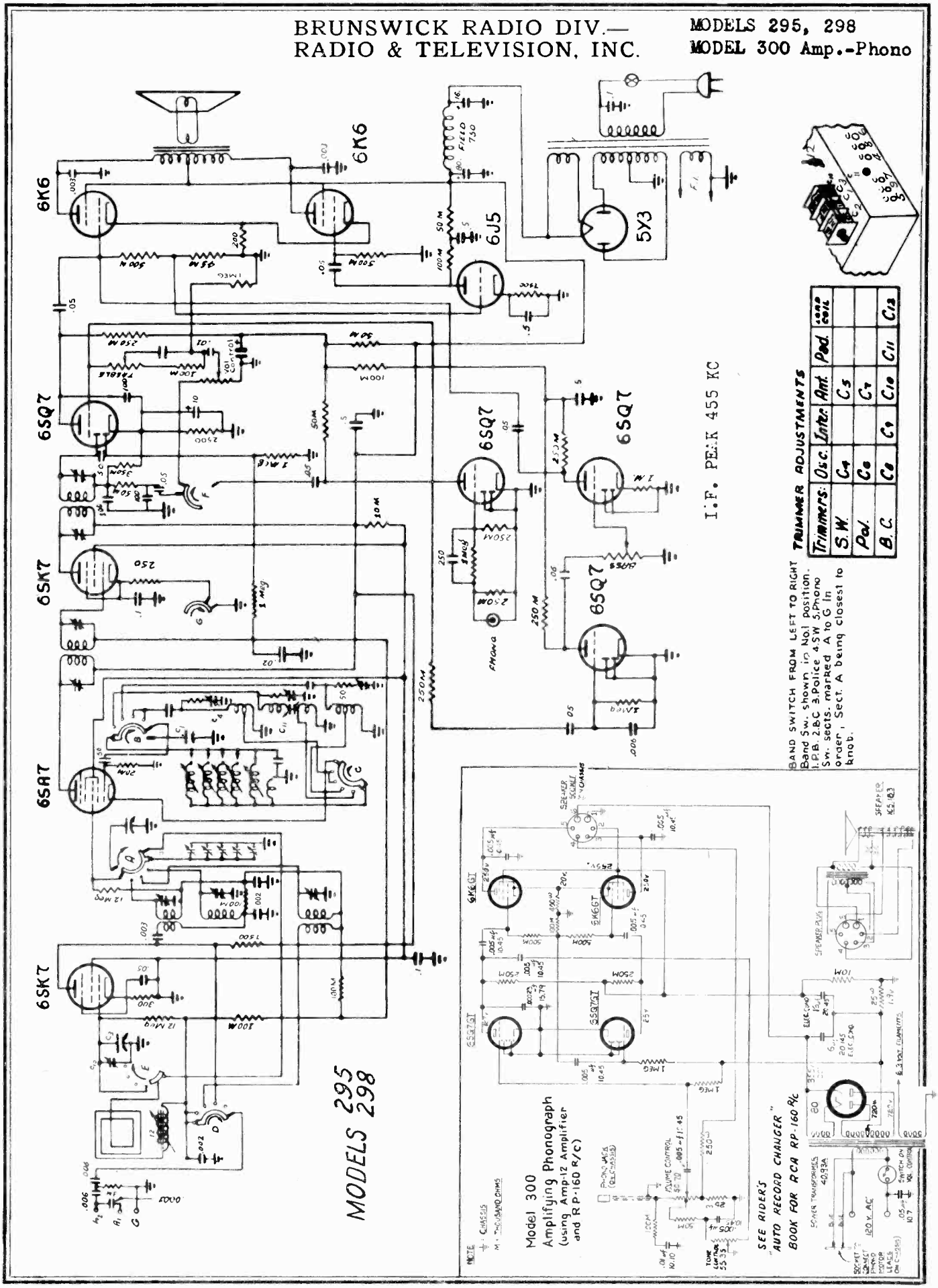
R1	13038	2 megohm—½ w.
R2	130266	200M ohm—½ w.
R3	13018	4M ohm—½ w.
R4	130208	40M ohm—½ w.
R5	130215	25 ohm—½ w.
R6	130170	3 megohm—½ w.
R7	130129	2500 ohm—½ w.
R8	101210	1 megohm volume control
R9	130257	5 megohm—½ w.
R10	1303	500M ohm—½ w.
R11	13038	2 megohm—½ w.
R12	13092	1M ohm—½ w.

PARTS

T1	111171	Loop Antenna
T2	110144	Oscillator Coil
T3	108171	Input I.F. Coil—465 kc.
T4	108172	Output I.F. Coil—465 kc.
T5	114189	Speaker with output transformer
S1	101210	Switch on volume control
S2	125106	Power Switch
S3	125107	Cut-off switch in line cord
P1	107249	Pilot light T47

CONDENSERS

C	102125	2 gang variable condenser
C1	12912	.00025
C2	100110	.2 mfd. x 400 v.
C3	1009	.05 x 200 v.
C4	12912	.00025
C5	1009	.05 x 200 v.
C6	10020	.1 x 200 v.
C7	10011	.01 x 400 v.
C8	119104	Lytic 200 mfd. x 6 w. v.
C9	1295	.0001 mfd.
C10	119104	Lytic 40 mfd. x 150 w. v.
C11	10025	.002 x 600 v.
C12	1292	.0005 mfd.
C13	119104	Lytic 20 mfd. x 150 w. v.
C14	10011	.01 x 400 v.
C15	10025	.002 x 600 v.
C16	124116	Adjustable antenna trimmer C8, C10 and C13 in same unit



MODELS 295, 298

BRUNSWICK RADIO DIV.— RADIO & TELEVISION, INC.

ALIGNMENT INSTRUCTIONS

Re-alignment of this receiver should not be attempted unless all other possible causes of faulty operation have been thoroughly investigated. An accurately calibrated signal generator which will cover the necessary wave bands, and an output meter for indicating the effect of adjustments are required.
During the alignment procedure all adjustments should be made under the following conditions:

1) Line Voltage as indicated on instruction sheet.
2) Volume & Treble controls at maximum volume positions, Bass at Minimum.
3) Minimum Input from signal generator.

I. F. Adjustment - The signal generator is set at 455KC and is connected to the grid of the converter tube (6SA7) through a .5 MFD condenser. Be sure to connect a resistor of approximately 25,000 Ohms between the converter grid and ground so that the grid circuit is at ground potential for D.C. It is necessary to disconnect the grid from the rest of the circuit.

The Input I. F. Transformer trimmers-are both adjusted for maximum output as indicated by the output meter connected across either the voice coil or the primary coil of the loud speaker.

The Output I. F. Transformer trimmers-are adjusted for maximum output as indicated on the output meter. The Input I.F. should now be rechecked for maximum response.

Short Wave - Set the band switch to the short wave band. Connect the signal generator thru a standard dummy antenna to the antenna and ground leads of the receiver. Set the generator at 17MC; turn the condenser until a response is indicated. The pointer should coincide with the 17MC mark on the dial. Adjust the short wave antenna trimmer (#5, see diagram) for maximum output while rocking the condenser gang from left to right.

POLICE BAND
With signal generator set at 6 megacycles, tune in the signal. The pointer setting should correspond with the 6MC marking on the dial. If this is not so, adjust the police oscillator trimmer (C-6, see diagram) till it does. Now adjust the police antenna trimmer (C7) for maximum output.

BROADCAST BAND
It is desirable to align this band on the loop. The signal generator is coupled to the receiver by means of a 2 or 3 turn loop. Set the band switch in the broadcast position and condenser plates completely out of mesh. Set the signal generator at 1630KC and adjust the broadcast oscillator trimmer (#8, see diagram) until a response is indicated on the output meter. The generator is now set at 1400KC. Turn the variable condenser until a response is indicated. The dial pointer should now coincide with the 1400KC mark on the dial. Now adjust the broadcast inter-stage trimmer (#9) for maximum. Set the generator at 600KC and rotate the variable condenser until a response is indicated. Adjust the broadcast oscillator padder condenser (#11) for maximum response while "Rocking" the gang condenser. The antenna loading coil (#12) is now checked for maximum response. The High Frequency adjustment should then be re-checked.

Push Button Alignment
Looking into the back of the cabinet directly behind the buttons, above the dial will be seen two rows of screws. These are painted in various colors. Viewed from the rear these are; from left to right, YELLOW, BLUE, BLUE, ORANGE, and ORANGE. Each of these may be adjusted to cover a band of frequencies as tabulated below:

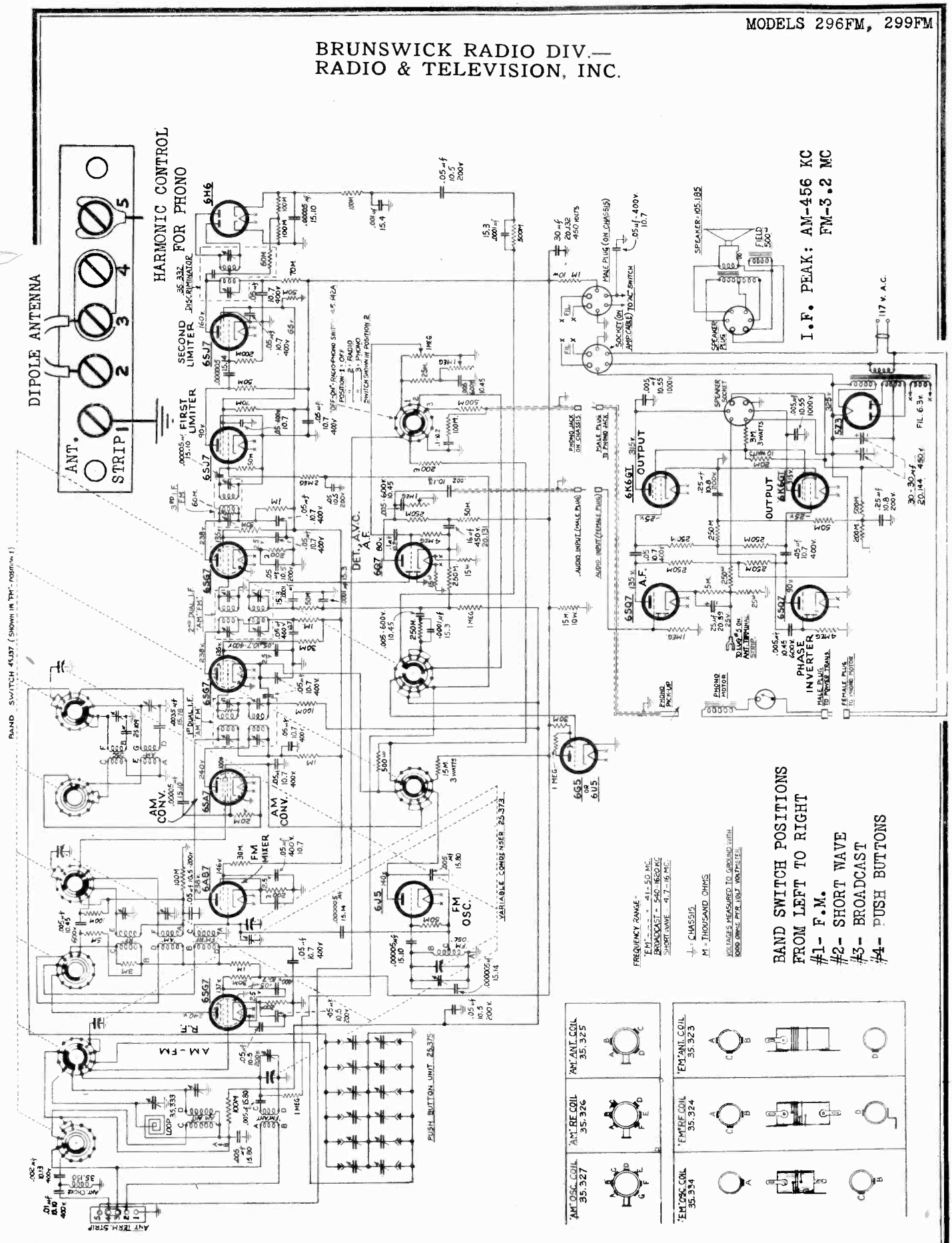
Yellow - 1130 to 1600 kilocycles
Blue - 690 to 1180 kilocycles
Orange - 540 to 950 kilocylces

The bottom row of adjusting screws are the oscillators which determine the frequency of the station to be received. The upper row is for the antenna adjustment.

The simplest procedure, when a suitable oscillator is available, is to feed the desired frequency into the antenna, depress the button; turn the oscillator screw till the signal is picked up, then reduce the output from the oscillator so that it is just audible. Now adjust the antenna trimmer for maximum. Proceed to the next button and repeat the operation.
In the absence of such equipment, turn the Band Switch for dial tuning of broadcast stations. Start at the low frequency end of the band and tune in the program of the station it is desired to receive. Note the frequency of this station. Without touching the tuning, throw the Band Switch over to the Push Button position. Depress the first button, corresponding to the orange screws. Slowly rotate the lower (oscillator) orange screw till the same program is received. Check this by switching back to dial tuning. (Broadcast position on the band switch). When this has been determined, the signal may now be clarified by carefully adjusting the trimmer of the same color (orange) directly above it. Now repeat the operation by tuning in, on the dial, the next station, of a higher frequency that it is desired to set up; and so on until all five have been aligned. Note that there are two BLUE and two ORANGE SETS of screws. Each button will cover only a range of frequencies as noted above, and therefore a group of stations falling within these limits must be selected. The antenna trimmer in each case is directly over the corresponding oscillator.

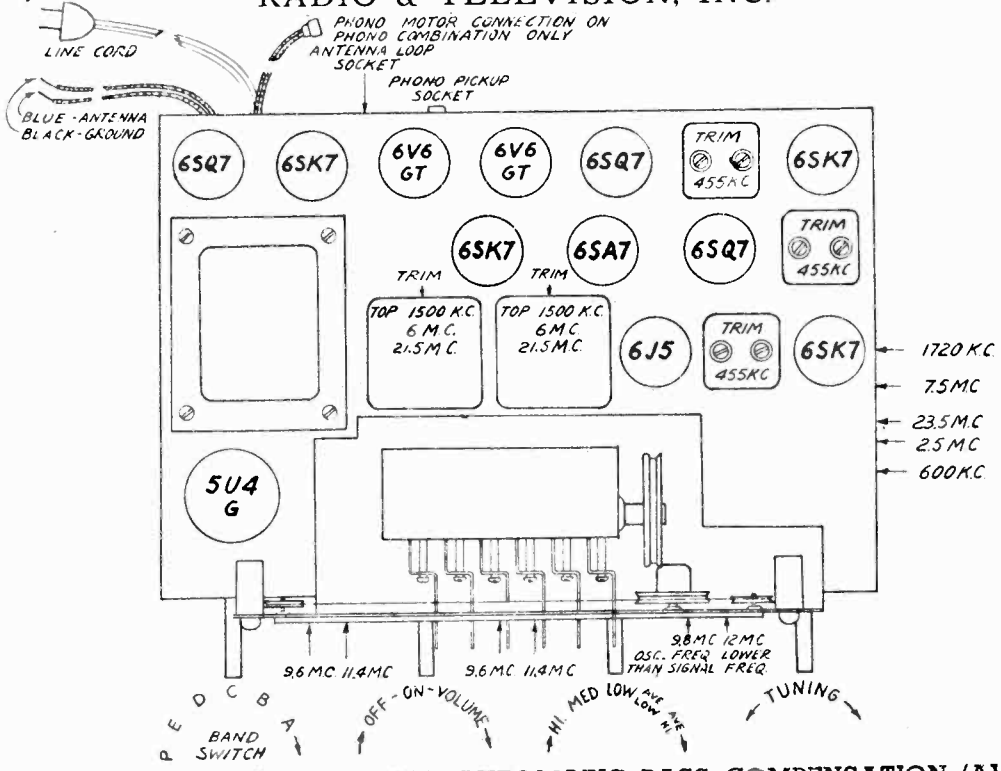
MODELS 296FM, 299FM

BRUNSWICK RADIO DIV.— RADIO & TELEVISION, INC.



MODELS 400, 400 1/2, 500, 600

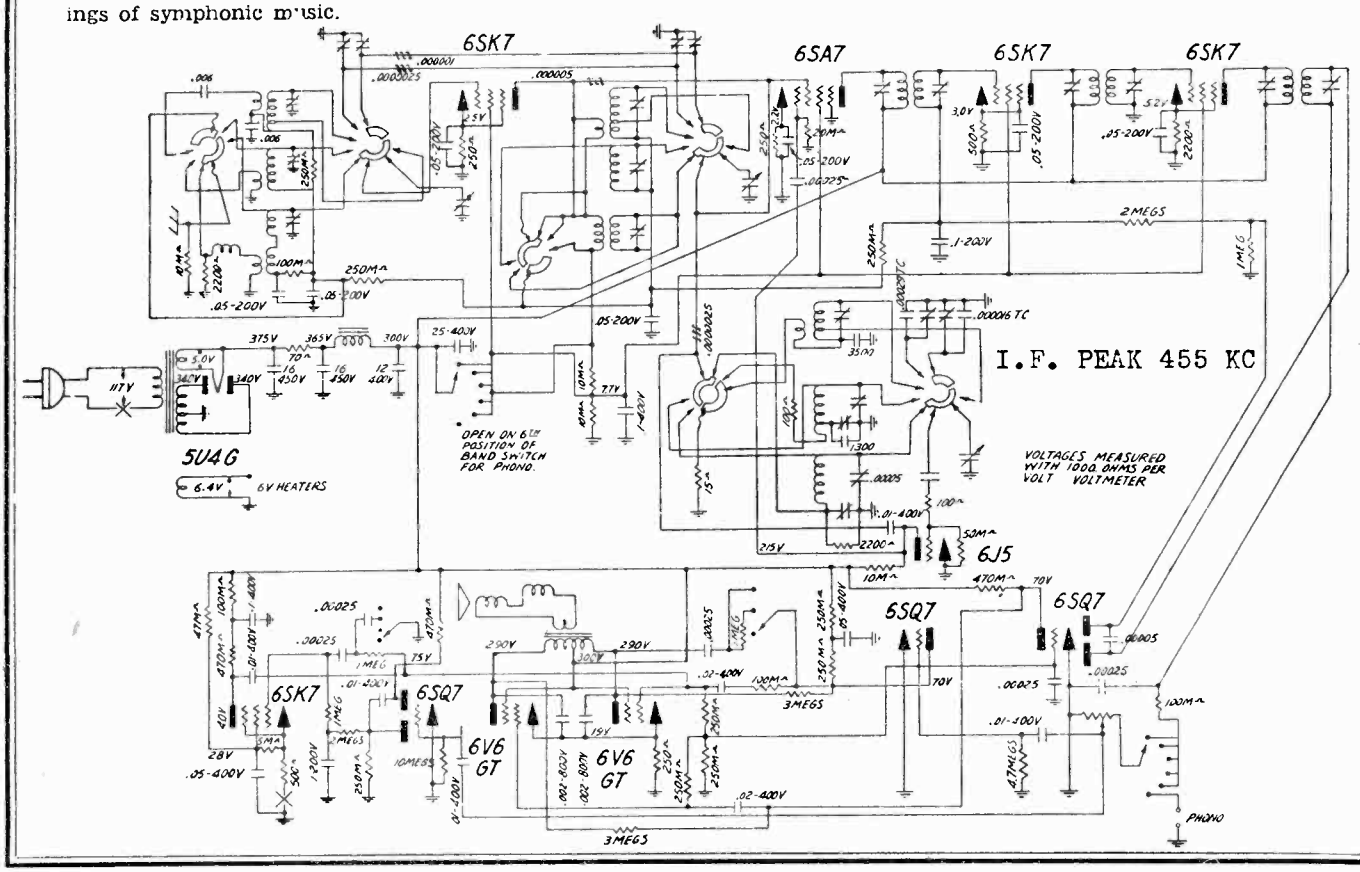
BRUNSWICK RADIO DIV.— RADIO & TELEVISION, INC.



AUTOMATIC VOLUME EXPANSION AND AUTOMATIC BASS COMPENSATION (AVE-ABC):

These two devices are incorporated in one, and their function is entirely automatic. They function by turning the third knob from the left to the fourth and fifth positions from the left. The fourth position corresponds to a maximum of bass, a minimum of treble, and a minimum of needle scratch on phonograph records. The fifth position corresponds to a maximum of treble.

This device can be used on organ, chamber, or symphonic music. IT SHOULD NOT BE USED ON VOICE OR SHORT WAVES, and is not desirable on popular orchestrations. It is especially effective on phonograph recordings of symphonic music.



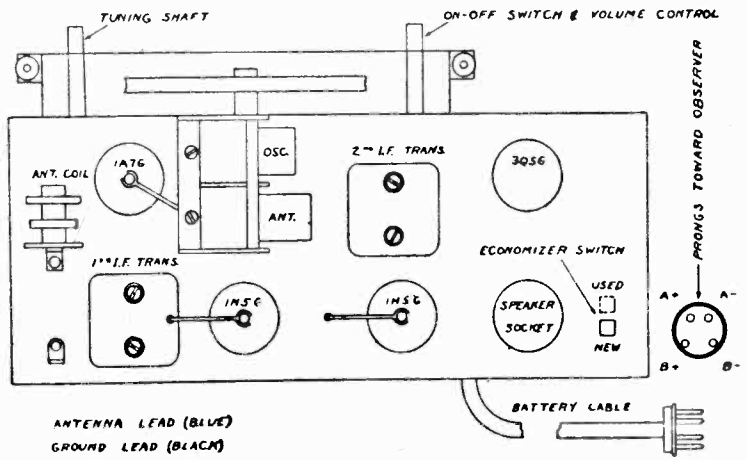


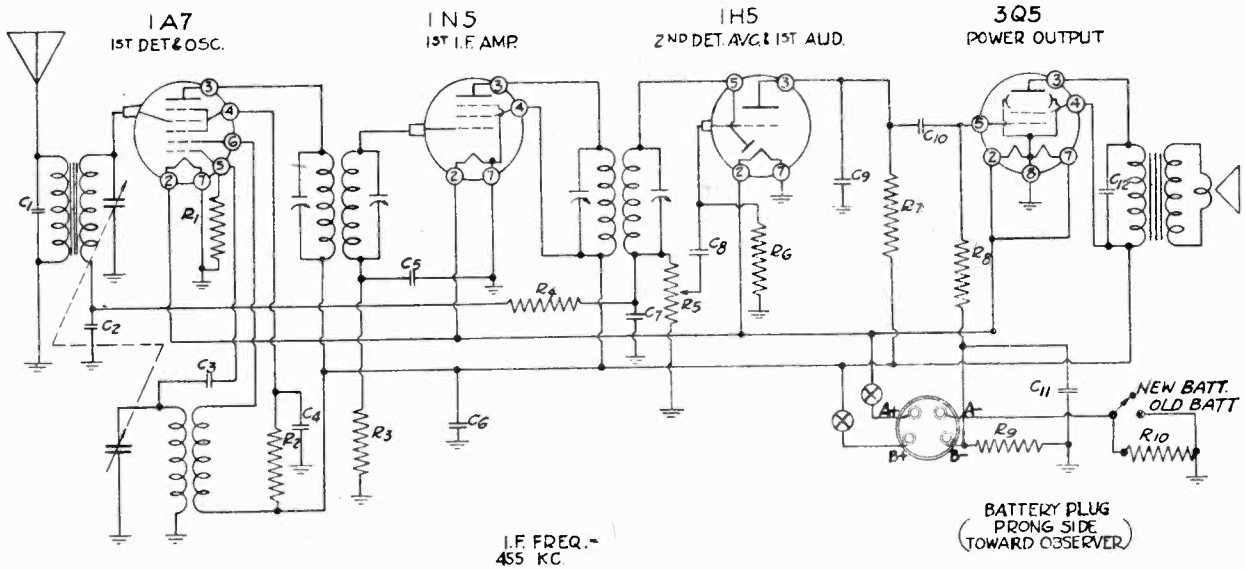
Fig. 1—Top View

POWER SUPPLY

This receiver is designed to operate on a single unit Ray-O-Vac No. AB-82, Burgess 17G-D60, Eveready 748, Bond 0528 or General 60DL-11L Battery. No other batteries are required as this battery is a combination 90 volt "B" battery and a 1½ volt "A" battery. To use separate batteries a P2863 battery adapter cable is required.

Antenna Coil (Part No. G-5724)
Looking at the connection end starting at the chassis in a clockwise direction the terminals are: No. 1, AVC; No. 2, grid; No. 3, Ant.; No. 4, ground. No. 4 is grounded to the mounting bracket.

Oscillator Coil (Part No. 2412) (Red Dot)
Looking at the connection end (with dot) starting at the chassis in a clockwise direction the terminals are: No. 1, grid; No. 2, plate; No. 3 B+; No. 4, ground.



ALIGNMENT

REMOVE CHASSIS FROM CABINET. SET SIGNAL GENERATOR TO 455 KC. AND CONNECT OUTPUT TO GRID OF 1A7 THRU A .05 MFD. CONDENSER. ALIGN ALL I.F. TRIMMERS TO PEAK.

CONNECT SIGNAL GENERATOR THROUGH A .0002 CONDENSER TO ANTENNA. WITH GANG CONDENSER AT MINIMUM CAPACITY, ADJUST OSCILLATOR TRIMMER AT 1730KC.

SET GENERATOR TO 1400KC. TUNE IN SIGNAL AND ADJUST ANTENNA TRIMMER TO PEAK.

RESISTORS

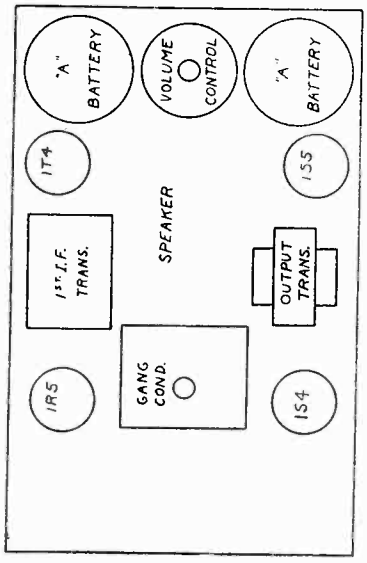
No.	Ohms	Watts	No.	Ohms	Watts
R1	200,000	½	R6	5 Meg.	¼
R2	30,000	½	R7	1 Meg.	¼
R3	5 Meg.	¼	R8	1 Meg.	¼
R4	1 Meg.	¼	R9	440 10%	¼
R5	500,000	V.C.			

CONDENSERS

No.	Capacity (Mfd.)	Volts	No.	Capacity (Mfd.)	Volts
C1	.00005	Mica	C7	.00025	Mica
C2	.05	200	C8	.01	400
C3	.00005	Mica	C9	.00025	Mica
C4	.1	200	C10	.01	400
C5	.002	400	C11	20 (Elect.)	25
C6	.001	200	C12	.005	400

MODEL G4
MODEL G5

CONTINENTAL RADIO & TELEV. CORP.

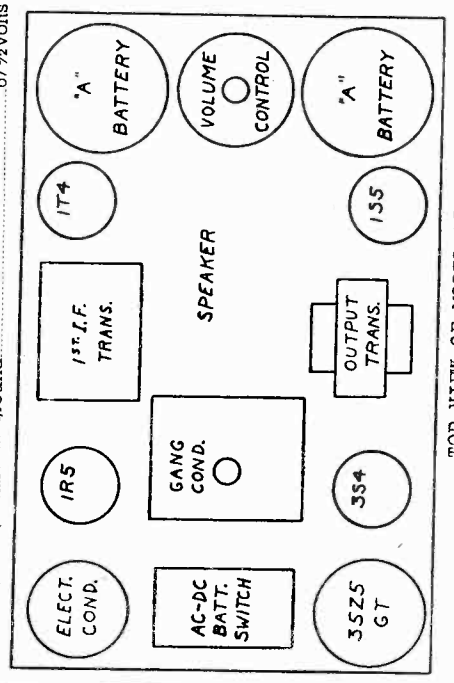


TOP VIEW OF MODEL G4

VOLTAGES MODELS G4 and G5

Volume control maximum and no signal tuned in. Meter 1000 ohms per volt, 150 volt scale.

Plate (2) of 1R5 tube to ground	66 volts
Screen (3) of 1R5 tube to ground	45 volts
Plate (2) of 1T4 tube to ground	66 volts
Screen (3) of 1T4 tube to ground	45 volts
Plate (2) and (6) of 1S4 tube to ground	66 volts
Screen (4) of 1S4 tube to ground	67½ volts

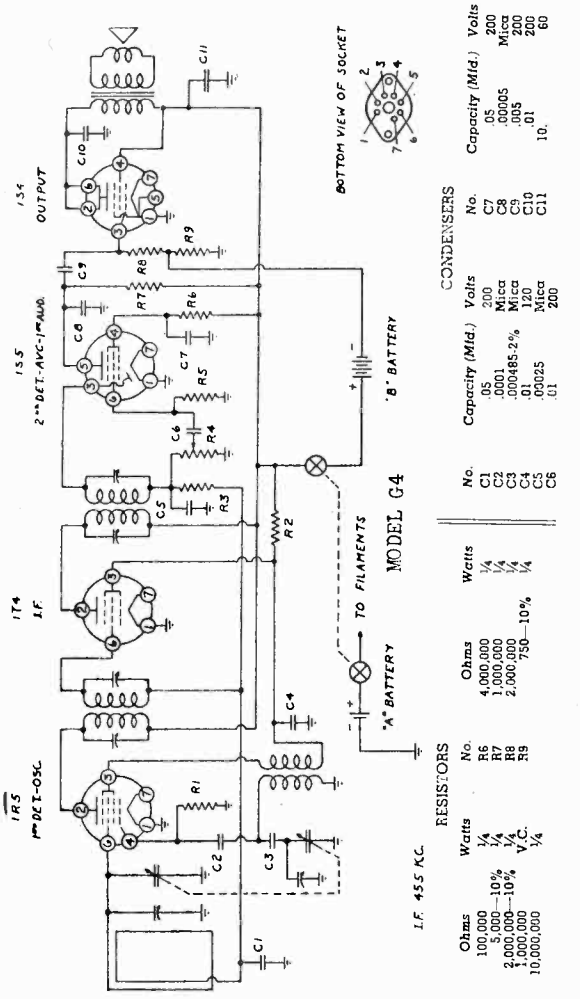


TOP VIEW OF MODEL G5

ALIGNMENT FOR 4,G5

BATTERIES

I.F. PEAK - 455 KC — 1 EVEREADY 467 OR BURGESS
TRIM OSC. - 1730 KC — "B" BATTERY AND TWO #2
TRIM ANT. - 1400 KC. — FLASHLIGHT CELLS.

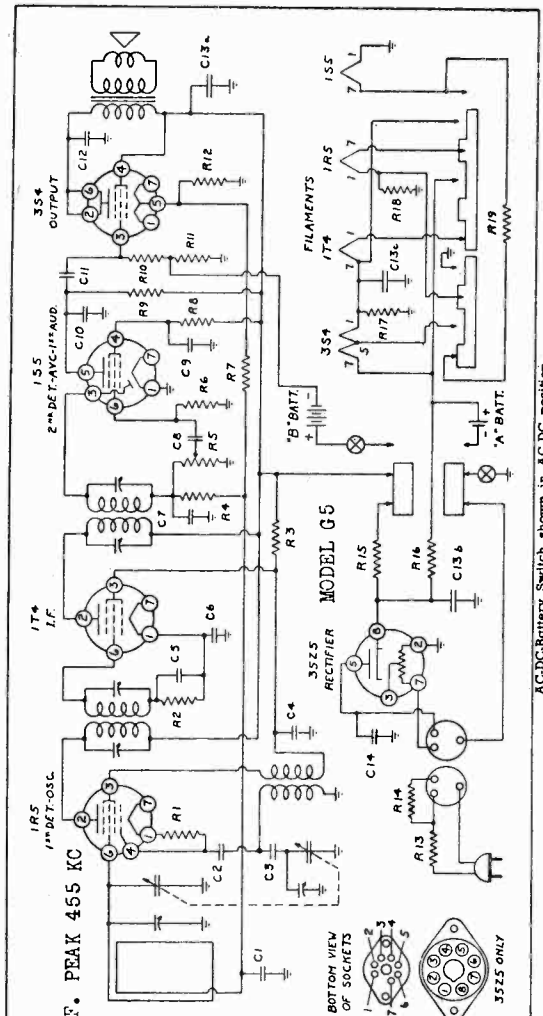


RESISTORS

No.	Ohms	No.	Watts
R1	100,000	R6	¼
R2	5,000—10%	R7	¼
R3	2,000,000—10%	R8	¼
R4	1,000,000	R9	V.C.
R5	10,000,000		¼

CONDENSERS

No.	Capacity (Mid.)	Volts
C1	.05	200
C2	.0001	Mica
C3	.000485-2%	Mica
C4	.01	120
C5	.00025	Mica
C6	.01	200
C7	.05	200
C8	.00005	Mica
C9	.005	200
C10	.01	200
C11	10.	60



AC-DC Battery Switch shown in AC-DC position.

RESISTORS

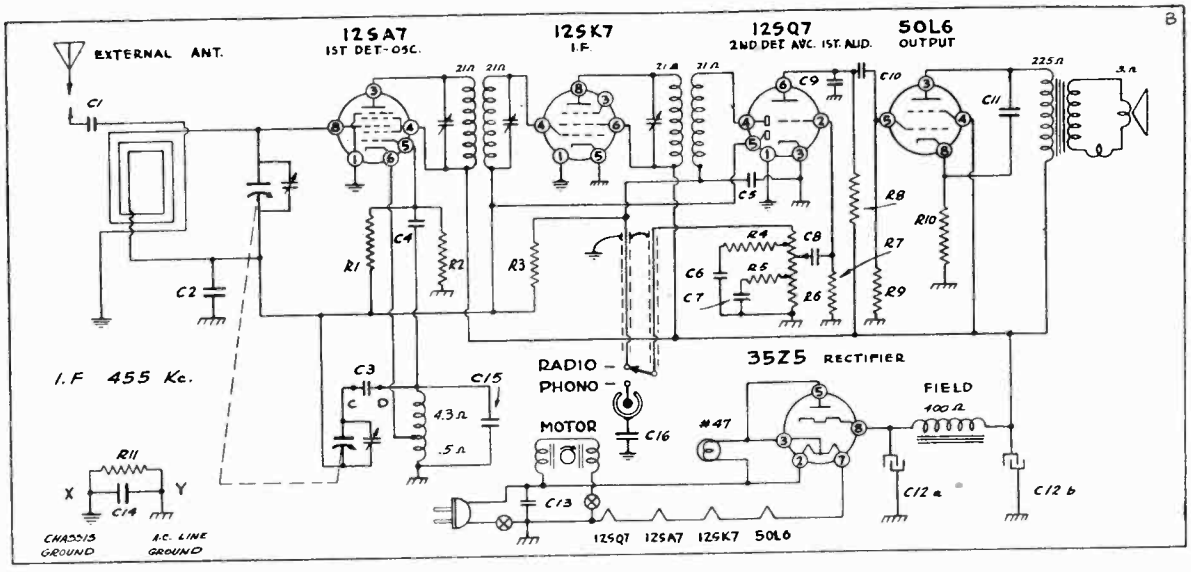
No.	Ohms	Watts
R1	100,000	¼
R2	5,000,000	¼
R3	5,000—10%	¼
R4	2,000,000—10%	¼
R5	1,000,000	V.C.
R6	10,000,000	¼
R7	3,000,000—10%	¼
R8	4,000,000	¼
R9	1,000,000	¼
R10	2,000,000	¼
R11	750—10%	¼
R12	3,000—10%	¼
R13	80 } Part of	¼
R14	350 } line cord	¼
R15	2,000—10%	½
R16	1,750—10%	4
R17	1,700—10%	¼
R18	1,000—10%	¼
R19	55—10% (wire wound)	½

CONDENSERS

No.	Capacity (Mid.)	Volts
C1	.05	200
C2	.0001	Mica
C3	.000485-2%	Mica
C4	.01	120
C5	.1	120
C6	.0025	120
C7	.01	Mica
C8		200
C9	.05	200
C10	.00005	Mica
C11	.005	200
C12	.01	200
C13a	20.	150
C13b	80.	150
C13c	100.	150
C14	.05	400

CONTINENTAL RADIO & TELEV. CORP.

MODELS L5 LATE, XL5



Volume control tapped at 100,000 ohms and 200,000 ohms from zero end.

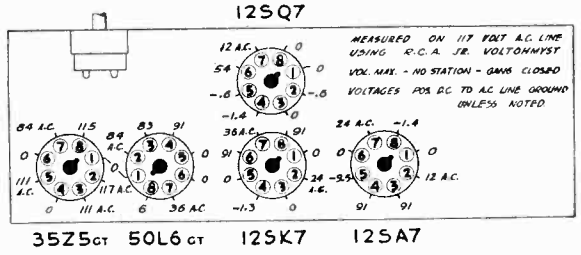
In model L5 only, X and Y are connected together. R11, C14, and C3 are not used. C is connected to D.

RESISTORS

Circuit	Ohms	Type
R1	10,000,000	½w
R2	25,000	½w
R3	1,000,000	½w
R4	50,000	½w
R5	30,000	½w
R6	50,000	V.C.
R7	5,000,000	½w
R8	250,000	½w
R9	500,000	½w
R10	150	½w
R11	150,000	½w

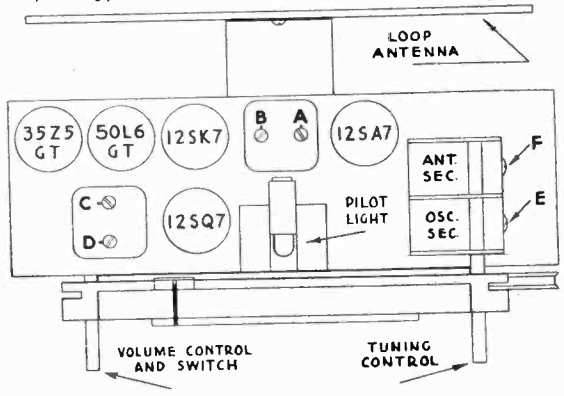
CONDENSERS

Circuit	Capacity	Type
C1	.005	600V
C2	.1	200V
C3	.02	400V
C4	.00005	Mica
C5	.00025	Mica
C6	.01	400V
C7	.01	400V
C8	.01	400V
C9	.0005	Mica
C10	.01	400V
C11	.02	400V
C12a	30. Elect	150V
C12b	50. Elect	150V
C13	.05	400V
C14	.2	200V
C14	.16 (XL5 only)	200V
C15	.00002-10%	Mica
C16	.2	200V

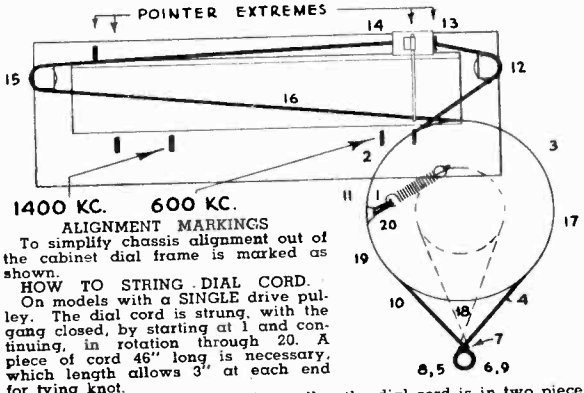


Voltages are positive D.C. unless noted. Measured from chassis with R.C.A. Jr. Volt Ohmyst. On XL5 Series use floating ground instead of chassis.

Set to be used on 110-120 volts A.C. (Alternating Current) 60 cycles, ONLY. Current consumption: Radio only, 25w. Phono. only, 15w.



Top View—Tube and Trimmer Location



ALIGNMENT MARKINGS

To simplify chassis alignment out of the cabinet dial frame is marked as shown.

HOW TO STRING DIAL CORD.

On models with a SINGLE drive pulley. The dial cord is strung, with the gang closed, by starting at 1 and continuing, in rotation through 20. A piece of cord 46" long is necessary, which length allows 3" at each end for tying knot.

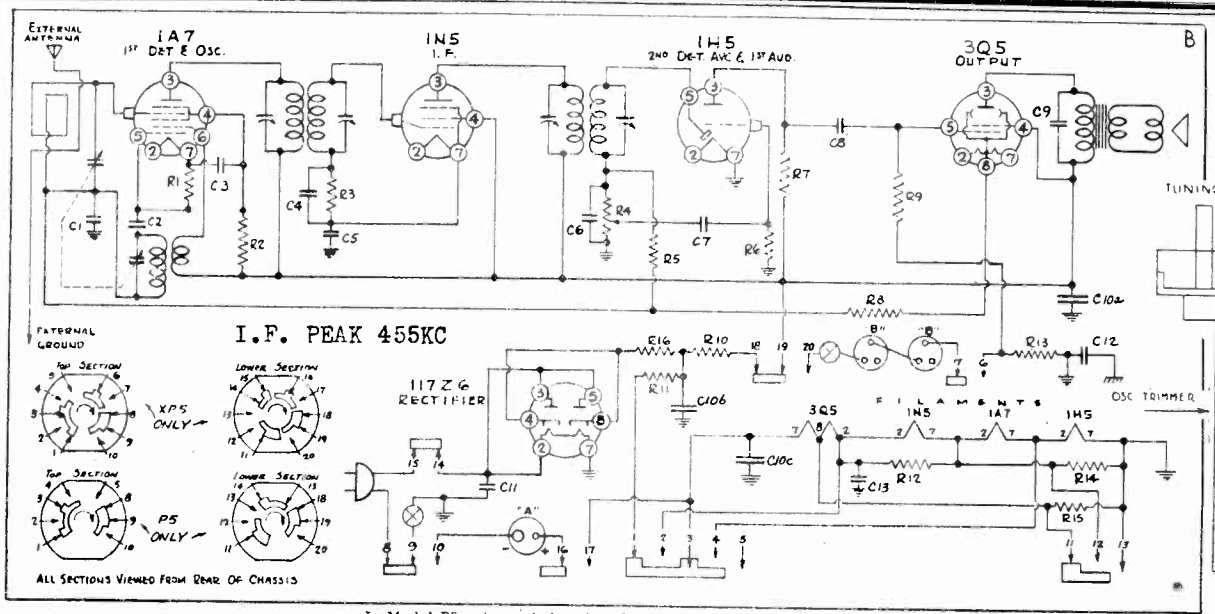
On models with DOUBLE drive pulley the dial cord is in two pieces. The pointer cord is on the large pulley starting at 1 and continuing through 20 BUT in the following special order. 1, 2, 3, 4, 18, 19, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20. The drive cord is on the smaller dotted pulley, in the dotted position.

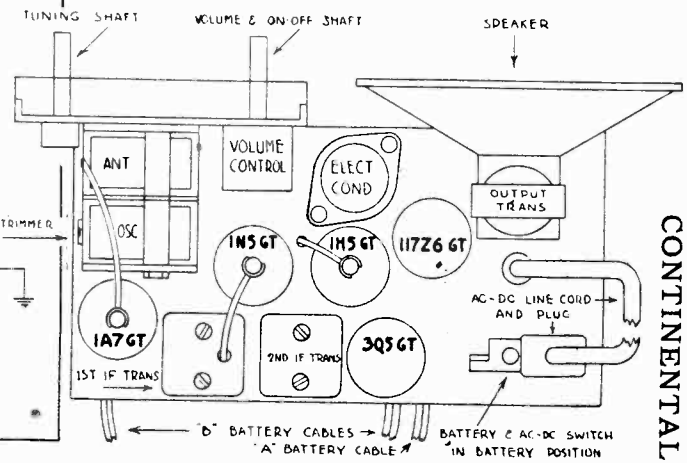
To clarify dial cord arrangement the dial frame is shown as transparent.

ALIGNMENT

1	Tuning Cond. Ant. Stator	.1 Mfd.	455 Kc.	A, B, C, D, I.F.
2	Tuning Cond. Ant. Stator	.1 Mfd.	1630 Kc.	E Osc.
3	Loop Radiator	Two feet from Radio No Connection	1400 Kc.	F Ant. (See Note)

NOTE: IF ANT. TRIMMER IS ON LOOP, USE THREE-TURN LOOP 10" IN DIAMETER IN SERIES WITH 400 OHMS CONNECTED TO SIGNAL GENERATOR.





In Model P5 only, switch points 6, 7, 16 and 17 are not used.
Switch point 5 is not used in either model.

RESISTORS

No.	Ohms	Watts	No.	Ohms	Watts
R1	200,000	½	R9	2,000,000	½
R2	50,000	½	R10	3,500—10%	½
R3	5,000,000	½	R11	2,600—10%	5
R4	1,000,000	V.C.	R12	300—10%	½
R5	3,000,000	¼	R13	440—10%	½
R6	15,000,000	½	R14	300—10%	½
R7	1,000,000	½	R15	3,000—10%	½
R8	10,000,000	¼	R16	30	½

CONDENSERS

No.	Capacity (Mfd.)	Volts	No.	Capacity (Mfd.)	Volts
C1	.05	200	C9	.002	600
C2	.00005	Mica	C10a	50. Elect.	150
C3	.01	400	C10b	30. Elect.	150
C4	.001	Mica	C10c	100. Elect.	25
C5	.1	200	C11	.05	400
C6	.00025	Mica	C12	.05	400
C7	.001	200	C13	100. Elect.	10
C8	.001	400			

ALIGNMENT: I.F. PEAK - 455 KC
OSC. TRIMMER - 1600 KC
ANT. TRIMMER - 1400 KC

Oscillator Coil (Part No. P5020)

Looking at the connection end in a clockwise direction starting at the chassis the terminals are No. 1, grid; No. 2, plate; No. 3, B+; No. 4, ground.

Primary—No. 2 and No. 3—Resistance.....2.2 ohms
Secondary—No. 4 and No. 1—Resistance.....4.9 ohms

First I.F. Transformer (Part No. P4859)

Primary—Red white, B+; blue white, plate—Resistance..... 7.5 ohms
Secondary—White, grid; black white, AVC—Resistance.....17.3 ohms

Second I.F. Transformer (Part No. P4874)

Primary—Blue white, plate; red white B+—Resistance.....17.8 ohms
Secondary—White, grid; black white, AVC—Resistance.....13.1 ohms

Power Change Switch

The power change switch connects the tube filaments in series (7½ volts) on AC-DC operation and parallel (1½ volts) on battery operation.

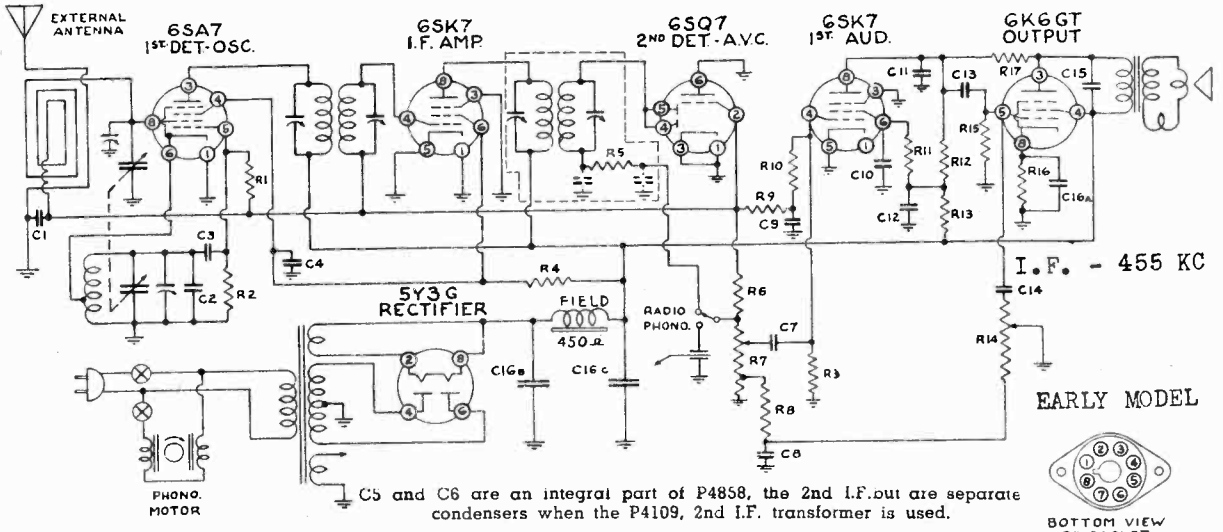
Voltages—Line 117.5 Volts AC—Power Consumption 25 Watts.

Volume control maximum and no signal tuned in. Meter 1000 ohms per volt, 150 volt scale.

Plate (3) of 1A7 tube to common ground	100 volts
Screen (4) of 1A7 tube to common ground	62 volts
Anode grid (6) of 1A7 tube to common ground	100 volts
Filament (2) to (7) of 1A7 tube	1.35 volts
Plate (3) of 1N5 tube to common ground	100 volts
Screen (4) of 1N5 tube to common ground	102 volts
Filament (2) to (7) of 1N5 tube	1.3 volts
Plate (3) of 1H5 tube to common ground	38 volts
Filament (2) to (7) of 1H5 tube	1.35 volts
Plate (3) of 3Q5 tube to common ground	98 volts
Screen (4) of 3Q5 to common ground	102 volts
Filament (7) to (8) of 3Q5 tube	1.3 volts
Filament (2) to (8) of 3Q5 tube	1.35 volts
Plate (3) or (5) of 117Z6 tube to common ground	117.5v. (AC)
Cathode (4) or (8) of 117Z6 tube to common ground	128 volts
Filament (2) to (7) of 117Z6 tube	117.5v. (AC)

MODELS N6, early;
N6, late

CONTINENTAL RADIO & TELEV. CORP.



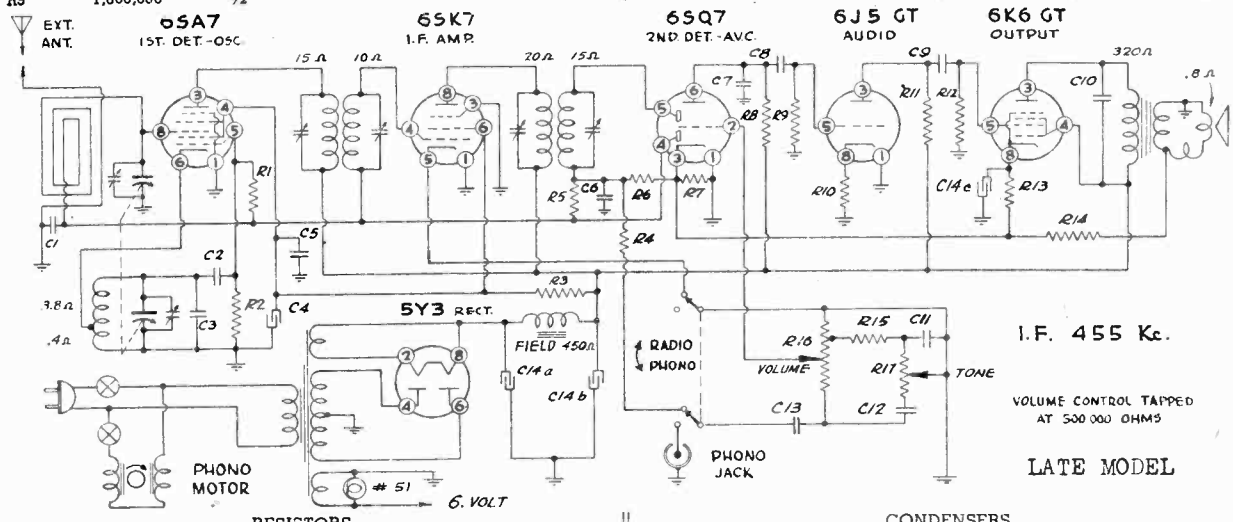
C5 and C6 are an integral part of P4858, the 2nd I.F. but are separate condensers when the P4109, 2nd I.F. transformer is used.

RESISTORS

No.	Ohms	Watts	No.	Ohms	Watts
R1	10,000,000	½	R10	5,000,000	½
R2	20,000	½	R11	1,000,000	½
R3	5,000,000	½	R12	250,000	½
R4	15,000—10%	2	R13	50,000	½
R5	70,000	½	R14	500,000	T.C.
R6	2,000,000	½	R15	500,000	½
R7	500,000	V.C.	R16	600—10%	½
R8	20,000	½	R17	3,000,000	½
R9	1,000,000	½			

CONDENSERS

No.	Capacity (Mfd.)	Volts	No.	Capacity (Mfd.)	Volts
C1	.05	200	C10	.05	400
C2	.000025—10%	Mica	C11	.00025	Mica
C3	.00005	Mica	C12	.1	400
C4	.05	400	C13	.01	400
C5	.0001	Mica	C14	.005	600
C6	.0001	Mica	C15	.002	600
C7	.01	400	C16a	20.	25
C8	.02	200	C16b	20.	350
C9	.05	200	C16c	20.	350

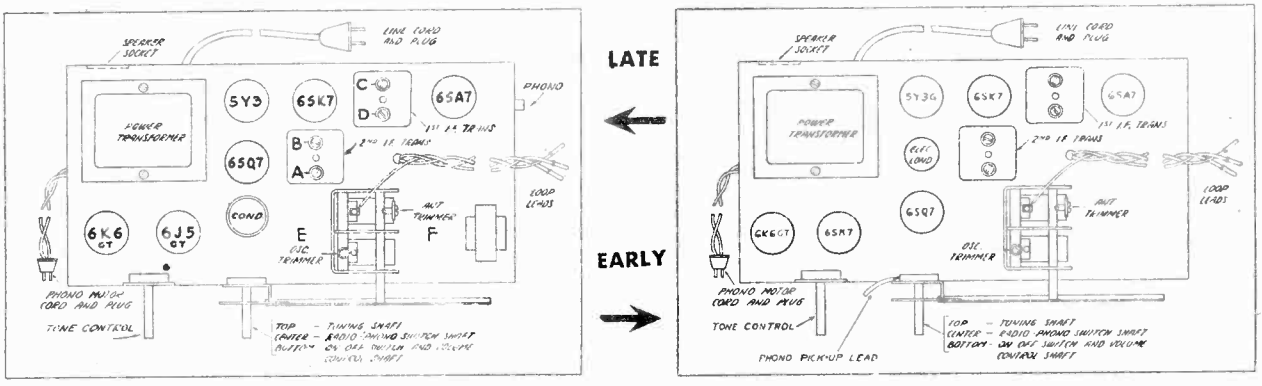


RESISTORS

Circuit	Ohms	Type	R9	500,000	½w.
R1	10,000,000	½w.	R10	3,000	½w.
R2	20,000	½w.	R11	50,000	½w.
R3	15,000	2w.	R12	250,000	½w.
R4	150,000	½w.	R13	600	½w.
R5	2,000,000	½w.	R14	350	½w.
R6	250,000	½w.	R15	30	½w.
R7	22	½w.	R16	1,000,000	V.C.
R8	250,000	½w.	R17	500,000	T.C.

CONDENSERS

Circuit	Capacity	Type	C8	.01	400v.
C1	.05	200v.	C9	.02	400v.
C2	.00005	Mica	C10	.02	400v.
C3	.000025	Mica	C11	.02	400v.
C4	8.Elect	150v.	C12	.002	600v.
C5	.05	400v.	C13	.002	600v.
C6	.00025	Mica	C14a	20.Elect.	350v.
C7	.00025	Mica	C14b	20.Elect.	350v.
			C14c	12.Elect.	25v.



ALIGNMENT: I.F. 455 KC, OSC. TRIM 1630 KC, ANT TRIM 1400

MODELS P6, XP6, early;
P6, XP6, late

CONTINENTAL RADIO & TELEV. CORP.

RESISTORS

No.	Ohms	Watts
R1	200,000	½
R2	50,000	½
R3	5,000,000	½
R4	5,000	½
R5	70,000	½
R6	3,000,000	½
R7	1,000,000	V.C.
R8	5,000,000	½
R9	10,000,000	¼
R10	15,000,000	½

CONDENSERS

No.	Capacity (Mfd.)	Volts
C1	.05	200
C2	.00005	Mica
C3	.25	200
C4	.01	400
C5	.001	600
C6	.05	400
C7	.05	200
C8	.001	600

RESISTORS

No.	Ohms	Watts
R11	1,000,000	½
R12	2,000,000	½
R13	22—10%	½
R14	1,000	½
R15	2,150—10%	5
R16	400—10%	½
R17	500—10%	½
R18	200—10%	½
R19	110—10%	½

CONDENSERS

No.	Capacity (Mfd.)	Volts
C9	.00025	Mica
C10	.001	600
C11	.002	600
C12a	50. Elect.	150
C12b	30. Elect.	150
C12c	100. Elect.	25
C13	.05	400
C14	.2	200

3Q5 GT — MEASURED ON 117 VOLT A.C. LINE USING RCA 1R VOLTOHMYST

1H5 GT — VOL. MAX. - NO STATION - VOLTAGES POS. DC. TO A.C. LINE GROUND UNLESS NOTED GANG CLOSED

117 Z 6 GT — 1A7 GT — 1N5 GT

FIG. 1 TOP VIEW

RESISTORS

No.	Ohms	Watts
R1	100,000	½
R2	200,000	½
R3	5,000,000	½
R4	5,000,000	½
R5	5,000,000	½
R6	3,000,000	½
R7	5,000	½
R8	70,000	½
R9	1,000,000	V.C.
R10		

CONDENSERS

No.	Capacity (Mfd.)	Volts
C1	.0003?67	Silver Mica
C2	.00025	Mica
C3	.01	400
C4	.000015	Mica
C5	.00005	Mica
C6	.25	200
C7	.01	400
C8	.05	400
C9	.00005	In I.F. Can
C10		

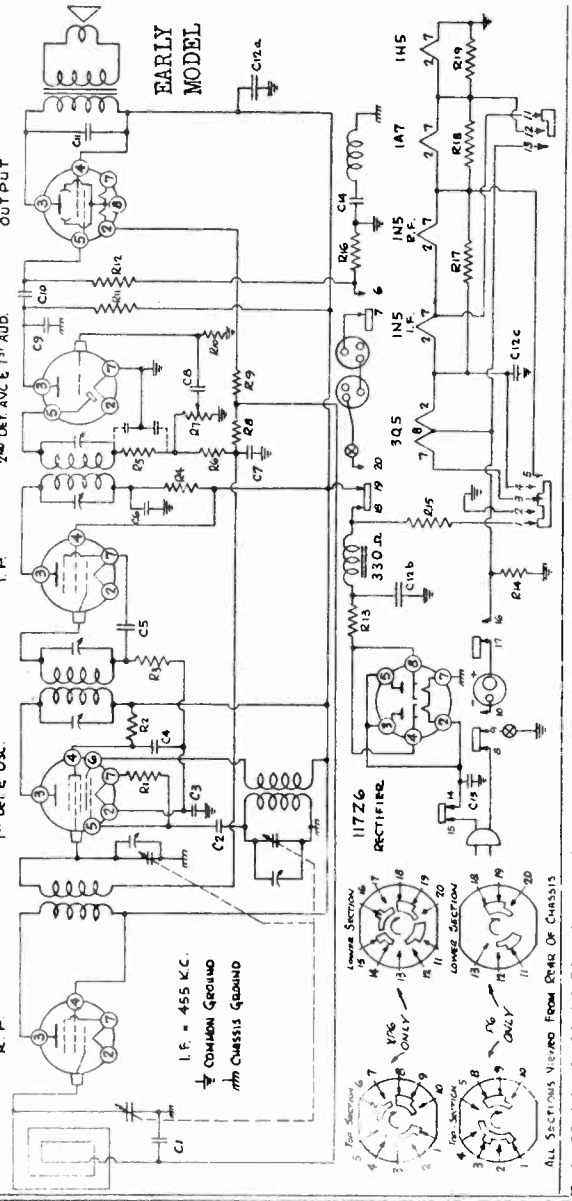
RESISTORS

No.	Ohms	Watts
R11	15,000,000	½
R12	1,000,000	½
R13	2,000,000	½
R14		½
R15	400	½
R16	22	½
R17	2,150	5
R18	3,000	½
R19	500	½
R20	200	½
	110	½

CONDENSERS

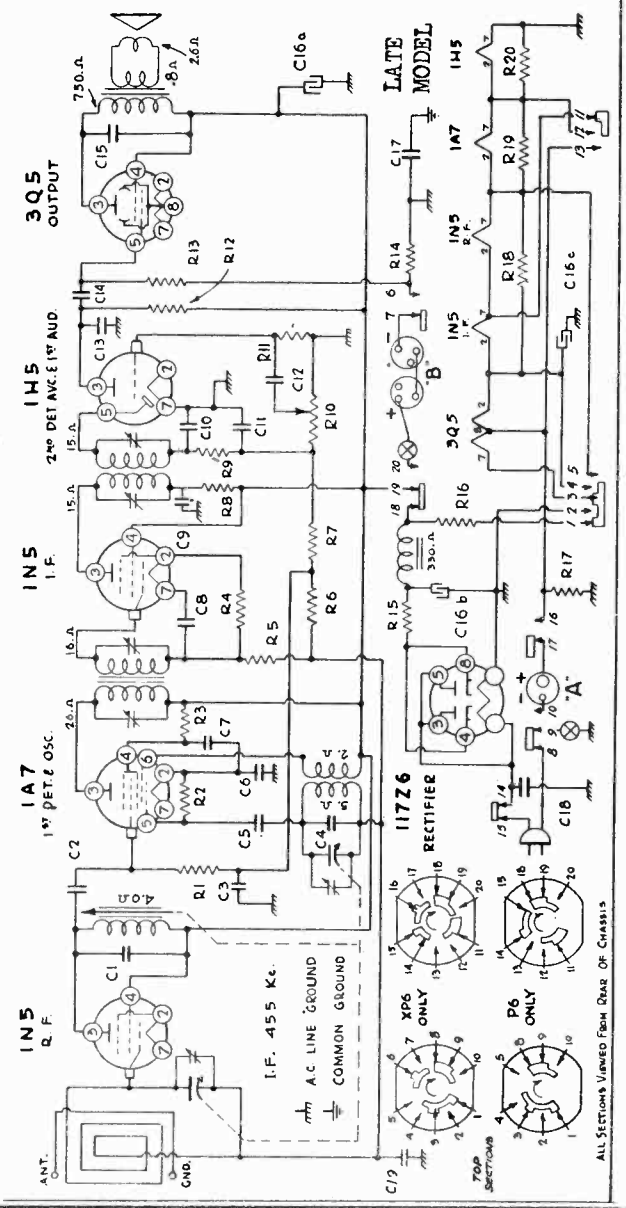
No.	Capacity (Mfd.)	Volts
C11	.0001	Mica
C12	.01	400
C13	.00025	Mica
C14	.01	400
C15	.002	Mica
C16a	40.	600
C16b	30.	150
C16c	100.	150
C17	.1	25
C18	.05	400
C19	.05	400

EARLY MODEL



Early Model. In Model P6 only, switch points 6, 7, 14, 15, 16 and 17 are not used.

LATE MODEL

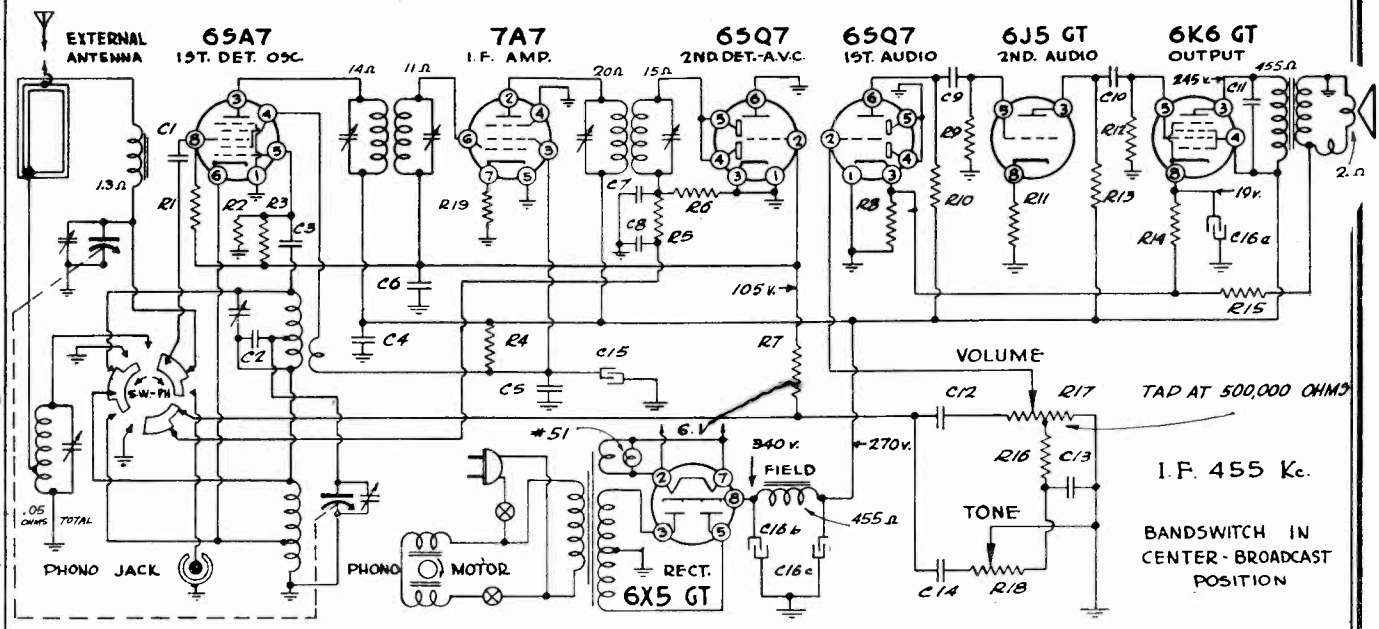


Late Model. In model P6 only, switch points 6, 7, 16, and 17 are not used. Power switch in line position. Common ground is chassis ground

ALIGNMENT: SEE INDEX, SAME AS MODEL B6, XB6

CONTINENTAL RADIO & TELEV. CORP.

MODEL C7



RESISTORS

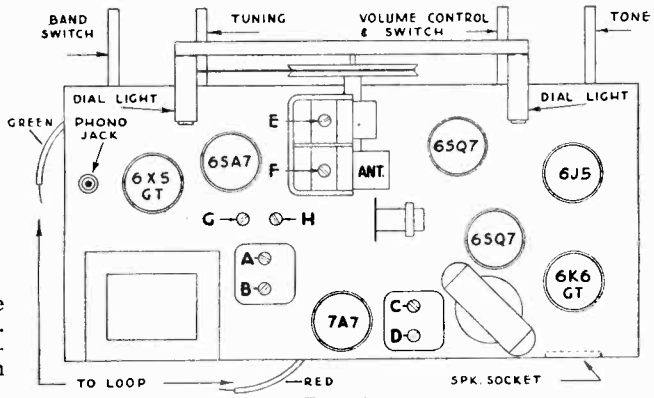
Circuit	Ohms	Type
R1	100,000	½w
R2	20,000	½w
R3	10,000,000	½w
R4	15,000	2 w
R5	150,000	½w
R6	500,000	½w
R7	1,000,000	½w
R8	22-10%	½w
R9	500,000	½w
R10	250,000	½w
R11	3,000	½w
R12	250,000	½w
R13	50,000	½w
R14	600-10%	½w
R15	300-10%	½w
R16	30,000	½w
R17	1,000,000	V.C.
R18	500,000	T.C.
R19	100	½w

CONDENSERS

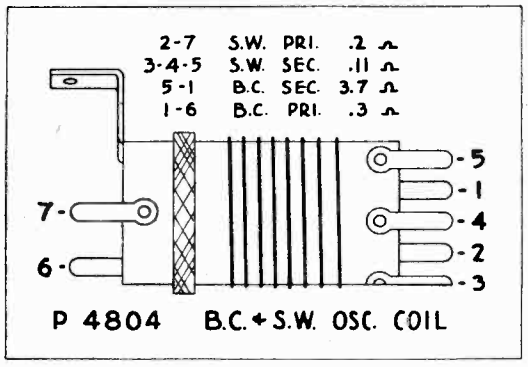
Circ't	Capacity	Type
C1	.0001	Mica
C2	.00025	Mica
C3	.00005	Mica
C4	.05	400V.
C5	.05	400V.
C6	.05	200V.
C7	.0001	Mica
C8	.0001	Mica
C9	.01	400V.
C10	.02	400V.
C11	.02	600V.
C12	.002	600V.
C13	.02	200V.
C14	.002	600V.
C15	8. Elect.	150V.
C16a	12. Elect.	25V.
C16b	20. Elect.	350V.
C16c	20. Elect.	350V.

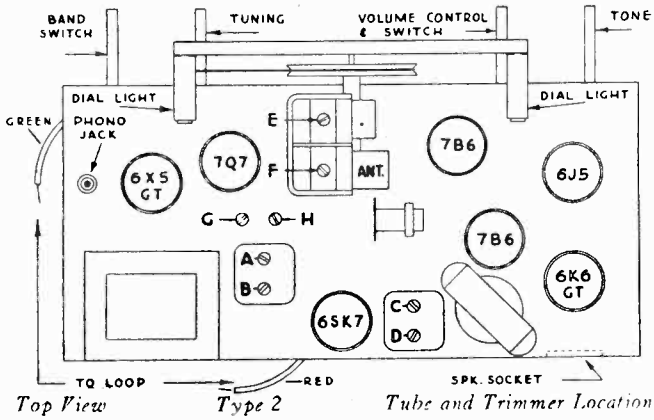
The C7 chassis has been made with either of two tube complements as shown in Type 1 and Type 2 Top Views. The only characteristics which change are tube socket connections due to variance between standard and loctal pin numberings.

Line—117 volts, 60 cycles, A.C.—Set volume control at max.
Wattage: Radio only, 60 watts; Record changer only, 15 watts.
Voltages shown are positive D.C. from chassis to socket terminal unless noted.
R.C.A. Jr. Volt Ohmyst used. No station tuned in.



Type 1



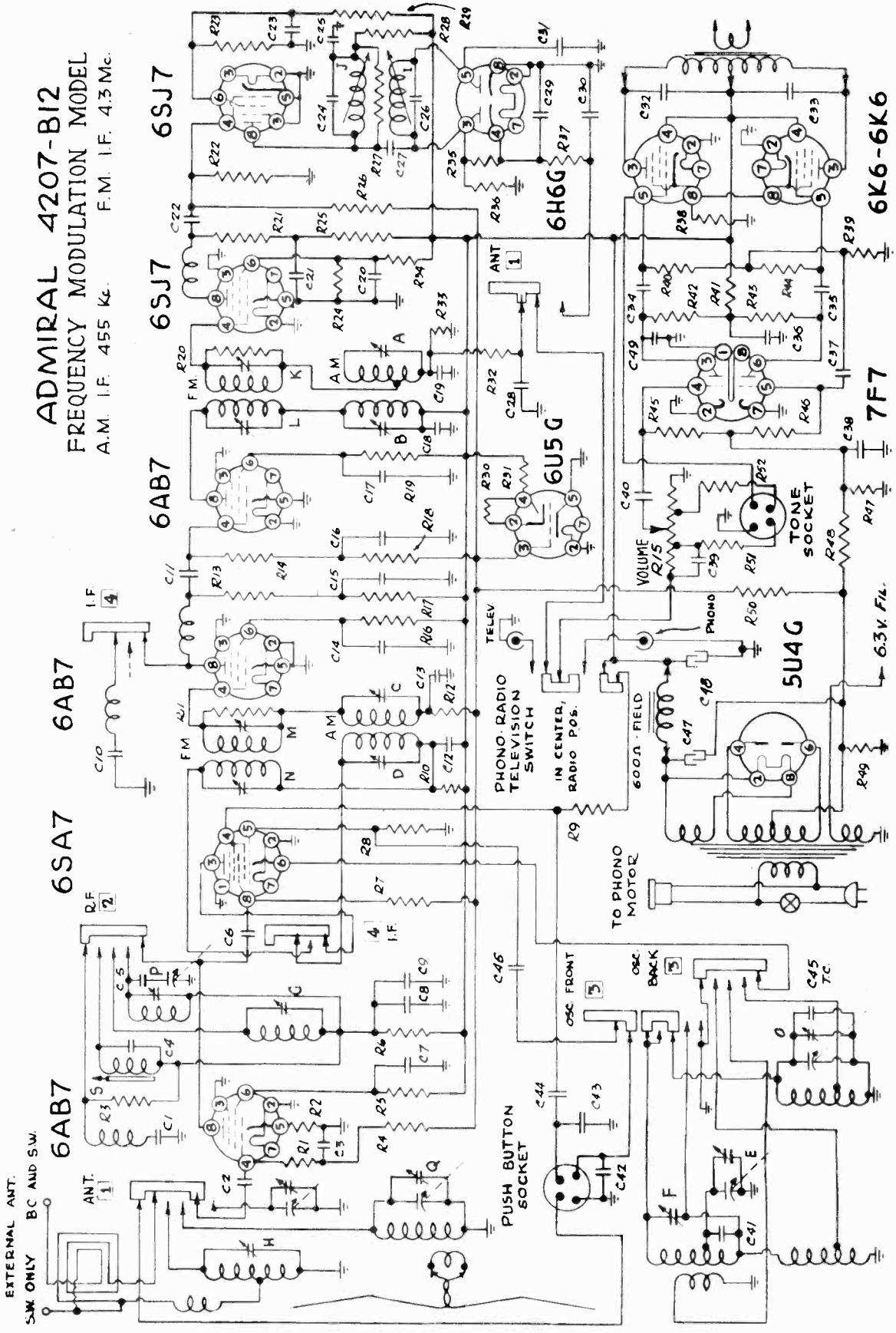


Top View *Type 2* *Tube and Trimmer Location*

FOR ALIGNMENT, SEE INDEX FOR MODEL C6

MODEL B12

CONTINENTAL RADIO & TELEV. CORP.



MODEL B12

CONTINENTAL RADIO & TELEV. CORP.

PARTS LIST

RESISTORS

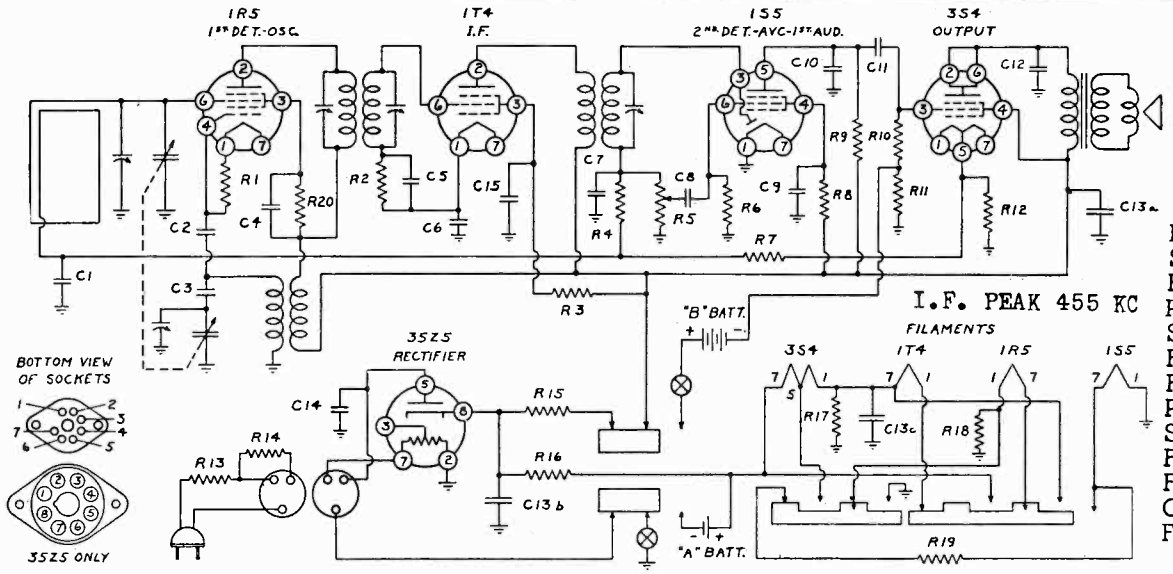
R1	3,000,000	ohms
R2	100	"
R3	5,000	"
R4	100,000	"
R5	50,000	"
R6	5,000	"
R7	2,000,000	"
R8	25,000	"
R9	25,000	"
R10	1,000	"
R11	20,000	"
R12	100,000	"
R13	10,000	"
R14	100,000	"
R15	1,000,000	" V.C. (Tapped at 300,000 ohms and 600,000 ohms from Ground.)
R16	50,000	ohms
R17	1,000	"
R18	25,000	"
R19	50,000	"
R20	20,000	"
R21	10,000	"
R22	200,000	"
R23	40,000	"
R24	60,000	"
R25	1,000	"
R26	4,000,000	"
R27	6,000	"
R28	25,000	"
R29	50,000	"
R30	1,000,000	"
R31	100,000	"
R32	100,000	"
R33	50,000	"
R34	50,000	"
R35	100,000	"
R36	100,000	"
R37	100,000	"
R38	300	"
R39	500,000	"
R40	500,000	"
R41	25,000	"
R42	250,000	"
R43	250,000	"
R44	500,000	"
R45	250,000	"
R46	250,000	"
R47	500,000	"
R48	500,000	ohms
R49	27	"
R50	1,000,000	"
R51	100,000	"
R52	50,000	"

CONDENSERS

C1	.00006	mfd.	Mica
C2	.000250	"	"
C3	.05	"	
C4	.00078	"	Mica Silver
C5	.0005	"	" "
C6	.00025	"	"
C7	.05	"	
C8	.05	"	
C9	.005	"	Mica
C10	.00006	"	"
C11	.00005	"	"
C12	.05	"	
C13	.05	"	
C14	.05	"	
C15	.05	"	
C16	.01	"	
C17	.05	"	
C18	.05	"	
C19	.00005	"	Mica
C20	.00005	"	"
C21	.05	"	
C22	.00002	"	"
C23	.05	"	
C24	.00015	"	Mica Silver
C25	.1	"	
C26	.00027	"	" Silver
C27	.00003	"	"
C28	.00025	"	"
C29	.00025	"	"
C30	.0015	"	
C31	.00003	"	Mica
C32	.005	"	" 600 V.
C33	.005	"	" 600 V.
C34	.02	"	
C35	.02	"	
C36	.05	"	
C37	.01	"	
C38	.1	"	
C39	.00025	"	Mica
C40	.01	"	
C41	.00025	"	Mica
C42	.0005	"	" Silver
C43	.003	"	"
C44	.05	mfd.	
C45	.00002	"	T.C.
C46	.00005	"	Mica
C47	20.	"	Elec.
C48	20.	"	"
C49	.00025	"	Mica

TRIMMER IDENTIFICATION

A. I.F. 455 Kc.
B. I.F. 455 Kc.
C. I.F. 455 Kc.
D. I.F. 455 Kc.
E. Osc, Broadcast
F. Osc, 31 meter
G. R.F., 31 meter
H. Antenna, 31 meter
I. F.M. Disc. Sec.
J. F.M. Disc. Pri.
K. I.F. 4.3 Mc. F.M.
L. I.F. 4.3 Mc. F.M.
M. I.F. 4.3 Mc. F.M.
N. I.F. 4.3 Mc. F.M.
O. Oscillator, F.M.
P. R.F., F.M.
Q. Antenna, F.M.
R. Antenna, Broadcast
S. R.F., Broadcast



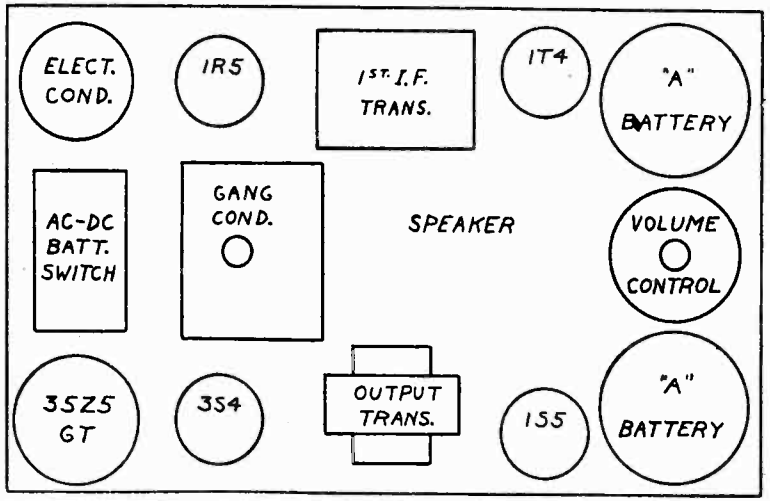
AC-DC-Battery Switch shown in AC-DC position.

RESISTORS

No.	Ohms	Watts	No.	Ohms	Watts
R1	100,000	¼	R12	3,000—10%	¼
R2	5,000,000	¼	R13	80 } part of	
R3	25,000—10%	¼	R14	350 } line cord	
R4	5,000,000—10%	¼	R15	2,000—10%	½
R5	1,000,000	V.C.	R16	1,750—10%	4
R6	10,000,000	¼	R17	1,700—10%	¼
R7	10,000,000—10%	¼	R18	1,000—10%	¼
R8	4,000,000	¼	R19	55—10% (wire wound)	½
R9	1,000,000	¼			
R10	2,000,000	¼	R20	10,000	¼
R11	750—10%	¼			

CONDENSERS

No.	Capacity (Mfd.)	Volts	No.	Capacity (Mfd.)	Volts
C1	.05	200	C10	.00005	Mica
C2	.0001	Mica	C11	.005	200
C3	.0004 10-2%	Mica	C12	.01	200
C4	.01	120	C13a	20.	150
C5	.01	120	C13b	30.	150
C6	.1	120	C13c	100.	12
C7	.00025	Mica	C14	.05	400
C8	.01	200	C15	.01	120
C9	.05	200			



VOLTAGES

Line 117 volts AC
Power Consumption 35 watts
Volume Control maximum and no signal tuned in.
Meter 1000 ohms per volt, 150 volt scale.

Plate (2) of 1R5 tube to ground	66	volts
Screen (3) of 1R5 tube to ground	45	volts
Filament (7) to (1) of 1R5 tube	1.4	volts
Plate (2) of 1T4 tube to ground	66	volts
Screen (3) of 1T4 tube to ground	45	volts
Filament (7) to (1) of 1T4 tube	1.3	volts
Filament (7) to (1) of 1S5 tube	1.3	volts
Plate (2) and (6) of 3S4 tube to ground	66	volts
Screen (4) of 3S4 tube to ground	67½	volts
Filament (1) to (5) of 3S4 tube	1.3	volts
Filament (7) to (5) of 3S4 tube	1.3	volts
Cathode (8) of 35Z5 tube to ground	90	volts
Filament (2) of 35Z5 tube to ground	37.5v.	(AC)

ALIGNMENT

IF 455 KC
OSC. trim. 1630 KC
Ant. trim. 1400 KC

Oscillator Coil (Part No. P4722)
Looking at the connection end in a clockwise direction starting at the mounting bracket the terminals are: No. 1, ground (direct to mounting bracket); No. 2, plate; No. 3, B+; No. 4, grid.
Primary—No. 2 and No. 3—Resistance.....3.4 ohms
Secondary—No. 1 and No. 4—Resistance.....2.6 ohms

First I.F. Transformer (Part No. P4610)
The primary leads are on one end (opposite sides) and the secondary leads on the other end. The red dots indicate the end of the windings. The primary and secondary windings are identical.
Resistance (primary or secondary).....16.7 ohms

Second I.F. Transformer (Part No. P4712)
Looking at the coil starting at the lug nearest the red dot in a clockwise direction the terminals are: No. 1, start of pri.; No. 2, start of sec.; No. 3, end of sec.; No. 4, end of pri.
Primary—No. 1 and No. 4—Resistance.....43.3 ohms
Secondary—No. 2 and No. 3—Resistance.....34.2 ohms

Power Change Switch
The power change switch connects the tube filaments in series (7½ volt) on AC-DC operation and parallel (1½ volt) on battery operation.

MODELS 22CA, 22CB, 22CP
Chassis 59 AM-FM

THE CROSLEY CORP.

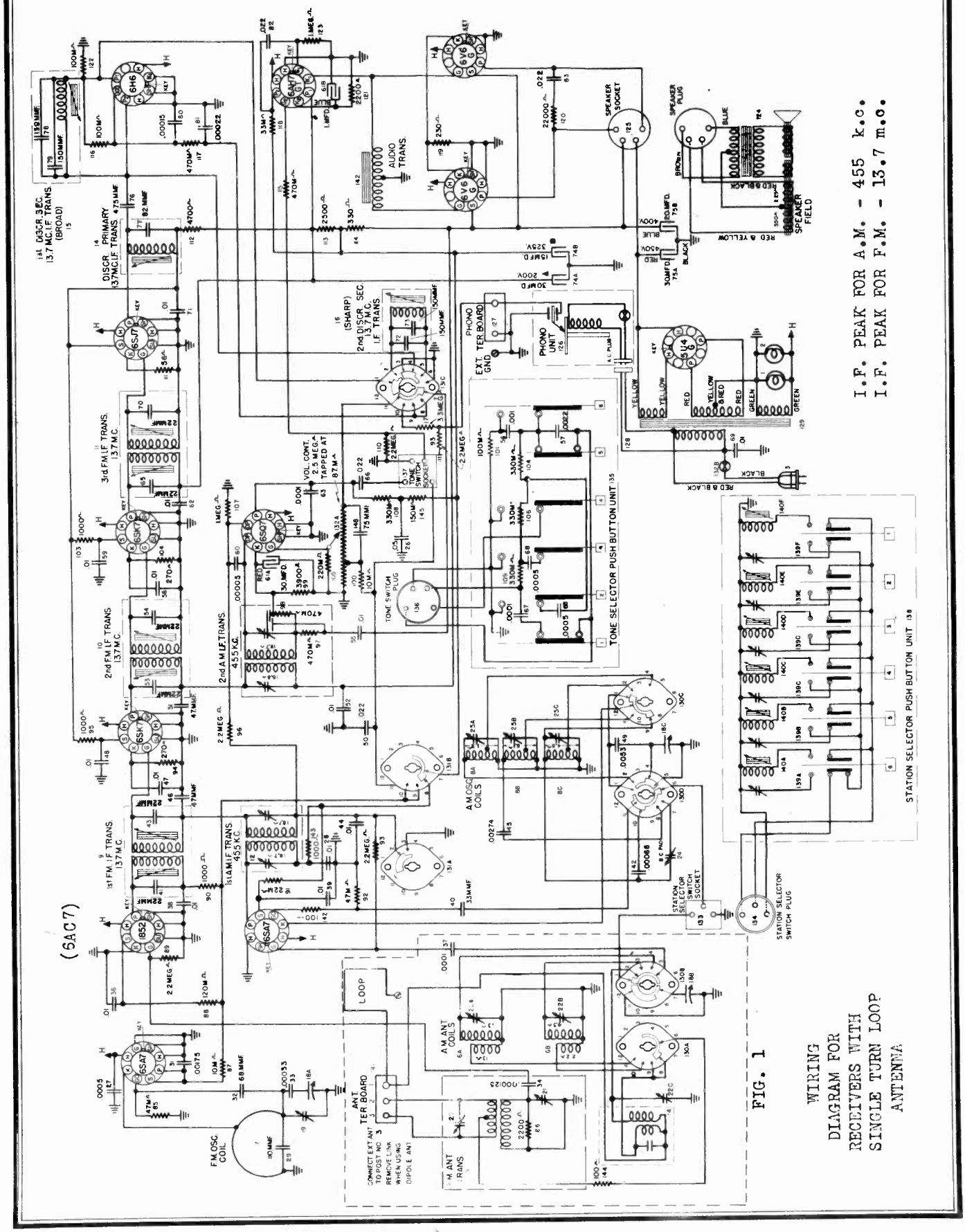


FIG. 1 WIRING DIAGRAM FOR RECEIVERS WITH SINGLE TURN LOOP ANTENNA

MODELS 22CA, 22CB, 22CP
Chassis 59 AM-FM

THE CROSLEY CORP.

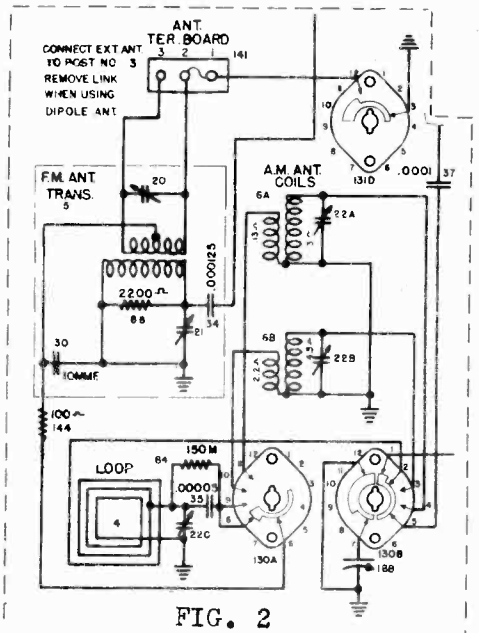


FIG. 2

SPECIAL NOTE

If the loop antenna has multiple turns, Fig. 2 is substituted for the portion of the schematic enclosed by dotted lines in Fig. 1.

TUNING RANGES

American Broadcast 540 to 1630 KC (555 to 184 Meters)
Police Amateur, etc., 1600 to 5200 KC (187 to 57.5 Meters)
Shortwave (Foreign) 5.2 to 18.0 MC (57.5 to 16.6 Meters)
Frequency Modulation 42 to 50 MC (7.1 to 6.0 Meters)

FUNCTIONAL SWITCH

The left-hand-inner knob controls the functional switch. From left to right, they are: "A. M.", "FM-1" "FM-2" and "PHONO" Use "FM-1" for sharp clear reception of stations operating on channels where adjacent channel stations might interfere. "FM-2" provides high fidelity reception over a broader range

TUBE VOLTAGE CHART

SOCKET VOLTAGES MEASURED AT 117.5 V. LINE (BETWEEN SOCKET PIN AND CHASSIS)
WITH 1000 OHM PER VOLT, 500 V. RANGE VOLTMETER

TUBE	FUNCTION	1	2	3	4	5	6	7	8	POSITION OF FUNCTION SW
6SA7	Oscillator	Gnd	Gnd	290	100	—8	0	6.3	0	A. M.
6SA7	Converter—A. M.	Gnd	Gnd	260	260	—2	0	6.3	Gnd	F. M. 1 or 2
6AC7	Det.—1st F. M.	Gnd	Gnd	Gnd	—.6	Gnd	85	6.3	260	F. M. 1 or 2
6SK7	I. F. Amp. (A. M. 1st FM)	Gnd	Gnd	Gnd	0	-3	100	6.3	300	A. M.
6SK7	2. F. Amp. 2nd F. M.	Gnd	Gnd	Gnd	0	3	100	6.3	190	F. M. 1 or 2
6SJ7	Limiter F. M.	Gnd	Gnd	Gnd	0	.5	200	6.3	100	F. M. 1 or 2
6H6	Discriminator	Gnd	Gnd	—.5(FM)	+.5(AM)	—.5(FM)	J.B.	6.3	Gnd	Note range settings for 3, 4 & 5
6SQ7	Det. A. M.—1st A. F.	Gnd	0	1	.4	0	140	6.3	Gnd	F. M. or A. M.
6AH7GT	2nd A. F. Driver	0	2	195	7	0	160	6.3	Gnd	F. M. or A. M.
6V6	Output	Gnd	Gnd	330	310	2	N.C.	6.3	20	F. M. or A. M.
6V6	Output	Gnd	Gnd	330	310	2	N.C.	6.3	20	F. M. or A. M.
5U4	Rectifier	N.C.	400	J.B.	360AC	J.B.	360AC	J.B.	400	

MAX. POWER OUTPUT ..... 15 WATTS
POWER CONSUMPTION ..... 120 WATTS
DROP ACROSS SPEAKER FIELD ..... 80 VOLTS
J. B.—Junction Block. N. C.—No Connection.

Voltages may vary 10% of values given.

SET-UP PROCEDURE

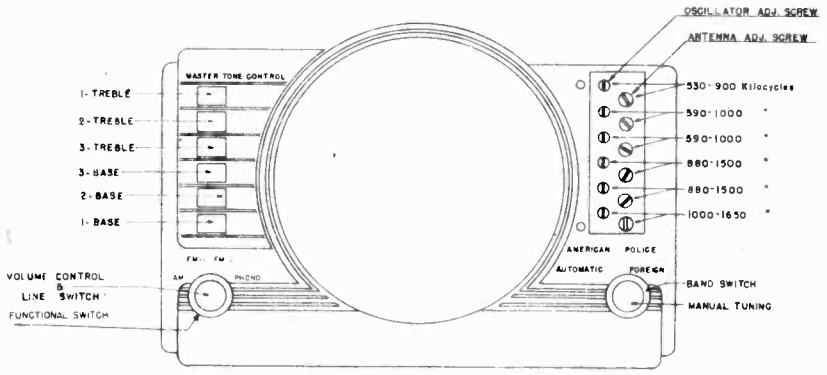
Remove station selector push button escutcheon. Turn the receiver on and let it operate for a sufficient length of time to permit the tubes to reach their normal operating conditions.

Note: To simplify the set up and insure accurate adjustments the following pre-adjustments should be made.

Tighten all Antenna Trimmer screws moderately tight. See Fig. 1. Turn the Oscillator adjusting screws to the left (counter clockwise) until the threaded portion extends approximately ½ inch.

continued

PUSH-BUTTON ADJUSTMENT



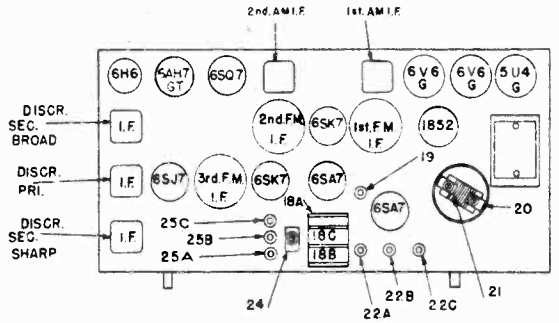
Preliminary
Output Meter Connections ..... Plate to Plate of 6V6's
Generator Ground Connection ..... To chassis or Ground Lead
Dummy Antenna to be in series with generator output ..... See Chart Below
Position of Volume Control ..... Fully On
Position of Master Tone Control ..... All Buttons Out

A. M. ALIGNMENT PROCEDURE CHART

Alignment Sequence	Signal Generator: Dummy Antenna	Signal Generator: Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.	Stator lug Middle section of Gang Cond.	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	.0002 MF.	1630 Kc.	Ant. Terminal	B. C.	Fully open	B. C. "OSC" Trimmer 25-C	Adjust for peak; gang does not have to tune thru signal. Loop must be connected.
3.	.0002 MF.	600 Kc.	Ant. Terminal	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer 24	Adjust for maximum output while rocking gang thru signal.
4.	Repeat Step No. 3 to check possible shift due to series adjustment.						
5.	.0002 MF.	1400 Kc.	Ant. Terminal	B. C.	Approx. 140 on dial	B. C. Loop 22-C	Adjust for maximum output do not touch B. C. Osc. Trimmer.
6.	400 ohm (carbon)	5.3 Mc.	Ant. Terminal	Police	Fully open	Pol. "OSC" 25-B	Adjust for peak; gang does not have to tune thru signal.
7.	400 ohm (carbon)	5.0 Mc.	Ant. Terminal	Police	Approx. 5.0 on dial	Pol. "ANT" Trimmer 22-B	Adjust for maximum output.
8.	400 ohm (carbon)	18.3 Mc.	Ant. Terminal	S. W.	Fully open	S. W. "OSC" 25-A	Adjust for peak. Gang does not have to tune thru signal.
9.	400 ohm (carbon)	18.0 Mc.	Ant. Terminal	S. W.	Approx. 18 on dial	S. W. "ANT" Trimmer 22-A	Adjust for maximum output while rocking gang thru signal.
10.	Repeat the above alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A. V. C. circuit.						

IMPORTANT ALIGNMENT NOTES

When aligning the shortwave bands "OSC" trimmers care must be exercised to see that the circuits are aligned on the correct frequency and not on the image which is approximately 910 kilocycles less **as indicated on the Receiver dial.** To check, increase generator output, tune-in the generator frequency and then tune-in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles **lower on the Receiver dial** than the fundamental. If image cannot be tuned-in, the "OSC" trimmer is adjusted to the wrong peak. (Correct peak is the second peak on trimmer from the closed position).



F. M. ALIGNMENT

EQUIPMENT NECESSARY: 1 modulated signal generator accurately calibrated and an output meter.

1. Connect output meter from plate to plate 6V6's.
2. Remove F. M. oscillator tube—6SA7 to right of gang.
3. Connect generator input to #4 pin of 6SJ7 F. M. limiter tube and generator ground to chassis.
4. Set generator to exactly 13.6 megacycles (AM signal with 400 cycle modulation).
5. Turn function switch to FM2.
6. Adjust the discriminator primary and secondary (broad) for peak.
7. Set generator to exactly 13.7 megacycles.
8. Adjust discriminator secondary (broad) for null (minimum reading on output meter). This null is very sharp and one peak will be considerably higher than the other.
9. Adjust discriminator primary until uniform peaks are obtained by shifting generator alternately from 13.6 to 13.8 MC, and carefully noting output meter readings.
10. Set generator to exactly 13.7 MC and note null point reading on output meter. Then turn function switch to FM1 (sharp) and adjust discriminator secondary (sharp) to null point. This adjustment is necessary to assure that FM1 and FM2 positions have same cross-over point.

NOTE: The relative height of peaks on FM1 is somewhat less than the FM2 position as can be noted by comparing with readings obtained in operation 9.

IF ALIGNMENT

1. Connect generator output to #4 pin of second I-F 6SK7 amplifier.
2. While shifting generator from 13.6 to 13.8 MC, adjust 3rd FM I-F primary and secondary for maximum gain and EQUAL PEAKS.
3. Connect generator output to #4 pin of 1st I-F 6SK7.
4. Follow same procedure outlined in step #2, using just enough output to give a reasonable indication on meter.
5. Clip generator output to 3rd terminal on antenna board and adjust 1st FM I-F primary and secondary, following same procedure as in step #2, using just enough input to give a reasonable indication on meter.

F. M. R-F ALIGNMENT

(a) Check Dial Calibration

1. Leave generator output connected to antenna—replace FM oscillator 6SA7.
2. Set generator to exactly 12.5 MC (fourth harmonic is 50 MC). Tune in 50 MC signal on dial, null between peaks.
3. Set generator to 10.5 MC (fourth harmonic—42 MC). Tune in 42 MC signal on dial, null between peaks. Correct dial calibration by bending osc. plate on gang.

(b) Set Generator to 11.5 MC (fourth harmonic- 46 MC).

4. Remove dipole shorting clip (not on all models) and ground #2 dipole lug. Place a 100 ohm carbon resistor between terminals #2 and #3.
5. Connect signal generator output to #3 terminal.
6. Tune dial to either of signal peaks (not null).
7. Turn FM antenna primary trimmer, item 20, all the way in.
8. Adjust FM antenna secondary trimmer, item 21, for peak.
9. Repeak FM antenna primary.
10. Check at 42 MC (Gen. 12.5 MC), 50 MC (Gen. 12.5 MC), output meter readings should be approximately the same over band, with slight humps on ends.

NOTE: If there is an appreciable variation between readings on the output meter on the frequencies in step #10, carefully repeat complete R-F alignment.

NOTE: If some receivers oscillate at one end of dial and not at the other end. It is possible that the red lead (top) on the FM oscillator coil is too close to the secondary side. This lead should be dressed down toward the chassis and closest to the grounded end of oscillator coil, using top as reference point.

PUSH-BUTTON ADJUSTMENT (cont'd)

Note: Care should be taken when adjusting the oscillator screws so that the selected station is not passed over. Turn the screws slowly. It is essential that the frequency (kilocycles) of the station selected is within the range of the push button to be set for that station. See Fig.

1. Turn the band change switch to the "American" position. Using the station selector knob, carefully tune in the the station to which the No. 1 push button is to be set. Note program.

2. Turn the band change switch to the "Automatic" position, depress No. 1 push button, and using a small screw driver, carefully turn in a clockwise direction the Oscillator adjusting screw until the station previously tuned in manually is heard again. Adjust for maximum output in the speaker.

3. Adjust the Antenna adjusting screw for maximum volume in the speaker.

4. Turn band change switch from "Automatic" to "American" and back again to check if adjustment has been correctly made. There should be no change in tone quality when switched from one to the other.

5. Repeat above procedure for the remaining push buttons.

To tune the receiver with the push buttons, set the band change switch on "Automatic" and depress completely the button corresponding to the station you wish to hear.

MODELS 22CA, 22CB, 22CP
Chassis 59 AM-FM

THE CROSLEY CORP.

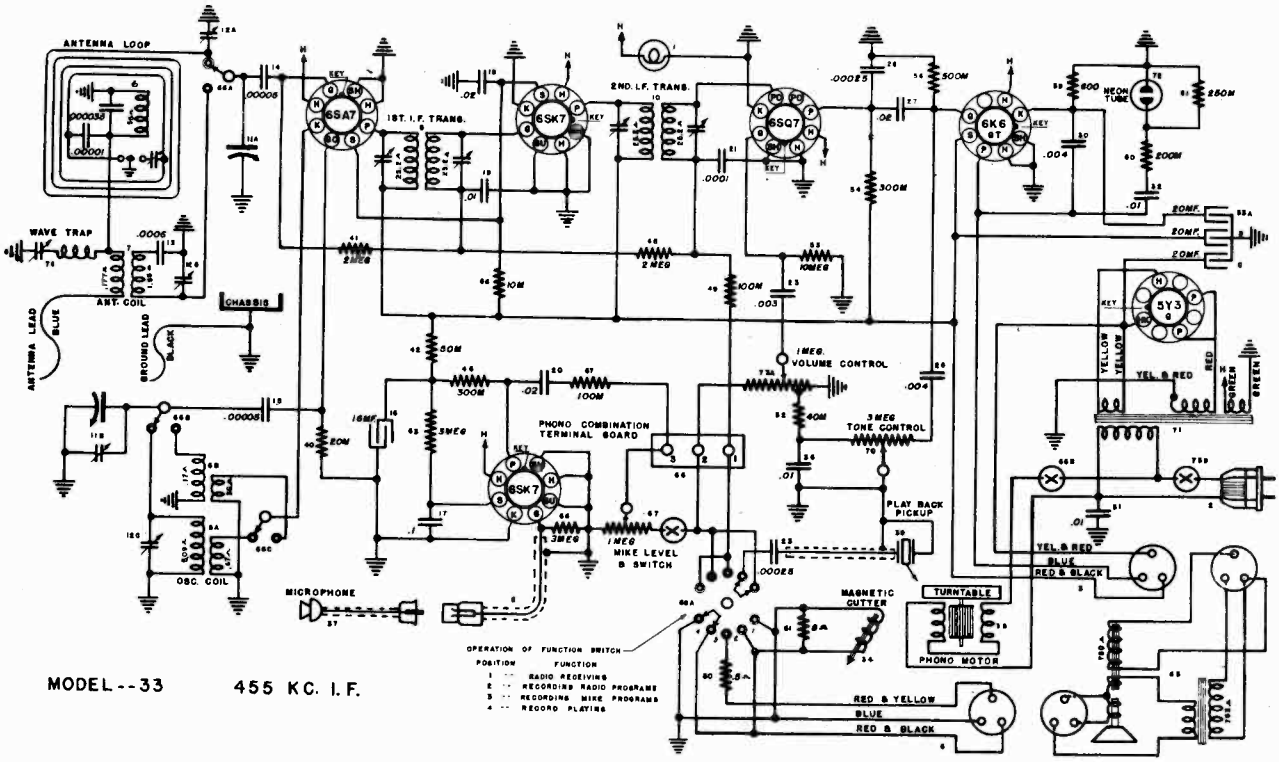
PARTS LIST, MODELS 22CA-CB-CP—CHASSIS MODEL No. 59

Figures in first column refer to parts in Diagrams.

ITEM No.	PART No.	DESCRIPTION
1	48885	Dial Light 6 V.
2	48885	Dial Light 6 V.
	132343-6	Escutcheon & Lens.
	132346-1	Lens.
	132347-1	Gasket.
	132320-1	Dial Pointer.
	132321-5	Dial Face Assem.
	48899	Screw—Dial Face Mtg. (2)
	49637-22	Light Socket Assem.
	132167-4	Drive Cord Assem.
	132584-1	Tuning Shaft Assem.
	49786-1	Drive Shaft Br'g.
	132608-1	Drive Shaft Brk't.
3	132300-2	A. C. Power Plug & Cable
4	133769-3	Antenna Coil.
5	32000-239	F. M. Ant. Trans. Assem.
6A, 6B	32000-238	AM Ant. Coil H. F. / AM Ant. Coil Pol.
7	132583	F. M. Osc. Coil Assy.
8A, 8B, 8C	32002-265	A. M. Osc. Coil H. F. / A. M. Osc. Coil Pol. / A. M. Osc. Coil B. C.
9	32004-279	1st F. M. I. F. Trans.
10	32004-279	2nd F. M. I. F. Trans.
11	32004-279	3rd F. M. I. F. Trans.
12	32004-277	1st A. M. I. F. Trans.
13	32004-278	2nd A. M. I. F. Trans.
14	32004-280	Discr. Primary I. F. Trans.
15	32004-281	1st Discr. Sec. I. F. Trans.
16	32004-281	2nd Discr. Sec. I. F. Trans.
17	39002-28	Res. 3.3 Megohm ¼ W.
18A, 18B, 18C	132296-3	Var. Cond. F. M. Section. / Var. Cond. A. M. Ant. Section. / Var. Cond. A. M. Osc. Section.
19	132852-1	F. M. Osc. Trimmer Cond.
20	49934	F. M. Ant. Pri. Trimmer.
21	131756-3	F. M. Ant. Sec. Trimmer.
22A, 22B, 22C	132386-1	A. M. Ant. Trimmer H. F. / A. M. Ant. Trimmer Pol. / Trimmer A. M. B. C. Loop.
23		
24	49652-1	B. C. Padder Cond.—600 Kc.
25A, 25B, 25C	132386-1	Trimmer H. F. Osc. / Trimmer Pol. Osc. / Trimmer B. C. Osc.
26	39001-41	Cond. .05 Mf. 400 V. Paper.
27	39001-5	Cond. .005 Mf. 600 V. Paper.
28	132627-1	Cond. .01 Mf. Bakelite.
29	132581-2	Cond. 110 Mmf. Ceramic.
30		
31	34007-7	Cond. .00175 Mf. Mica.
32	132582-2	Cond. 68 Mmf. Ceramic.
33	132591-8	Cond. .00033 Mf. Ceramic.
34	132591-6	Cond. .000125 Mf. Ceramic.
35		
36	132627-1	Cond. .01 Mf. Bakelite.
37	39004-1	Cond. .0001 Mf. Mica.
38	132627-1	Cond. .01 Mf. Bakelite.
39	132627-1	Cond. .01 Mf. Bakelite.
40	39004-4	Cond. 100 Mmf. Mica.
41	132591-3	Cond. 22 Mmf. Ceramic.
42	34005-37	Cond. 680 Mmf. Mica.
43	132591-3	Cond. 22 Mmf. Ceramic.
44	132627-1	Cond. .01 Mf. Bakelite.
45	34005-35	Cond. 2740 Mmf. Mica.
46	132591-4	Cond. 47 Mmf. Ceramic
47	132627-1	Cond. .01 Mf. Bakelite.
48	132627-1	Cond. .01 Mf. Bakelite.
49	34005-34	Cond. 5300 Mmf. Mica.
50	39001-63	Cond. .022 Mf. 200 V.
51	132591-4	Cond. 47 Mmf. Ceramic.
52	132627-1	Cond. .01 Mf. Bakelite.
53	132591-3	Cond. 22 Mmf. Ceramic.
54	132591-3	Cond. 22 Mmf. Ceramic.
55	132627-1	Cond. .01 Mf. Bakelite.
56	39001-7	Cond. .001 Mf. 600 V. Paper.
57	39001-9	Cond. .0022 Mf. 600 V. Paper
58	132627-1	Cond. .01 Mf. Bakelite.
59	132627-1	Cond. .01 Mf. Bakelite.
60	39004-5	Cond. 50 Mmf. Mica.
61A, 61B	132673-2	Cond. 30 Mfd. Electro. / Cond. 1 Mfd. Electro.
62	132627-1	Cond. .01 Mf. Bakelite.
63	39004-7	Cond. 100 Mmf. Mica.
64	39001-5	Cond. .0005 Mf. 600 V.
65	132591-3	Cond. 22 Mmf. Ceramic.
66	39001-15	Cond. .022 Mf. 600 V.
67	39001-1	Cond. 100 Mmf. 600 V.
68	39001-5	Cond. .0005 Mf. 600 V.
69	30805	Cond. .01 Mf. 120 V. A. C.
70	132591-3	Cond. 22 Mmf. Ceramic.
71	132627-1	Cond. .01 Mf. Bakelite.
72	132591-7	Cond. 150 Mmf. Ceramic.
73	132591-7	Cond. 150 Mmf. Ceramic.
74A, 74B	132571-1	Cond. 30 Mfd. 200 V. Electro. / Cond. 15 Mfd. 325 V. Electro.
75A, 75B	132570-1	Cond. 30 Mfd. 450 V. Electro. / Cond. 20 Mfd. 400 V. Electro.
76	132591-1	Cond. 4.75 Mmf. Ceramic.
77	132591-5	Cond. 82 Mmf. Ceramic.
78	132591-7	Cond. 150 Mmf. Ceramic.
79	132591-7	Cond. 150 Mmf. Ceramic.
80	39004-8	Cond. 150 Mmf. Mica.
81	39001-3	Cond. 220 Mmf. 600 V. Paper.
82	39001-15	Cond. .022 Mf. 600 V. Paper.
83	39001-63	Cond. .022 Mf. 200 V. Paper.
84		
85	132579-1	Res. 47,000 Ohms Ceramic.
86	39002-9	Res. 2200 Ohms ¼ W.
87	132578-1	Res. 10,000 Ohms 5 W.
88	36320	Res. 120,000 Ohms ½ W.
89	132579-2	Res. 2.2 Megohm Ceramic.
90	39002-7	Res. 1000 Ohms ¼ W.
91	132577-1	Res. 22,000 Ohms 3 W.
92	39002-17	Res. 47,000 Ohms ¼ W.
93	39002-27	Res. 2.2 Megohms ¼ W.
94	132572-1	Res. 270 Ohms ¼ W.
95	39002-7	Res. 1000 Ohms ¼ W.
96	39002-27	Res. 2.2 Megohm ¼ W.
97	39002-23	Res. 470,000 Ohm ¼ W.
98	39002-23	Res. 470,000 Ohm ¼ W.
99	132514-1	Res. 3900 Ohm ¼ W.
100	39002-13	Res. 10,000 Ohm ¼ W.
101	39002-19	Res. 100,000 Ohm ¼ W.
102	39002-22	Res. 330,000 Ohm ¼ W.
103	39002-7	Res. 1000 Ohm ¼ W.
104	132572-1	Res. 270 Ohm ¼ W.
105	39002-21	Res. 220,000 Ohm ¼ W.
106	39002-22	Res. 330,000 Ohm ¼ W.
107	39002-25	Res. 1. Megohm ¼ W.
108	39002-22	Res. 330,000 Ohm ¼ W.
109	39002-22	Res. 330,000 Ohm ¼ W.
110	39002-27	Res. 2.2 Megohm ¼ W.
111	132575-1	Res. 56 Ohm ½ W.
112	132573-1	Res. 4700 Ohm 1 W.
113	132576-1	Res. 2500 Ohm 4 W. Carbon.
114	132574-1	Res. 330 Ohm 2 W. Carbon.
115	39002-23	Res. 470,000 Ohm ¼ W.
116	132579-3	Res. 100,000 Ohm Ceramic.
117	39002-23	Res. 470,000 Ohm ¼ W.
118	39002-16	Res. 33,000 Ohm ¼ W.
119	132593-1	Res. 230 Ohm 2.5 W. Cer.
120	132577-1	Res. 22,000 Ohm 3 W. Carbon.
121	39002-9	Res. 2200 Ohm ¼ W.
122	132579-3	Res. 100,000 Ohm Ceramic.
123	39002-25	Res. 1 Megohm ¼ W.
124	132348-7	Speaker.
	45580-A	Grommet (4) Spkr. Mtg.
	37953	Flat Washer (4) Spkr. Mtg.
	N-8	Nut (4) Spkr. Mtg.
	L-8	Lock Washer (4) Spkr. Mtg.
	131512	Headed Bushing (4) Spkr. Mtg.
125	28807-103	Speaker Socket.
126	132467	Phono Unit Assem.
127	26719-65	Phono Ter. Board.
128		Phono A. C. Cable.
129	132601-3	Power Trans.
130a, 130b, 130c, 130d	132580-1	Band Switch Ant. Sec. / Band Switch Ant. Sec. / Band Switch Osc. Sec. / Band Switch Osc. Sec.
131a, 131b, 131c, 131d		Function Switch AM. I. F. / Function Switch F. M. I. F. / Function Switch F. M. & Phono. / Function Switch F. M. Ant.
132A, 132B	132564-1	Volume Control. / A. C. Power Switch.
133	47133	Station P. B. Cable Socket.
134	132437-2	Station P. B. Unit Cable.
135	132427-1	Tone Push Button Unit.
136	132437-3	Tone Switch Plug & Cable.
137	132303-1	Tone Switch Cable Socket.
138	132656	Station Push Button Unit.
139A	132436-4	Trimmer Cond.
139B	132436-3	Trimmer Cond.
139C	132436-3	Trimmer Cond.
139D	132436-2	Trimmer Cond.
139E	132436-2	Trimmer Cond.
139F	132436-1	Trimmer Cond.
140A	32002-267	Osc. Coil.
140B	32002-268	Osc. Coil.
140C	32002-268	Osc. Coil.
140D	32002-270	Osc. Coil.
140E	32002-270	Osc. Coil.
140F	32002-269	Osc. Coil.
141	26719-51	Ant. Ter. Board.
142	39002-1	Res. 100 Ohm ¼ W.
143	39002-7	Res. 1000 Ohm ¼ W.
144	39002-1	Res. 100 Ohm ¼ W.
145	39002-20	Res. 150 Ohm ¼ W.
146	39002-27	Res. 2.2 Megohm ¼ W.
147	39002-28	Res. 3.3 Megohm ¼ W.
	132531-1	Cabinet 22CA.
	132612-1	Cabinet 22CB
	132714-1	Cabinet 22CP
	132532-1	Carton 22CA.
	132613-1	Carton 22CB.
	132715-1	Carton 22CP.
	132371-1	Screw—Chassis Mtg. (4) 22CA. CB & CP.
	44725	Flat Washer—Chassis Mtg. (4) 22CA. CB & CP.
	132323-2	Mtg. Spring Bottom (4) 22 CA, CB & CP.
	132322-1	Mtg. Spring Top (4) 22 CA, CB & CP.
	132393-1	Knob (2) 22 CA-CB-CP.
	132341-1	Knob Large (2) CA-CB-CP.
	132398-1	Cabinet Protector.
	131411-1	Knob Spring.
	132429	Push Switch Assem.
	132656	Tone Switch Assem.
	132396-1	Push Button.
	132397-1	Tone Button.
	132397-2	Tone Button.
	132397-3	Tone Button.
	132397-4	Tone Button.
	132397-5	Tone Button.
	132397-6	Tone Button.
	50628-A	Button Springs (12).
	132478-2	Envelope Assem. 22CA-CB.
	132478-4	Envelope Assem. 22CP.
	134232-1	Di-Pole Antenna.
	134216-1	Instruction Envelope.
	43552	Speaker Plug Retainer Clamp.
	45808	#8 x ⅜ P. K. Screw.
	133174	Record Chgr. Assem. 22CP.
	132472-2	Hinge Roller (2).
	132473-2	Hinge Roller Stud (2).
	5096	Nut Hinge Roller Stud (2).
	132463-1	Hinge Assem. R. H.
	132463-2	Hinge Assem. L. H.
	132537-1	Slide Rail (3).
	131133	Screw (9) Slide Rail.
	132850-1	Screw (8) Hinge Assem.
	132454-5	Record Changer Cable.
	134050	Cabinet Back.
	8-80	Screw (8) Cabinet Back.
	134531	Complete Fold. Brkt. for Radio Compart. Door.
	132434-1	Station Call Letters.
	132399-1	Call Letter Covers.

THE CROSLEY CORP.

WIRING DIAGRAM



MODEL--33 455 KC. I. F.

FOR RECORDER, RECORD CHANGER, P.A. SYSTEM - SEE MODEL 33BG AND GENERAL INDUSTRIES MODEL R-70 IN RIDER'S BOOK, "AUTOMATIC RECORD CHANGER AND RECORDERS", AND ALSO VOLUME XII , PAGES 12-39 TO 12-43 INCLUSIVE.

VOLTAGE CHART

ALL VOLTAGES MEASURED FROM SOCKET PIN TO CHASSIS @ 117.5 VOLT LINE

	SOCKET PIN NUMBER							
TUBE SECTION	1	2	3	4	5	6	7	8
6SA7—Osc.-Mod.	0	0	200	81.5	9	0	6.3	0
6SK7—I. F. Amp.	0	0	0	0	0	81.5	6.3	200
6SQ7—Det. A.V.C.—1st A.F.	0	0	0	0	0	74	6.3	0
6K6GT—Output	0	0	184	200	0	0	6.3	12.5
6SK7—Mike Amp.	0	0	0	0	0	+	6.3	+
5Y3G—Rectifier	0	5.0	0	268 A.C.	0	268 A.C.	0	240

All voltages measured with 1000 OHM/Volt Voltmeter except heaters. Voltages may vary 10% of values given.

DROP ACROSS SPEAKER FIELD.....40 Volts
MAXIMUM POWER OUTPUT @ 130 V. LINE (approx.)..... 3 Watts
MAXIMUM POWER CONSUMPTION @ 130 V. LINE.....55 Watts

*Phono Motor 40 Watts additional.

MODEL C33CA

THE CROSLEY CORP.

RADIO RECEIVER ALIGNMENT PROCEDURE

PRELIMINARY

Output Meter Connections.....Plate to Screen of 6K6GT
Generator Ground Connection.....To chassis or Ground Lead
Dummy Antenna to be in series with generator output.....See Chart Below
Position of Volume Control.....Fully On
Position of Tone Control.....Treble or Speech

Alignment Sequence	Dummy Antenna	Frequency Setting	Input to Receiver	Band Switch	Tuning Cond. Setting	Trimmers Adjusted	Remarks
1.	.02MF	455 Kc.	Ant. Lead (Blue)	B. C.	Fully Open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum output. Adjust for Maximum output.
2.	400 ohm (carbon)	15.3 Mc.	Ant. Lead (Blue)	S. W.	Fully Open	S. W. "OSC" (on gang)	Adjust for Peak. See foot note.
3.	400 ohm (carbon)	15.0 Mc.	Ant. Lead (Blue)	S. W.	Approx. 15 on dial	S. W. "ANT" center trimmer on right end	Adjust for Maximum while rocking gang back and forth.
4.	.0002 MF.	1650 Kc.	Ant. Lead (Blue)	B. C.	Fully Open	B. C. "OSC" front trimmer on right end	Adjust for peak. Make sure the switch on loop is in B. C. position.
5.	.0002 MF.	1400 Kc.	Ant. Lead (Blue)	B. C.	Approx. 140 on dial	B. C. "ANT" rear trimmer on right end	Adjust for Maximum output.
6.	.0002 MF	2.5 Mc.	Ant. Lead (Blue)	B. C. and switch on loop to Pol.	Approx. 2.5 on dial lower right corner	Pol. Ant on loop	Adjust for Maximum output.

IMPORTANT ALIGNMENT NOTES

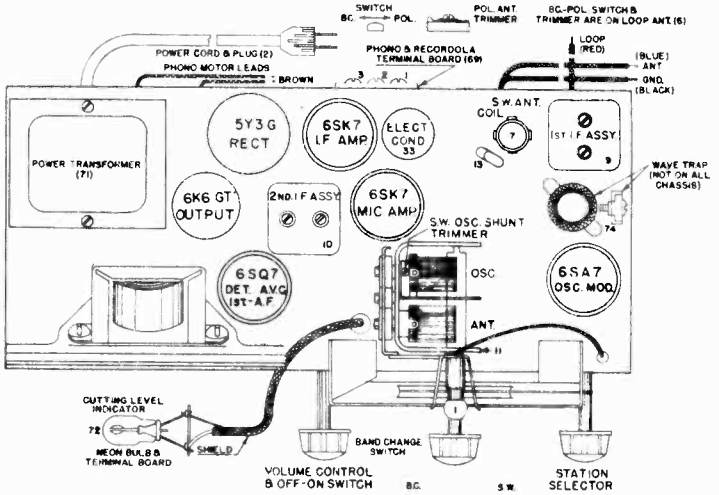
When aligning the shortwave bands "OSC" trimmers care must be exercised to see that the circuits are aligned on the correct frequency which is approximately 910 kilocycles less as **indicated on the dial.** To check, increase generator output, tune-in the generator frequency and then tune-in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles **lower on the dial** than the fundamental. If image cannot be tuned-in, the "OSC" trimmer is adjusted to the wrong peak. (Correct peak is the second peak on trimmer from the closed position).

Repeat the original alignment procedure for more accurate adjustments.

Always keep signal generator output as low as possible to prevent action of the A.V.C. circuit.

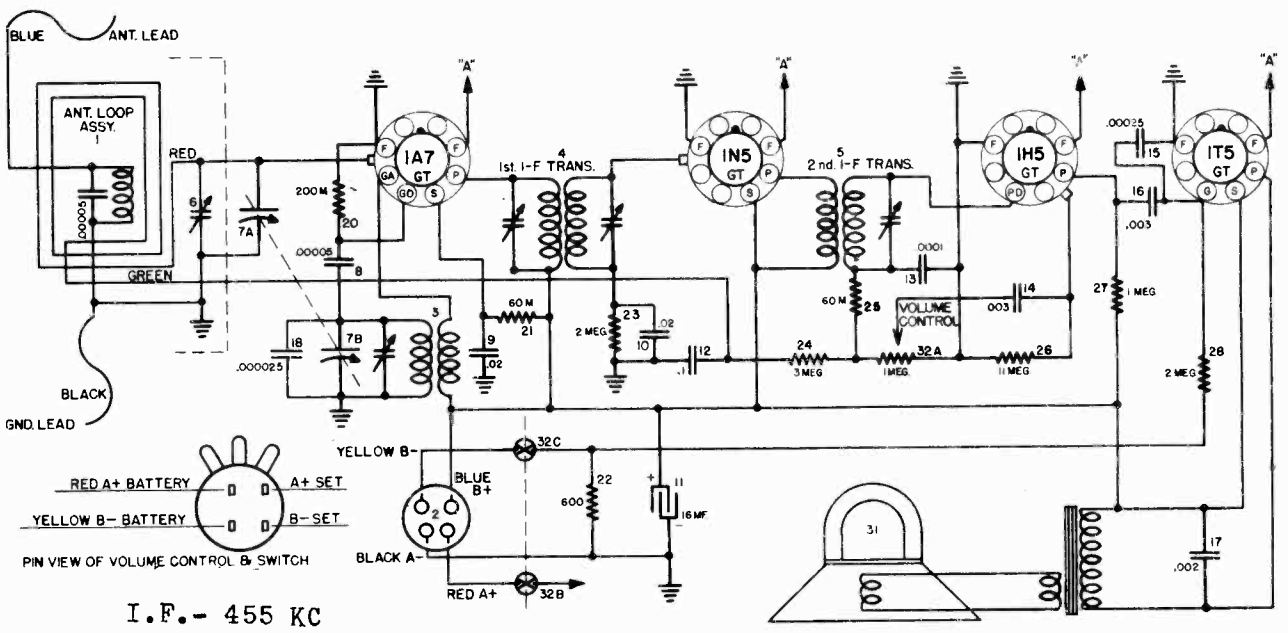
WAVE TRAP ADJUST.

The wave trap should be adjusted last. Feed a 455 kc signal through a .0002 mfd. condenser to the antenna lead of the receiver. With the band selector switch on the broadcast band, the dial set to 60, and the volume control full on, adjust the wave trap trimmer condenser to minimum.



MODEL B36BS

THE CROSLEY CORP.



BATTERIES REQUIRED — 1—CROSLEY "A & B" BATTERY PACK No. CR 60 or CR 28 OR EQUIVALENT (1.5 VOLT "A" and 90 VOLT "B") BATTERY PACK.

TUBE SOCKET VOLTAGE READINGS (MEASURED FROM SOCKET PIN TO CHASSIS)

Tube	Function	PIN NUMBER No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
1A7GT	Osc.-Mod.	GND.	1.5	87	43	Osc. Grid	87	F—	J.B.
1N5GT	I-F Amp.	GND.	1.5	87	87	N.C.	N.C.	F—	N.C.
1H5GT	Det.-A.V.C.-1st A. F.	GND.	1.5	20	DIODE	J.B.	J.B.	F—	GND.
1T5GT	Output	GND.	1.5	84	87	—6	N.C.	F—	J.B.

* —6 volts measured across item 22.

Max. Power Output approximately 320 milliwatts. "A" Battery Drain approximately .20 Ampere at 1.5 Volts. "B" Battery Drain approximately 11 Milliamperes at 90 Volts. *Measured across item 22. J.B.=Junction Block.

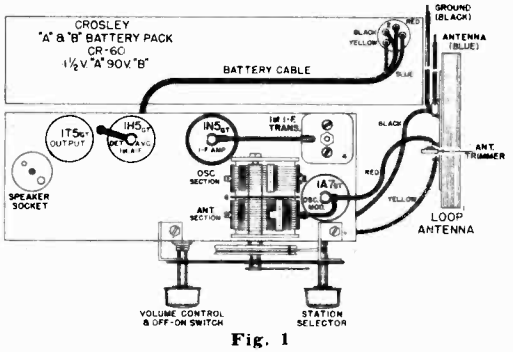


Fig. 1

ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary, the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

CONNECTING OUTPUT METER

Connect the output meter across the "P" and "S" terminals of the 1T5GT output tube. Be certain that the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

1. Tuning I-F Amplifier to 455 Kilocycles

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 1A7GT tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" lead or chassis. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Set the station selector so that the tuning condenser plates are completely in mesh and turn the volume control knob on the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust 2nd I-F trimmer, located below spk. front chassis flange, for maximum reading on the output meter.

(e) Adjust both trimmers on the 1st I-F transformer for maximum output.

(f) Check operations (d) and (e) for more accurate adjustments.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

2. Aligning R-F Amplifier

When aligning the R-F amplifier the output lead from the signal generator should be connected through a .0001 mfd. condenser to the "ANT" lead (Blue). (Check dial pointer to see that it covers complete range.)

(a) Set the signal generator to 1650 kilocycles.

(b) Open the condenser gang all the way.

(c) Adjust the "OSC" trimmer condenser on gang for maximum output.

(d) Set the signal generator to 1400 kilocycles.

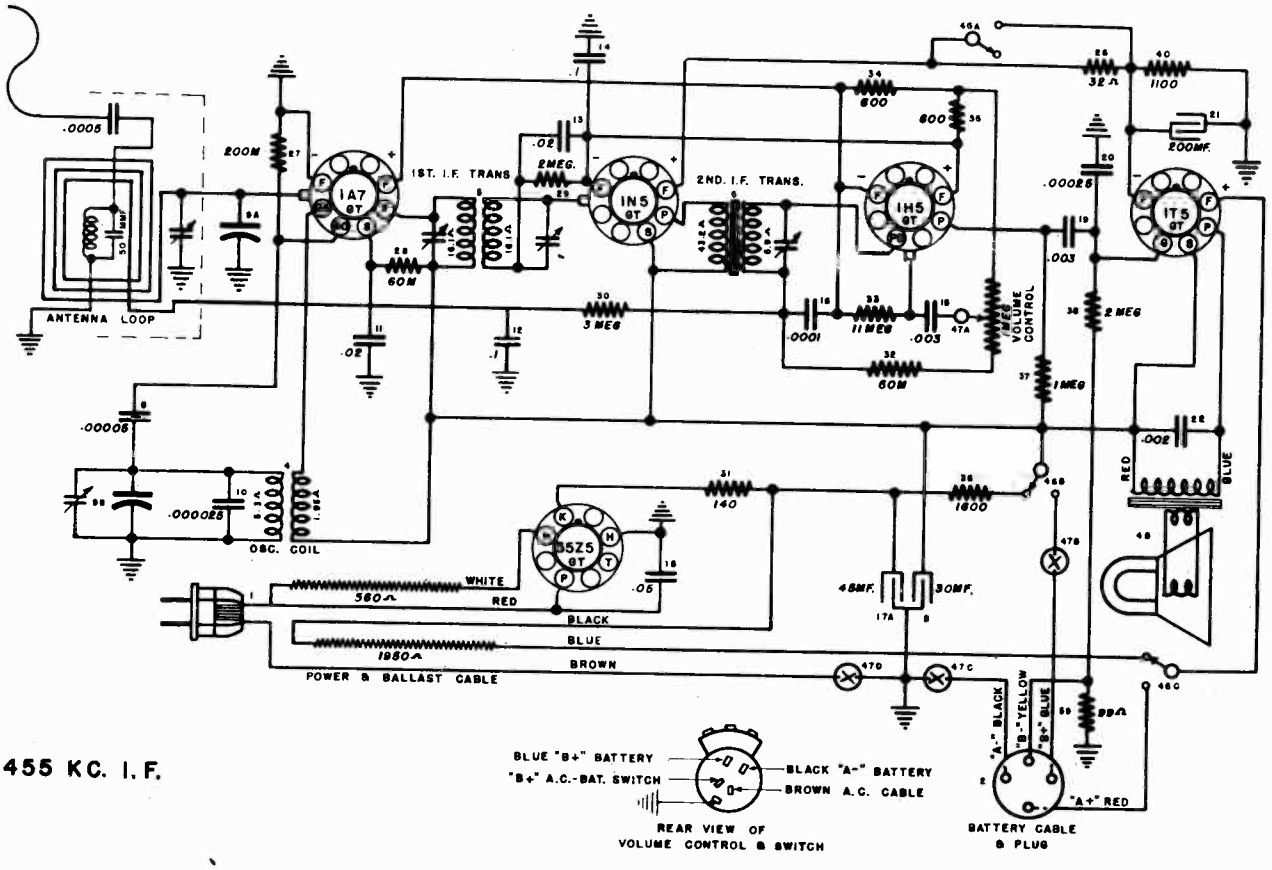
(e) Tune the receiver to the generator signal for maximum output (approximately 140 on the dial).

(f) Adjust the "ANT" trimmer condenser on loop for maximum output. DO NOT READJUST THE "OSC" TRIMMER AT 1400 KILOCYCLES.

(g) Repeat operations (e) and (f) alternately until no further improvement in output can be obtained.

MODEL 43BT, Chassis 43

THE CROSLEY CORP.



ALIGNMENT PROCEDURE — Volume Control on full — Output meter connected to Plate and Screen of 1T5GT

SIGNAL GENERATOR FREQUENCY SETTING	SIGNAL GENERATOR CONNECTION TO RADIO	DUMMY ANTENNA	TUNING COND. SETTING	TRIMMERS TO ADJUST (See Fig. 1)	REMARKS
455 Kc	Grid 1A7GT	.02 MF	Fully open	2nd I-F (1) located on front chassis flange	Adjust for maximum signal.
455 Kc	Grid 1A7GT	.02 MF	Fully open	1st I-F (2)	Adjust for maximum signal. Located top of 1st I-F ass'y.
1650	Ant. Lead	.0001 MF	Approx. 140	"OSC" Shunt on gang	Adjust for maximum output. Gang does not have to tune through signal.
1400	Ant. Lead	.0001 MF	on dial	"ANT" shunt on loop ant.	Adjust for maximum output.

Repeat above for more accurate adjustments
Maximum power output @ 75 V. "B" — approx. 200 M. W.
Maximum power output @ 90 V. "B" — approx. 340 M. W.

A Battery drain @ 6 volts, .05 Amp.; "B" Battery drain @ 75 V., 9 M. A.; @ 90 V., 12 M. A.
Power consumption @ 117.5 volts line—30 Watts

DO NOT CONNECT A GROUND WIRE TO THIS RECEIVER.

POWER SUPPLY —

BATTERIES REQUIRED — 1 No. CR61 Crosley "A & B" Battery Pack (6 Volts "A" and 90 Volts "B") or equivalent.

Receiver will operate on any 110 Volt (50-60 cycle) A.C. or D.C. electric circuit. When used on 110 Volts D.C. the electric polarity must be correct to the receiver.

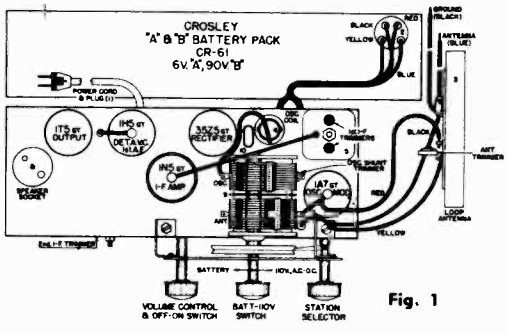
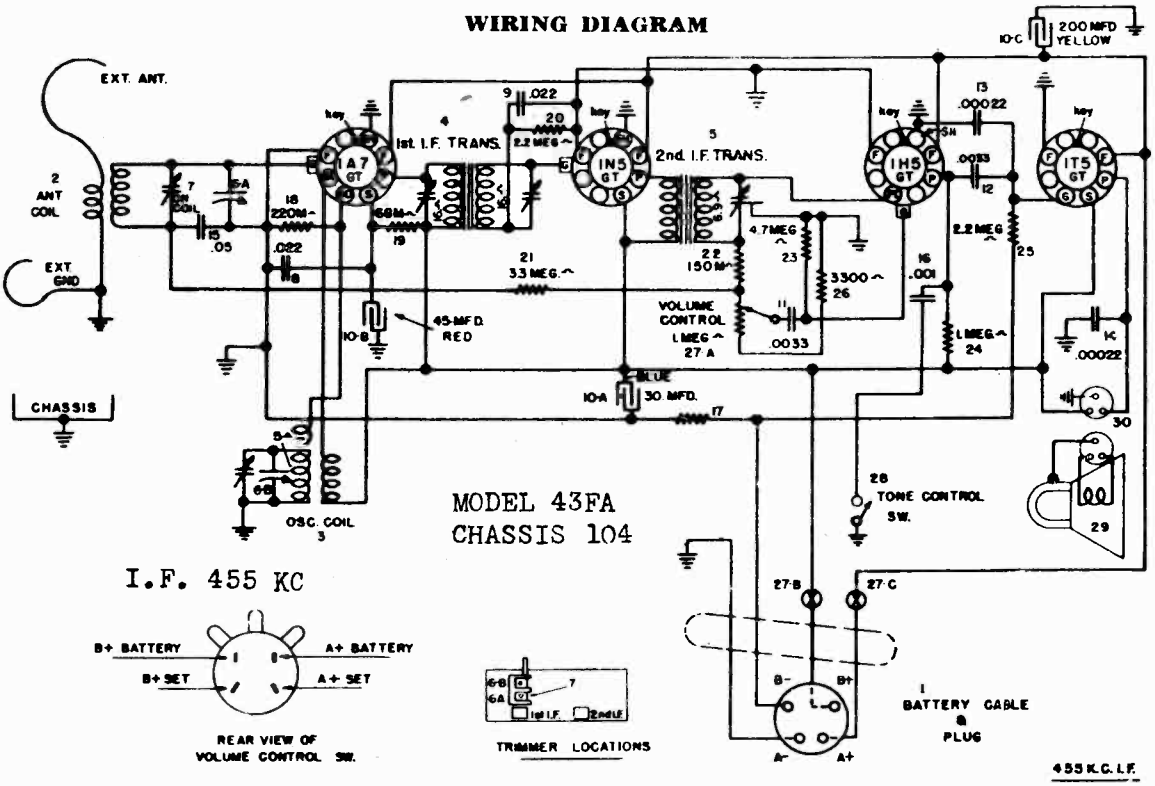


Fig. 1

MODEL 43FA, Chassis 104
MODELS 53FA, 53FB, Ch. 105, 106

THE CROSLEY CORP.

WIRING DIAGRAM

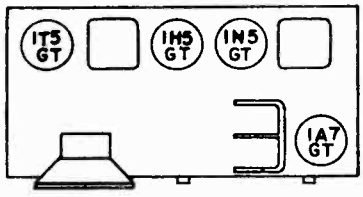


BATTERIES REQUIRED—One No. CR-69 Crosley "A and B" Battery Pack (1.5 Volt "A"—90 Volt "B").

SOCKET VOLTAGES

Measured from "B" minus using 1000 Ω/V Voltmeter, 100 V. Range, no signal input

Tube		Battery Pack (GR-69)			
Type	Function	Filament Volt	Plate Volt	Screen Volt	Osc. Anode
1A7GT	Osc. Modulator	1.5	82	11	82
1N5GT	I. F. Amplifier	1.5	82	82	....
1H5GT	Det.-A. S. C. 1st A. F.	1.5	+	....	....
1T5GT	Out Put	1.5	82	82	....



MODEL 43FA, Chassis 104. MODELS 53FA, 53FB, Chassis 105, 106
ALIGNMENT PROCEDURE

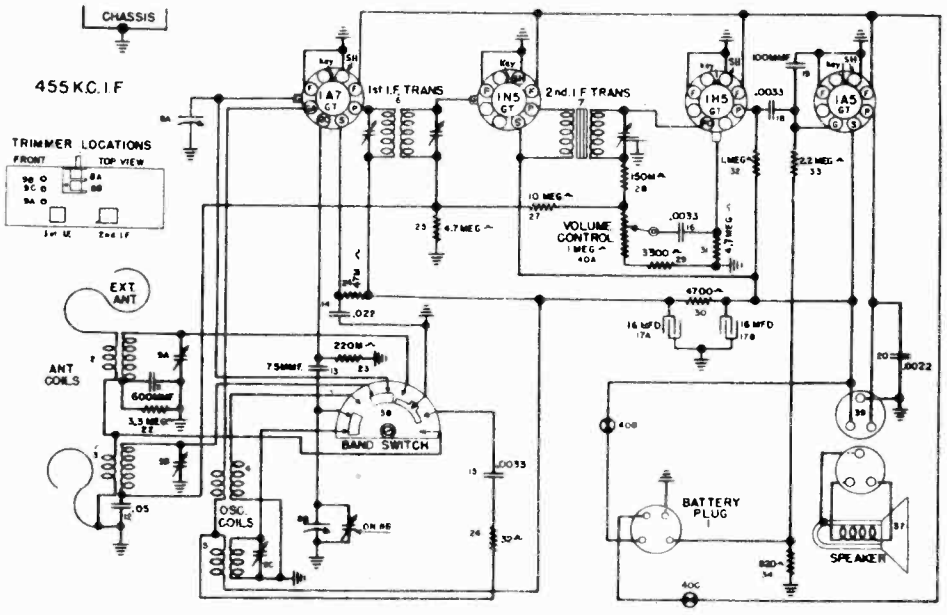
Volume Control on full Output meter connected to Plate and Screen of 1T5GT

SIGNAL GENERATOR					
FREQUENCY SETTING	CONNECTION TO RADIO	DUMMY ANTENNA	TUNING COND. SETTING	TRIMMERS TO ADJUST (See Fig. 1)	REMARKS
455 Kc	Ant. Lead	.0001 MF	Fully Open	2nd 1-F(1)	Adjust for maximum signal.
455 Kc	Ant. Lead	.0001 MF	Fully Open	1st 1-F (2)	Adjust for maximum signal. Located top of 1st 1-F ass'y.
1650	Ant. Lead	.0001 MF	Fully Open	"OSC" Shunt on gang	Adjust for maximum output Gang does not have to tune through signal.
1400	Ant. Lead	.0001 MF	140 on dial	"ANT" shunt on Coil	Adjust for maximum output

MODEL 43FB, Chassis 91

THE CROSLEY CORP.

WIRING DIAGRAM

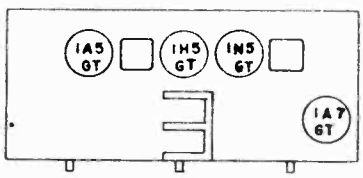


BATTERIES REQUIRED—One No. CR-69 Crosley "A and B" Battery Pack (1.5 Volt "A"—90 Volt "B").

SOCKET VOLTAGES

Measured from "B" minus using 1000 Ω/V Voltmeter, 250 V. Range, no signal input

Tube		Battery Pack (GR-69)			
Type	Function	Filament Volt	Plate Volt	Screen Volt	Osc. Anode
1A7GT	Osc. Modulator	1.5	72	40	72
1N5GT	I. F. Amplifier	1.5	84	84	....
1H5GT	Det.-A. S. C. 1st A. F.	1.5	17	....	....
1A5GT	Out Put	1.5	81	84	....



ALIGNMENT PROCEDURE

Volume Control on full Output meter connected to Plate and Screen of 1T5GT

Align. Seq.	Dummy Antenna	Freq'cy Setting	Connec'n to Radio	Band Switch	Tun'g Cond. Setting	Trimmer Adjusted	Remarks
	Signal Generator						
1.	.02 MF	455 KC.	Antenna Lead	BC	Fully Open	2nd I-F(1) 1st I-F(2)	Adjust for maximum signal. Adjust for maximum signal.
2.	400 ohm Carbon Resistor	15.3 MC.	Antenna Lead	S.W.	Fully Open	S. W. "Osc."	Adjust for maximum output.
3.	400 ohm Carbon	15.0 MC.	Antenna Lead	S.W.	15 on Dial	S.W. "Ant."	Adjust for maximum signal while rocking gang through it.
4.	.0002 MF.	1650 KC.	Antenna Lead	BC	Fully Open	B.C. "Osc."	Adjust for maximum output. Gang does not have to tune through signal.
5.	.0002 MF.	1400 KC.	Antenna Lead	BC	140 Dial	B.C. "Ant."	Adjust for maximum output.

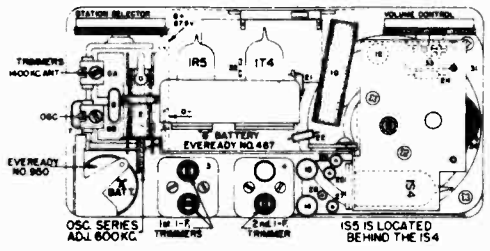
Rèpeat above procedures for more accurate adjustments.

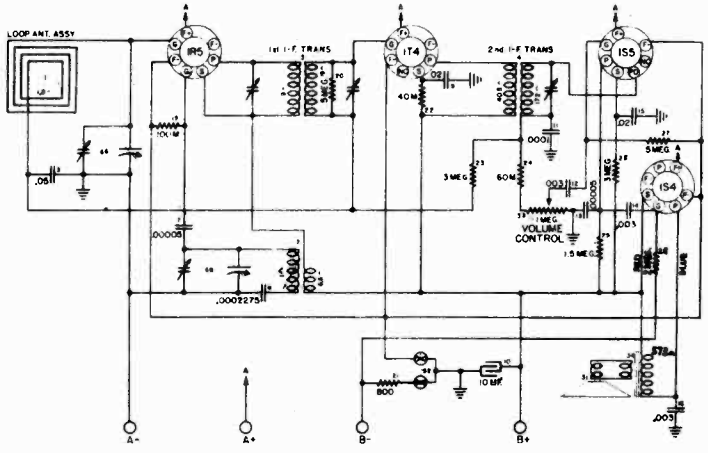
Maximum power output at 90 V. "B"—approx. 340 M. W.

A Battery drain at 1.5 volts, .20 Amp.; "B" Battery drain at 90 V., 11 M. A.

MODEL 45, Chassis 45
COMMUTER

THE CROSLEY CORP.





BATTERIES REQUIRED—1 Eveready No. 950 size "D", 1.5 volt "A" Battery or equivalent; 1 Eveready No. 467 Minimax 67½ Volt "B" Battery or equivalent.

SOCKET VOLTAGES

Measured from socket contact to chassis ground using 10 volt range (for Filament) and 500 Volt range (for Plate and Screen) of a 100,000 ohm per volt Voltmeter.

		SOCKET PIN NUMBER						
TUBE	**FUNCTION**	**No. 1**	**No. 2**	**No. 3**	**No. 4**	**No. 5**	**No. 6**	**No. 7**
1R5	Osc-Mod	Gnd.	51	51	—	—	—	1.3
1T4	I-F Amp.	Gnd.	51	33	—	—	—	1.3
1S5	Det.—A.V.C. 1st A.F.	Gnd.	—	—	5	5	—	1.3
1S4	Pwr. Output	Gnd.	51	*7.9	51	—	—	1.3

*Measured across item 21, an 800 ohm resistor.
"A" Battery drain approximately 250 M.A. "B" Battery drain @ 58.9 Volts approximately 9.2 M.A.

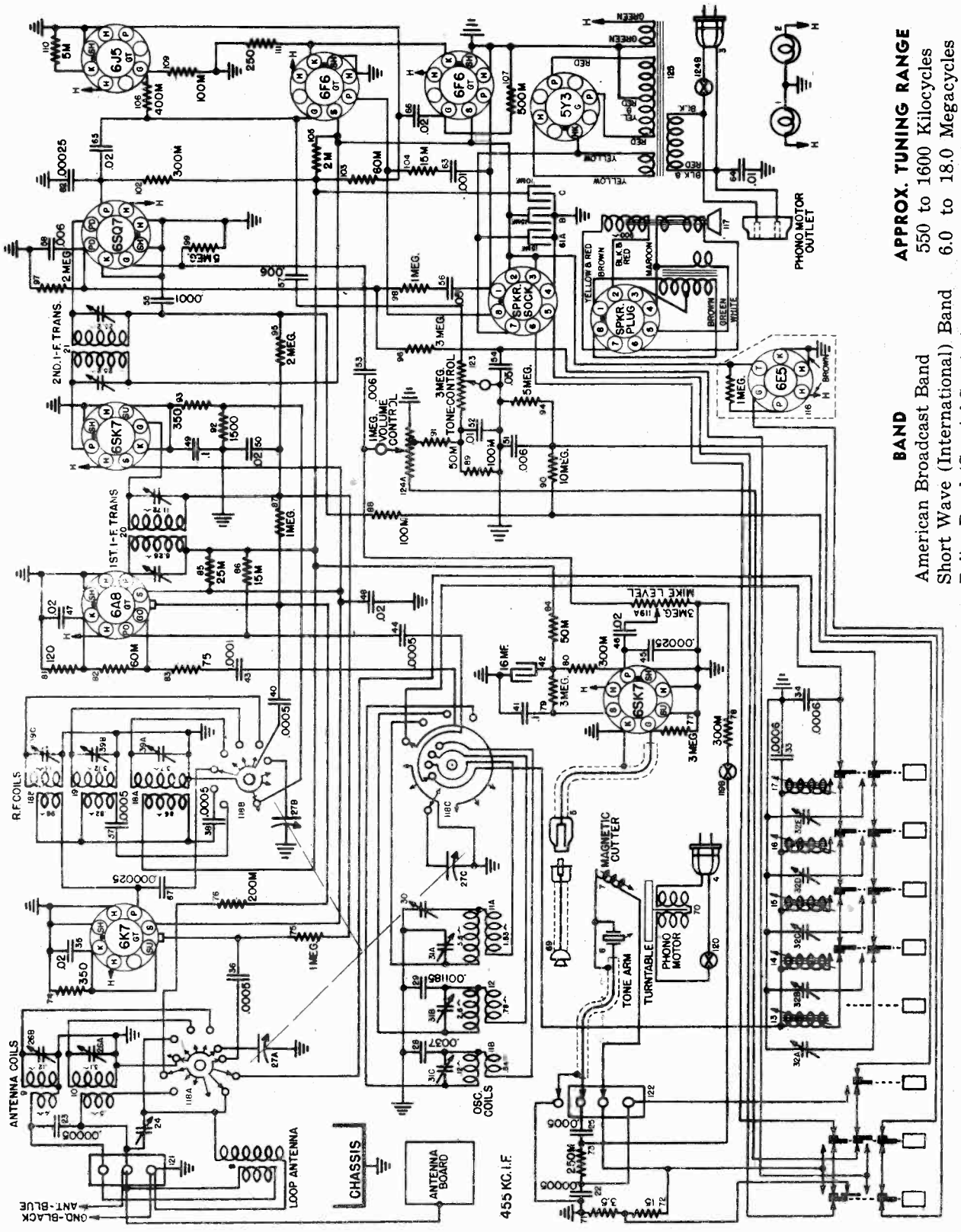
RECEIVER ALIGNMENT

OUTPUT METER CONNECTIONS.... Plate to screen of 1S4
GENERATOR GROUND CONNECTION .... To chassis
POSITION OF VOLUME CONTROL .... Fully on

Step	Signal Generator Dummy Antenna	Frequency Setting	Input to Receiver	Tuning Cond. Setting	Trimmers Adjusted	Remarks
1.	02.	455 Kc.	Stator of top section of gang	Fully open	2nd I-F(2) 1st I-F(2)	Adjust for maximum output. Adjust for maximum output.
2.	None	1620 Kc.	Signal radiated by loop on generator	Fully open	"OSC" Trimmer	Adjust for peak gang; does not have to tune through signal.
3.	None	1400 Kc.	"	Approx. 140 on dial knob	"ANT" Trimmer	Adjust for maximum output
4.	None	600 Kc.	"	Approx. 60 on dial knob	Iron core in osc coil	Adjust for maximum output while rocking gang through signal.
5.	REPEAT THE ABOVE ALIGNMENT PROCEDURE TO INSURE ACCURATE ADJUSTMENTS.					

MODELS 48 Late, 48BF,
48CB

THE CROSLEY CORP.



BAND — **APPROX. TUNING RANGE**

American Broadcast Band	550 to 1600 Kilocycles
Short Wave (International) Band	6.0 to 18.0 Megacycles
Police Band (Special Service)	1.6 to 5.0 Megacycles

MODELS 48, 48BF, 48CB

THE CROSLEY CORP.

RADIO RECEIVER ALIGNMENT PROCEDURE

Preliminary
Output Meter Connections.....Plate to Plate of 6F6G's
Generator Ground Connection.....To chassis or Ground Lead
Dummy Antenna to be in series with generator output.....See Chart Below
Position of Volume Control.....Fully On
Position of Tone Control.....Treble or Speech
Position of Function Switch.....Radio
Position of Mike Level Control.....All the Way to Left (Off)

	Signal Generator						
Alignment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.	Grid of 6A8GT	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	.0002 MF.	1650 Kc.	Ant. Lead (Blue)	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal.
3.	.0002 MF.	600 Kc.	Ant. Lead (Blue)	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer	Adjust for maximum output while rocking gang thru signal.
4.	Repeat Step No. 2 to check possible shift due to series adjustment						
5.	.0002 MF.	1400 Kc.	Ant. Lead (Blue)	B. C.	Approx. 140 on dial	B. C. "ANT" Trimmer B. C. "R-F" Trimmer	Adjust for maximum output; do not touch B. C. Osc. Trimmer. Adjust for maximum output while rocking gang thru signal.
6.	400 ohm (carbon)	5.3 Mc.	Ant. Lead (Blue)	Police	Fully open	Pol "OSC"	Adjust for peak; gang does not have to tune thru signal.
7.	400 ohm (carbon)	5.3 Mc.	Ant. Lead (Blue)	Police	Approx. 5.0	Pol "ANT" and "R-F" Trimmers	Adjust for maximum output while rocking gang thru signal.
8.	400 ohm (carbon)	18.3 Mc.	Ant. Lead (Blue)	S. W.	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
9.	400 ohm (carbon)	18.0 Mc.	Ant. Lead (Blue)	S. W.	Approx. 18	S. W. "ANT" and "R-F" Trimmers	Adjust for maximum output while rocking gang thru signal.

When aligning the shortwave bands "OSC" trimmers care must be exercised to see that the circuits are aligned on the correct frequency and not on the image which is approximately 910 kilocycles less **as indicated on the dial.** To check, increase generator output, tune-in the generator frequency and then tune-in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles **lower on the dial** than the fundamental. If image cannot be tuned-in, the "OSC" trimmer is adjusted to the wrong peak. (Correct peak is the second peak on trimmer from the closed position).

Repeat the original alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A.V.C. circuit.

SOCKET VOLTAGES MEASURED @ 117.50 VOLTS LINE (BETWEEN SOCKET PIN AND CHASSIS) WITH 1000 OHM PER VOLT, 500 VOLT RANGE VOLTMETER D.C.)

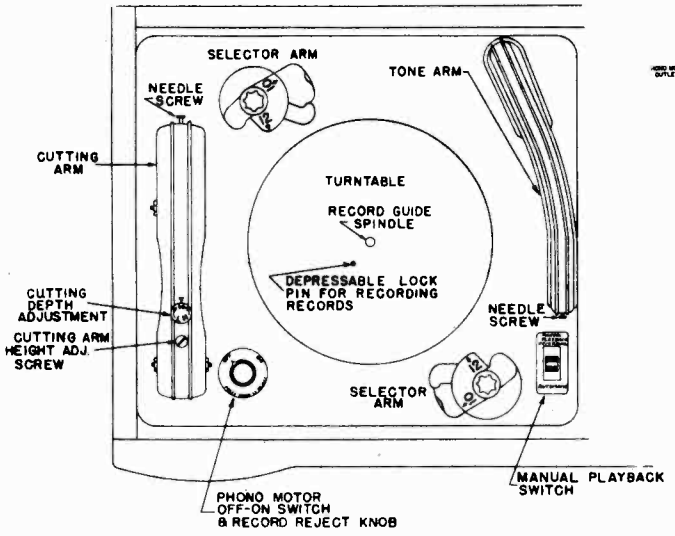
		SOCKET PIN NUMBER							
TUBE	FUNCTION	1	2	3	4	5	6	7	8
6K7GT	R-F Amp.	.....	.....	195	78.6	.....	2.0	*6.3	2.0
6A8GT	Osc.-Mod.	.....	.....	195	78.6	.....	136	*6.3	1.0
6SK7	I-F Amp.	.....	.....	.....	.....	5.5 B.C. 2.6 S.W.	78.6	*6.3	234
6SQ7	Det. A.V.C. 1st A-F	.....	.....	.....	.....	.....	110	*6.3	.....
6J5GT	Phase Invert	.....	.....	118	195	.....	110	*6.3	4.5
6F6G	Output	.....	.....	220	228	.....	.....	*6.3	15.0
6F6G	Output	.....	.....	220	228	.....	.....	*6.3	15.0
6SK7	Mike Amp.	.....	.....	.....	.....	.....	.....	*6.3	POS.
5Y3G	Rectifier	.....	305 D.C.	.....	*325	.....	*325	.....	305 D.C.
6E5	Indicator	.....	.....	.....	225	.....	*6.3		

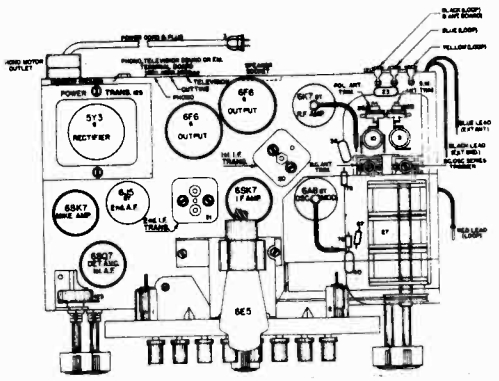
*Measured with A.C. volt meter

VOLTAGE DROP ACROSS SPEAKER FIELD=77 VOLTS
MAXIMUM POWER OUTPUT @ 130 V. Line=7.5 Watts
POWER CONSUMPTION @ 117.5 V. Line=Radio 80 Watts, Phono Motor 35 Watts—TOTAL=115 WATTS
Voltages may vary 10% of values given.

MODELS 48, 48BF, 48CB

THE CROSLEY CORP.





FOR OTHER DATA PERTAINING TO THE RECORD CHANGER AND RECORDER, SEE RIDER'S "AUTOMATIC RECORD CHANGERS AND RECORDERS", AND VOLUME XII PAGES 12-39 TO 12-43 INCLUSIVE.

ADJUSTING PUSH BUTTONS TO STATIONS

SET-UP PROCEDURE

Remove push button escutcheon. Turn the receiver "on" and leave operate a sufficient length of time to permit the tubes to reach normal operating conditions.

NOTE: To simplify the set up and insure accurate adjustments the following pre-adjustments should be made.

Tighten all the "ANT" Trimmer screws just moderately tight. See Fig. 3.

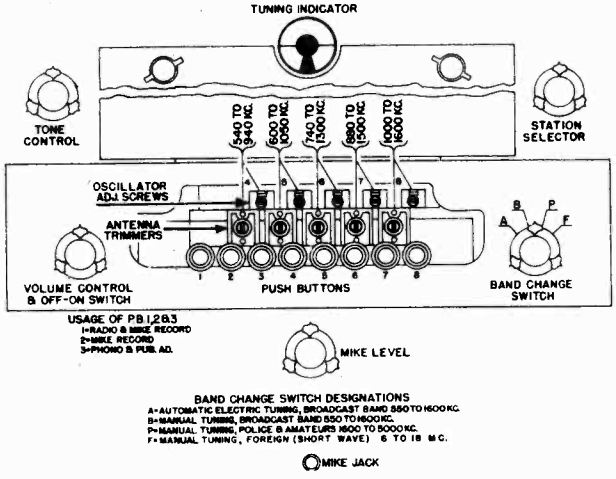


FIG. 3

Turn the "OSC" adjusting screws to the left (counter clockwise) until the end of the screw is about flush (even) with the top of the "ANT" padder condenser. NOTE: Care should be exercised when adjusting the "OSC" screws so that the selected station is not passed over; turn screws slowly.

It is essential that the frequency (Kilocycles) of the station selected is **within** the range of the push button to be set for that station, see Fig. 3.

1. Turn the band switch to "B" position, first notch from left end. Using the station selector knob (upper right) carefully tune in the station to which the No. 4 push button is to be set. Note program.

2. Turn the band switch to the left ("A") and using a small screw driver, carefully turn (in a clockwise direction) the "OSC" screw for the No. 4 push button (first screw on left in the upper row), until the station you tuned in (Manually) is heard again. Adjust for maximum output in speaker (narrowest width of shadow on tuning indicator tube).

3. Adjust the No. 4 push button "ANT" adjusting screw for maximum volume in speaker, (narrowest width of shadow on tuning indicator tube).

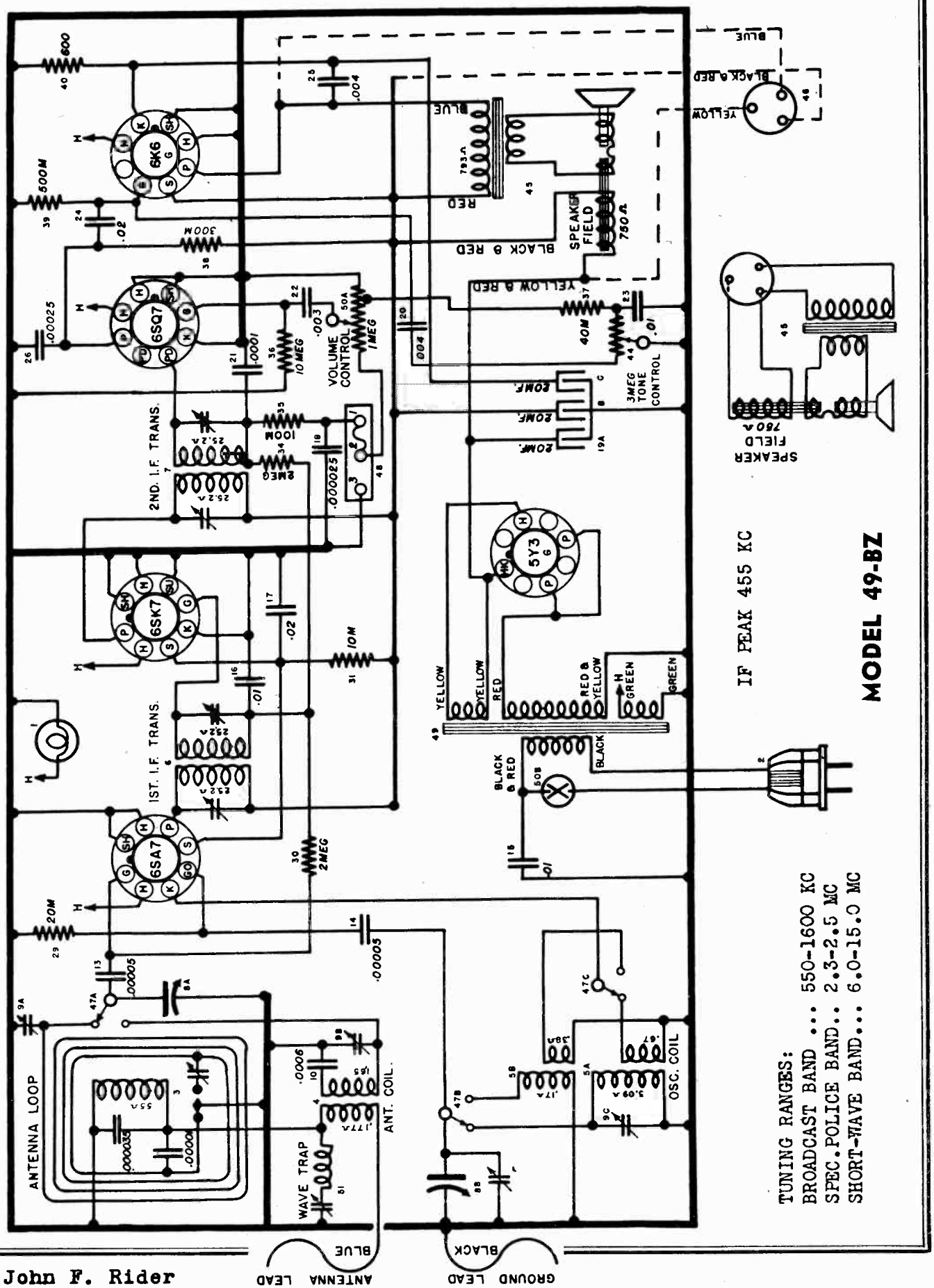
4. Turn band switch one notch to right "B" then back to "A" to check if push button is correctly adjusted.

5. The set-up for No. 4 push button is now complete. Set up remaining buttons to be set, following the same procedure, adjusting the "OSC" screw first, then the "ANT" padder screw.

6. After all the buttons have been set, they should be rechecked to insure accurate adjustments.

MODEL 49BZ

THE CROSLEY CORP.



MODEL 49BZ

THE CROSLEY CORP.

ALIGNMENT PROCEDURE

PRELIMINARY

Output meter connections.....Plate to Screen 6K6GT
Generator ground connection.....To chassis or ground lead
Dummy antenna to be in series with generator output.....See chart below
Position of volume control.....Fully on
Position of tone control.....Treble or speech

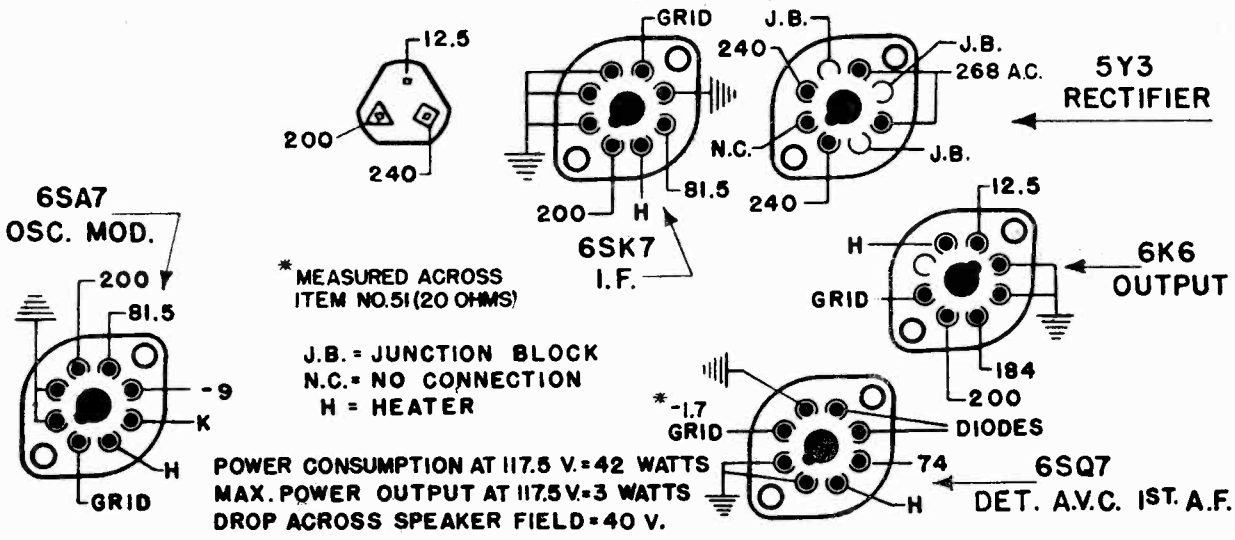
ALIGNMENT PROCEDURE CHART

Alignment Sequence	Signal Generator Dummy Antenna	Signal Generator Frequency Setting	Input Connection To Receiver	Band Switch	Tuning Cond.	Trimmer Adjusted	Remarks
1	.02 Mf.	455 Mc.	Ant. Lead	B. C.	Fully open	2nd I-F 1st I-F	Adjust for maximum output.
2	400 Ohm Carbon	15.4 Mc.	Ant. Lead	S. W.	Fully open	S. W. "OSC" rear section of gang	Adjust for Peak.
3	400 Ohm Carbon	15.0 Mc.	Ant. Lead	S. W.	Approx. 15 on dial	S. W. Ant.	Adjust for maximum output while rocking gang thru signal.
4	.0002 Mf.	1650 Kc.	Ant. Lead	B. C.	Fully open	B. C. "OSC"	Adjust for peak; gang does not have to tune thru signal.
5	.0002 Mf.	1400 Kc.	Ant. Lead	B. C.	Approx. 140 on dial	D. C. Ant.	Adjust for maximum output.
6	.0002 Mf.	2.5 Mc.	Ant. Lead	B. C. and switch on loop to POL.	Approx. 2.5 on dial	POL. Ant. on loop	Adjust for maximum output.

When aligning the shortwave band "OSC" trimmer care must be exercised to see that the circuit is aligned on the correct frequency and not on the image which is approximately 910 kilocycles less AS INDICATED ON THE DIAL. To check, increase generator output, tune-in the generator frequency and then tune-in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles LOWER ON THE DIAL than the fundamental. If image cannot be tuned-in, the "OSC" trimmer is adjusted to the wrong peak. (Correct peak is the second peak on trimmer from the closed position).

Repeat the original alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A. V. C. Circuit.

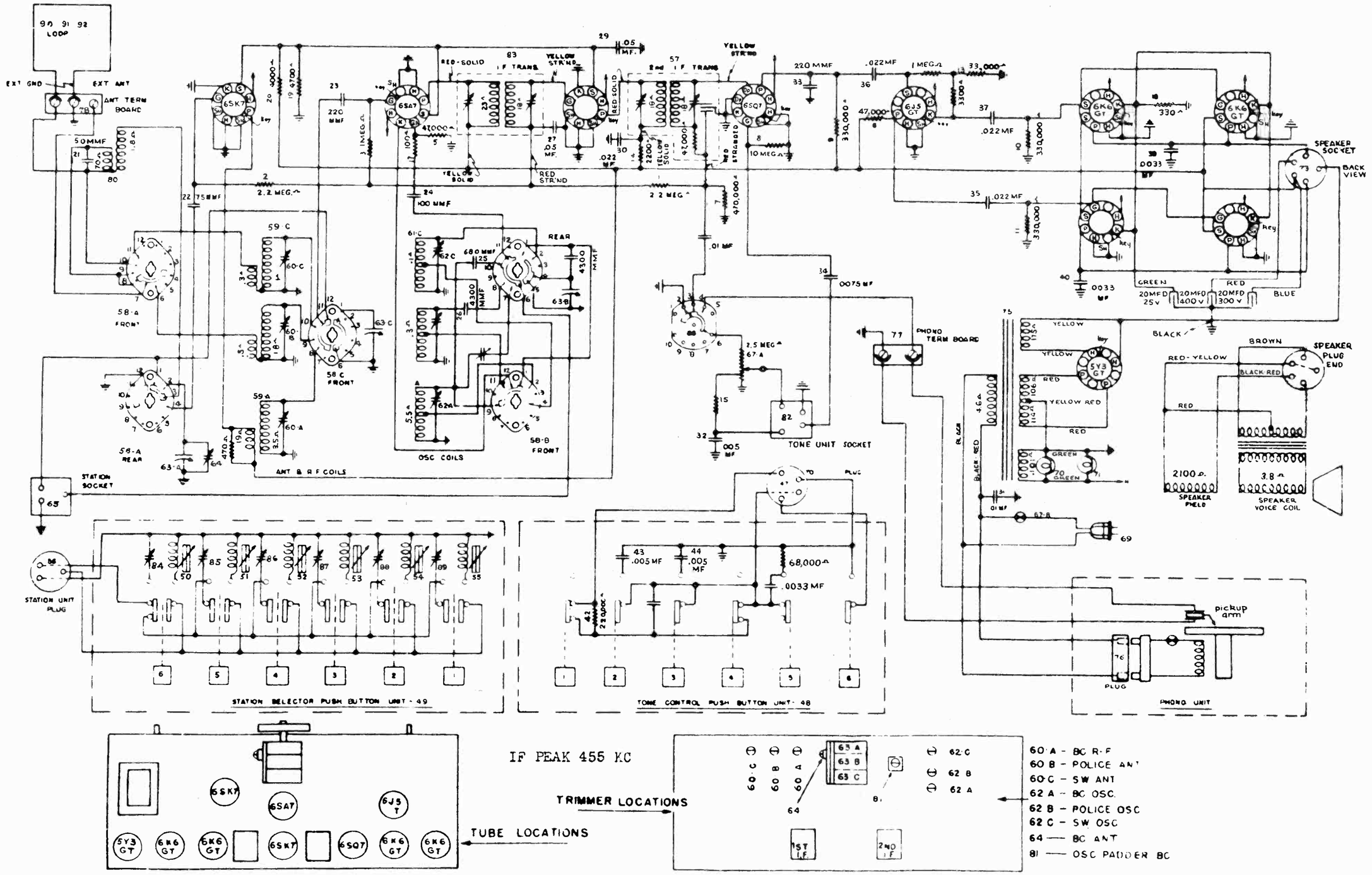
SOCKET VOLTAGE CHART



VOLTAGES MEASURED BETWEEN SOCKET PIN & GROUND WITH A 250 VOLT, 1000 OHMS PER VOLT, VOLT METER. READINGS MAY VARY 10%

MODELS 03CA, 03CB, 03CC,
03CP, 03CQ, 03CR.
Chassis 95

THE CROSLEY CORP.



THE CROSLEY CORP.

MODELS 03CA, 03CB, 03CC, 03CP, 03CQ, 03CR
Chassis 95

ALIGNMENT PROCEDURE

Preliminary

Output Meter Connections.....Plate to Plate of Adjacent 6K6's
Generator Ground Connection.....To Chassis or Ground Lead
Dummy Antenna to be in Series with Generator Output.....See Chart Below
Position of Volume Control.....Fully On
Position of Master Tone Control.....All Buttons Out

ALIGNMENT PROCEDURE CHART

Signal Generator							
Alignment Seq.	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02MF.	455Kc.	Stator lug Rear section of Gang Cond.	B.C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	.0002MF.	1620Kc.	Antenna Terminal	B.C.	Fully open	B.C."OSC" 62A	Adjust for peak; gang does not have to tune thru signal. Loop must be connected.
3.	.0002MF.	1400Kc.	Antenna Terminal	B.C.	Approx. 140 on dial	B.C."Ant."64 B.C."R-F" 60A	Adjust for max. output. Do not touch B.C. Osc. trimmer. Adjust for maximum output.
4.	.0002MF.	600Kc.	Antenna Terminal	B.C.	Approx. 60 on dial	B.C."OSC" Series 81	Adjust for max. output while rocking gang thru signal.
5.	400 ohm (Carbon)	6.5Mc.	Antenna Terminal	Police	Fully open	Pol "OSC" 62P	Adjust for peak; gang does not have to tune thru signal. And repeat No. 3
6.	400 ohm (Carbon)	6.0Mc	Antenna Terminal	Police	Approx. 6.0	Pol "ANT." 60B	Adjust for maximum output.
8.	400 ohm (Carbon)	18.3Mc.	Antenna Terminal	S.W.	Fully open	S.W."OSC" 62C	Adjust for peak. Gang does not have to tune thru signal.
9.	400 ohm (Carbon)	18.0Mc	Antenna Terminal	S.W.	Approx. 18	S.W."ANT." 60C	Adjust for maximum output while rocking gang thru signal.
10.	Repeat the above alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A. V. C. circuit.						

IMPORTANT ALIGNMENT NOTES: When aligning the shortwave bands "OSC" trimmers care must be exercised to see that the circuits are aligned on the correct frequency and not on the image which is approximately 910 kilocycles less as indicated on the Receiver dial. To check, increase generator output, tune-in the generator frequency and then tune-in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles lower on the Receiver dial than the fundamental. If image cannot be tuned-in, the "OSC" trimmer is adjusted to the wrong peak. (Correct peak is the second peak on trimmer from the closed position).

ADJUSTING PUSH BUTTONS TO STATIONS.

1—To simplify setup carefully preset "ANT" adjusting screw by turning clockwise until moderately tight and then backing out (turning counter-clockwise) the oscillator ADJUSTING SCREWS until the threaded portion extends approximately ½ inch. DO NOT EXERT PRESSURE.

2—Turn band switch to the "American" position and carefully manually tune in the station to which the No. 1 Push Button is to be set.

3—Turn band switch to the "Automatic" position and with a small screw driver carefully turn the No. 1 push button **oscillator adjusting screw** in a clockwise direction until the station previously tuned in manually is heard again. Adjust for maximum output on speaker.

4—Adjust No. 1 Ant. adjusting screw for maximum output in speaker.

5—Repeat above procedure for remaining buttons to be set.

6—From call letter sheets supplied, carefully remove the call letters of the stations to which the buttons have been set.

7—Break celluloid into separate "V's" and insert call letter tab in "V", then slide into push button from side.

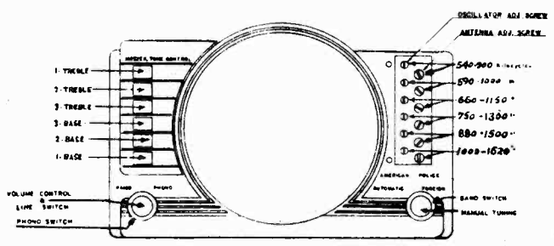


Fig. 1

TUBE VOLTAGE CHART

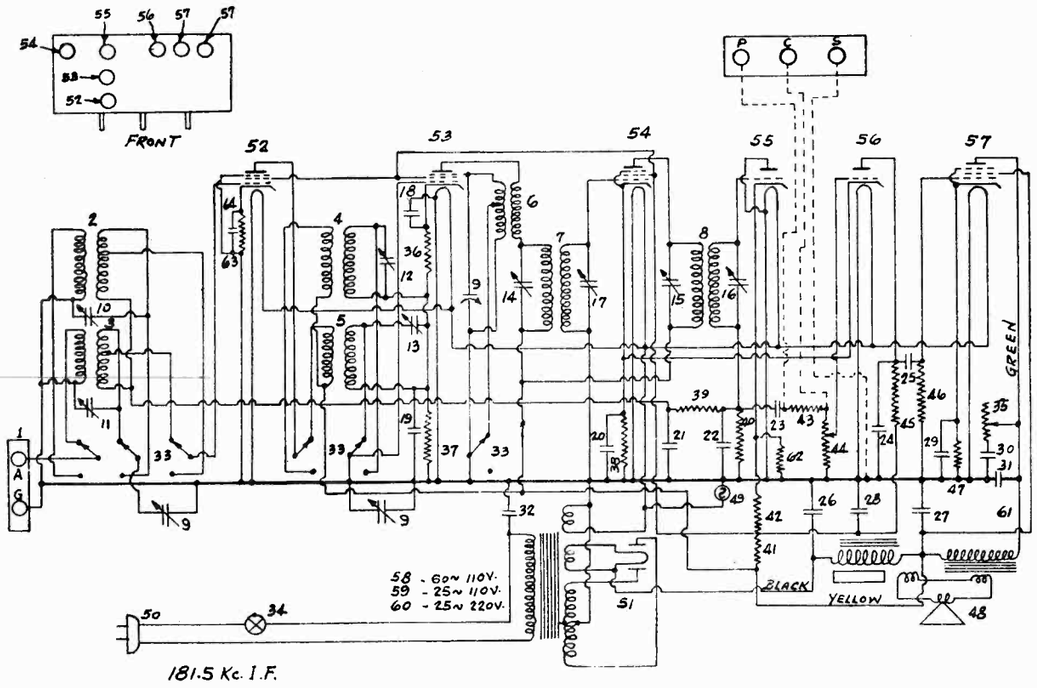
Socket voltages measured at 117.5 V. Line (between socket pin and chassis) with 1000 OHM PER VOLT, 500 V. RANGE VOLTMETER (D.C.)

TUBE FUNCTION		1	2	3	4	5	6	7	8
6SK7	R. F. Amplifier	Gnd	Gnd	Gnd	0	Gnd	80	6.3 A.C.	175
6SA7	Converter	Gnd	Gnd	175	80	Neg	0	6.3 A.C.	0
6SK7	I.F Amplifier	Gnd	Gnd	Gnd	0	Gnd	80	6.3 A.C.	175
6SQ7	Det. A. V. C. 1st A. F.	Gnd	0	Gnd	Gnd	0	67	6.3 A.C.	Gnd
6J5GT	Phase Inverter	Gnd	Gnd	125		0		6.3 A.C.	Gnd
6K6GT	(4) P. P. Parallel Output	Gnd	Gnd	295	175	0		6.3 A.C.	
5Y3G	Rectifier	N.C.	300		A.C.		A.C.		300

Max. Power Output....12.0 Watts Power Consumption....90 Watts Drop Across Speaker Field.....125 Volts
Voltages may vary 10% of values given.

MODEL 7V2

THE CROSLEY CORP.



PARTS LIST—MODEL 7V2

* Figures in 2nd last column refer to parts shown in wiring diagram of Model 7V2

Qty.	Part No.	Description	* Item	List Each	Qty.	Part No.	Description	* Item	List Each
1	G15-32000	Ant. Transformer Coil L. F. (Short Wave)	2	.60		G18-23559	Power Transformer 110 Volt 25 cy.	59	4.75
1	G16-32000	Ant. Transformer Coil H. F. (Broadcast)	3	.45		G19-23559	Power Transformer 220 Volt 25 cy.	60	4.75
1	G9-32001	R. F. Transformer Coil L. F.	4	.50	1	B-21491C	A. C. Cord & Plug	50	.50
1	G8-32001	R. F. Transformer Coil H. F.	5	.50	1	LW-20264	Ant.-Gnd. Terminal	1	.15
1	G11-32002	Osc. Transformer Coil	6	.70			**FILTER & BY-PASS CONDENSERS**		
1	G5-32003	1st I. F. Transformer Coil	7	.70					
1	G1-32003	2nd I. F. Transformer Coil	8	.80					
7	W25200	Coil Socket		.05	1	W29150B	12.-6.-8. Mfd. 25 V.-450 V.-450 V. Cond.	27-28	
5	W25024A	Coil Shield (Large)		.10				29	2.60
2	W25025A	Coil Shield (Small)		.10	1	W26194B	12. Mfd. 475 Volt Cond.	26	1.25
7	W26891	Insulating Washer		.05	1	W24049B	0.1 Mfd. 200 Volt Cond.	20	.15
7	W21541B	Retaining Ring		.05	1	W23142	0.02 Mfd. 400 Volt Cond.	21	.20
1	G1-29699	L. F. & H. F. Ant. Trimmer Cond.	10-11	.20	1	W25537A	0.001-0.03 Mfd. 400 V.-400 V. Cond.	24-25	.30
1	G1-29699	L. F. & H. F. R. F. Trimmer Cond.	12-13	.20	1	W25517A	0.05-0.008 Mfd. 400 V.-400 V. Cond.	30-31	.30
1	G1-33007	1st & 2nd I. F. Primary and 2nd I. F. Secondary Trimmer Cond.	14-15		1	W30805	0.01 Mfd. 400 Volt Cond.	32	.20
			16	.70	1	W29266B	0.00017-0.03 Mfd. 400 V.-400 V. Cond.	66-67	.25
1	W25008A	1st I. F. Sec. Trimmer Cond. Adj. Blade	17	.05	1	W28621	0.02 Mfd. 200 Volt Cond.	68	.15
1	W32291B	Dial Support Brkt.		.05	1	W28625	0.02-0.02 Mfd. 200 V.-200 V. Cond.	69-70	.25
1	G6-32080	Dial Drive Assm.		1.20					
1	W32208A	Dial Hand		.05			**RESISTORS**		
1	G14-33002	Variable Tuning Condenser Gang	63	3.75	3	W25937	275 Ohm	36-38	
1	W25666B	Level Control (Volume)	44	.90				63	.15
1	W25594B	Tone Control & Line Switch	34-35	1.10	1	31094	4500 Ohm	37	.15
2	G4-27134	Light Bracket Assm.	49	.20	1	26577	3 Megohm	39	.15
1	B30569D	6 Pole D. T. Switch	33	1.90	1	21454	1 Megohm	40	.15
3	G24-27456	58 Socket	52-53		1	W28471	8500-25000 Ohm	41-42	.45
			54	.10	2	23785	500000 Ohm	43-46	.15
2	G18-27456	56 Socket	55-56	.10	1	23403	150000 Ohm	45	.15
1	G43-27456	2A5 Socket	57	.10	1	W25521	450 Ohm	47	.15
1	G6-27456	80 Socket	51	.10	1	W30127	450 Ohm	62	.15
3	W26010	Tube Shield Base (58 Tube)		.05	1	W31009A	Speaker Cable	61	.15
3	B29009C	Tube Shield		.10	1	W32353	Knob (Large)		.10
1	G17-23559	Power Transformer 110 Volt 60 cy.	58	3.25	3	W32352	Knob (Small)		.10
					1	B21335	Tube & Condenser Shield		.20

THE CROSLEY CORP.

PHONO CONNECTIONS

This chassis is so constructed as to be adaptable to a phonograph pick-up (high impedance type) for the reproduction of recordings. The terminals may also be used for the reproduction of television sound as supplied by a suitable television converter unit. The double pole double throw switch for changing from Radio to Phono or television sound, should be connected as shown in the diagram (Fig. 3). The terminals are coded as follows: 1, 2, 3, respectively. The No. 2 terminal connects to the high side of the phono pickup or television A-F connections.

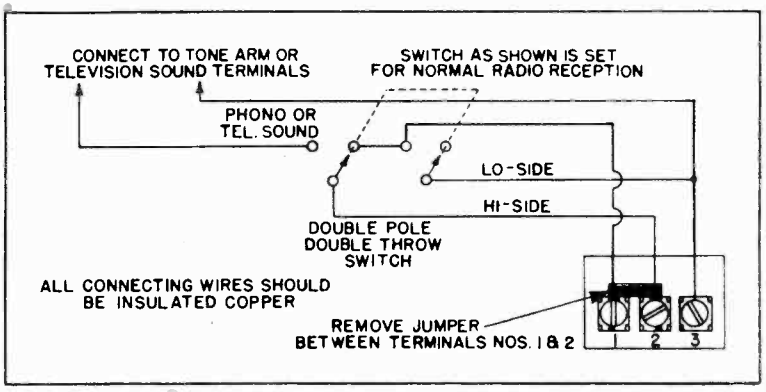


FIG. 3

NOTE: The jumper wire between No. 1 and No. 2 terminals must be removed when phono-radio switch is connected. If phono switch is removed, it is absolutely essential that the jumper wire between No. 1 and No. 2 terminals be replaced. Be sure all connections are tight.

The No. 3 terminal is the ground or low side connection. The No. 1 terminals should be connected to the No. 3 terminals by some means (as indicated in the above diagram). This prevents any radio signals from the receiver proper interfering with the Phono or Television sound reproduction.

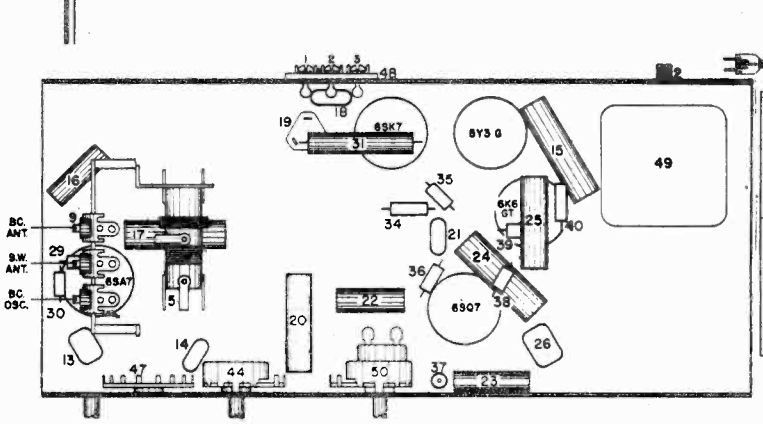
SETTING THE PUSH BUTTONS

The push buttons are easily and accurately set from the front of the receiver without removing any panels, etc.

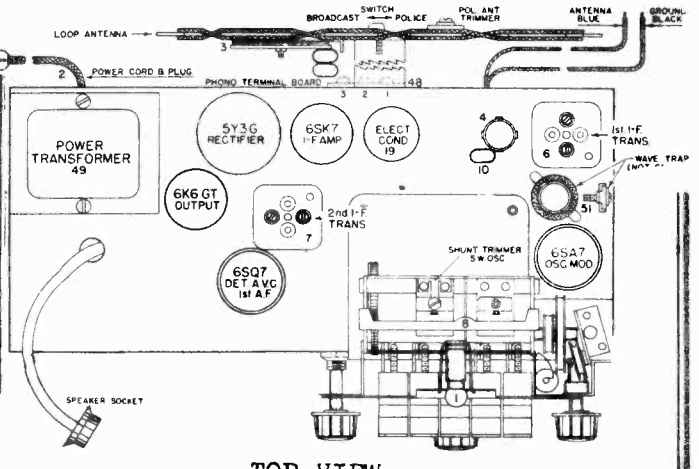
Determine the five favorite stations to which the buttons are to be set and remove their call letters from the stations tab list supplied.

Place the call letters in the buttons in the order of their frequency (Kilocycles), that is, the station which is tuned-in nearest the 55 end of the dial should be placed in the left hand buttons, etc. After the call letters have been placed in the buttons, break five pieces from the scored celluloid strip supplied and snap into place over the call letter tabs in the buttons to protect and hold them in place.

To set the push buttons, lift up on push button and the setting screw is easily accessibe through cutout on right side of button. With a small screw driver loosen the setting screws two or three turns (DO NOT REMOVE)



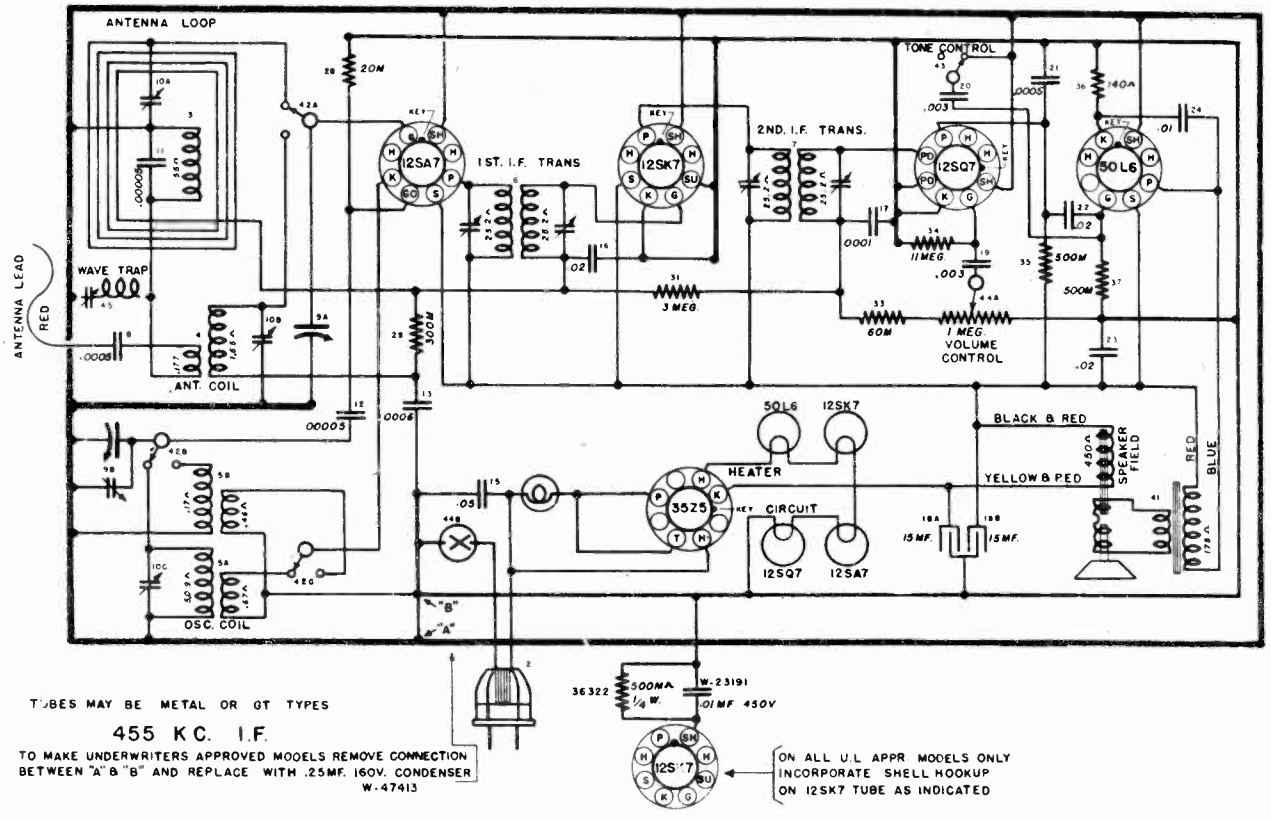
BOTTOM VIEW



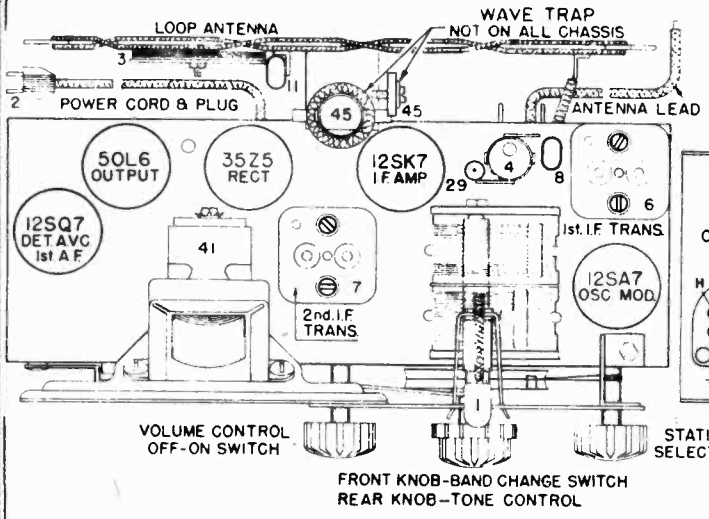
TOP VIEW

MODELS TH52, TH52W, TH52J
Chassis 65, 65JW

THE CROSLEY CORP.



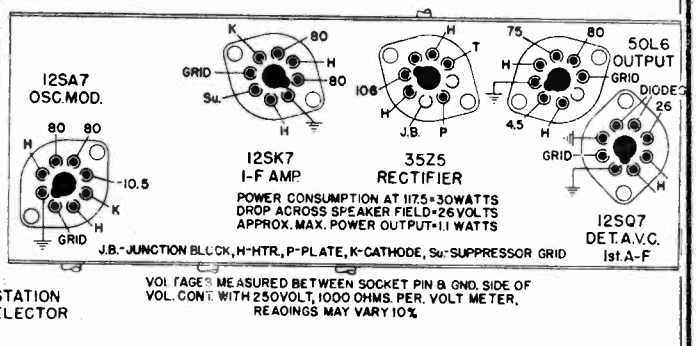
GROUND: Never Attach a Ground Wire to This Receiver.



Top View

TUNING RANGE

Broadcast band — 1600 to 540 Kilocycles
Short wave band — 15 to 6 Megacycles



VOLTAGES MEASURED BETWEEN SOCKET PIN & GND. SIDE OF VOL. CONT. WITH 250VOLT, 1000 OHMS. PER. VOLT METER. READINGS MAY VARY 10%

Socket Voltage Chart

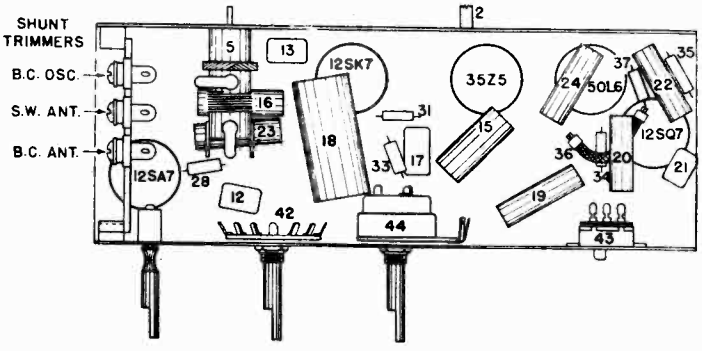
MODELS TH52, TH52W, TH52J
Chassis 65, 65JW

THE CROSLEY CORP.

ALIGNMENT PROCEDURE

1.—Aligning I-F TO 455 Kc.

(a) Connect the output lead of the signal generator through a .0001 mf. condenser to the antenna lead extending from the rear of the chassis. Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If necessary a small condenser (.001 mf.) should be connected in series with the ground lead of the signal generator and the chassis.
(b) Open tuning gang condenser all the way (plates completely out of mesh). Turn volume control to maximum.



Bottom View

(c) Set the signal generator to 455 kilocycles.
(d) Adjust the two trimmer condensers on top of 2nd I-F assembly (Fig. 2) for maximum output.
(e) Adjust the two trimmer condensers on top of the 1st I-F assembly (Fig. 2) for maximum output.
(f) Repeat (d) and (e) for more accurate adjustments.

2.—Aligning R-F Amplifier.

The short wave band 6-15 mc., must be aligned before the Broadcast Band 540-1600 kc.
(a) Connect the signal generator output lead through a dummy antenna (400 ohm carbon resistor) to lead (Blue or Red) extending from rear of chassis. Turn the band swtich to S. W. (right) and open tuning condenser all the way.
(b) Set signal generator to 15.0 megacycles.
(c) Adjust the S. W. "OSC" trimmer condenser (Fig. 2) (on rear section of gang) for maximum output. The gang should just tune through this signal.
(d) Tune in 15.0 mc. signal with gang and while slowly rocking gang through signal, adjust the S. W. "ANT" trimmer condenser for maximum output. (Center trimmer on right end of chassis). NOTE: When aligning the Short Wave band care should be exercised so that the circuits are aligned on the fundamental rather than on the image frequency which is approximately 910 kilocycles more than the fundamental. To check this increase the output of the signal generator approximately 10 times and try to tune in both, the fundamental, at the signal generator frequency as indicated on the dial and the image which should be approximately 910 kilocycles lower (approximately 14) on the dial.
(e) Repeat (c) and (d) for more accurate adjustments.
(f) Replace 400 ohm carbon antenna dummy with a .0001 mf. condenser. Turn band switch to the Broadcast band, open gang condenser all the way, etc.
(g) Set the signal generator to 1650 kilocycles.
(h) Adjust B. C. "OSC" trimmer (rear trimmer right end of chassis) Fig. 2, for maximum output.
(i) Set signal generator to 1400 kilocycles.
(j) Tune in generator signal for maximum output then adjust B. C. "ANT" trimmer (front trimmer right end of chassis) Fig. 2, for maximum output.
(k) Repeat (h) and (j) for more accurate adjustments.

WAVE TRAP — 65W Chassis Only

The wave trap snould not be adjusted until all other adjustments have been made. To make the adjustment, feed a 455 kilocycle signal from the signal generator through a .0001 mfd. condenser into the antenna terminal of the receiver. With the band selector switch turned to the Broadcast Band position, the gang condenser set to approximately 60 on the dial, and the volume control full on, adjust the trimmer condenser on the wave trap for MINIMUM output. Should the interfering station be operating on a frequency of slightly more or less than 455 kilocycles, the exact frequency should be determined with the aid of the signal generator. Then, instead of feeding a 455 kilocycle signal into the receiver the exact frequency of the interfering signal should be used. If it is not possible to determine the exact frequency of the interfering signal an antenna may be attached to the receiver and the receiver turned to the position where the interfering signal is most noticeable. Then adjust the wave trap for minimum interference.

MODEL 52TL, Chassis 86

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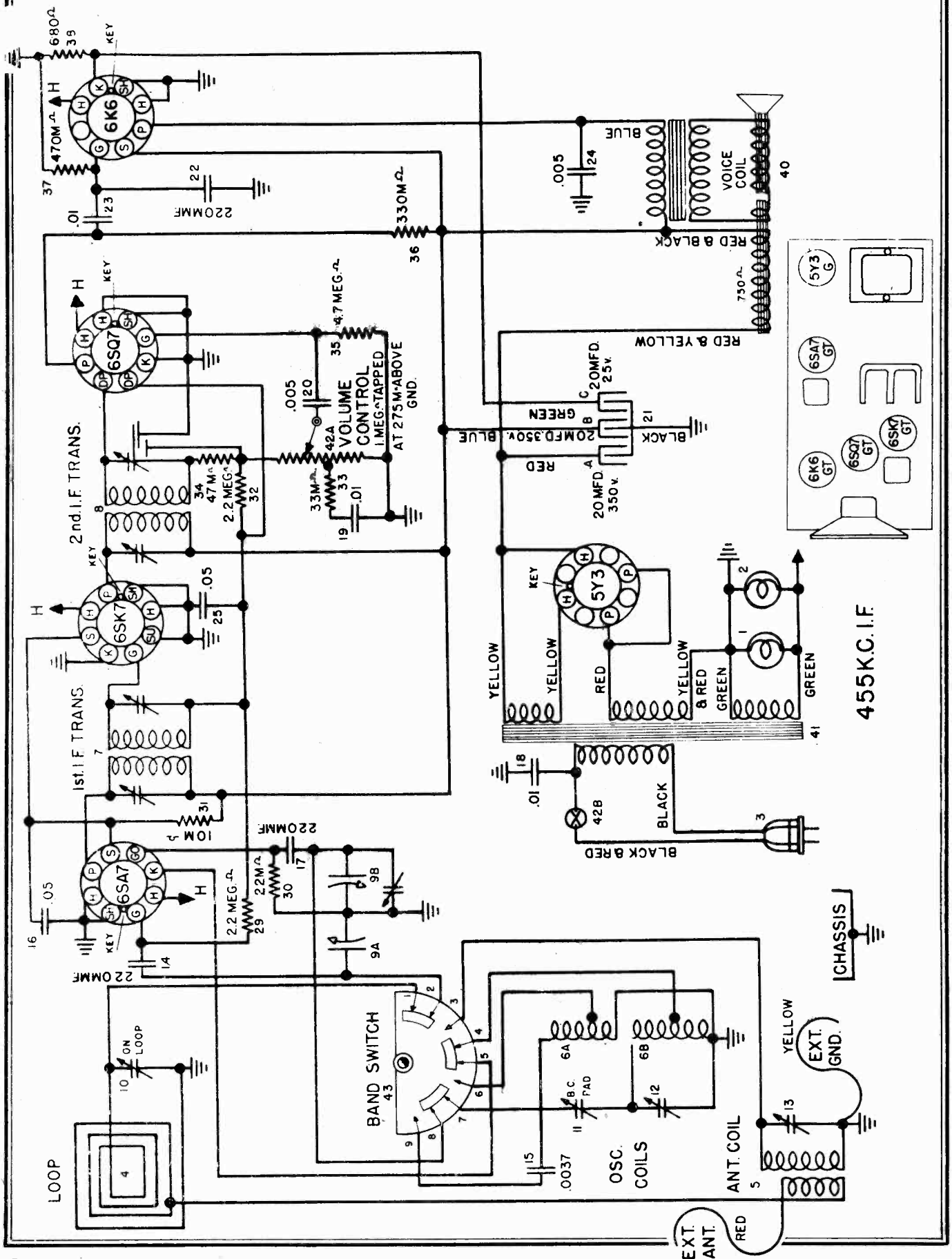


THE CROSLEY CORP.

TUBE VOLTAGE CHART

SOCKET VOLTAGES MEASURED AT 117.5 V. LINE (BETWEEN SOCKET PIN AND CHASSIS) WITH 1000 OHM PER VOLT, 500 V. RANGE VOLTMETER (D. C.)

TUBE	FUNCTION	PIN NUMBER 1	2	3	4	5	6	7	8
6SA7	OSC.—Mod.	0	0	180	73		0	6.3 A. C.	0
6SK7	I. F. Amplifier	0	0	0	0	0	73	6.3 A. C.	180
6SQ7	Det. A. S. C. 1st A. F.	0	0	0	0	0	68	6.3 A. C.	0
6K6G or GT	Output	0	0	160	180	0	180	6.3 A. C.	9
5Y3G	Rectifier	0	225		270 A.C.		270 A. C.		225

MAX. POWER OUTPUT ..... 3.0 WATTS.
POWER CONSUMPTION ..... 55 WATTS.
DROP ACROSS SPEAKER FIELD ..... 45 VOLTS.

Voltages may vary 10% of values given.

ALIGNMENT PROCEDURE

Output Meter Connections ..... Plate and Screen of 6K6G
Generator Ground Connection ..... To Chassis or Ground Lead
Dummy Antenna to be in series with generator output ..... See Chart Below
Position of Volume Control ..... Fully On

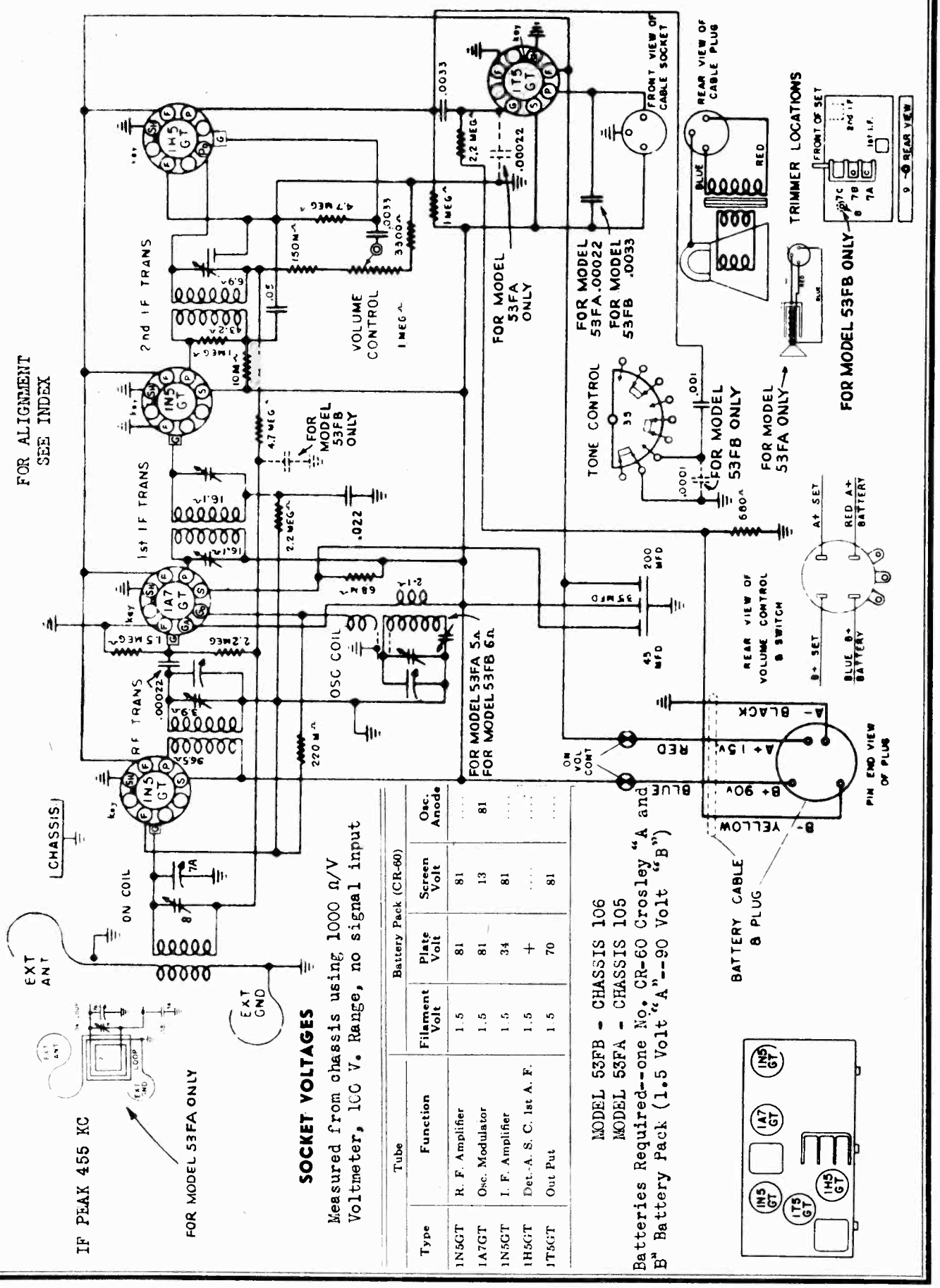
ALIGNMENT PROCEDURE CHART

Alignment Sequence	Signal Generator: Dummy Antenna	Signal Generator: Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.	Stator lug Rear section of Gang Cond.	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum Adjust for Maximum.
2.	400 ohm (carbon)	18.3 Mc.	Ant. Terminal	S. W.	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
3.	400 ohm (carbon)	18.0 Mc.	Ant. Terminal	S. W.	Approx. 18	S. W. "ANT" Trimmer	Adjust for maximum output while rocking gang thru signal. do not touch B. C. Osc. Trimmer.
4.	.0002 MF.	1650 Kc.	Ant. Terminal	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal. Loop must be connected.
5.	.0002 MF.	600 Kc.	Ant. Terminal	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer	Adjust for maximum output while rocking gang thru signal.
6.	.0002 MF.	1400 Kc.	Ant. Terminal	B. C.	Approx. 140 on dial	B.C. LOOP "ANT" Trimmer	Adjust for maximum output do not touch B. C. Osc. Trimmer.
7.	Repeat the above alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A. S. C. circuit.						

IMPORTANT ALIGNMENT NOTES — When aligning the shortwave band "OSC" trimmer care must be exercised to see that the circuit is aligned on the correct frequency and not on the image which is approximately 910 kilocycles less **as indicated on the Receiver dial.** To check, increase generator output tune-in the generator frequency and then tune-in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles **lower on the Receiver dial** than the fundamental. If image cannot be tuned-in, the "OSC" trimmer is adjusted to the wrong peak. (Correct peak is the second peak on trimmer from the closed position.)

MODEL 53FA, Chassis 105
MODEL 53FB, Chassis 106

THE CROSLEY CORP.



SOCKET VOLTAGES

Measured from chassis using 1000 Ω/V Voltmeter, 100 V. Range, no signal input

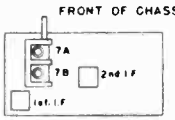
Tube Type	Function	Battery Pack (CR-60) Filament Volt	Plate Volt	Screen Volt	Osc. Anode
1N5GT	R. F. Amplifier	1.5	81	81	....
1A7GT	Osc. Modulator	1.5	81	13	81
1N5GT	I. F. Amplifier	1.5	34	81	....
1H5GT	Det.-A. S. C. 1st A. F.	1.5	+	....	....
1T5GT	Out Put	1.5	70	81	....

MODEL 53FB - CHASSIS 106
MODEL 53FA - CHASSIS 105

Batteries Required--one No. CR-60 Crosley "A and B" Battery Pack (1.5 Volt "A"--90 Volt "B")

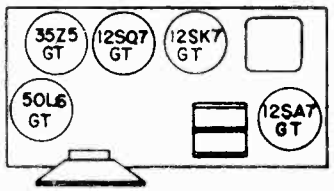
MODEL 53TP
CHASSIS 100

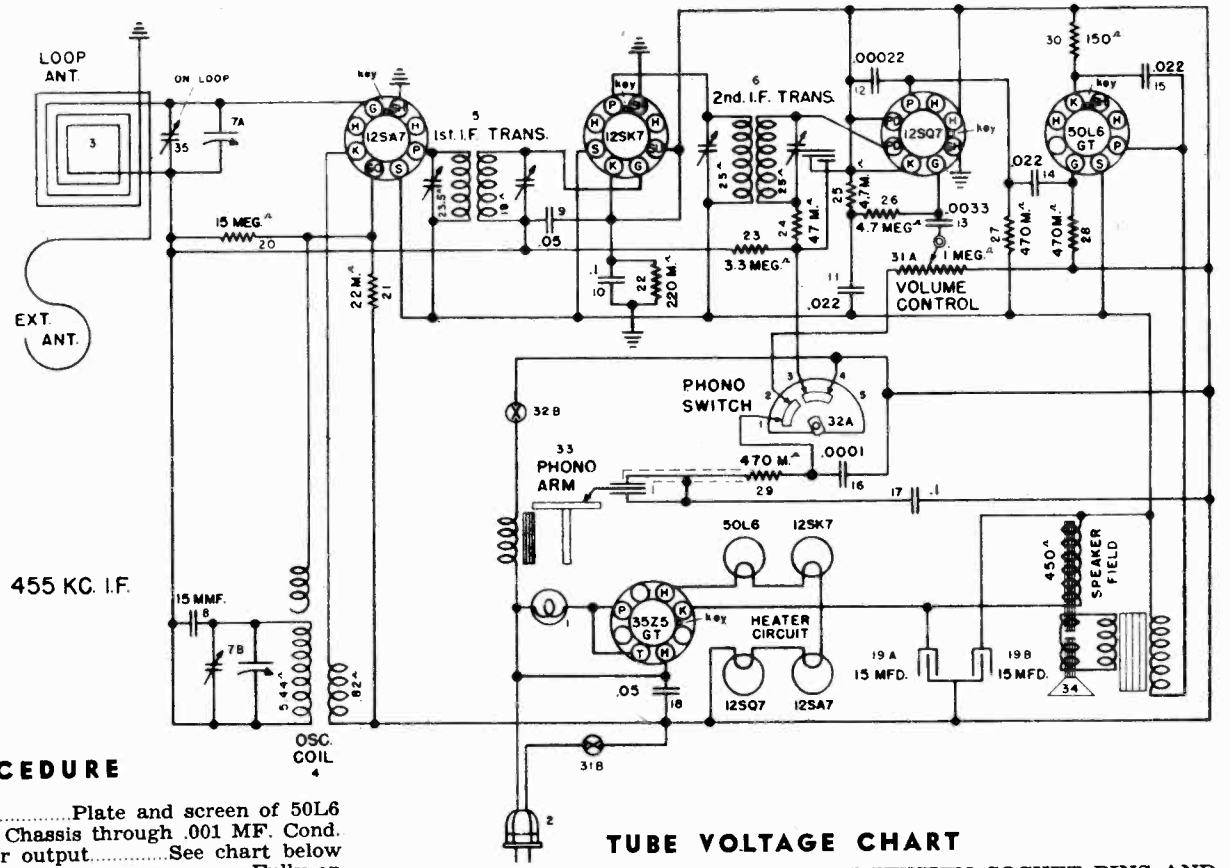
TRIMMER LOCATIONS



TUNING RANGE — Broadcast Band 1600 to 540 kilocycles, or 18.75 to 555 meters.

TUBE LAYOUT





ALIGNMENT PROCEDURE

Preliminary
Output Meter Connections.....Plate and screen of 50L6
Generator Ground Connections.....To Chassis through .001 MF. Cond.
Dummy Antenna to be in series with generator output.....See chart below
Position of Volume Control.....Fully on

ALIGNMENT PROCEDURE CHART

Alignment Seq.	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Phono Radio Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1	.0001 MF.	455 Kc.	Antenna Lead	Radio	Fully Open	1st I-F (2) 2nd I-F (2)	Adjust for maximum signal. Adjust for maximum signal.
2	.0001 MF.	1620 Kc.	Antenna Lead (red)	Radio	Fully Open	B. C. "Osc."	Adjust for maximum output. Gang does not have to tune through signal
3	.0001 MF.	1400 Kc.	Antenna Lead (red)	Radio	140 Dial	B. C. "Ant."	Adjust for maximum output.

Repeat the original alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A.V.C. circuit.

TUBE VOLTAGE CHART

Socket Voltage is measured @ 117.5 V line (BETWEEN SOCKET PINS AND B—) WITH 1000 OHM PER VOLT—500 V. RANGE D. C. VOLTMETER.

TUBE	FUNCTION	PIN NUMBER 1	2	3	4	5	6	7	8
12SA7	Osc. Mod.	....	....	85	85	Neg.	0	....	Neg.
12SK7	I. F. Amp.	....	....	0	Neg.	0	85	....	85
12SQ7	Det., Etc.	0	0	0	0	Neg.	40	....	0
50L6	B. P. O.	....	....	80	85	0	....	....	....
35Z5	Rect.	....	....	....	....	117.5A.C.	....	....	110

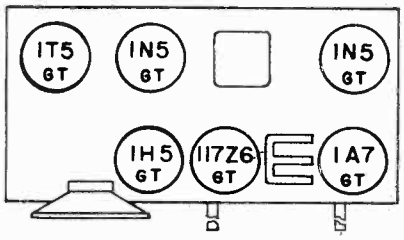
All voltages may vary 10% of values indicated. Neg. indicates Neg. reading on Voltmeter Scale but of too small a value to record accurately.

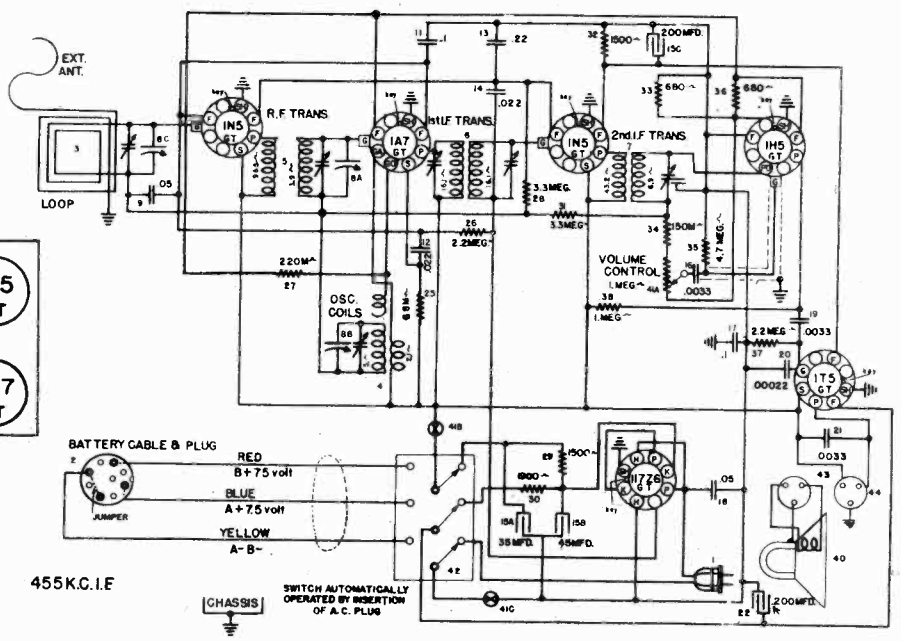
Power consumption at 117.5 V. line, 60 watts. Phono Motor 20 watts additional. Drop across Speaker Field—35 V. Current thru Speaker Field—90 M. A.

MODELS 62PA, 62PB
Chassis 68

THE CROSLEY CORP.

TUBE LAYOUT





BATTERIES REQUIRED — one No. CR68 CROSLEY "A and B" Battery Pack (7.5-Volt "A" and 75-Volt "B") OR EQUIVALENT

SOCKET VOLTAGES — Models 62-PA and 62-PB

Measured from "B" minus using 1000 Ω/V — Voltmeter, 100 V. Range, no signal input

Tube		@ 117.5-Volt Line				Battery Pack			
Type	Function	Filament Volt	Plate Volt	Screen Volt	Cathode Volt	Filament Volt	Plate Volt	Screen Volt	Cathode Volt
1N5GT	R. F. Amplifier	3.8	.....	.....	.....	4.6	75	75	.....
1A7GT	Osc. Modifier	2.6	80	31	.....	3.1	75	28	.....
1N5GT	I. F. Amplifier	5.0	80	80	.....	6.1	75	75	.....
1H5GT	Det.-A. V. C. 1st A. F.	1.3	7	.....	.....	1.6	4.5	.....	.....
1T5GT	Out Put	6.2	72	80	100	7.7	68	75	.....
117Z6GT	Rectifier	117.5 A. C.	117.5 A. C.	.....	.....				

ALIGNMENT PROCEDURE — Volume Control on full Output meter connected to Plate and Screen of 1T5GT

SIGNAL GENERATOR FREQUENCY SETTING	CONNECTION TO RADIO	DUMMY ANTENNA	TUNING COND. SETTING	TRIMMERS TO ADJUST (See Fig. 1)	REMARKS
455 Kc	Ant. Lead	.0001 MF	Fully open	2nd 1-F (1) front chassis flange	Adjust for maximum signal.
455 Kc	Ant. Lead	.0001 MF	Fully open	1st 1-F (2)	Adjust for maximum signal. Located top of 1st 1-F ass'y.
1650	Ant. Lead	.0001 MF	Fully open	"OSC" Shunt on gang	Adjust for maximum output. Gang does not have to tune through signal.
1400	Ant. Lead	.0001 MF	140 on dial	"ANT" shunt on gang	Adjust for maximum output.
1400	Ant. Lead	.0001 MF	140 on dial	"RF" shunt on gang	Adjust for maximum output.
600	Ant. Lead	.0001 MF	60 on dial	Iron core in "OSC" coil	Adjust for maximum output while rocking gang.

Repeat above for more accurate adjustments
Maximum power output @ 75 V. "B" — approx. 200 M. W.

A Battery drain @ 6 volts, .05 Amp.; "B" Battery drain @ 75 V., 9 M. A.; @
Power consumption @ 117.5 volts line — 25 Watts

MODELS 63CA, 63TA
Chassis 110, 111

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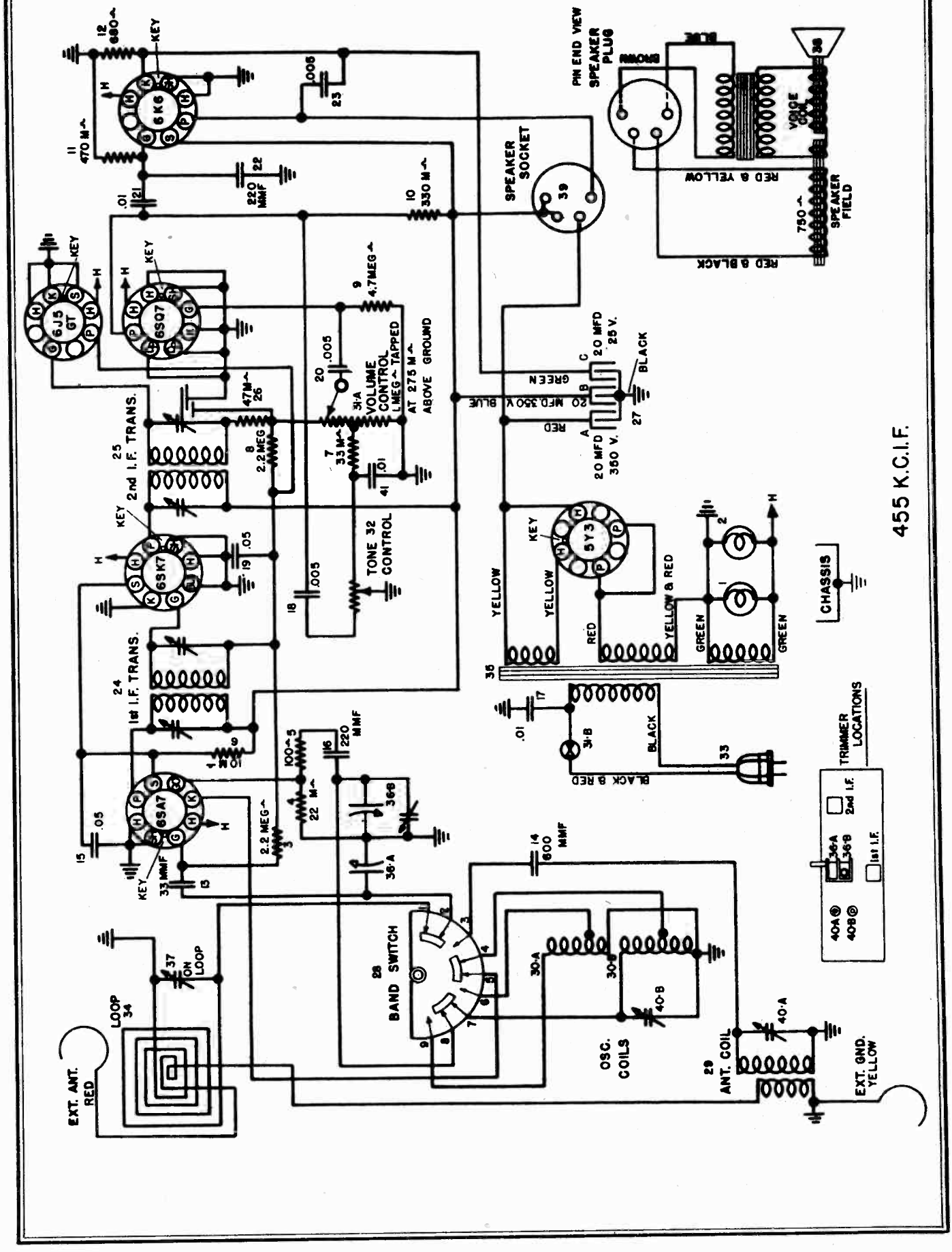


MODELS 63CA, 63TA
Chassis 110, 111

THE CROSLEY CORP.

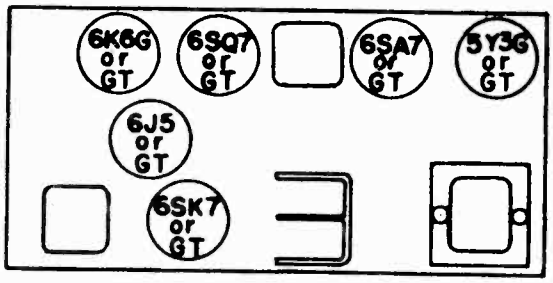
TUBE VOLTAGE CHART

Voltages measured with 1000 ohm per volt meter on the 500 volt range between socket pin and chassis

TUBE	FUNCTION	PIN NUMBER 1	2	3	4	5	6	7	8
6SA7	OSC.—Mod.	..	..	180	73	..	..	6.3 A. C.	..
6SK7	I. F. Amplifier	..	..	..	..	..	73	6.3 A. C.	180
6J5	Detector A. J. C.	..	..	..	..	..	..	6.3 A. C.	..
6SQ7	1st A. F.	..	..	..	..	..	68	6.3 A. C.	..
6K6G or GT	Output	..	..	160	180	..	..	6.3 A. C.	9
5Y3G	Rectifier	..	225	..	270 A.C.	..	270 A.C.	..	225

MAX. POWER OUTPUT, 3.0 WATTS. POWER CONSUMPTION, 60 WATTS. DROP ACROSS SPEAKER FIELD, 45 VOLTS. Voltages may vary 10% of values given.

TUBES	FUNCTION
1—6SA7 GT	Oscillator-Modulator
1—6SK7 GT	Intermediate Frequency Amplifier
1—6J5 GT	Detector A.V.C.
1—6SQ7 GT	1st Audio Amplifier
1—6K6 GT	Pentode Output
1—5Y3 GT	Rectifier



ALIGNMENT PROCEDURE

Output Meter Connections.....Plate and Screen of 6K6GT
Generator Ground Connection.....To Chassis or Ground Lead
Dummy Antenna to be in series with generator output.....See Chart Below
Position of Volume Control.....Fully On

Alignment Seq.	Signal Generator: Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1	.02 MF.	455 Kc.	Stator lug rear section of Gang Cond.	B.C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2	400 ohm (carbon)	15.3 Mc.	Ant. Terminal	S. W.	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
3.	400 ohm (carbon)	15.0 Mc.	Ant. Terminal	S. W.	approx. 18	S. W. "ANT" Trimmer	Adjust for maximum output while rocking gang thru signal. Do not touch B. C. Osc. Trimmer.
4.	.0002 MF.	1620 Kc.	Ant. Terminal	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak: gang does not have to tune thru signal. Loop must be connected.
5.	.0002 MF.	1400 Kc.	Ant. Terminal	B. C.	Approx. 140 on dial	B. C. "ANT" Trimmer	Adjust for maximum output. Do not touch B. C. OSC. Trimmer.
6.	Repeat the above alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A. S. C. circuit.						

IMPORTANT ALIGNMENT NOTES—When aligning the shortwave band "OSC" trimmer care must be exercised to see that the circuit is aligned on the correct frequency and not on the image which is approximately 910 kilocycles less as indicated on the Receiver dial. To check, increase generator output tune-in the generator frequency and then tune-in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles lower on the Receiver dial than the fundamental. If image cannot be tuned-in, the "OSC" trimmer is adjusted to the wrong peak. (Correct peak is the second peak on trimmer from the closed position.)

MODEL 72TA, Chassis 79

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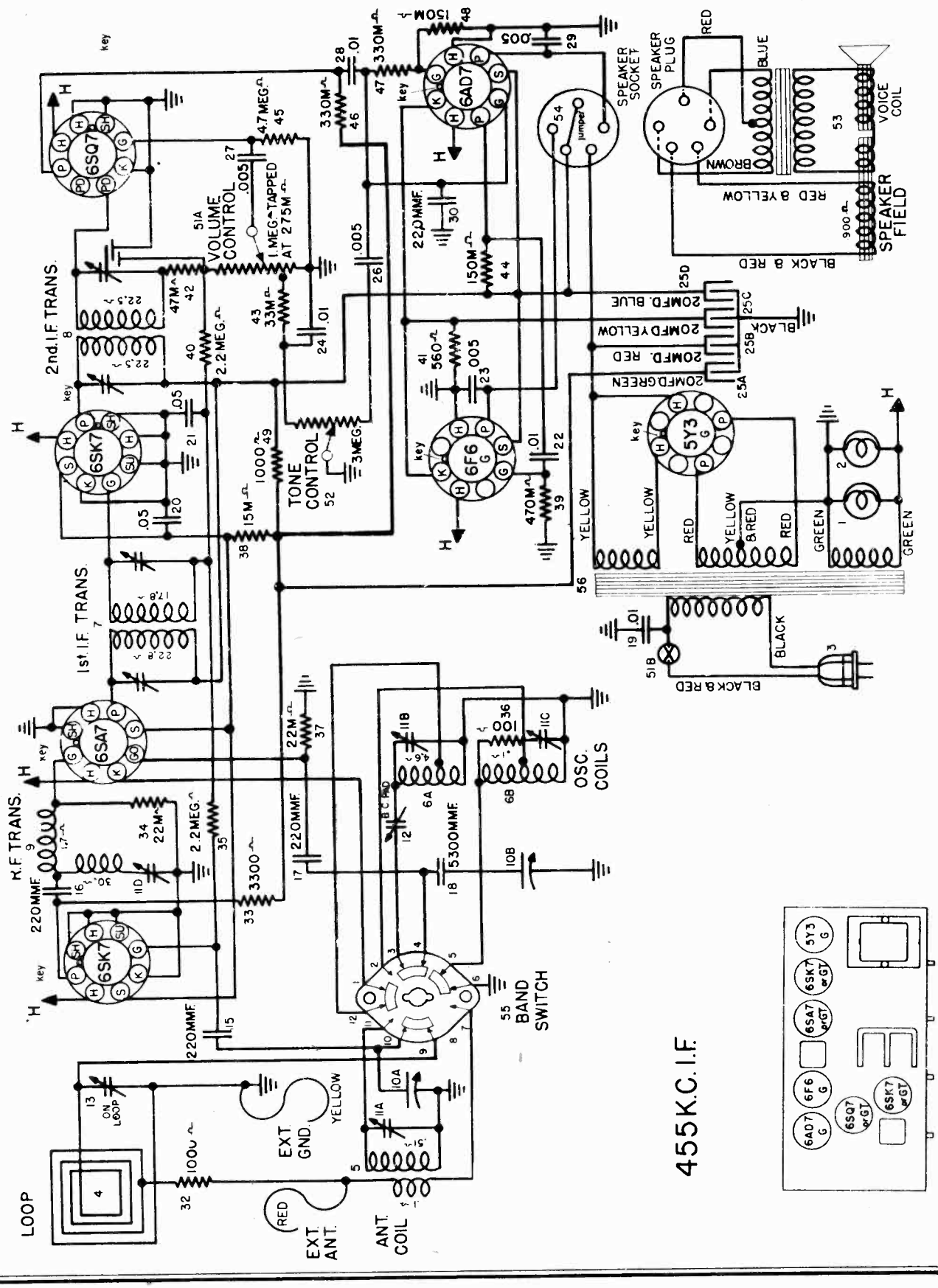


MODEL 72TA, Chassis 79

THE CROSLEY CORP.

TUBE VOLTAGE CHART

SOCKET VOLTAGES MEASURED AT 117.5 V. LINE (BETWEEN SOCKET PIN AND CHASSIS) WITH 1000 OHM PER VOLT, 500 V. RANGE VOLTMETER (D. C.)

TUBE	FUNCTION	PIN NUMBER 1	2	3	4	5	6	7	8
6SK7	R. F. Amplifier	0	0	0	0	0	80	6.3 A. C.	235
6SA7	OSC.—Mod.	0	0	260	80	0	0	6.3 A. C.	0
6SK7	I. F. Amplifier	0	0	0	0	0	80	6.3 A. C.	260
6SQ7	Det. A. S. C. 1st A. F.	0	0	0	0	0	85	6.3 A. C.	0
6AD7	Phase Inverter and Output	0	0	255	260	0	180	6.3 A. C.	23
6F6	Output	0	0	255	260	0	235	6.3 A. C.	23
5Y3G	Rectifier	N. C.	330	J. B.	300A.C.	J. B.	300 A. C.	J. B.	330

MAX. POWER OUTPUT ..... 6.5 WATTS.
POWER CONSUMPTION ..... 85 WATTS.
DROP ACROSS SPEAKER FIELD ..... 70 VOLTS.
J. B.—Junction Block. N. C.—No Connection.

Voltages may vary 10% of values given.

ALIGNMENT PROCEDURE

Output Meter Connections ..... Plate of 6AD7 to Plate of 6F6
Generator Ground Connection ..... To Chassis or Ground Lead
Dummy Antenna to be in series with generator output ..... See Chart Below
Position of Volume Control ..... Fully On
Position of Tone Control ..... Treble or Speech

ALIGNMENT PROCEDURE CHART

Alignment Sequence	Signal Generator: Dummy Antenna	Signal Generator: Frequency Setting	Signal Generator: Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.	Stator lug Rear section of Gang Cond.	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	.02 MF.	455 Kc.	Stator lug Rear section of Gang Cond.	B. C.	Fully open	Adj. Wave Trap Trimmer.	Adjust for Minimum.
3.	.0002 MF.	1650 Kc.	Ant. Terminal	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal. Loop must be connected.
4.	.0002 MF.	600 Kc.	Ant. Terminal	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer	Adjust for maximum output while rocking gang thru signal.
5.	Repeat Step No. 3 to check possible shift due to series adjustment.						
6.	.0002 MF.	1400 Kc.	Ant. Terminal	B. C.	Approx. 140 on dial	B.C. LOOP "ANT" Trimmer	Adjust for maximum output do not touch B. C. Osc. Trimmer.
7.	400 ohm (carbon)	18.3 Mc.	Ant. Terminal	S. W.	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
8.	400 ohm (carbon)	18.0 Mc.	Ant. Terminal	S. W.	Approx. 18	S. W. "ANT" Trimmer	Adjust for maximum output while rocking gang thru signal. do not touch B. C. Osc. Trimmer.
9.	Repeat the above alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A. S. C. circuit.						

IMPORTANT ALIGNMENT NOTES — When aligning the shortwave band "OSC" trimmer care must be exercised to see that the circuit is aligned on the correct frequency and not on the image which is approximately 910 kilocycles less **as indicated on the Receiver dial.** To check, increase generator output tune-in the generator frequency and then tune-in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles **lower on the Receiver dial** than the fundamental. If image cannot be tuned-in, the "OSC" trimmer is adjusted to the wrong peak. (Correct peak is the second peak on trimmer from the closed position.)

MODELS 83CA, 83CB, 83CC,
83CP, 83CQ, 83TA
Chassis 96

THE CROSLEY CORP

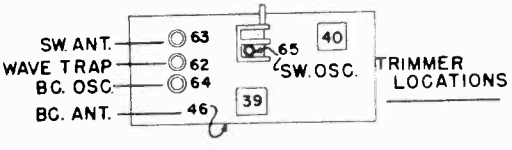
TUBE VOLTAGE CHART

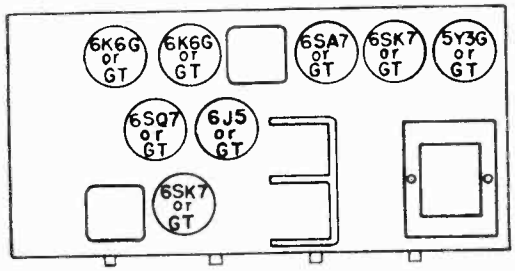
Socket voltages measured at 117.5 V. Line (between socket pin and chassis) with 1000 OHM PER VOLT, 500 V. RANGE VOLTMETER (D.C.)

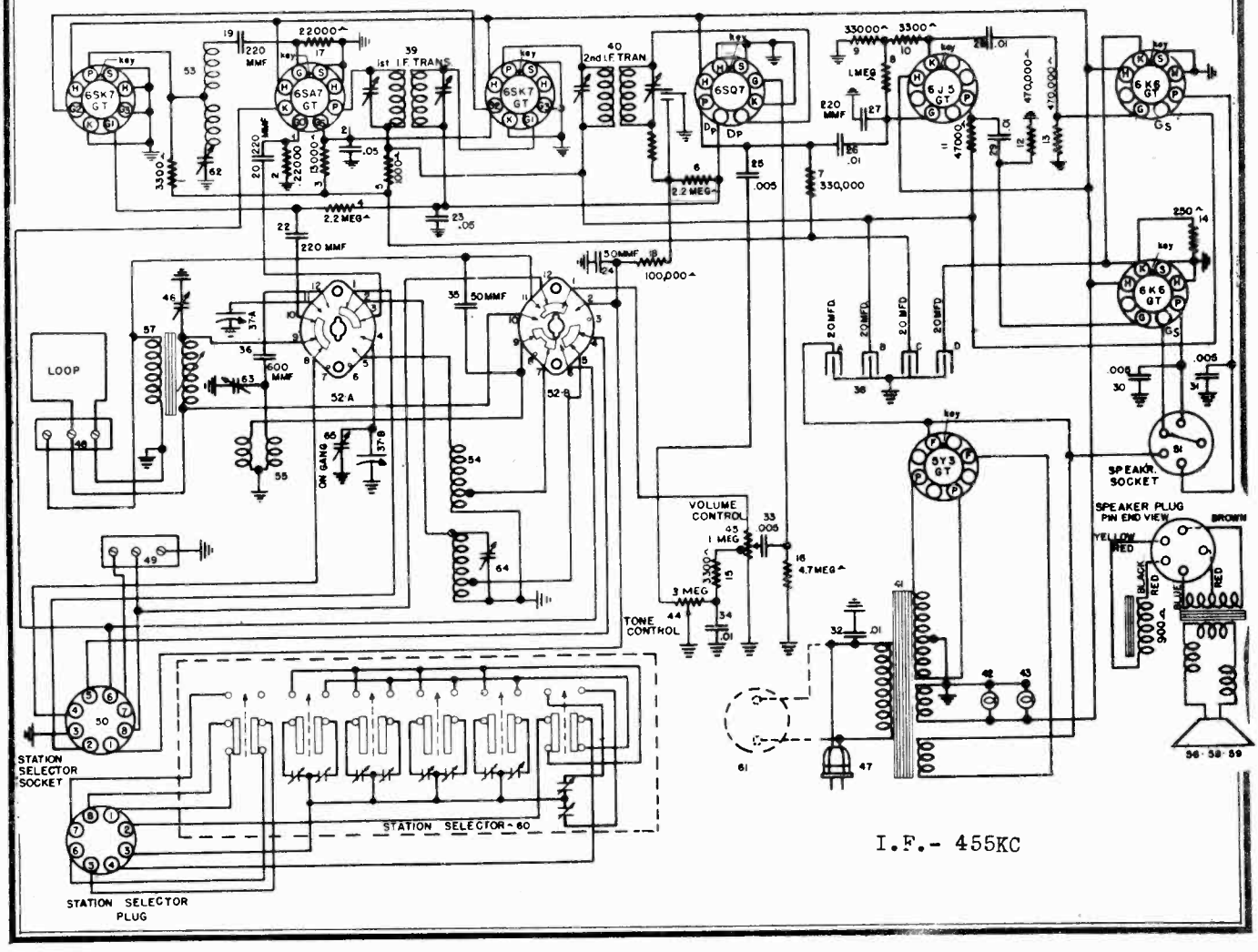
TUBE	FUNCTION	PIN NUMBER 1	2	3	4	5	6	7	8
6SK7GT	R. F. Amplifier	0	0	0	0	0	70	6.3 A. C.	175
6SA7GT	OSC.—Mod.	0	0	235	70	0	0	6.3 A. C.	0
6SKFGT	I. F. Amplifier	0	0	0	0	0	70	6.3 A. C.	235
6SQ7GT	Det. A. S. C. 1st A. F.	0	0	0	0	0	40	6.3 A. C.	0
6J5GT	Phase Inverter	0	0	155	0	0	0	6.3 A. C.	46
6K6GT	(2)—Output	0	0	220	235	0	0	6.3 A. C.	16
5Y3G	Rectifier	..	330	..	355A.C.	..	355A.C.	J. B.	320

MAX. POWER OUTPUT ..... 6.8 WATTS
POWER CONSUMPTION ..... 85 WATTS
DROP ACROSS SPEAKER FIELD ..... 95 VOLTS
PHONO MOTOR ..... 25 WATTS

Voltages may vary 10% of values given.







MODELS 83CA, 83CB, 83CC, 83CP, 83CQ, 83TA Chassis 96

THE CROSLEY CORP.

ADJUSTING PUSH BUTTONS TO STATIONS: MODELS 83CA and 83CQ: There are six pusn buttons, five of which may be pre-set to any station whose frequency (kilocycles) is within range covered by that button. See Figure No. 1.

On Model 83CA, the left hand push button is to be used only when an external Record Player is connected to the Phono terminals on rear of chassis.

On Model 83CQ, the lower push button must be depressed to place the Automatic Record Changer in operation.

SET-UP PROCEDURE: Carefully remove the push button escutcheon. Turn receiver on and let it operate a sufficient length of time to permit the tubes to reach normal operating conditions.

1. Turn the band change switch to "A" (American) position. Using manual tuning knob, carefully tune in the station to which the No. 2 push button is to set. Note program.
2. Turn band change switch to "P" (Push Button) position. Depress No. 2 push button and using a small screw driver, carefully turn the OSCILLATOR adjusting screw until the station previously tuned-in manually is heard again. Adjust for maximum volume in speaker.
3. Adjust the No. 2 push button ANTENNA for maximum volume in speaker.
4. Turn band switch from "P" to "A" and back again to check if adjustment has been correctly made. There should be no change in tone quality when switched from one to the other.
5. Repeat above procedure for remaining buttons.
6. Select station call letters to which the push buttons have been set from the sheets supplied. Place them in the windows over corresponding push buttons. After tabs are in place, break celluloid covers from strip furnished and snap them in place over the tabs.

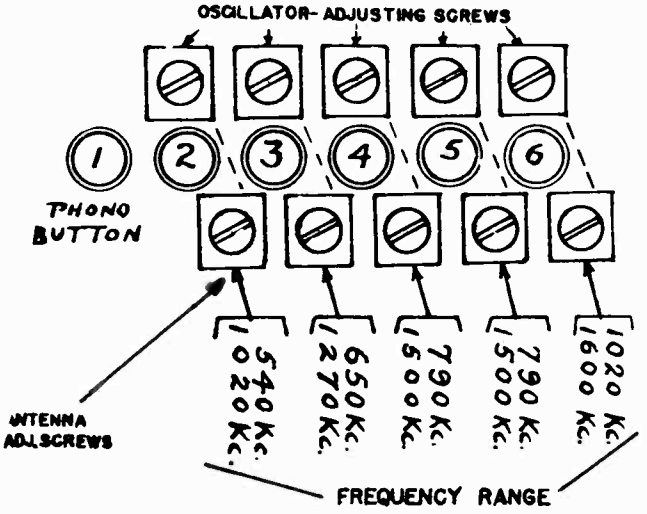


Fig. 1.

ALIGNMENT PROCEDURE

Output Meter Connections ..... Plate to Plate of 6K6
Generator Ground Connection ..... To Chassis or Ground Lead
Dummy Antenna to be in series with generator output ..... See Chart Below
Position of Volume Control ..... Fully On
Position of Tone Control ..... Treble or Speech

Signal Generator

Alignment Seq.	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.	Stator lug front section of Gang Cond.	A	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	.02 MF.	455 Kc.	Stator lug front section of Gang Cond.	A	Fully open	Adj. Wave Trap Trimmer.	Adjust for Minimum.
3.	400 ohm (carbon)	15.3 Mc.	Ant. Terminal	F	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
4.	400 ohm	15.0 Mc.	Ant. Terminal	F	Approx. 15	S. W. "ANT"	Adjust for maximum output while rocking gang thru signal. Do not touch B. C. Osc. Trimmer.
5.	.0002 MF.	1630 Kc.	Ant. Terminal	A	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal. Loop must be connected.
6.	.0002 MF.	600 Kc.	Ant. Terminal	A	Approx. 60 on dial	B. C. "OSC" Series	Adjust iron core on rear of chassis for maximum output.
7.	.0002 MF.	1400 Kc.	Ant. Terminal	A	Approx. 140 on dial	B. C. "ANT" Trimmer Rear Chassis	Adjust for maximum output. Do not touch B. C. Osc. Trimmer.

8. Repeat the above alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A. V. C. circuit.

IMPORTANT ALIGNMENT NOTES—When aligning the shortwave band "OSC" trimmer care must be exercised to see that the circuit is aligned on the correct frequency and not on the image which is approximately 910 kilocycles less as indicated on the Receiver dial.

THE CROSLEY CORP.

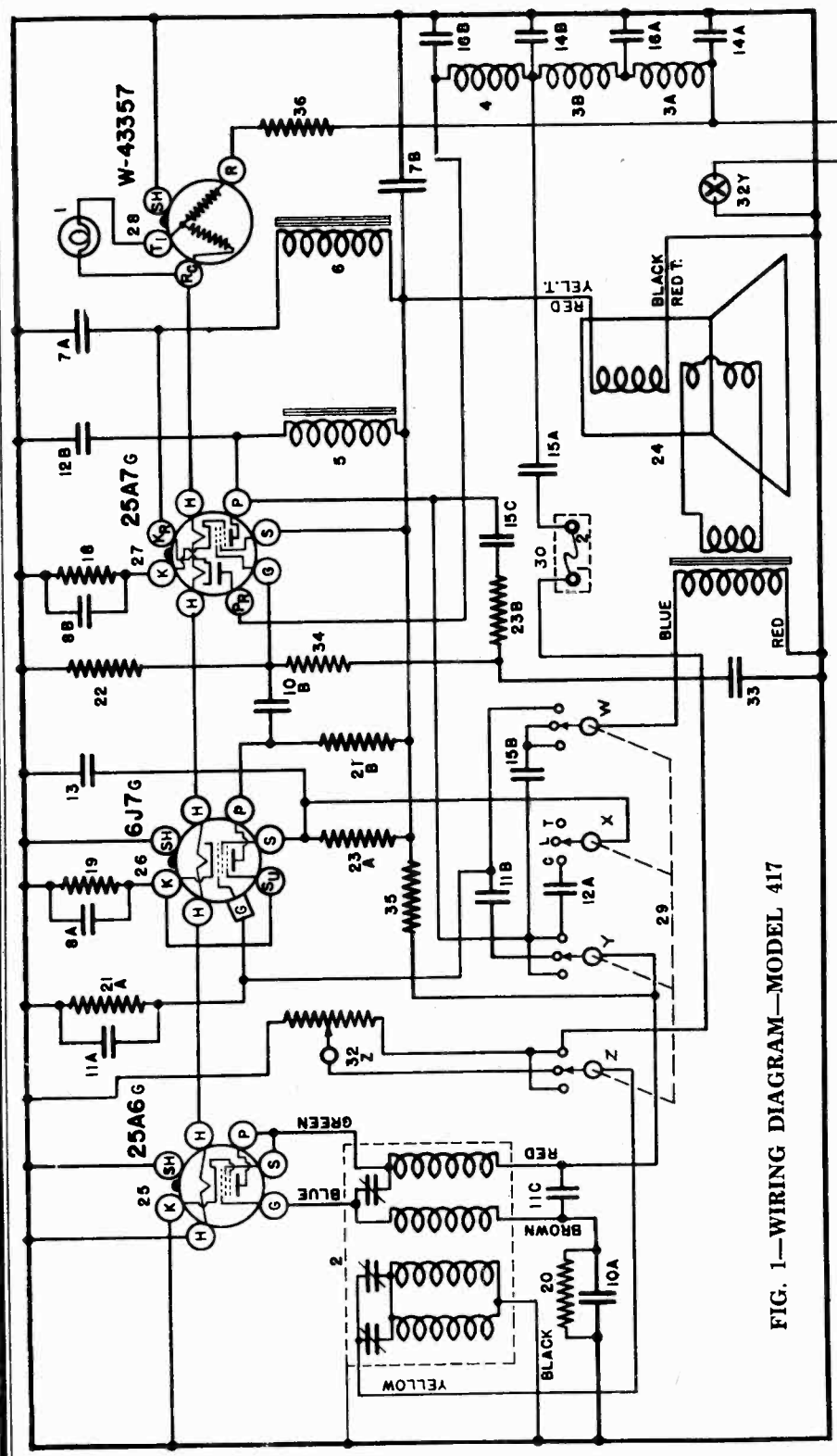
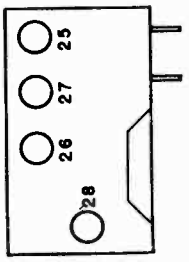


FIG. 1—WIRING DIAGRAM—MODEL 417

JUNE 1938

MODEL...417
OPERATING FREQ. 90 KC'S.



SOCKET VOLTAGES

The following table gives the functions of the tubes used, together with the voltage readings between the tube socket contacts and chassis. Voltage readings should be taken with a 1000 ohm per volt D. C. voltmeter (except filaments) with the volume control full "ON." The filament voltage should be measured with an accurate low range voltmeter. Voltage limits may vary plus or minus 10% of values given.

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	K
25A6G	Oscillator and Det.	25	—	—	0
6J7G	Audio Driver	5.8	7	5	1.3
25A7G	Rectifier	25	105	—	—
	Modulator		90	95	11
	Output		90	95	11
W43357	Ballast	Rc—R 48 Volts, T1—R 43 Volts			

*Voltage drop across speaker field 95 volts.
Power consumption 50 watts.
All readings taken on 117.5 volt a. c. line.

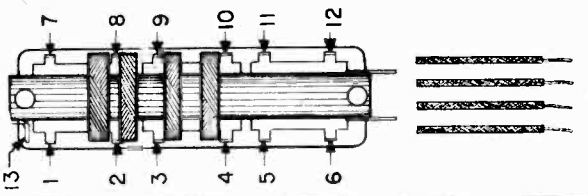


Fig. 6

MODEL 417, Chattabox

THE CROSLEY CORP.

SPECIFICATIONS

The Crosley Chattabox is a two way loud speaking communication system which may be used between offices or departments in a large organization, between rooms in a home such as 1st floor and recreation room or between 1st floor and nursery or 1st floor and garage, at sports events for communication between judges and announcer, at mines for communication between the surface and interior, etc.

The units are designed to operate on 100-125 volt power supply lines, either A. C. or D. C. When transmitting, a carrior frequency of approximately 90 kilocycles is routed over the regular power supply lines. The carrior frequency will not, however, pass through large inductances such as transformer windings.

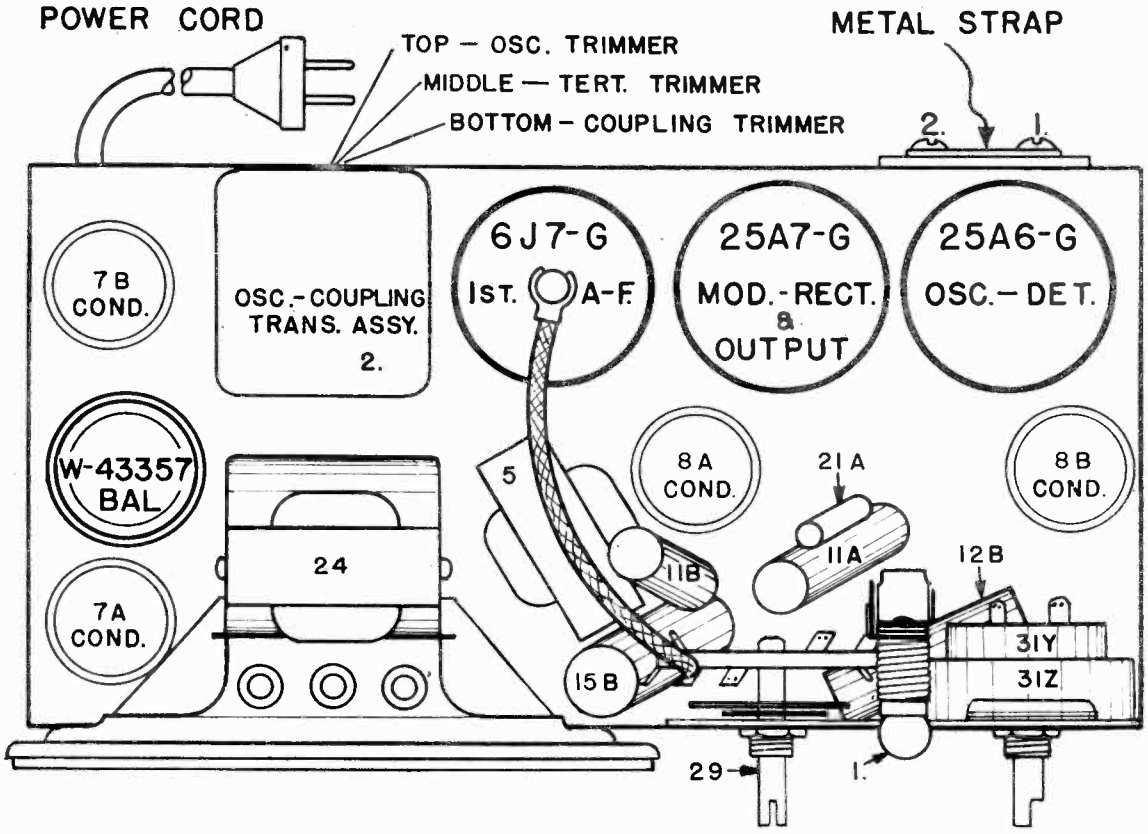


Fig. 2. Top View Model 417

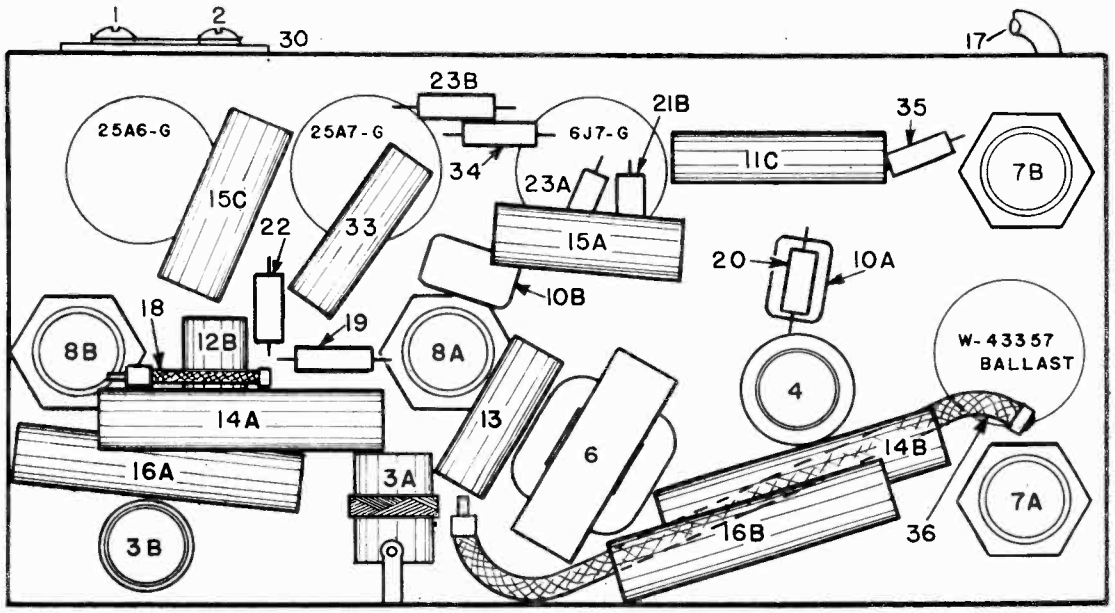


Fig. 3. Bottom View Model 417

THE CROSLEY CORP.

CIRCUIT CHANGES

Several circuit changes should be made in all earlier models before any tests or adjustments are made. (1) The free terminal of the volume control should be connected to chassis, (2) item 35 should be changed to the value shown in the Parts List, (3) item 36 should be added and (4) Remove the triple-tuned transformer from the chassis and then remove its can.

Referring to Fig. 6, connect a jumper wire between lugs 10 and 11 and another jumper wire between lugs 9 and 12. Attach a solder lug to the top end of the coil form, No. 13. Remove the black lead and two coil leads from lug 3 and solder them to the new lug, No. 13.

After these circuit changes have been made, the condenser and resistor which were required in the direct transmission line of the earlier units, will no longer be required.

ALIGNMENT PROCEDURE

Equipment Required

(1) Standard 400 cycle modulated signal generator.
(2) Output meter.
(3) Radio receiving set.
(4) Two Chattaboxes which are known to be in good operating condition.

Procedure

Arrange the equipment as shown in Fig. 4.

(a) Feed a 400 cycle modulated signal into the receiver and tune the receiver to this signal.

(b) Place one of the good Chattaboxes in front of the speaker of the radio. Turn the Chattabox "ON" and lock the switch in the "TALK" position.

(c) Place the unit to be aligned in an adjacent room and connect to the same electric circuit as the good unit in the other room is connected.

(d) The second good unit should be set up in the same room as the unit to be aligned. Its switch should remain in the "LISTEN" position.

(e) Connect the output meter from the plate of the 25A7G tube to chassis of the unit being aligned. A .1 mfd., or larger, condenser should be connected in series with one of the leads.

(f) Turn the unit "ON" and with the switch in the "LISTEN" position, adjust all three trimmers on the triple-tuned transformer for maximum reading on the output meter. (Fig. 2.)

(g) Lock the switch in the "TALK" position. The signal produced in the good unit will be the beat note produced by the interaction of the unit being aligned and the good unit in the other room. CAUTION: The volume level of the good unit receiving the beat note should be kept low enough to prevent a microphonic howl.

(h) Adjust the top trimmer on the triple-tuned transformer until the note in the good unit is reduced almost to zero beat.

(i) Throw the switch lever back and forth several times between the "LISTEN" and "TALK" positions, listening each time to the tone of the beat note. If the note changes in pitch or disappears altogether, readjust the top trimmer. Repeat this operation until the note is stable and as close as possible to zero beat.

Alternate Method

If the units to be aligned are not too far out of adjustment a quick alignment may be made without the use of special equipment.

(a) Place the two units to be aligned in the same room and turn them "ON." Leave one set in the "LISTEN" position and lock the other in the "TALK" position.

(b) If they are not too far out of adjustment a microphonic howl will be heard between them. Retard the volume control on the one which is receiving until the howl is just audible.

(c) Adjust all three trimmer condensers on the triple-tuned transformer in the unit which is acting as a transmitter for maximum howl.

(d) Repeat operations (b) and (c) until maximum interaction is obtained.

(e) Reverse the functions of the two units and repeat the above procedure.

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description
1	W —44337	Bulb—Dial Light
2	G151—32002	Osc. and Coupling Coil Assy.
3A	G1 —32007	R-F. Filter Choke
3B	G1 —32007	R-F. Filter Choke
4	G2 —32007	R-F. Filter Choke
5	G18 —29535	Audio Choke
6	G17 —29535	Rectifier Filter Choke
7A	W —43280	Condenser, 25 Mf. 150 V.
7B	W —43280	Condenser, 25 Mf. 150 V.
8A	W —44434	Condenser, 50 Mf. 25 V.
8B	W —44434	Condenser, 50 Mf. 25 V.
9		None
10A	G3 —34002	Condenser, .0005 Mf. 200 V.
10B	G3 —34002	Condenser, .0005 Mf. 200 V.
11A	W —30270	Condenser, .001 Mf. 400 V.
11B	W —30270	Condenser, .001 Mf. 400 V.
11C	W —30270	Condenser, .001 Mf. 400 V.
12A	W —23191A	Condenser, .01 Mf. 400 V.
12B	W —23191A	Condenser, .01 Mf. 400 V.
13	W —27216	Condenser, .05 Mf. 200 V.
14A	W —23615	Condenser, .05 Mf. 400 V.
14B	W —23615	Condenser, .05 Mf. 400 V.
15A	W —24049C	Condenser, .1 Mf. 200 V.
15B	W —24049C	Condenser, .1 Mf. 200 V.
15C	W —24049C	Condenser, .1 Mf. 200 V.
16A	W —22688	Condenser, .1 Mf. 400 V.
16B	W —22688	Condenser, .1 Mf. 400 V.
17	B —33906B	Power Cord and Plug
18	W —29585	Resistor, 600 Ohm ½W. Flex.
19	—35934	Resistor, 6,500 Ohm ¼W. Ins.
20	—36760	Resistor, 20,000 Ohm ¼W. Ins.
21A	—35601	Resistor, 300,000 Ohm ¼W. Ins.
21B	—35601	Resistor, 300,000 Ohm ¼W. Ins.
22	—36322	Resistor, 500,000 Ohm ¼W. Ins.
23A	—35602	Resistor, 1. Megohm ¼W. Ins.
23B	—35602	Resistor, 1. Megohm ¼W. Ins.
24	269BL6"U"	Speaker—Spec. No. 5-B-103
	—45172	V. C. and Cone Assy.
	—45292	Output Transformer
25	G161—36400	Socket, Type 25A6
26	G157—36400	Socket, Type 6J7
27	G181—36400	Socket, Type 25A7
28	G170—36400	Socket Ballast—W-43357
29	B —44333	Switch—Listen, Talk and Signal
30	G40 —26719	Direct Line Term. Board
31		None
32	—44612	Vol. Cont. (5,000-Ohm) and Line Switch
33	W —28619	Condenser, .006 Mf. 200 V.
34	—35927	Resistor, 2 Megohm ¼W. Ins.
35	—38623	Resistor, 750,000 Ohm ¼W. Ins.
36	W —45418	Resistor, 50 Ohm 6W. Flex.
	7DF	Cabinet
	W —43320	Knob (Vol. Cont.)
	W —44616B	Switch Lever
	W —44617A	Switch Lock
	W —29023	Bezel (Jewel)
	W —28723B	Jewel
	—44460	Cabinet Back
	W —23012	Resistor (40 Ohm) Direct Line

MODEL A459, Roamio

THE CROSLEY CORP.

SPECIFICATIONS

This model Roamio is a two unit five-tube superheterodyne receiver, designed expressly for installation in the Crosley automobile. It incorporates a mechanical push button tuning system of simple, rugged trouble free construction. The tubes used and their functions are as follows: one 6A8 as oscillator-modulator, one 6SK7 I-F amplifier, one 6SQ7 as diode detector, A. V. C., and 1st audio, one 6K6GT as Pentode output and one 6X5GT as rectifier. Bias for the 6A8 and 6SK7 is obtained from the drop across item 30, a 160 ohm resistor and bias for the 6K6GT is obtained from the drop across item 41, a 600 ohm resistor. The 6SQ7 is operated at zero bias. A. V. C. is supplied to the 6A8 and 6SK7 through item 32, a 500,000 ohm filter and item 33, a 1 megohm filter respectively. The B circuit is filtered by means of item 39, a 1,400 ohm resistor, and the two 10 mf. sections of item 27, a three section electrolytic condenser. Item 14 is a chemical temperature compensating condenser used in the oscillator circuit to prevent station drift.

TUBES AND VOLTAGE LIMITS

The following table gives the functions of the tubes used, together with the voltage readings between the tube socket contacts and chassis. Voltage readings should be taken with a 1,000 ohm per volt, 250 volt volt-meter (except filaments) with the volume control full "ON" and no signal input. The filament voltages should be measured with an accurate low range voltmeter.

TUBE SOCKET VOLTAGE READINGS

Tube	Function	No. 1	No. 2	No. 3	SOCKET PIN NUMBER No. 4	No. 5	No. 6	No. 7	No. 8
6A8	OSC.-MOD.	GND.	GND.	206	102	-4.5	101	6	3
6SK7	I-F Amplifier	GND.	GND.	GND.	Grid	3	102	6	207
6SQ7	Det., A.V.C., 1st A-F	GND.	Grid	0	Diode	Diode	67	6	GND
6K6GT	Output	GND.	GND.	230	213	Grid	210 J.B.	6	14
6X5GT	Rectifier	GND.	GND.	A.C.	—	A.C.	—	6	245

Maximum Power Output—approximately 3.6 watts.
Normal "A" Drain—6.5 amperes.
GND.—Ground. J.B.—Junction Block.

ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary such as when an I-F assembly has been changed and etc., the circuit can best be properly aligned with the use of a MODULATED SIGNAL GENERATOR and an output meter.

CONNECTING OUTPUT METER

Connect the output meter to the plate and screen of the 6K6GT output tube. Be sure the meter is protected from D. C. by connecting a condenser (0.1 mf. or larger—not electrolytic) in series with one of the meter leads.

1. Aligning the I-F to 455 Kilocycles.

(a) Connect the ground lead from the signal generator to the chassis frame. Connect the high side of generator through an .02 mf. condenser to the grid cap of the 6A8 oscillator-modulator (leaving the tube's grid connector in place). Care should be exercised to keep signal generator leads as far as possible from the other grid leads.

(b) Open gang condenser all the way (minimum) turn volume control to maximum and then set signal generator to 455 kilocycles.

(c) Adjust both 2nd I-F trimmers for maximum output. Trimmers are accessible from bottom of the chassis. Fig. 3.

(d) Adjust both 1st I-F trimmers for maximum output. Trimmers are accessible from bottom of the chassis. Fig. 3.

(e) Repeat (c) and (d) with as low an output as gives a reasonable indication on output meter for more accurate adjustment.

2. Aligning the R-F.

(a) The output lead from the signal generator should be connected through a .0001 mf. condenser to the "ANT" connection of the receiver.

(b) Set the signal generator to 1400 kilocycles.

(c) Adjust the station selector to 140 on the dial.

(d) Adjust the trimmer on the "OSC" section of the tuning condenser for maximum output.

(e) Adjust the trimmer on the "ANT" section of the tuning condenser for maximum output.

(f) Readjust the station selector for maximum output.

(g) Repeat operation (e) for more accurate adjustment.

3. Setting the Push Buttons.

The push buttons are easily and accurately set from the front of the receiver.

To set push buttons, remove button by pulling straight out and the setting screw is easily accessible. Loosen the screws of the buttons to be set (two or three turns to the left).

By means of the manual tuning knob tune-in AS ACCURATELY AS POSSIBLE the station for which the button is to be set. REMEMBER: the accuracy of the push buttons depends upon how accurate YOU tune-in the station when setting them.

With a small screw driver push the key all the way down. While holding the key down, securely tighten the setting screw. It is essential that you apply pressure while tightening the setting screw, in order to keep mechanism lined up with station tuned-in.

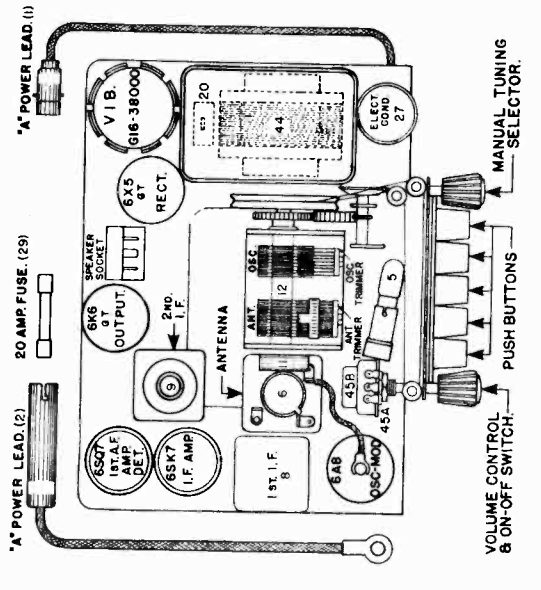


Fig. 2-A—Top View Model A-459

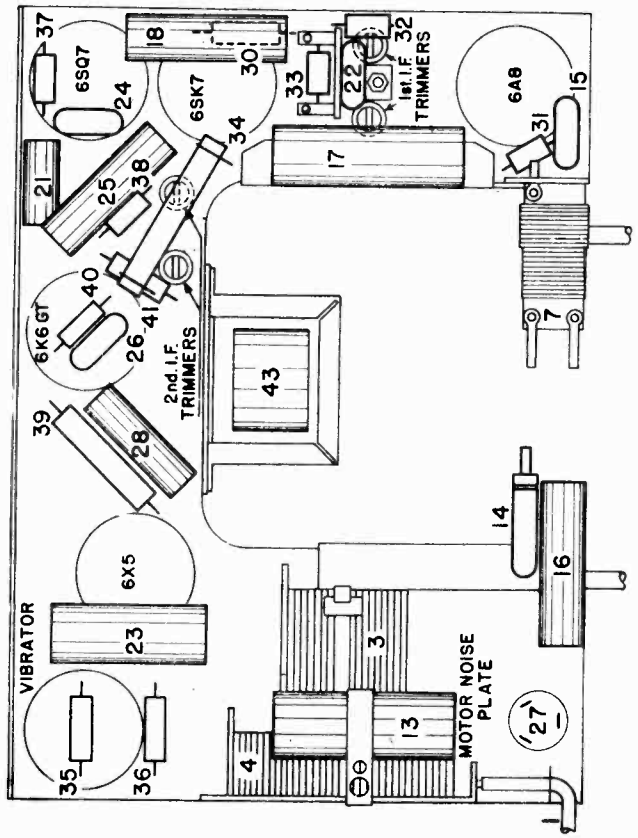
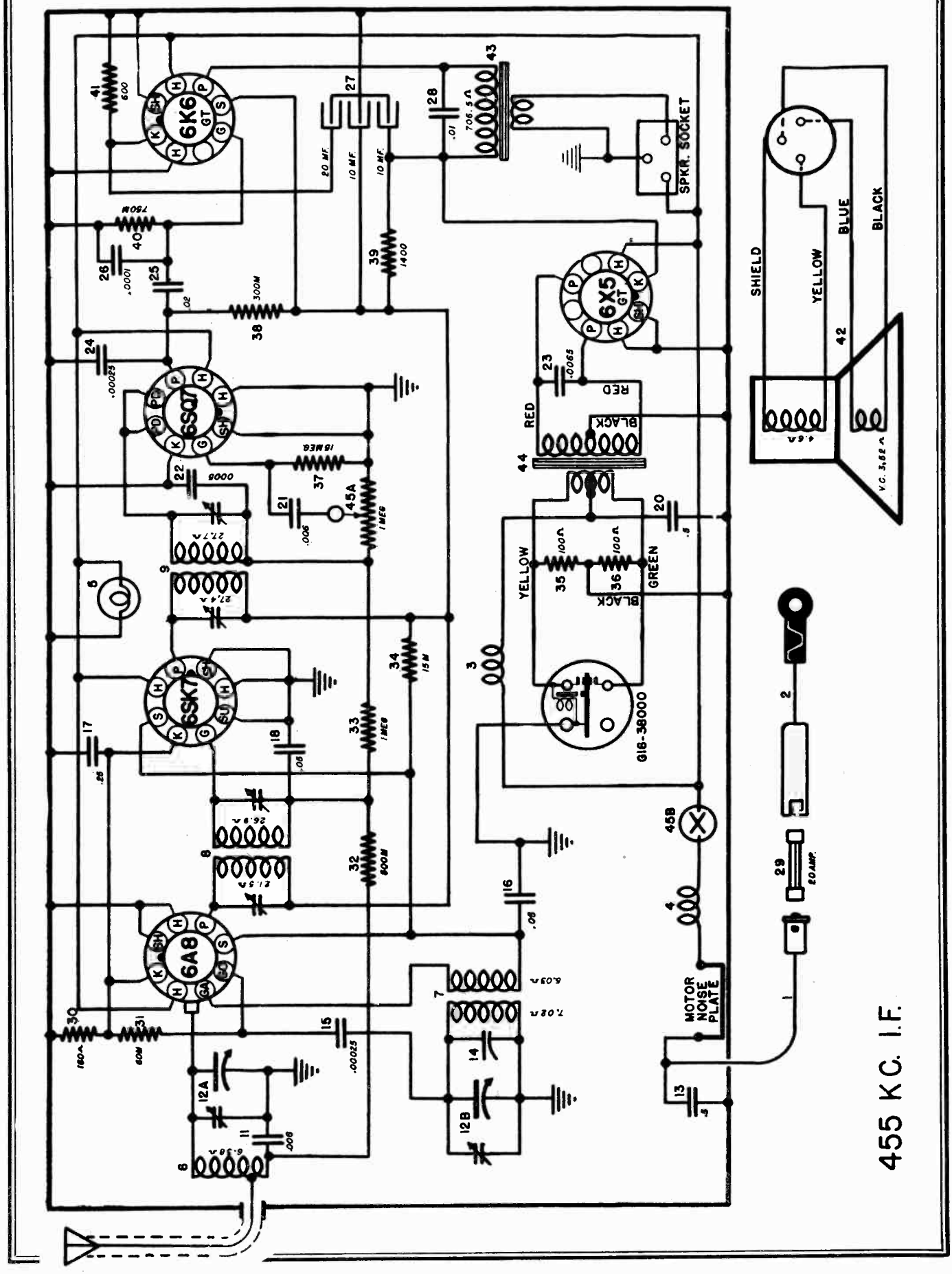


Fig. 3-A—Bottom View Model A-459

MODEL A459, Roamio

THE CROSLEY CORP.



SPECIFICATIONS

Model 539—This model is a phonograph combination designed for 110 volt 50-60 cycle operation. The radio chassis used in this model is almost identical to Model 5539 (Phono-Radio switch replaces tone control switch).

The phonograph motor is small, efficient and self-starting. The pickup or tone arm is an improved crystal cartridge type having a high output with an unusual wide frequency response. The turn table is rim driven. Special receptacles are provided for new and used needles.

The later series of this model were equipped with adjustable loop antennas.

Model J-539—This model is identical with model 539 except that it has a 1:1 isolating power transformer (for receiver) and slightly different phono. motor.

Model 5539—This model Crosley is a five tube, single band superheterodyne receiver. It is designed for operation on 110 volt power circuits, either DC or 50-60 cycle AC.

Model J-5539—This model is the same as Model 5539 except that it is designed for 110 volt, 50-60 cycle operation only.

ALIGNMENT PROCEDURE

MODELS 539, J539, 5539, J5539

NOTE: The chassis of this receiver is connected to one side of the power lines and for this reason all test equipment should be thoroughly insulated in order that the power supply will not become short circuited while aligning the receiver. This does not apply to the J models which have isolating power transformers.

CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 50L6GT output tube. Be certain that the meter is protected from DC by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

Tuning the I-F Amplifier To 455 Kilocycles.

(a) Connect the output of the signal generator through a 100 mmf. condenser to the antenna connection (BLUE LEAD) on the receiver. Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If it is found to be necessary, a small condenser (approximately .001 mfd.) should be connected in series with the ground terminal of the signal generator and the receiver chassis. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Set the station selector so that the plates of the condenser gang are completely out of mesh and turn the volume control to the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust the 2nd I-F trimmer condensers (Fig. 2) for maximum reading on the output meter.

(e) Adjust the 1st I-F trimmer condensers (Fig. 2) for maximum output.

(f) Repeat operations (d) and (e) for more accurate adjustmnets.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE READING ON THE OUTPUT METER.

Aligning the R-F Amplifier.

(a) Leave signal generator output lead connected to the antenna lead (BLUE). Set signal generator to 1712 kilocycles for models without a loop antenna, or to 1620 kilocycles for models equipped with a loop antenna.

(b) With the condenser gang turned to the minimum capacity position, adjust the trimmer condenser on the "OSC" section of the gang for maximum output. It is not necessary that the receiver tune through this signal.

(c) Set the signal generator to 1400 kilocycles.

(d) Tune in the 1400 kilocycles in the region of 140 on the dial for maximum output.

(e) Adjust the trimmer condenser on the "ANT" section of the gang for maximum output.

(f) Repeat the above for more accurate adjustments.

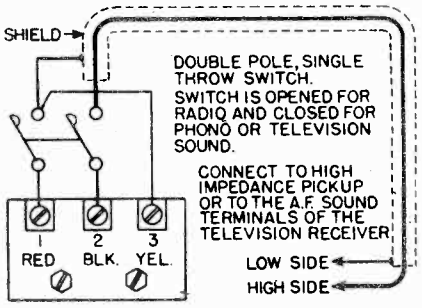
WAVE TRAP

Some models without the loop antenna are equipped with a wave trap for the purpose of eliminating interference from code stations which operate on a frequency of approximately 455 kilocycles. This assembly consists of a coil, a fixed condenser and a trimmer condenser as illustrated by the dotted lines in the Wiring Diagram (item 30).

The wave trap should not be adjusted until all other adjustments have been made. To make the adjustment, feed a 455 kilocycle signal from the signal generator through a 50 mmf. condenser into the antenna terminal of the receiver. With the gang condenser open and the volume control full on, adjust the trimmer condenser on the wave trap for MINIMUM output.

Should the interfering station be operating on a frequency of slightly more or less than 455 kilocycles, the exact frequency should be determined with the aid of the signal generator. Then, instead of feeding a 455 kilocycle signal into the receiver the exact frequency of the interfering signal should be used. If it is not possible to determine the exact frequency of the interfering signal the antenna may be attached to the receiver and the receiver tuned to the position where the interfering signal is most noticeable. Then adjust the wave trap for minimum interference.

PHONO. CONNECTIONS 5539, J-5539



Some chassis are so constructed as to be adaptable to a phonograph pickup (high impedance type) for the reproduction of recordings. The terminals may also be used for the reproduction of television sound as supplied by a suitable television converter unit.

The double pole single throw switch for changing from Radio to Phono or television sound, should be connected as shown in the above diagram.

The terminals are coded as follows: RED, BLACK, YELLOW, or numbered 1, 2, 3, respectively. The BLACK or No. 2 terminal connects to the high side of the phono pickup or television A-F connection. The YELLOW or No. 3 terminal is the ground or low side connection. The RED or No. 1 terminal should be connected to the YELLOW (3) terminal by some means (as indicated in the above diagram). This prevents any radio signals from the receiver proper from interfering with the Phono or Television sound reproduction.

TUBES AND VOLTAGE LIMITS

The following table gives the functions of the tubes used, together with the voltage readings between the tube socket contacts and chassis. Voltage readings should be taken with a 1000 ohm per volt, 250 volt voltmeter (except filaments) with the volume control full "ON" and no signal input, measured on a 117.5 volt AC line and voltage may vary plus or minus 10% of the values given.

MODEL 539, J539, 5539, J5539

TUBE SOCKET VOLTAGE READINGS

Tube	Function	SOCKET PIN NUMBER No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
12A8GT	Oscillator-Modulator	—	—	95	50	-10	95	—	—
12SK7GT	I-F Amplifier	—	—	—	-1	—	95	—	95
12SQ7GT	Det, AVC, A-F Amplifier	—	—	—	Diode	Diode	35	—	—
50L6GT	Output	—	—	95	95	-8*	—	—	—
35Z5GT	Rectifier	—	—	Tap	—	117.5 A.C.	—	—	100

Power output approximately 2.5 watts.
Power consumption approximately 35 watts.
Voltage drop across speaker field 100 volts.
*Measured across 75 ohm resistor.

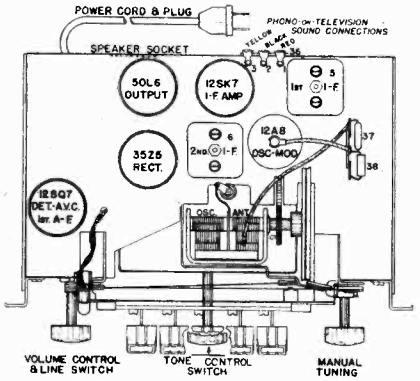


Fig. 2—Top View Model 5539

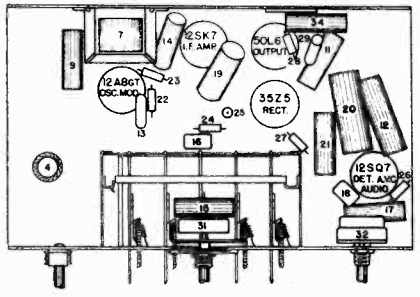


Fig. 3—Bottom View Model 5539

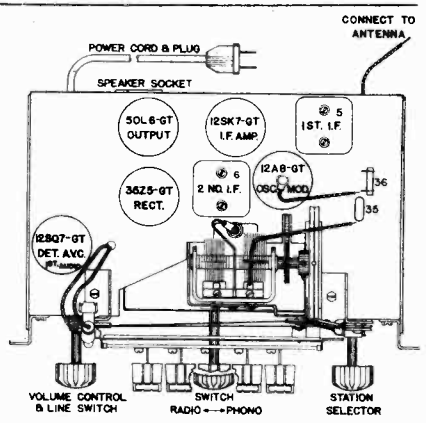


Fig. 4—Top View Model 539

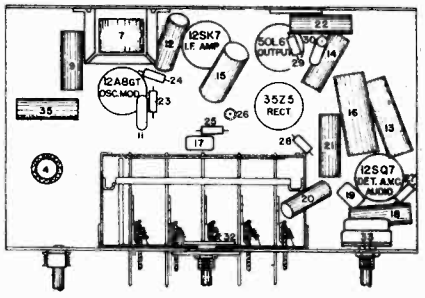


Fig. 5—Bottom View Model 539

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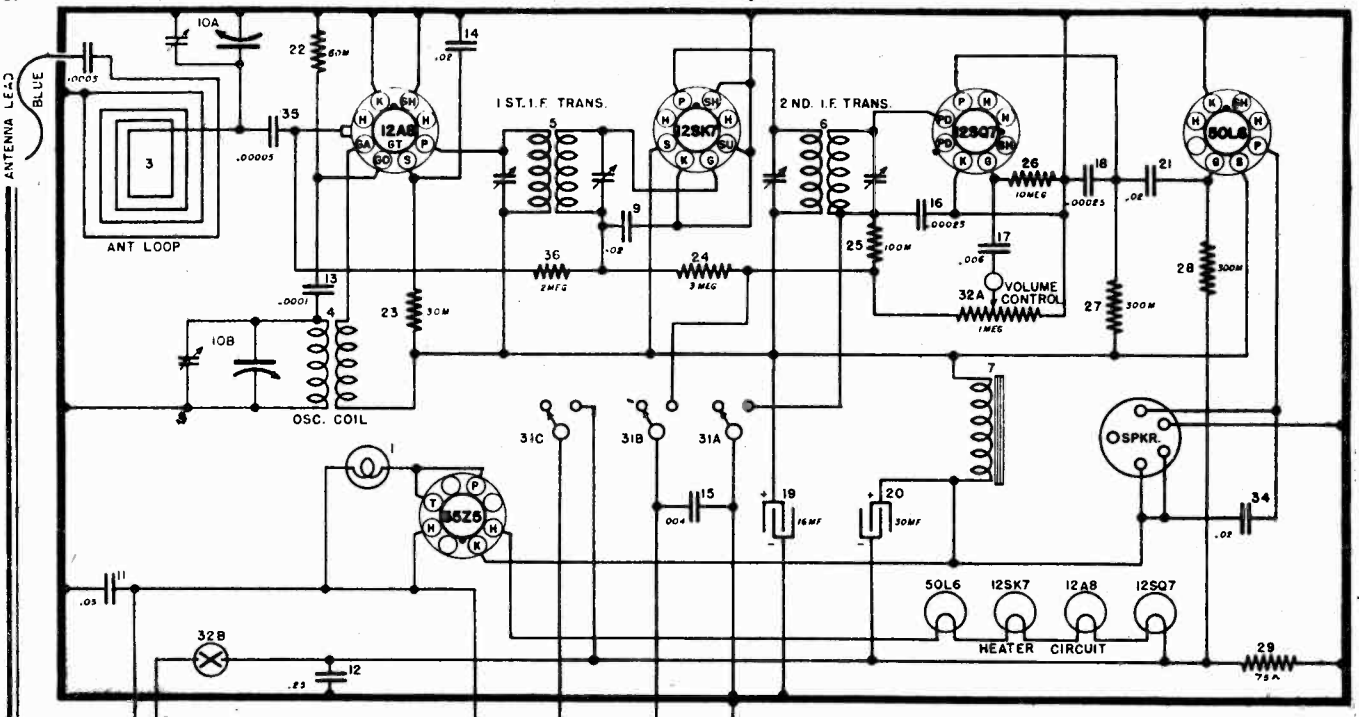
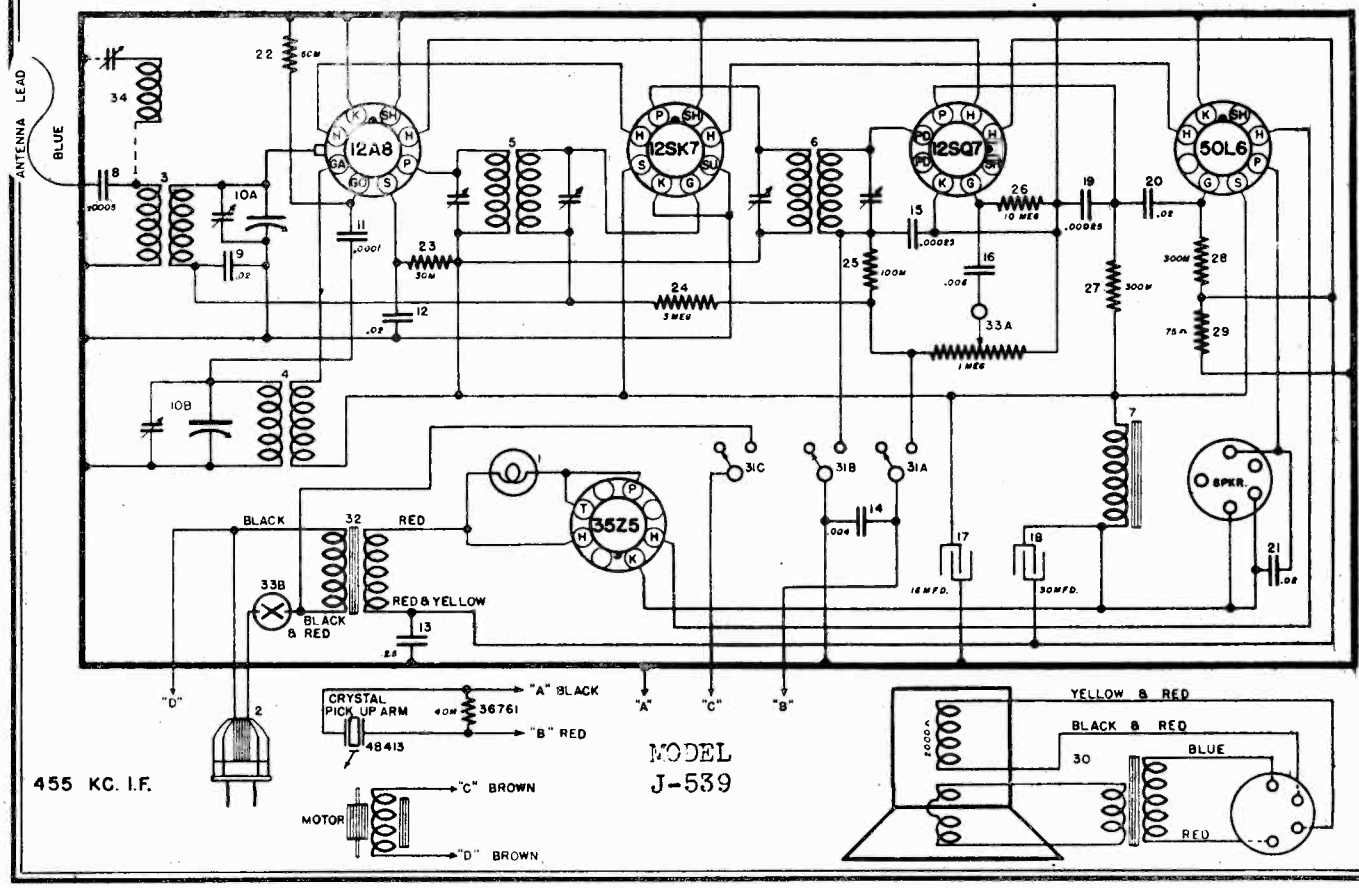
MODEL 539
MODEL J539



MODEL --- 539

TUBES MAY BE METAL OR GT TYPES EXCEPT 12A8

455 KC. I.F.



455 KC. I.F.

MODEL J-539

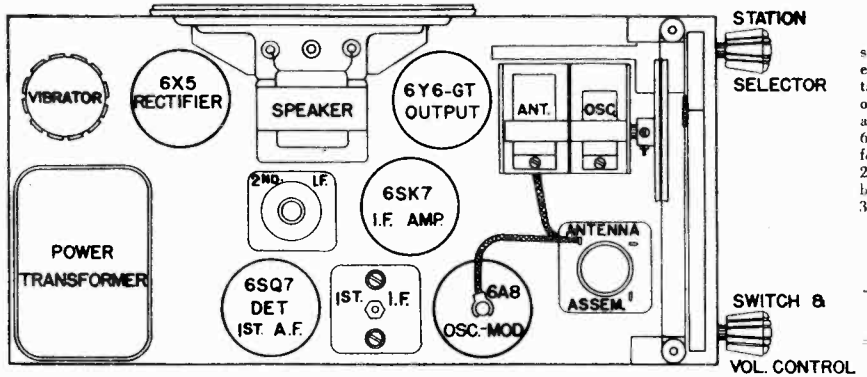


Fig. 2—Top View Model A-559

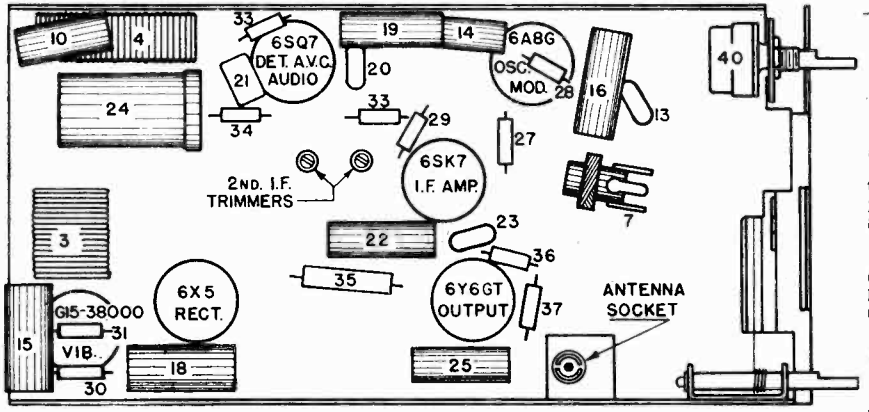


Fig. 3—Bottom View Model A-559

REPLACING THE A-559 DRIVE CORD

1.—Remove the broken cord and the cord tension spring.

2.—Cut a 30 inch length of drive cord and tie the tension spring approximately 4 inches from one end. Thread both ends through the eyelet in the large pulley from the inside. Hook the other end of the spring to th catch in the pulley and bend catch to secure spring.

3.—Close the condenser gang and see that the eyelet in pulley is on top and that the end of the condenser shaft is flush with the inside of the pulley.

4.—Take the long end of cord and place on small brass idler pulley on the right side of the dial bracket. Loop around pulley in a clockwise direction and then around idler pulley on the left side of the dial bracket, continue on over the top of the large pulley and down to the drive shaft. From the under side of drive shaft wrap 2 turns around shaft in a counter-clockwise direction, bringing cord up on the left side of large pulley. Be sure the cord is on all the pulleys then tie a knot, pulling with sufficient force to stretch the tension spring to within ½-inch of the edge of pulley.

5.—Close gang and place the pointer on the cord at the extreme left end of the dial. Check to see that pointer travels full length of the dial. It may be advisable to place some "ARATEX" or other liquid adhesive on cord where it fits into the pointer.

SPECIFICATIONS

This model Crosley Roamio is a single unit five-tube superheterodyne receiver. A highly efficient superheterodyne circuit employs five tubes to the utmost advantage as follows: one 6A8GT as an oscillator and mixer or modulator, one 6SK7 as an intermediate frequency amplifier, one 6Y6GT as power output amplifier and a 6X5 as a rectifier. A full wave vibrator is used. Bias for the 6A8GT and 6SK7 tubes is obtained across item 27 (160 ohm resistor), the 6SQ7 is operated at zero bias. Bias for the 6Y6GT is developed across item 37, a 160 ohm resistor.

TUBES AND VOLTAGE LIMITS

The following table gives the functions of the tubes used, together with the voltage readings between the tube socket contacts and the receiver chassis. Voltage readings taken with a 1000 ohm per volt, 500 volt voltmeter (except filaments) with receiver in operating condition and no signal input. The filament voltages should be measured with an accurate low range D. C. voltmeter (approximately 0 to 10 volts). Voltage limits may vary plus or minus 10% of values given.

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	K	Ga	Go
6A8GT	Oscillator-Modulator	6.0	100	75	—	2.4	75	—
6SK7	I-F Amplifier	6.0	100	—	—	9	—	—
6SQ7	Diode Detector & A-F Amp.	6.0	45	—	—	0	—	—
6Y6GT	Output	6.0	105	100	—	5.6	—	—
6X5	Rectifier	6.0	—	—	—	120	—	—

Power Output approximately 4 Watts.
Battery Drain approximately 6.6 Amperes at 6 Volts.

ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

CONNECTING OUTPUT METER

Connect the output meter to P and S of the 6Y6GT Output tube. Be sure the meter is protected from D. C. by connecting a condenser .1 mfd. or larger—not electrolytic) in series with one of the leads.

1. Tuning the I-F Amplifier To 455 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. or larger, condenser to the top cap of the 6A8GT tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis frame. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Adjust the station selector so that the rotor plates of the tuning condenser are completely disengaged and turn Vol. Cont. to maximum position (RIGHT).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust both 2nd I-F trimmer condensers for maximum output. Fig. 3.

(e) Adjust both trimmers located on the 1st I-F transformer for maximum output.

(f) Repeat operations (d) and (e) for more accurate adjustments.

IN ORDER TO PREVENT A. V. C ACTION ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

2. Aligning R-F Amplifier.

To obtain the greatest gain from the R. F. amplifier, the capacity of the dummy antenna should be equal to the capacity of the antenna with which the receiver is to be used. The capacities of auto radio antennas range from 65 mmf. (.000065 mf) to 250 mmf. (.00025 mf.), depending upon the size and type. If the receiver is adjusted for maximum efficiency when used with an antenna having a high capacity, it will not operate at its maximum efficiency on an antenna having a much lower capacity and vice versa.

(a) If the receiver is to be used with a whip or streamlined antenna, the output lead from the signal generator should be connected through a .0001 mf. condenser to the "Ant" connection of the receiver. If a large antenna such as a running board type or built-in top antenna is to be used, a .0002 mf. condenser should be used in place of the .0001 mf. condenser.

(b) Set the signal generator to 1400 kilocycles.

(c) Adjust the station selector to 140 on the dial.

(d) Adjust the trimmer on the "OSC" section of the tuning condenser for maximum output.

(e) Adjust the trimmer on the "ANT" section of the tuning condenser for maximum output.

(f) Readjust the station selector for maximum output. DO NOT READJUST THE OSC. TRIMMER.

(g) Repeat operation (e) for more accurate adjustment.

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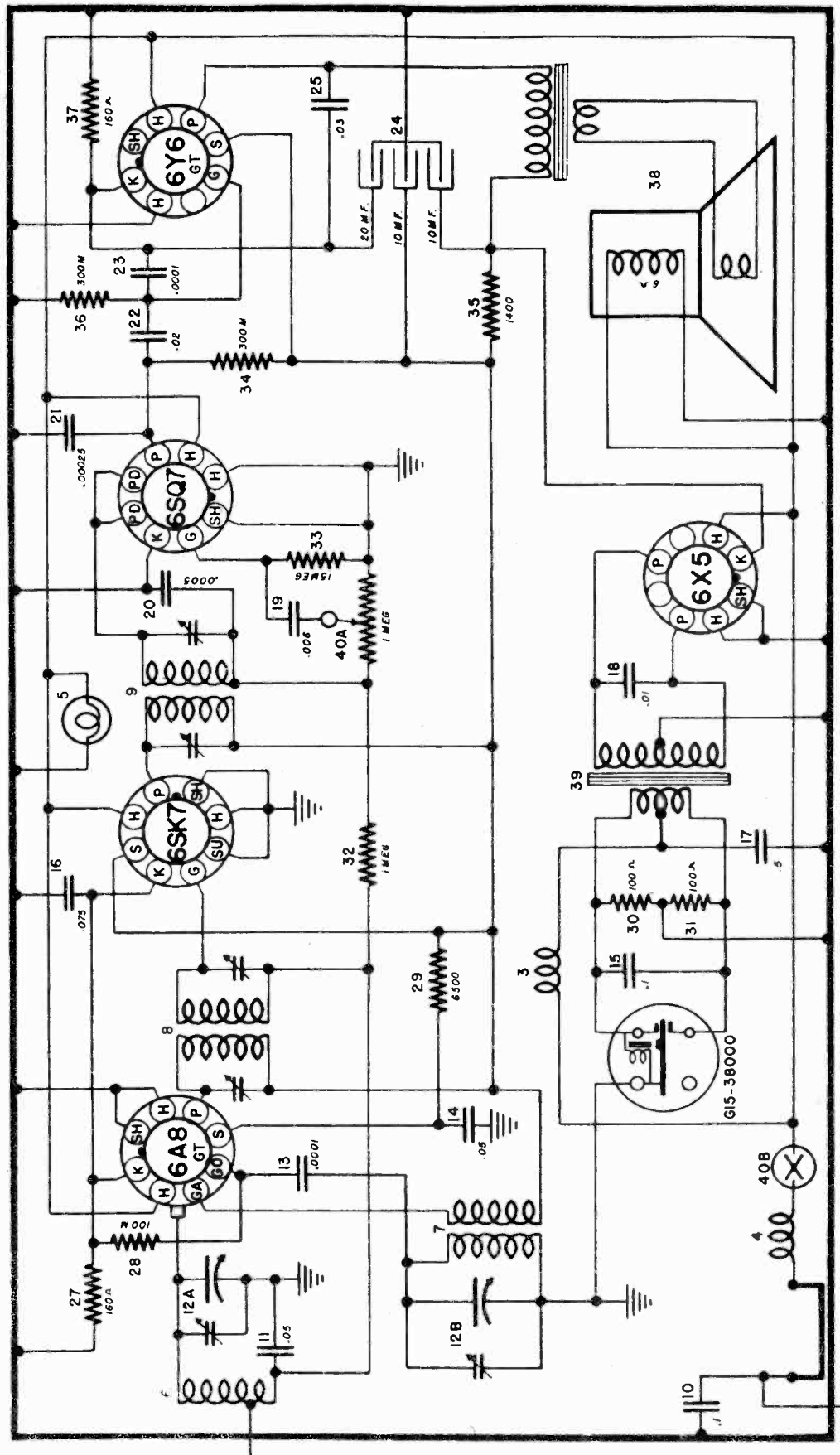
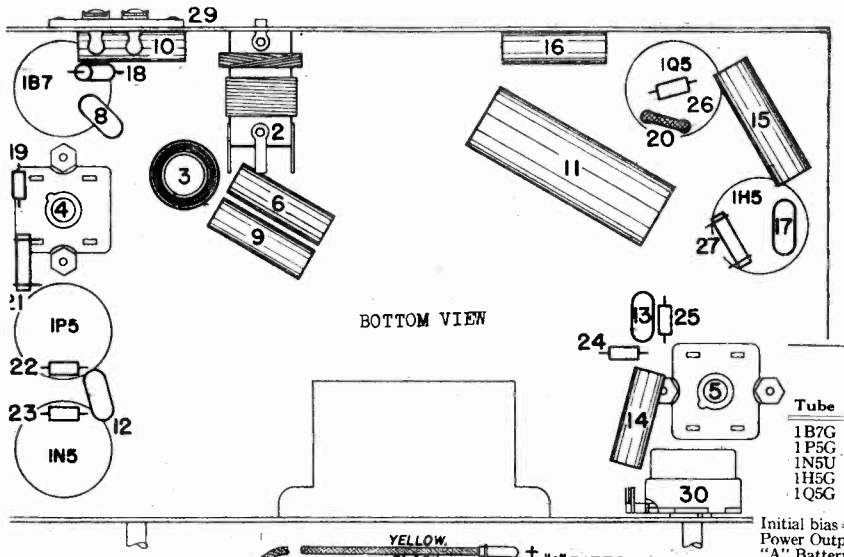


FIG. 1—WIRING DIAGRAM—MODEL A-559



TUBE SOCKET VOLTAGE DATA

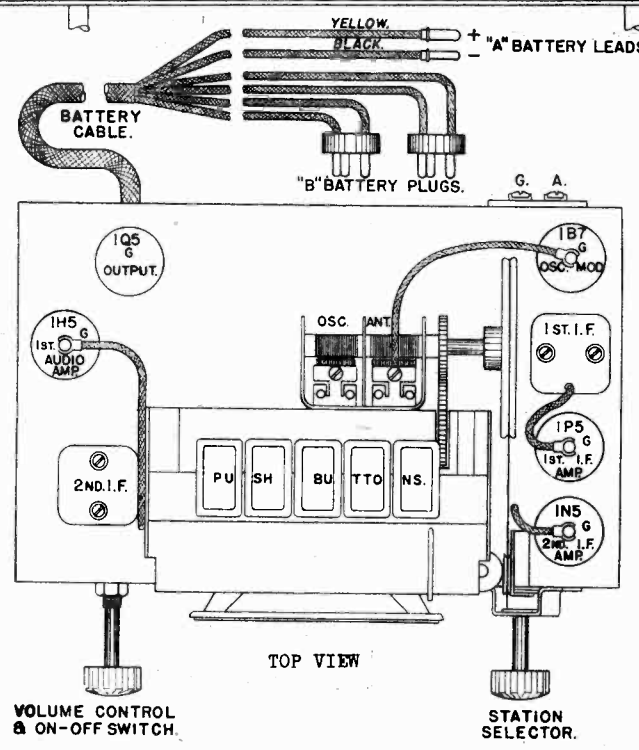
MODELS 579,5579,6579

The following table gives the functions of the tubes used, together with the voltage readings between the tube socket contacts and the negative side of the "A" battery circuit (chassis). Voltage readings should be taken with a 1000 ohm per volt, 250 volt voltmeter (except filaments) with receiver in operating condition and the volume control full on and no signal input. The filament voltages should be measured with an accurate low range D-C voltmeter (Approximately 0 to 10 volts). Voltage limits may vary plus or minus 10% of values given.

TUBE SOCKET VOLTAGE READINGS

Tube	Function	SOCKET PIN NUMBER No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
1B7G	OSC. MOD.	GND.	1.5	78	35	G.	78	GND.	N.C.
1P5G	1st I-F Amp.	GND.	1.5	41	90	N.C.	N.C.	GND.	N.C.
1N5U	2nd I-F Amp.	GND.	1.5	90	90	N.C.	N.C.	GND.	J.B.
1H5G	Det., AVC, 1st A-F	N.C.	1.5	22	N.C.	Diode	90 J.B.	GND.	N.C.
1Q5G	Output	-5 J.B.	1.5	85	90	G.	N.C.	GND.	N.C.

Initial bias = -5 volts measured across item 20—350 Ohms.
Power Output Approximately 500 M.W.
"A" Battery Drain = 350 M.A. @ 1.5 volts.
"B" Battery Drain = 15 M.A. @ 90 volts.
GND. = Ground. N.C. = No Connection. J.B. = Junction Block. G. = Grid.



ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 1Q5G Output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

1. Tuning the I-F Amplifier To 455 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. or larger condenser to the top cap of the 1B7G Osc.-Mod. tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver.

(b) Set the station selector so that the tuning condenser plates are completely meshed. Turn the volume control knob to the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust both trimmers located on top of the 2nd I-F transformer assembly for maximum output. Fig. 2.

(e) Adjust both trimmers located on top of the 1st I-F transformer assembly for maximum output.

(f) Check operations (d) and (e) for more accurate adjustments.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

2. Aligning R-F Amplifier.

(a) Connect the output lead from the signal generator through a .0001 mfd. condenser to the "ANT." terminal of the receiver. Connect generator ground lead to the chassis.

(b) Set signal generator to 1712 kilocycles.

(c) Open condenser gang all the way.

(d) Adjust "OSC" trimmer on gang to 1712 kc. signal, the gang should just tune through this signal.

(e) Set signal generator to 1400 kilocycles.

(f) Tune-in 1400 kc. signal with station selector, should be approximately 140 on dial.

(g) Adjust "ANT." trimmer on gang for maximum output. Do not readjust "OSC" trimmer. Repeat above operations for more accurate adjustments.

SETTING THE PUSH BUTTONS

If any of the circuits have been readjusted it may be necessary to reset the push button tuning system.

Remove the push buttons by pulling straight up. Loosen set screws a turn or two by turning to the left. Then tune-in as accurately as possible the station to which the button is to be set. With the screw driver inserted in adjustment screw slot push the key all the way down and while holding in that position securely tighten the adjusting screw. It should be remembered that when tightening the adjusting screw in this manner, to all apply a steady pressure when tightening the screw in order to keep the key aligned with the station tuned-in.

Repeat the above procedure for resetting the rest of the buttons.

MODELS 579, 5579, 6579

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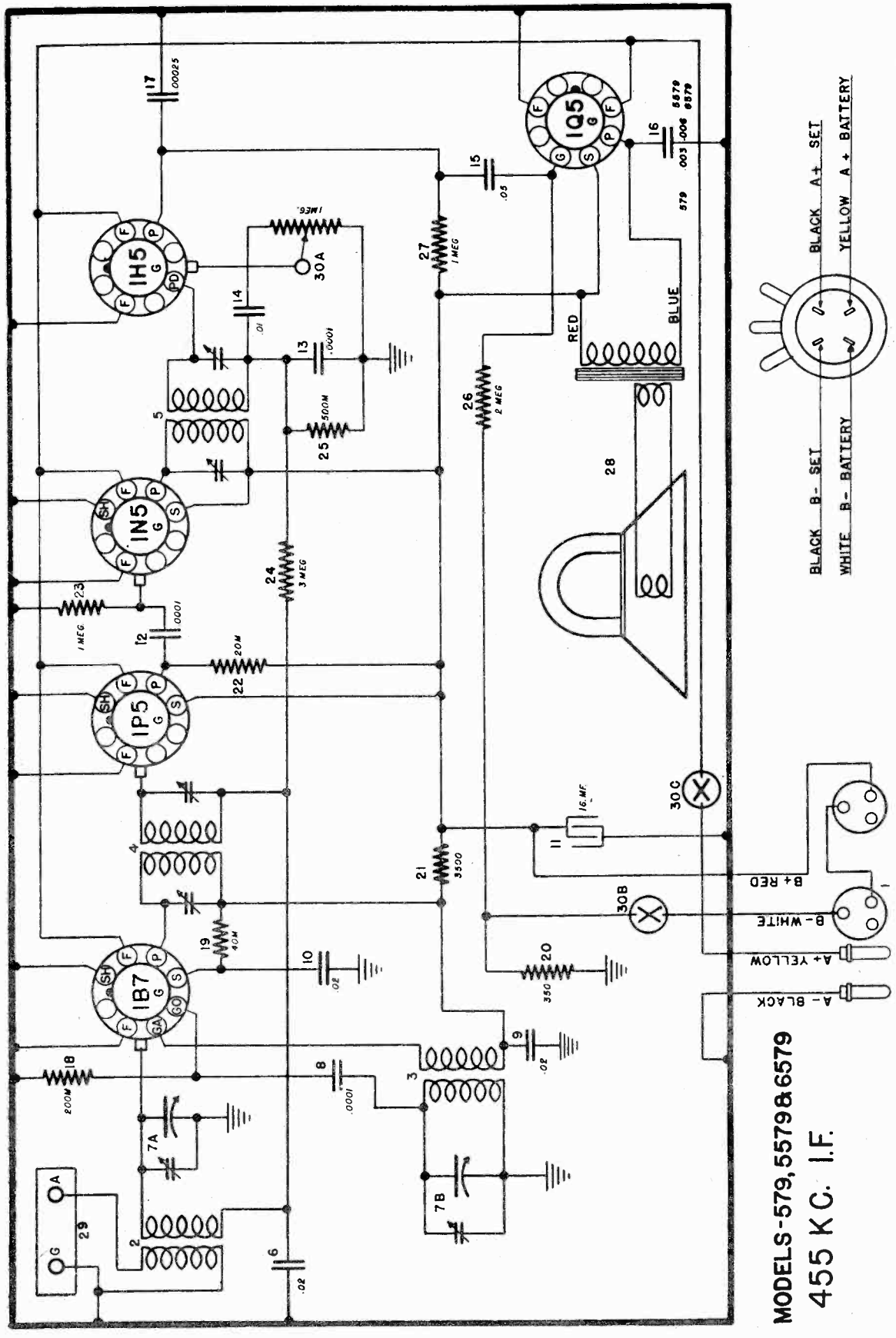


FIG. 1—WIRING DIAGRAM—MODELS 579, 5579, 6579

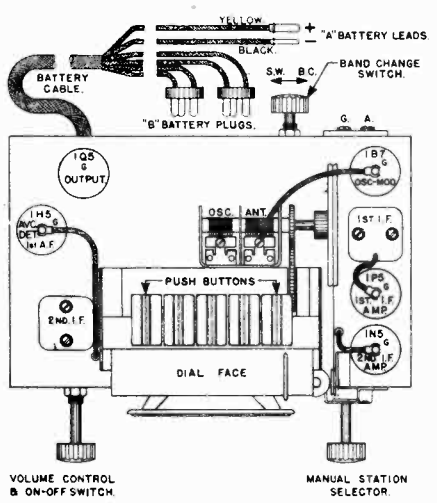


Fig. 2-A—Top View Model 589

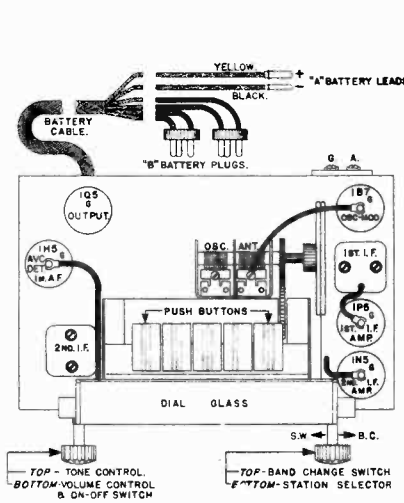


Fig. 2-B—Top View Model 5589

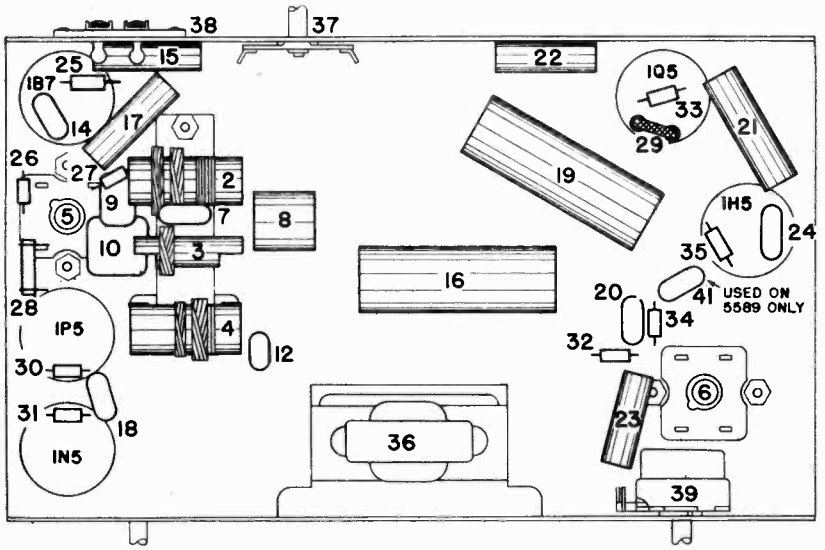


Fig. 3—Bottom View Models 589, 5589

SPECIFICATIONS

Models 589 and 5589 are five-tube two band superheterodyne receivers designed for operation from batteries. The batteries required are one Crosley "A & B" Battery Pack No. CR-28 or one 1.5 Volt plug in type "A" (Eveready No. A-1300) and two 45 Volt plug in "B" batteries (Eveready No. 386) or equivalent.

The frequency range is divided into two bands as follows:

American Broadcast—1725 to 540 Kilocycles
Short-Wave Band—5.7 to 18.3 Megacycles.

Model 589 is a table model with the band change switch mounted on the rear of the chassis. Model 5589 is the console version of the 589 with tone control added and all controls on the front.

CIRCUIT DESCRIPTION

The circuit is a conventional superheterodyne and does not contain any regeneration. The tubes employed are as follows, one 1B7G as oscillator-modulator, one 1P5G as 1st I-F amplifier, one 1N5G (resistance coupled) 2nd I-F amplifier, one 1H5G as diode detector, A. V. C. and 1st audio amplifier and one 1Q5G as beam power output. The initial bias for all the tubes (except 1Q5G) is obtained from voltage drop across item 29, a 350 ohm resistor which is in the negative "B" leg.

TUBES AND VOLTAGE LIMITS

The following table gives the functions of the tubes used, together with the voltage readings between the tube socket contacts and the negative side of the "A" battery circuit (chassis). Voltage readings should be taken with a 1000 ohm per volt, 250 volt voltmeter (except filaments) with receiver in operating condition and the volume control full on and no signal input. The filament voltages should be measured with an accurate low range D-C voltmeter (Approximately 0 to 10 volts). Voltage limits may vary plus or minus 10% of values given.

TUBE SOCKET VOLTAGE READINGS

Tube	Function	SOCKET PIN NUMBER No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
1B7G	OSC. MOD.	GND.	1.5	78	35	G.	78	GND.	N.C.
1P5G	1st I-F Amp.	GND.	1.5	41	90	N.C.	N.C.	GND.	N.C.
1N5U	2nd I-F Amp.	GND.	1.5	90	90	N.C.	N.C.	GND.	J.B.
1H5G	Det., AVC, 1st A-F	N.C.	1.5	22	N.C.	Diode	90 J.B.	GND.	N.C.
1Q5G	Output	-5 J.B.	1.5	85	90	G.	N.C.	GND.	N.C.

Initial bias = -5 volts measured across item 20—350 Ohms.
Power Output Approximately 500 M.W.
GND. = Ground. N.C. = No Connection. J.B. = Junction Block. G. = Grid.

ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 1Q5G Output tube. Be sure the meter is protected from D. C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

1. Tuning the I-F Amplifier To 455 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. or larger condenser to the top cap of the 1B7G Osc-Mod. tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver.

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and band switch to B. C. position.

(c) Set the signal generator to 455 kilocycles.

(d) Adjust both trimmers located on top of the 2nd I-F transformer assembly for maximum output. Fig. 2.

(e) Adjust both trimmers located on top of the 1st I-F transformer assembly for maximum output.

(f) Check operations (d) and (e) for more accurate adjustments.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

2. Aligning R-F Amplifier.

(a) Connect the output lead of the signal generator to the ANT. terminal of the receiver through a 250 ohm carbon resistor and the ground lead to the "GND" terminal.

(b) Set signal generator to 18.3 megacycles.

(c) Turn tuning condenser gang so plates are completely out of mesh, turn the volume control on full, the tone control to treble and the band switch to S. W. band.

(d) Adjust S. W. Oscillator trimmer condenser for maximum output.

(e) Set signal generator to 18.0 megacycles.

(f) With the manual tuning knob tune-in the 18. megacycle signal for maximum output. Then adjust the S. W. Antenna trimmer condenser for maximum output.

NOTE: Make sure the short wave band is aligned on the fundamental frequency (18 megacycles) and not the image frequency by increasing the signal generator output and tuning in the image frequency (approx. 17.1 mc. on the dial). If receiver is correctly aligned the image will be heard as stated above but will be much weaker than the fundamental.

(g) Repeat operations (b) to (f) for more accurate adjustments.

(h) Replace the 250 ohm resistor dummy antenna with a .0001 mf. condenser.

(i) Open gang condenser all the way, minimum capacity position, turn band switch to B. C. position, etc.

(j) Set signal generator to 1725 kilocycles.

(k) Adjust B. C. oscillator trimmer condenser for maximum output. Gang does not have to tune through this signal

(l) Set signal generator to 1400 kilocycles.

(m) Tune-in 1400 kc. generator signal on receiver, then adjust B. C. "ANT" trimmer condenser for maximum output.

(n) Repeat operations (j) to (m) for more accurate adjustments.

THE CROSLEY CORP.

MODEL 589
MODEL 5589

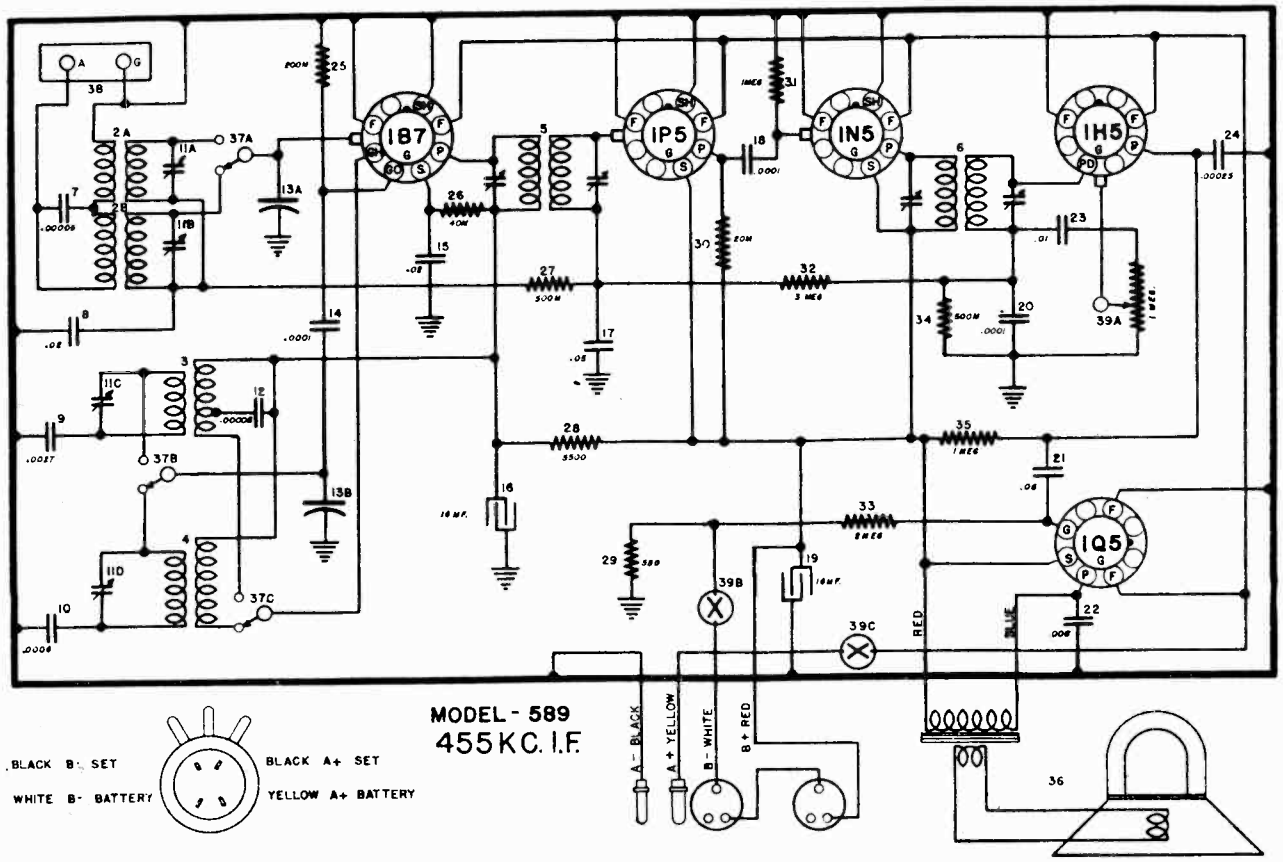


FIG. 1-A—WIRING DIAGRAM—MODEL 589

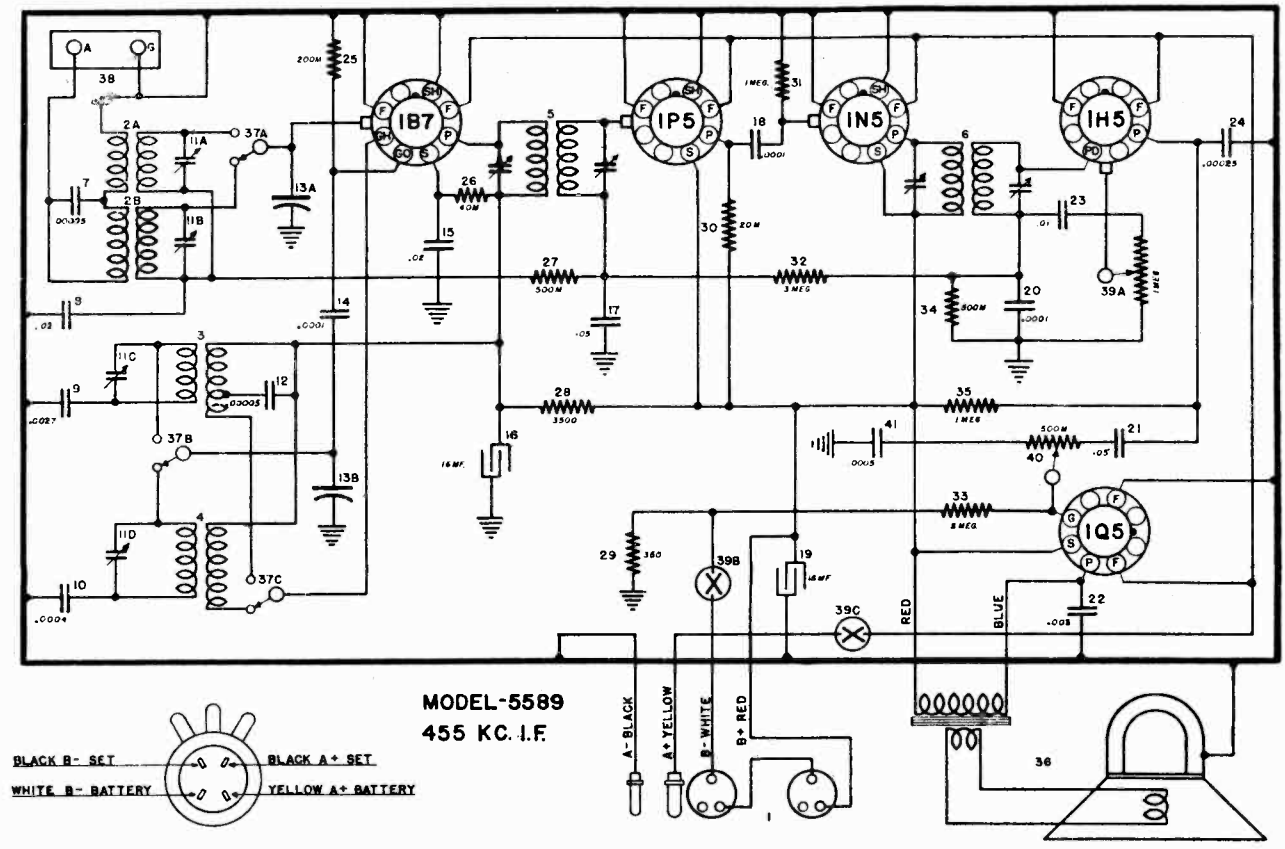


FIG. 1-B—WIRING DIAGRAM—MODEL 5589

MODEL 48
MODEL 618

THE CROSLEY CORP.

PARTS LIST — MODEL 48

Item No.	Part No.	DESCRIPTION
1	43567	Bulb, Dial Light
2	43567	Bulb, Dial Light
3	45763-A	Cable & Power Plug
4	130857	Cable & Plug (Phono Motor
5	G294-34003	Cable & Socket (Mike)
6	130857	Crystal Cart. (Tone Arm)
7	130854	Cutter, Magnetic
8	G2-130234	Loop Ant.
9	G224-32000	Coil H.F. Ant.
10	G225-32000	Coil Pol. Ant.
11A	G241-32002	Coil B.C. Osc.
11B		Coil H.F. Osc.
12	G242-32002	Coil Pol. Osc.
13	G234-32002	Coil P.B. Osc. 540-940 Kc.
14	G235-32002	Coil P.B. Osc. 600-1050 Kc.
15	G237-32002	Coil P.B. Osc. 740-1300 Kc.
16	G238-32002	Coil P.B. Osc. 880-1550 Kc.
17	G239-32002	Coil P.B. Osc. 1000-1600 Kc.
18A	G114-32001	Coil B.C. R.F.
18B		Coil H.F. R.F.
19	G115-32001	Coil Pol. R.F.
20	G246-32004	1st I-F Trans.
21	G240-32004	2nd I-F Trans.
22	G5-34002	Cond. 50 Mmf. Mica
23	G5-34002	Cond. 50 Mmf. Mica
24	49932	Cond. Trimmer
25	G3-34002	Cond. 500 Mmf. Mica
26A	37986-A	Cond. Pol. Ant. Trimmer
26B		Cond. H.F. Ant. Trimmer
27A	49929	Var. Cond. Ant. Sect.
27B		Var. Cond. R.F. Sect.
27C		Var. Cond. Osc. Sect.
28	G17-34005	Cond. 3700 Mmf. Mica
29	G14-34005	Cond. 1185 Mmf. Mica
30	130108	Cond. BC. Osc. Ser. Trim.
31A	35951-A	Cond. BC. Osc. Trimmer
31B		Cond. Pol. Osc. Trimmer
31C		Cond. HF. Osc. Trimmer
32A	49933	Cond. P.B. Trim. 540-940 Kc.
32B	49934	Cond. P.B. Trim. 600-1050 Kc.
32C	49936	Cond. P.B. Trim. 740-1300 Kc.
32D	49937	Cond. P.B. Trim. 880-1550 Kc.
32E	49938	Cond. P.B. Trim. 1000-1600 Kc.
33	G21-34002	Cond. 600 Mmf. Mica
34	G21-34002	Cond. 600 Mmf. Mica
35	45780-B	Cond. .02 Mf. 160 V. Paper
36	G3-34002	Cond. 500 Mmf. Mica
37	G3-34002	Cond. 500 Mmf. Mica
38	G3-34002	Cond. 500 Mmf. Mica
39A	35951-A	Cond. B.C. R.F. Trimmer
39B		Cond. Pol. R.F. Trimmer
39C		Cond. S.W. R.F. Trimmer
40	G3-34002	Cond. 500 Mmf. Mica
41	22688	Cond. .1 Mf. 400 V. Paper
42	48122	Cond. 16 Mf. 250 V. Elect.
43	G2-34002	Cond. 100 Mmf. Mica
44	G3-34002	Cond. 500 Mmf. Mica
45	G-134002	Cond. 250 Mmf. Mica
46	30488	Cond. .02 Mf. 400 V. Paper
47	45780-B	Cond. .02 Mf. 160 V. Paper
48	30488	Cond. .02 Mf. 400 V. Paper
49	50105	Cond. .1 Mf. 160 V. Paper
50	45780-B	Cond. .02 Mf. 160 V. Paper
51	34713	Cond. .006 Mf. 160 V. Pap.
52	130171	Cond. .01 Mf. 100 V. Paper
53	34713	Cond. .006 Mf. 160 V. Pap.
54	45817-A	Cond. .05 Mf. 160 V. Paper
55	G2-34002	Cond. 100 Mmf. Mica
56	32780-B	Cond. .05 Mf. 400 V. Paper
57	45810-B	Cond. .006 Mf. 160 V. Pap.
58	34713	Cond. .006 Mf. 160 V. Pap.
59		
60		
61A	130246	Cond. 15 Mf. 450 V. Elect.
61B		Cond. 15 Mf. 450 V. Elect.
61C		Cond. 10 Mf. 250 V. Elect.
62	G1-34002	Cond. 250 Mmf. Mica
63	30270	Cond. .001 Mf. 400 V. Pap.
64	30805	Cond. .01 Mf. 400 V. Paper
65	30488	Cond. .02 Mf. 400 V. Paper
66	30488	Cond. .02 Mf. 400 V. Paper
67	G6-34002	Cond. 25 Mmf. Mica
68		
69	130764	Microphone (Crystal)
70	130870	Motor, Phono 60-110 V.
71	130654	Res. 3.5 Ohm ½ W. Ins.
72	130655	Res. 15 Ohm 2 W. Ins.
73	38976	Res. 250,000 Ohm ¼ W. Ins.
74	38916	Res. 350 Ohm ½ W. Ins.
75	35602	Res. 1 Meg. ¼ W. Ins.
76	35930	Res. 200,000 Ohm ¼ W. Ins.
77	36688	Res. 3 Meg. ¼ W. Ins.
78	35601	Res. 300,000 Ohm ¼ W. Ins.
79	36688	Res. 3 Meg. ¼ W. Ins.
80	35601	Res. 300,000 Ohm ¼ W. Ins.
81	130311	Res. 120 Ohm ½ W. Ins.
82	35928	Res. 60,000 Ohm ¼ W. Ins.
83	47699	Res. 75 Ohm ½ W. Ins.
84	40757	Res. 50,000 Ohm ¼ W. Ins.
85	130318	Res. 25,000 Ohm 1 W. Ins.
86	47819	Res. 15000 Ohm 1 W. Ins.
87	35602	Res. 1 Meg. ¼ W. Ins.
88	35600	Res. 100,000 Ohm ¼ W. Ins.
89	35600	Res. 100,000 Ohm ¼ W. Ins.
90	50956	Res. 10 Meg. ¼ W. Ins.
91	40757	Res. 50,000 Ohm ¼ W. Ins.
92	130488	Res. 1500 Ohm ¼ W. Ins.
93	38916	Res. 350 Ohm ½ W. Ins.
94	47131	Res. 5 Meg. ¼ W. Ins.
95	35927	Res. 2 Meg. ¼ W. Ins.
96	36688	Res. 3 Meg. ¼ W. Ins.
97	35927	Res. 2 Meg. ¼ W. Ins.
98	35602	Res. 1 Meg. ¼ W. Ins.
99	47131	Res. 5 Meg. ¼ W. Ins.
100		
101		
102	35601	Res. 300,000 Ohm ¼ W. Ins.
103	35928	Res. 60,000 ¼ W. Ins.
104	36318	Res. 1500 Ohm 1 W. Ins.
105	23013	Res. 2000 Ohm 1½ W. Flex.
106	36321	Res. 400,000 Ohm ¼ W. Ins.
107	36322	Res. 500,000 Ohm ¼ W. Flex.
108		
109	35600	Res. 100,000 Ohm ¼ W. Ins.
110	49945	Res. 5000 Ohm ¼ W. Ins.
111	49703	
112		
113		Res. 250 Ohm 2 W. Ins.
114		
115		
116	130815	Sock. & Cable Magic Eye
117	G2-130728	Speaker & Plug
	47219	Spkr. Headed Bushing, 4
	37953	Spkr. Mtg. Flat Wash., 4
	N-8	Speaker Mtg. Nut—8-32 Hex, 4
	49219	Spkr. Mtg. Brkt., 4
	32814	Speaker Mtg. Brkt. Screws, 9
	N-5096	Spkr. Mtg. Brkt. Nuts, 4
	130359	Speaker Mtg. Brkt. Flat Washer, 4
118A	130487	Switch, Band Change
118B		Switch, Band Change
118C		Switch, Band Change
119A	130602	Mike Level, 3 Meg. Ohm
119B		Switch
120	130856	Switch, Phono Motor
121	G68-26719	Terminal Board, Loop Ant.
122	G50-26719	Terminal Board, Phono
123	130741-A	Tone Cont., 3 Meg. Ohm
124A	47783-A	Vol. Control, 1 Meg. Ohm
124B		Switch (Power)
125	130784	Transformer (Power)
	130763	Escutcheon, Magic Eye, 1
	130624-A	Escutcheon, Neon Tube, 1
	130637	Escutcheon & Dial, 1
	130518	Escutcheon Mtg. Screws, Dial & Tube, 8
	130772	Escutcheon Mtg. Screws, Magic Eye, 2
	130767	Escutcheon Push But., 1
	130324	Escutcheon Push Button Screws, 4
	130160-A	Push Button, 8
	131456	Push Button Switch, 1
	42911	Protector, Cabinet, 1
	130460	Protector, Cab. Cloth, 1
	130424	Chassis Mtg. Strap (RH) (1)
	130427	Chassis Mtg. Strap (LH) (1)
	45580-A	Chassis Grommet, Rubber (6)
	130425	Chassis Mtg. Brkt. (2)
	131512	Chassis Headed Bush. (6)
	43885	Chassis Mtg. Screw, 8
	130992	Chassis End Plate (LH), 1
	130991	Chassis End Plate (RH), 1
	130197	Knob (5)
	49859	Iron Core, 5
130361-A		Clamp, Condenser, 1
49674		Socket, No Marking, 9
G7-49837		Light Socket Assy.
130621		Mike Socket
130591		Mike Socket Shell
130787		Mike Socket Con. Brkt.
130186-B		Call Letter Sheet
130187		Call Letter Cover
47339		Needles (Package 10)
130801		6½-inch R.
47791		Needle Cup, 2
47790		Needle Cup Lid, 2
130901		Needle, Cutting Unit & Bag, 1
130563-A		Recordiomatic Unit, 1
130801		Records, 6½-in. & Envpe.
MG20-130611		Dial Back Plate
130138		Pointer Shaft
41582		Drive Cord
49829		Lock Spring
130125		Dial Pointer

PARTS LIST—MODEL 618

Figures in first column refer to parts in Diagrams.

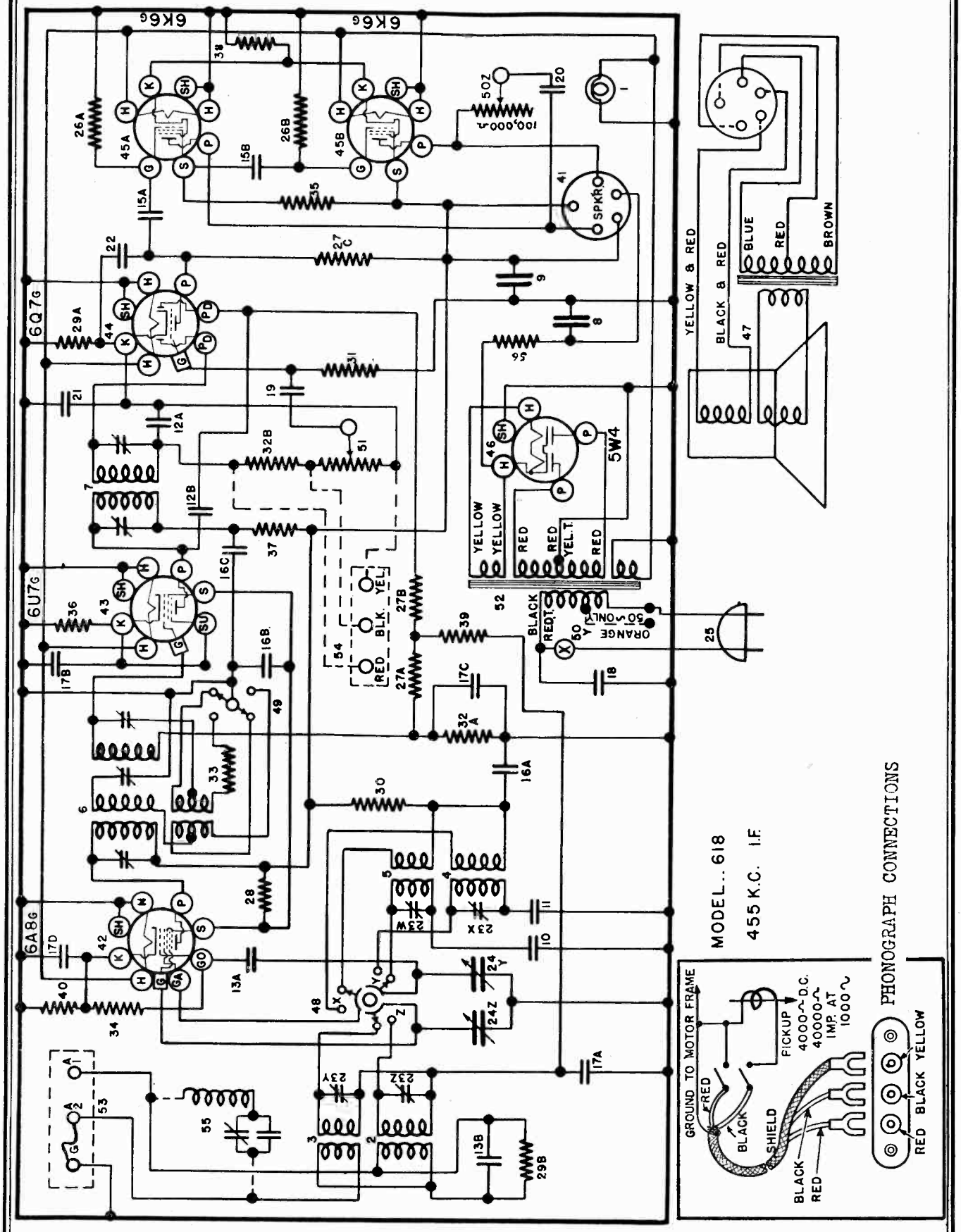
Item No.	Part No.	Description
1	W —43567	Dial Light Bulb
	G2 —45398	D. L. Socket Assy.
2	G148—32000	Ant. Coil, B-C.
3	G171—32000	Ant. Coil, H-F.
4	G145—32002	Osc. Coil, B-C.
5	G144—32002	Osc. Coil, H-F.
6	G161—32004	1st I-F. Assy.—455 Kc.
7	G166—32004	2nd I-F. Assy.—455 Kc.
8	W —44438A	Condenser, 40 Mf. 300 V.
9	W —44012	Condenser, 16 Mf. 250 V.
10	G16 —34000	Condenser, 3.800 Mmf. H-F. Osc. Series
11	G14 —34002	Condenser, 400 Mmf. B-C. Osc. Series
12A	G2 —34002	Condenser, .0001 Mf. Molded
12B	G2 —34002	Condenser, .0001 Mf. Molded
13A	G13 —34002	Condenser, .000035 Mf. Molded
13B	G13 —34002	Condenser, .000035 Mf. Molded
14		None
15A	W —23142	Condenser, .02 Mf. 400 V. Tub.
15B	W —23142	Condenser, .02 Mf. 400 V. Tub.
16A	W —28621	Condenser, .02 Mf. 200 V. Tub.
16B	W —28621	Condenser, .02 Mf. 200 V. Tub.
16C	W —28621	Condenser, .02 Mf. 200 V. Tub.
17A	W —36541	Condenser, .02 Mf. 160 V. Tub.
17B	W —36541	Condenser, .02 Mf. 160 V. Tub.
17C	W —36541	Condenser, .02 Mf. 160 V. Tub.
17D	W —36541	Condenser, .02 Mf. 160 V. Tub.
18	W —30805	Condenser, .01 Mf. 400 V. Tub.
19	W —30323	Condenser, .01 Mf. 200 V. Tub.
20	W —23615	Condenser, .05 Mf. 400 V. Tub.
21	W —34712	Condenser, .25 Mf. 160 V. Tub.
22	G3 —34002	Condenser, .0005 Mf. Molded
23W		H-F. Osc. Trimmer
23X	W —45715	B-C. Osc. Trimmer (Temp. Compensated)
23Y		H-F. Ant. Trimmer
23Z		B-C Ant. Trimmer
24	G42 —33001	2 Section Gang Cond.
	B —45670	Dial Face (Glass)
	W —44085B	Dial Mask (Metal Disc)
	W —44084A	Ring (Cardboard Support)
	C —45689	Bracket (Dial Mounting)
	W —45690	Right Angle (Bracket Mtg.)
	W —44299	Dial Hand (Pointer)
	W —40486	Screw—Dial Hand Mtg.
	—2045	Int. Shakeproof Washer (Pointer)
	W —45644	Pointer Shaft
	W —50325A	Retaining Ring (Pointer Shaft)
	G10 —43564	Pulley and Hub Assy. (Pointer Shaft)
	G11 —43564	Pulley, Gear and Hub Assy.
	W —45632	Spring (Double Gear Takeup)
	MG29—45607	Brkt. and Pulley Assy. (Gang Mtg.)
	W —44500A	Bearing Plate (Drive Shaft)
	W —43542B	Mtg. Brkt. (Drive Shaft)
	W —45686A	Drive Shaft
	W —43549	Retaining Ring (Drive Shaft)
	W —44701C	Grommet (On Drive Shaft)
	—41582	Drive Cord—35" Req.
	W —50573A	Tension Spring (Drive Cord)
25	B —44004	Power Cord
26A	—23785	Resistor, 500,000 Ohm ⅓W. Carb.
26B	—23785	Resistor, 500,000 Ohm ⅓W. Carb.
27A	—33344C	Resistor, 400,000 Ohm ⅓W. Carb.
27B	—33344C	Resistor, 400,000 Ohm ⅓W. Carb.
27C	—33344C	Resistor, 400,000 Ohm ⅓W. Carb.
28	—24990	Resistor, 25,000 Ohm ⅓W. Carb.
29A	—24814	Resistor, 7,000 Ohm ⅓W. Carb.
29B	—24814	Resistor, 7,000 Ohm ⅓W. Carb.
30	—21876	Resistor, 10,000 Ohm ⅓W. Carb.
31	—26577	Resistor, 3 Megohm ⅓W. Carb.
32A	—33474	Resistor, 10,000 Ohm ⅓W. Carb.
32B	—33474	Resistor, 10,000 Ohm ⅓W. Carb.
33	—42401B	Resistor, 99 Ohm ¼W. Ins.
34	—21237A	Resistor, 60,000 Ohm ⅓W. Carb.
35	—44009	Resistor, 3,000 Ohm ½W. Ins.
36	W —25937	Resistor, 275 Ohm ½W. Flex.
37	W —23013	Resistor, 2,000 Ohm 1¼W. Flex.
38	W —21965	Resistor, 375 Ohm 1W. Flex.
39	—21454	Resistor, 1 Megohm ⅓W. Carb.
40	W —28106	Resistor, 500 Ohm ½W. Flex.
41	G103—28807	Socket Speaker
42	G156—36400	Socket, Type 6A8
43	G171—36400	Socket, Type 6U7
44	G160—36400	Socket, Type 6Q7
45AB	G172—36400	Socket, Type 6K6
46	G187—36400	Socket, Type 5W4
	W —40911	Tube Shield
47	465BP15"M"	Speaker, Mfg. Spec. 1-D-1197
	—45186	Cone and V. C. Assy.
	—45187	Field Coil (750 Ohm. 75 M. A.)
	—45188	Output Transformer
	—44681	Speaker Plug
48	—44955	Band Selector Switch
49	—44796	Local-Distance Switch
	MG17—44575	Arm, Sleeve and Clamp Assy.
50	—44024B	Tone Control and Switch
51	—44467	Volume Control (1 Meg.)
52	—44695	Power Trans., 60 Cy.-110 V.
	—44697	Power Trans., 50 Cy.-110 V.
	—44698	Power Trans., 50 Cy.-220 V.
	—44696	Power Trans., 25 Cy.-110 V.
	—44694	Power Trans., 25 Cy.-220 V.
53	G27 —26719	Ant. and Gnd. Terminal Assy.
54	G39 —26719	Phono Terminal Assy.
55	G170—32004	Wave Trap (455 Kc.)
56	W —45798	Resistor, 75 Ohm 1½W. Flex.

PUSH BUTTON PARTS

Part No.	Description
G2 —45683	Push Button Unit Assy.
G30 —45683	Key and Toggle Assy.
W —50542A	Key Clip (Lock Clamp)
—45718	Screw (Lock Clamp)
W —50607	Return Spring
G31 —45683	Rocker Plate Assy.
W —50561	⅛" No. 40 Screw (Rear Plate Bearing)
W —50547	Rear Guide Plate
W —45646A	Adjust. Clip (Front—5 Req.)
W —45589A	Push Button
W —50551A	Celluloid Cover
B —44960	R. H. Mtg. Plate
B —44961	L. H. Mtg. Plate
7NA	Cabinet
W —44019	Extruded Rubber Spacer (Chassis Mtg.)
—44023	Headed Bushing (Chassis Mtg.)
—44387B	Knob (Large—Tuning)
W —44431	Knob (Large—Loc.-Dist.)
—44386B	Knob (Small—Tuning and Vol. Cont.)
W —44432	Knob (Small—Tone Cont. and Band Sw.)
—45614	Bushing for 44387B Knob
B —44869A	Escutcheon
B —45626B	Push-Button Escutcheon
—50549	Call Letter Sheet
W —45693	Bracket—P. B. Unit Support
W —23880A	Thumb Screw

THE CROSLEY CORP.

MODEL 618



MODEL 618

THE CROSLEY CORP.

(C) SIGNAL INPUT FREQUENCIES

	Minimum Capacity Signal	Shunt Alignment Signal
American Broadcast Band	1,725 Kilocycles	1,400 Kilocycles
High Frequency Band	18,300 Kilocycles	18,000 Kilocycles

ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits may be properly aligned with the use of a modulated signal generator and an output meter.

CONNECTING OUTPUT METER

Connect the output meter to the plates of the two 6K6G Output tubes. Be certain that the meter is protected from D. C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

Tuning I-F Amplifier To 455 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6U7G tube, leaving the tube's grid lead in place. Connect the ground lead from the signal generator to the ground terminal of the receiver. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Turn the band selector switch to the Broadcast Band.

(d) Turn the Local-Distance switch to the "Distance" position.

(e) Set the signal generator to 455 kilocycles.

(f) Adjust both trimmer condensers located on top of the 2nd I-F transformer for maximum output.

(g) Transfer the signal generator lead to the top cap of the 6A8G tube, leaving the tube's grid clip in place.

(h) Close the middle trimmer of the 1st I-F transformer. Do not force adjustment screw.

(i) Adjust the top and then the bottom trimmers of the 1st I-F transformer for maximum output.

(j) Adjust the middle trimmer of the 1st I-F transformer for maximum output.

DO NOT ADJUST THE TRIMMER CONDENSERS LOCATED ON THE 2ND I-F TRANSFORMER WITH THE SIGNAL GENERATOR LEAD CONNECTED TO THE 6A8G TUBE.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE READING ON THE OUTPUT METER.

Aligning The R-F Amplifier.

When aligning the R-F amplifier the output lead from the signal generator is connected to the antenna (A) terminal of the receiver. For the Broadcast Band a 200 mmf. condenser should be connected in series with the output lead of the signal generator and for the High Frequency Band a 250 ohm carbon resistor should be used in place of the condenser.

(a) With the station selector adjusted so that the tuning condenser plates are completely out of mesh and the band selector switch set for the band being aligned, adjust the "OSC" shunt trimmer so that the MINIMUM CAPACITY SIGNAL ¶ (C) is heard (it is not necessary that the receiver tune through this signal).

(b) Adjust the station selector so that the SHUNT ALIGNMENT signal is tuned-in with maximum output. Then adjust the "ANT" shunt trimmer for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and check the adjustment of the "ANT" trimmer. DO NOT READJUST THE OSCILLATOR TRIMMER.

NOTE: When shunt aligning the High Frequency Band care should be exercised so that the circuits will be aligned on the correct frequency rather than on the image frequency which is approximately 910 kilocycles less than the fundamental. To check on this, increase the output of the signal generator 10 times, or more. and try to tune-in the signal both at the generator frequency as indicated on the station selector dial and at approximately 910 kilocycles less than the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct frequency.

WAVE TRAP

Some chassis of this model are equipped with a wave trap for the purpose of eliminating interference from code stations which operate on a frequency of approximately 455 kilocycles. This assembly is located on the underneath side of the chassis and consists of a coil, a fixed condenser and a trimmer condenser as illustrated by dotted lines in the Wiring Diagram (item 55).

The wave trap should not be adjusted until all other adjustments have been made. To make the adjustment, feed a 455 kilocycle signal from the signal generator through a 200 mmf. condenser into the antenna terminal of the receiver. With the band selector switch turned to the Broadcast Band position, the gang condenser open and the volume control full on, adjust the trimmer condenser on the wave trap for MINIMUM output.

Should the interfering station be operating on a frequency of slightly more or less than 455 kilocycles, the exact frequency should be determined with the aid of the signal generator. Then, instead of feeding a 455 kilocycle signal into the receiver the exact frequency of the interfering signal should be used. If it is not possible to determine the exact frequency of the interfering signal the antenna may be attached to the receiver and the receiver turned to the position where the interfering signal is most noticeable. Then adjust the wave trap for minimum interference.

SETTING THE PUSH BUTTONS

The push buttons may be quickly and accurately set from the front of the receiver. It is not necessary that all the buttons be set at the same time. Insert a small screw driver in the hole in the front of each push button to be set and loosen (Do not remove) the set screw in the bottom of the hole.

Determine the favorite broadcasting stations whose call letters are to be placed in the push buttons. By means of the conventional tuning knob, tune-in AS ACCURATELY AS POSSIBLE the station having the highest frequency—that is the station nearest the 1500 kilocycle end of the dial. Completely depress and hold the No. 1 push button and SECURELY TIGHTEN THE SET SCREW. No. 1 push button is the one toward the high frequency end of the dial.

The push button system is now correctly set for the 1st station. FFollow through with the same procedure, setting the other stations in the order of their frequency (kilocycles). Detach the call letters of the favorite stations from the list supplied with your receiver and press them into the openings in the front of the push buttons. Thin pieces of clear celluloid are supplied in a small envelope and should be snapped in place over the call letters to protect and hold them in place.

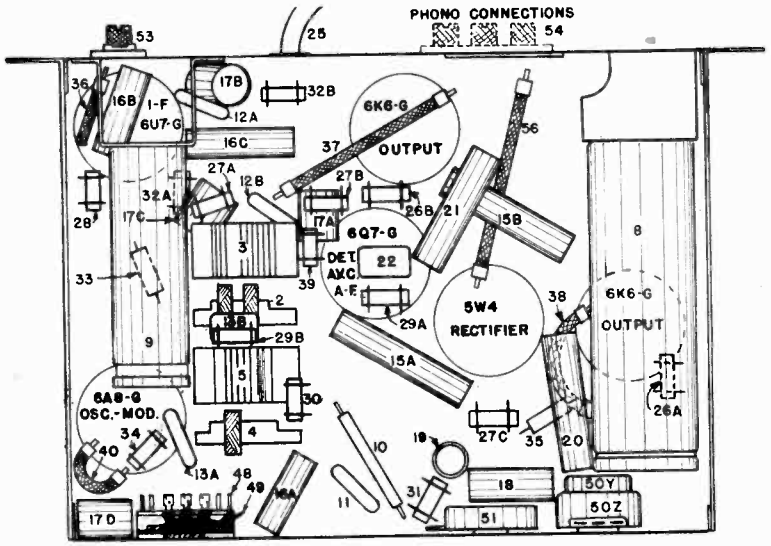


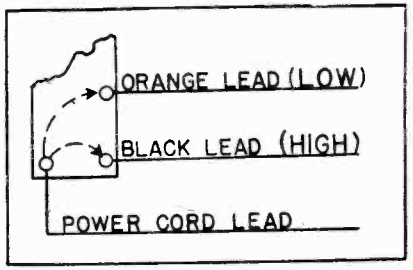
Fig. 3. Bottom View Model 618

SPECIAL POWER TRANSFORMER ADJUSTMENT

In localities where the voltage variation on 50 or 60 cycle power supply lines is greater than customary commercial limits, special 50-60 cycle power transformers are available. These transformers have a "high" and "low" voltage tap on the under side of the chassis. The "high" voltage lead (BLACK) and the "low" voltage lead (ORANGE) are connected to a terminal strip near the transformer.

The voltage range of the "low" tap of the 95-130 volt transformer is from 95 to 112½ volts and of the "high" tap is from 112½ to 130 volts. The range of the "low" tap of the 190-260 volt transformer is from 190 to 225 volts and of the "high" tap is from 225 to 260 volts.

The accompanying illustration shows the connections



for changing from high to low or low to high line voltage. Note the "jumper" wire which is attached to the terminal at which one side of the power cord is attached. The other end of this jumper wire should be connected to the ORANGE or BLACK lead of the transformer primary, according to the line voltage the receiver is to be used on.

NOTE: Any change made in the power supply circuit of the receiver should be plainly stamped or otherwise permanently recorded on the rear of the chassis.

REPLACING DIAL DRIVE CORD

To replace the dial drive cord, the following procedure should be carefully followed.

(1) Remove the chassis from the cabinet.

(2) Remove the dial glass, pointer and dial mounting bracket.

(3) Remove the broken cord and the tension spring.

(4) Double a 48" length of drive cord. Insert the doubled end through the eyelet (from the outside) in the pulley on the end of the tuning condenser gang. Tie a knot in the cord so as to form a loop about ¾" long. Close the gang so that the eyelet in the pulley will be "down." Hook the looped cord over the catch provided in the pulley opposite the eyelet.

(5) Bring one end of the cord forward and over the top idler pulley. Continue the cord under and around to the top of the pulley on the pointer shaft (¾ turn). With the pointer shaft pulley set so that its eyelet is in the "up" position, thread the cord through the eyelet.

(6) Bring the other end of the cord back and over the condenser gang pulley. Continue it down and over the lower idler pulley to the left-hand side of the rubber grommet and then over the top of the pointer shaft pulley. This lead should cross behind the down lead to the rubber grommet. Make one complete loop around the pointer shaft pulley and back to the eyelet. Thread the lead through the eyelet and tie a knot in the two ends of the cord so that it will be about ½" from the eyelet when the cord is drawn taught. Hook one end of the tension spring over the knot and hook the other end to the catch provided opposite the eyelet. Cut off the excess cord and if bees' wax is available, apply a small amount to the knot as an added protection against slipping.

CIRCUIT DESCRIPTION

The 6Q7G tube serves as the detector and 1st A-F amplifier and supplies AVC voltage to the grids of th 6A8G and 6U7G tubes. The speaker field is located in the negative leg of the power supply. Phase inversion is obtained in the output circuit by the voltage developed across a 3000 ohm resistor, item 35.

SOCKET VOLTAGES

The tube socket voltages are measured from the tube socket contacts to the chassis with a 1000 ohm per volt, 500-volt D. C. voltmeter (except filaments) with receiver in operating condition and no signal input. The filament voltages should be measured with an accurate low range A. C. voltmeter (approximately 0-10 volts). Readings may vary plus or minus 10% of values given.

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	K	Go	Ga
6A8G	Oscillator-Modulator	6.3	220	100	3.	-15	156
6U7G	I-F Amplifier	6.3	206	100	2.5	—	—
6Q7G	Det, AVC & AF Amp.	6.3	68	—	1.5	—	—
6K6G	(2) Output	6.3	216	214	18.	—	—
5W4	Rectifier	5.0	—	—	295	—	—

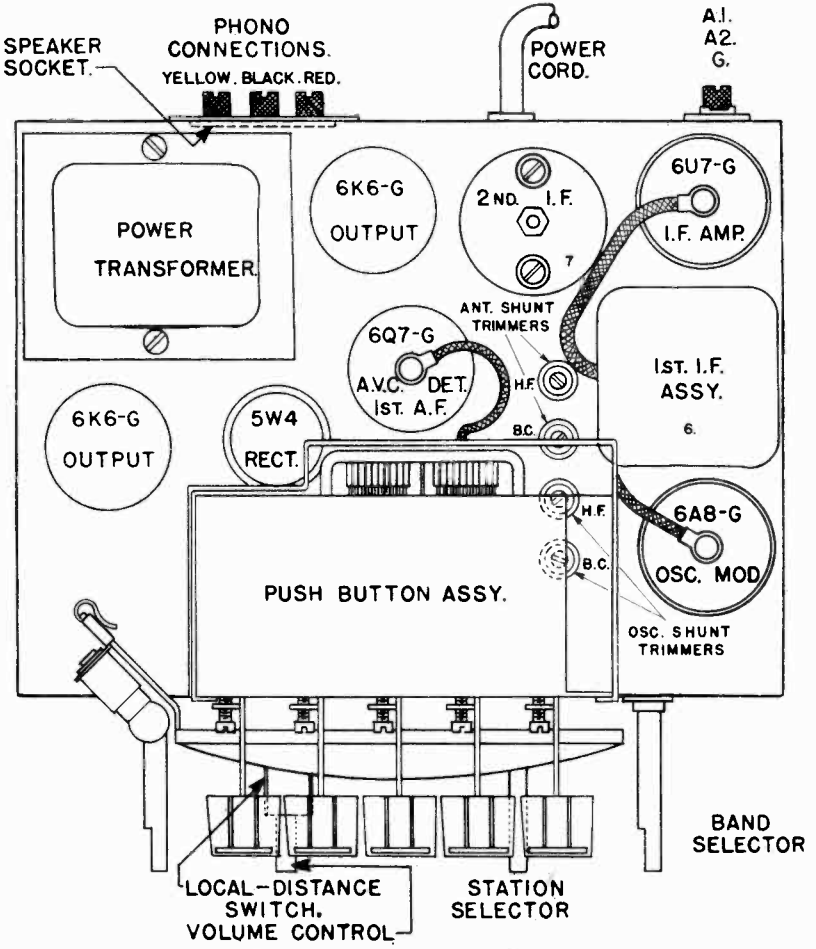


Fig. 2. Top View Model 618

MODEL 629, First, Second and Third Series

THE CROSLEY CORP.

CIRCUIT DESCRIPTION

Six glass (octal) tubes are used and their functions are as follows: one 6A8G as oscillator-modulator, one 6K7G as I-F amplifier, one 6Q7G as diode detector and A. V. C., and 1st audio, one 6P5G as 2nd audio amplifier, one 6AC5G dynamic coupled power output and one 5Y3G as a half-wave rectifier.

The tube socket voltages are measured from the tube socket contacts to the chassis with a 1000 ohm per volt, 500-volt D. C. voltmeter (except filaments) with receiver in operating condition and no signal input. The filament voltages should be measured with an accurate low range A. C. voltmeter (approximately 0-10 volts). Readings may vary plus or minus 10% of values given.

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	K	G	Ga	Go
6A8G	Oscillator-Modulator	6.3	230	68	—	—	68	Neg.
6K7G	I-F Amplifier	6.3	230	68	—	—	—	—
6Q7G	Detector—A. V. C.—1st A-F	6.3	74	—	—	—	—	—
6P5G	Driver	6.3	230	—	+13	—	—	—
6AC5G	Power Output	6.3	225	—	—	+13	—	—
5Y3G	Rectifier	5.0	—	—	—	—	—	—

Voltage drop across speaker field 44 volts.
Maximum power output approximately 5 watts.
Power consumption at 117.5 volts approximately 85 watts with phono operating.

ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits may be properly aligned with the use of a modulated signal generator and an output meter.

CONNECTING OUTPUT METER

Connect one side of the output meter to the plate of the 6AC5G Output tube and the other to the plate of the 6P5G. Be certain that the meter is protected from D. C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

Tuning I-F Amplifier To 455 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8G tube, leaving the tube's grid lead in place. Connect the ground lead from the signal generator to the ground terminal of the receiver. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output. (Item 6, Fig. 2).

(e) Adjust both trimmers located on top of the 1st I-F transformer for maximum output. (Item 5, Fig. 2).

(f) Check operations (d) and (e) for more accurate adjustment.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE READING ON THE OUTPUT METER.

Aligning R-F Amplifier.

When aligning the R. F. amplifier the output lead from the signal generator is connected to the antenna lead of the receiver, a 200 mmf. condenser should be connected in series with the output lead of the signal generator.

(a) With the station selector adjusted so that the tuning condenser plates are completely out of mesh adjust the "OSC" shunt trimmer so that the MINIMUM CAPACITY SIGNAL ¶ (C) is heard (it is not necessary that the receiver tune through this signal).

(b) Adjust the station selector so that the SHUNT ALIGNMENT signal is tuned-in with maximum output. Then adjust the "ANT" shunt trimmer for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and check the adjustment of the "ANT" trimmer. DO NOT READJUST THE OSCILLATOR TRIMMER.

If any of the circuits have been re-adjusted it may be necessary to reset the push buttons.

SETTING THE PUSH BUTTONS

Remove push button and with a small screw driver loosen the set screws a turn or two. With the manual tuning knob, tune-in as ACCURATELY AS POSSIBLE the station whose call letters were in the button or that station for which the button is to be set. Then push the key all the way down and while you hold it in that position SECURELY TIGHTEN the set screw.

WAVE TRAP

Some chassis of this model may be equipped with a wave trap for the purpose of eliminating interference from code stations which operate on a frequency of approximately 455 kilocycles. (Not in models having a loop antenna). This assembly is located on the underneath side of the chassis and consists of a coil and a trimmer condenser as illustrated by dotted lines in the Wiring Diagram (item 31).

The wave trap should not be adjusted until all other adjustments have been made. To make the adjustment, feed a 455 kilocycle signal from the signal generator through a 100 mmf. condenser into the antenna terminal of the receiver. With the band selector switch turned to the Broadcast Band position, the gang condenser closed and the volume control full on, adjust the trimmer condenser on the wave trap for MINIMUM output.

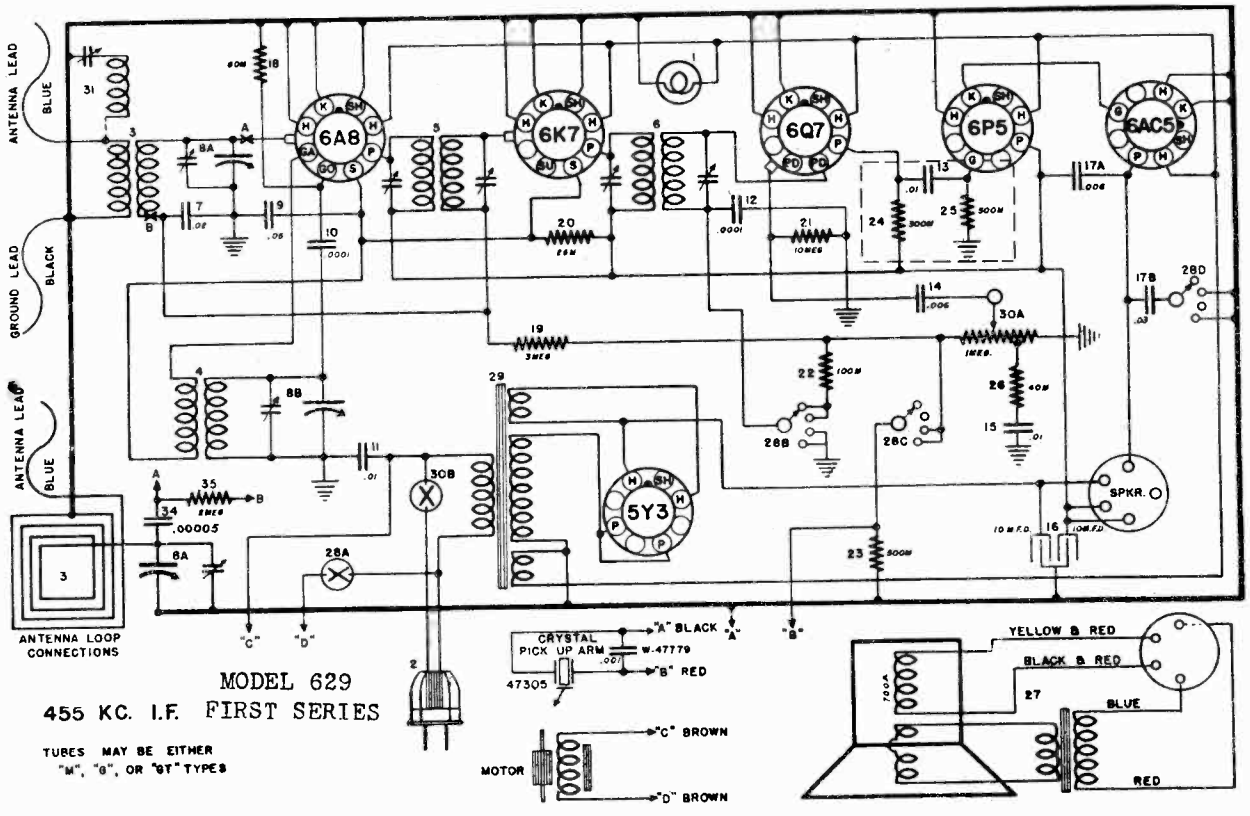
Should the interfering station be operating on a frequency of slightly more or less than 455 kilocycles, the exact frequency should be determined with the aid of the signal generator. Then, instead of feeding a 455 kilocycle signal in the receiver the exact frequency of the interfering signal should be used. If it is not possible to determine the exact frequency of the interfering signal the antenna may be attached to the receiver and the receiver tuned to the position where the interfering signal is most noticeable. Then adjust the wave trap for minimum interference.

(C) SIGNAL INPUT FREQUENCIES

I-F Alignment Signal	Minimum Capacity Signal	Shunt Alignment Signal
455 Kilocycles (Models Without Loop)	1,725 Kilocycles	1,400 Kilocycles
455 Kilocycles (Models With Loop)	1,620 Kilocycles	1,400 Kilocycles

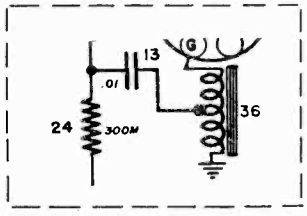
MODEL 629, First, Second and Third Series

THE CROSLEY CORP.



MODEL 629
455 KC. I.F. FIRST SERIES

TUBES MAY BE EITHER "M", "G", OR "GT" TYPES



SECOND AND THIRD SERIES

THE SECOND AND THIRD SERIES OF MODEL 629 is IS IDENTICAL WITH THE FIRST SERIES BUT WITH THE EXCEPTION THAT THE AUTOTRANSFORMER IN THE FIGURE TO THE LEFT IS USED AS A METHOD OF COUPLING AND REPLACES THE RESISTOR IN THE GRID CIRCUIT OF THE 6P5.

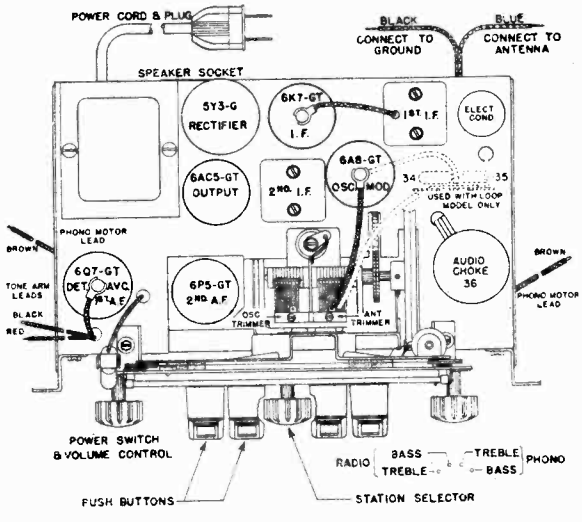


Fig. 2—Top View Model 629

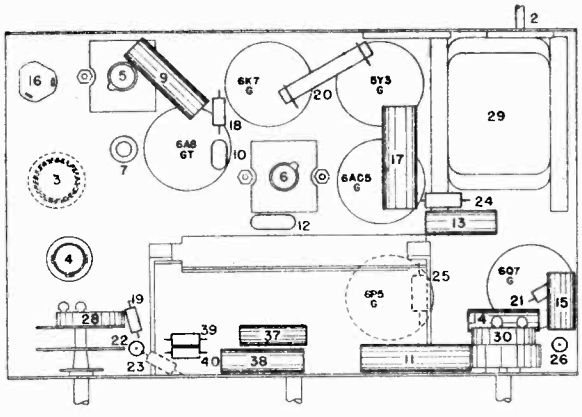


Fig. 3—Bottom View Model 629

MODELS 669, 6669,
6679, 7669

THE CROSLEY CORP.

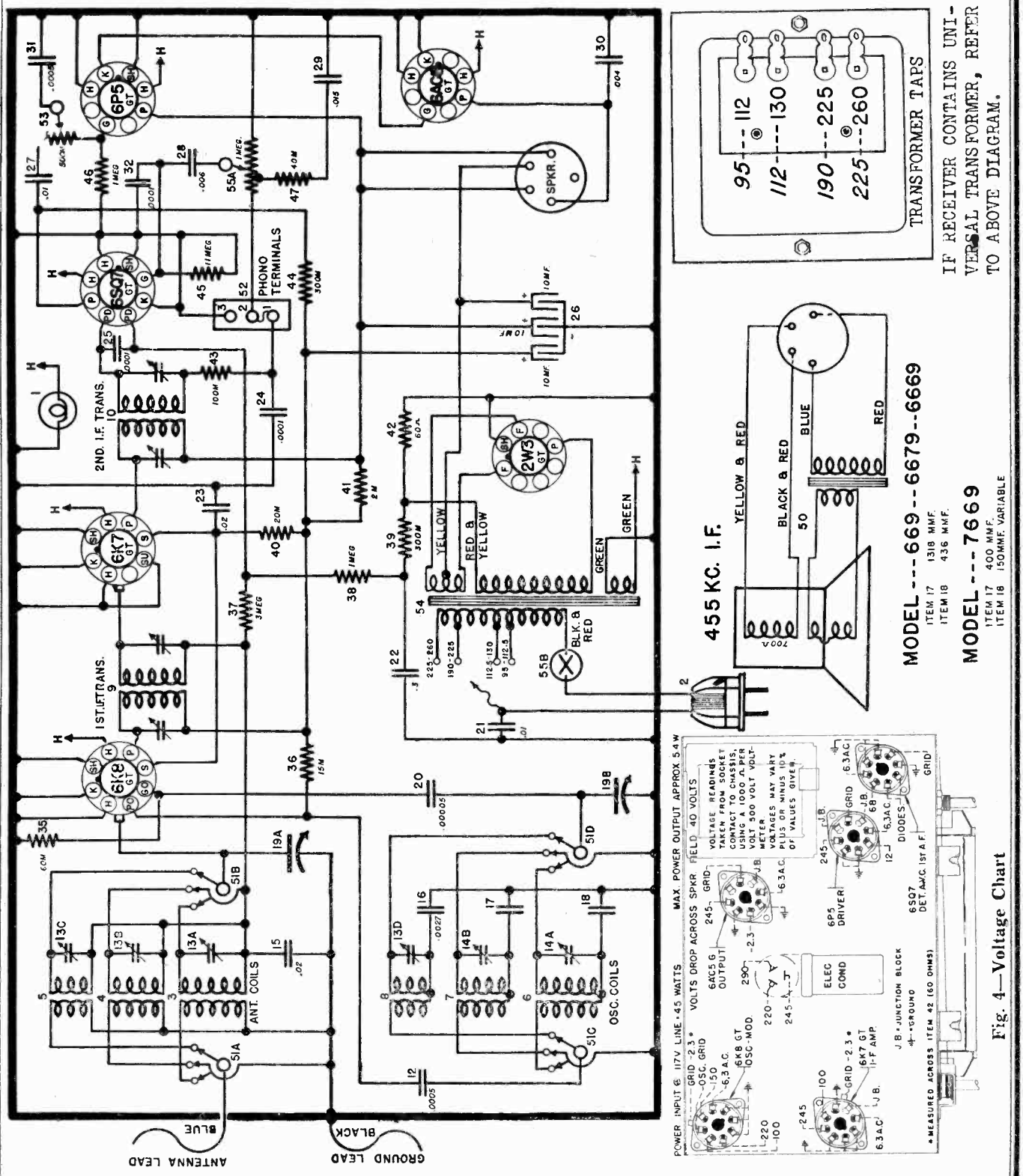


Fig. 4—Voltage Chart

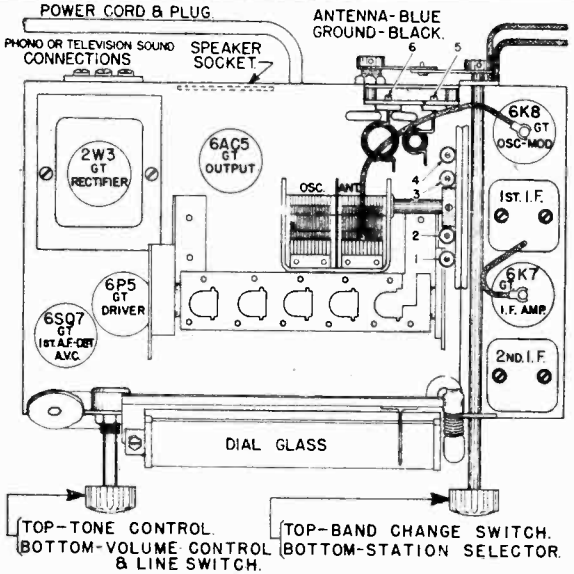


Fig. 2—Top View Model 6669

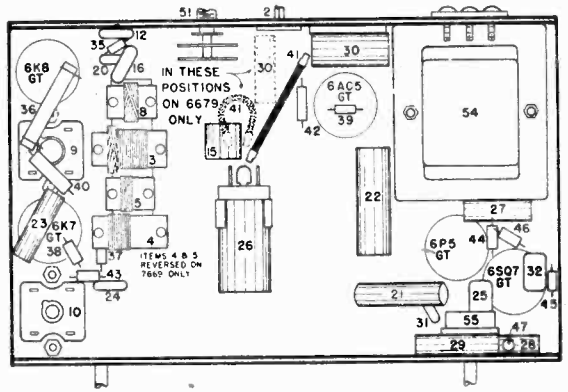


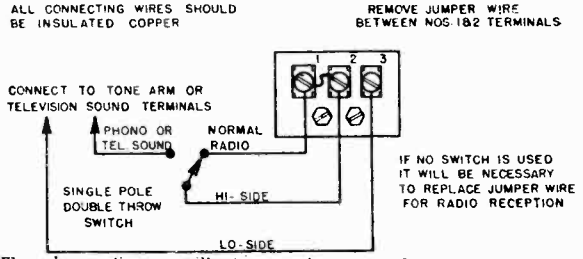
Fig. 3—Bottom View Model 6669

CIRCUIT DESCRIPTION

The circuit is a conventional superheterodyne without regeneration employing the following tubes, one 6K8GT as Oscillator-Mixer (first detector), one 6K7GT as intermediate frequency amplifier, one 6SQ7 as 2nd Detector, A. V. C. and 1st audio amplifier, one 6P5GT as audio driver, one 6AC5GT as dynamic coupled output and one 2W3GT as half wave rectifier.

The initial bias for the 6K8GT and the 6K7GT is developed across item 42, a 60 ohm resistor in series with the negative leg. Items 38, a 1 megohm resistor and 39 a 300,000 ohm resistor, act as filters for this bias voltage and likewise serve as the A. V. C. load resistor.

Fig. 5—Phono or Television Sound Connections



The above diagram illustrates the method of connecting a phonograph tone arm (pickup) to this receiver or the connections for Television (sound). The pickup or tone arm should be of the high impedance type (Crystal). The switch illustrated is a single pole double throw type and facilitates the changing over from Radio to Phono reproduction. If no switch is used it will be absolutely necessary to remove the jumper wire for phono operation and it will have to be replaced for radio reception, being very careful to make a good tight connection each time.

ALIGNMENT PROCEDURE

Connect one terminal of the output meter to the plate of the 6AC5GT output tube and the other terminal to the plate of the 6P5GT, audio driver tube. Be certain that the meter is protected from D. C. by inserting a .25 mf. condenser in series with one of the leads.

Tuning the I-F Amplifier To 455 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6K8GT tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the ground lead (BLACK) of the receiver. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Set the band selector switch on the Broadcast Band (right).

(d) Set the signal generator to 455 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output.

(f) Adjust both trimmers located on top of the 1st I-F transformer for maximum output.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING, TO PREVENT A. V. C. ACTION.

Aligning the R-F Amplifier.

When aligning the R-F amplifier the output lead from the signal generator is connected to the "ANT" lead (BLUE) of the receiver. For the American Broadcase band a .0002 mfd. condenser should be connected in series with the output lead of the signal generator and for the Short Wave Bands a 250 ohm carbon resistor should be used in place of the condenser.

The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated for each adjustment, ¶ (D) below.

() With the station selector adjusted so that the tuning condenser plates are completely out of mesh, adjust the "OSC" shunt trimmer until the MINIMUM CAPACITY SIGNAL (D) is heard (it is not necessary that the receiver tune through this signal).

(b) Adjust the station selector so that the SHUNT ALIGNMENT SIGNAL (D) is tuned-in with maximum output. Then adjust the "ANT" shunt trimmer for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and check the adjustment of the "ANT" trimmer. DO NOT READUST THE OSCILLATOR TRIMMER.

NOTE: When shunt aligning the Short Wave Bands, care must be exercised so that the circuits will be aligned on the correct frequency rather than on the image frequency which is approximately 910 kilocycles less than the fundamental. To check on this, increase the output of the signal generator ten times, or more, and try to tune-in the signal both at the generator frequency as indicated on the station selector dial and at approximately 910 kilocycles less than the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct frequency.

(D) SIGNAL INPUT FREQUENCIES

	Oscillator Min. Cap. Signal	Trimmer Condenser	Antenna Shunt Align.	Trimmer Condenser
American Broadcast Band	1,725 Kilocycles	No. 6	1,400 Kilocycles	No. 3
Police and Amateur Band (No. 1)	7,250 Kilocycles	No. 5	7,000 Kilocycles	No. 1
Foreign or High Frequency Band (No. 2)	23.0 Megacycles	No. 4	22 Megacycles	No. 2

MODEL 1218

THE CROSLEY CORP.

SPECIFICATIONS

This model Crosley radio is a 12-tube AC receiver designed for Standard Broadcast and Short Wave reception, and incorporates such features as push button electric truning, automatic volume control, Local-Distance switch and push pull parallel output. The tuning range is divided into three bands as follows:

535-1725 Kilocycles or 555-173 Metres (American Broadcast Band)
2.0- 6.8 Megacycles or 150-44.5 Metres (Police & Amateur Band)
6.6- 22 Megacycles or 45.5-13.5 Metres (High Frequency or Foreign Band)

PARTS LIST—MODEL 1218

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description
1AB	W —43567	Dial Light Bulb
	G8 —45398	Dial Light Socket Assy.
2	G145—32000	Ant. Coil, B-C.
3	G146—32000	Ant. Coil, Pol.
4	G147—32000	Ant. Coil, H-F.
5	G94 —32001	R-F. Coil, B-C.
6	G95 —32001	R-F. Coil, Pol.
7	G96 —32001	R-F. Coil, H-F.
8	G148—32002	Osc. Coil, B-C.
9	G149—32002	Osc. Coil, Pol.
10	G150—32002	Osc. Coil, H-F.
11	G161—32004	1st I-F. Assy.
12	G166—32004	2nd I-F. Assy.
13	W —44672	Condenser, 40 Mf. 125 V.
14	W —44054	Condenser, 30 Mf. 350 V.
15	W —36057B	Condenser, 40 Mf. 300 V.
16	G1 —44886	Condenser, Temp. Compensating
17	G5 —34002	Condenser, .00005 Mf. Molded
18A	G1 —34002	Condenser, .00025 Mf. Molded
18B	G1 —34002	Condenser, .00025 Mf. Molded
19A	W —35936	Condenser, .05 Mf. 200 V.
19B	W —35936	Condenser, .05 Mf. 200 V.
20A	W —28621	Condenser, .02 Mf. 200 V.
20B	W —28621	Condenser, .02 Mf. 200 V.
20C	W —28621	Condenser, .02 Mf. 200 V.
21A	W —32378	Condenser, .01 Mf. 400 V.
21B	W —32378	Condenser, .01 Mf. 400 V.
22	W —29910A	Condenser, .25 Mf. 200 V.
23	W —24049C	Condenser, .1 Mf. 200 V.
24A	W —35139	Condenser, .004 Mf. 400 V.
24B	W —35139	Condenser, .004 Mf. 400 V.
25	W —30805	Condenser, .01 Mf. 400 V.
26	W —37988	Condenser, .017 Mf. 400 V.
27	G58 —33002	3 Section Var. Tun. Condenser
	B —44815B	Dial Face (Glass)
	W —45587A	Dial Mask (Metal)
	C —44814A	Dial Support Bracket
	W —44262	Ring—Dial Glass Support
	W —44127	Dial Hand (Pointer)
	W —40486	Screw (Hand Mtg.)
	G1 —43564	Pulley and Hub Assy. (Drive Cord)
	—41582	Drive Cord (23 in.)
	W —44908	Idler Stud
	W —44989	Spring—Drive Cord Tension
	W —44907A	Idler Pulley
	W —45448	Drive Belt
	—45449	Friction Tubing—Motor Shaft
28	—40769	B-C Osc. Series Trimmer (.00052 Mf.) Variable
29	G23 —34000	Pol. Osc. Fixed Series Condenser (.00156 Mf.)
30	G24 —34000	H-F. Osc. Fixed Series Condenser (.005525 Mf.)
31	W —35951A	3 Section Shunt Trimmer Assy.
32		
33	B —33906A	Power Cord and Plug
34	—35930	Resistor, 200,000 Ohm ¼W. Ins.
35	—34883	Resistor, 2 Megohm ⅓W. Carb.
36	—21237A	Resistor, 60,000 Ohm ⅓W. Carb.
37	—44008	Resistor, 10,000 Ohm 2W. Carb.
38	—23616	Resistor, 15,000 Ohm 1W. Carb.
39A	—35600	Resistor, 100,000 Ohm ¼W. Ins.
39B	—35600	Resistor, 100,000 Ohm ¼W. Ins.
40	—37583	Resistor, 2.5 Megohm ⅓W. Carb.
41	—37245	Resistor, 1.5 Megohm ⅓W. Carb.
42A	—23785	Resistor, 500,000 Ohm ⅓W. Carb.
42B	—23785	Resistor, 500,000 Ohm ⅓W. Carb.
42C	—23785	Resistor, 500,000 Ohm ⅓W. Carb.
43	—21455	Resistor, 300,000 Ohm ⅓W. Carb.
44	—37472	Resistor, 50,000 Ohm ⅓W. Carb.
45	W —28589	Resistor, 350 Ohm ½W. Flex.
46	W —44456	Resistor, 250 Ohm 3W. Flex.
47	W —37630	Resistor, 21 Ohm ½W. Flex.
48	W —23013	Resistor. 2,000 Ohm 1¼W. Flex.
49A	—42401B	Resistor, 99 Ohm ¼W. W. W. Ins.
49B	—42401B	Resistor, 99 Ohm ¼W. W. W. Ins.

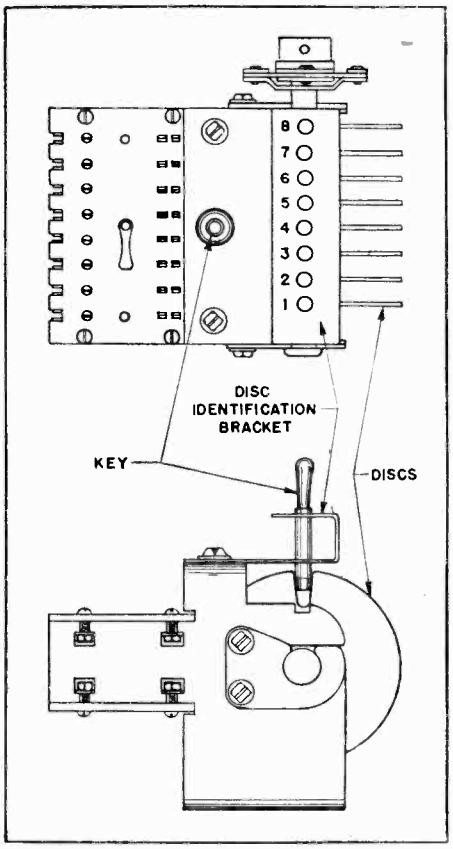


Fig. 5

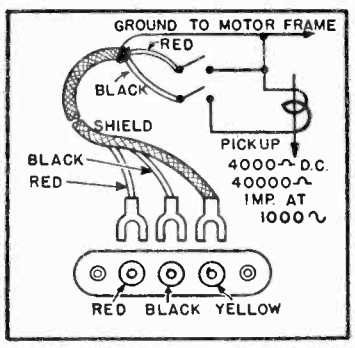
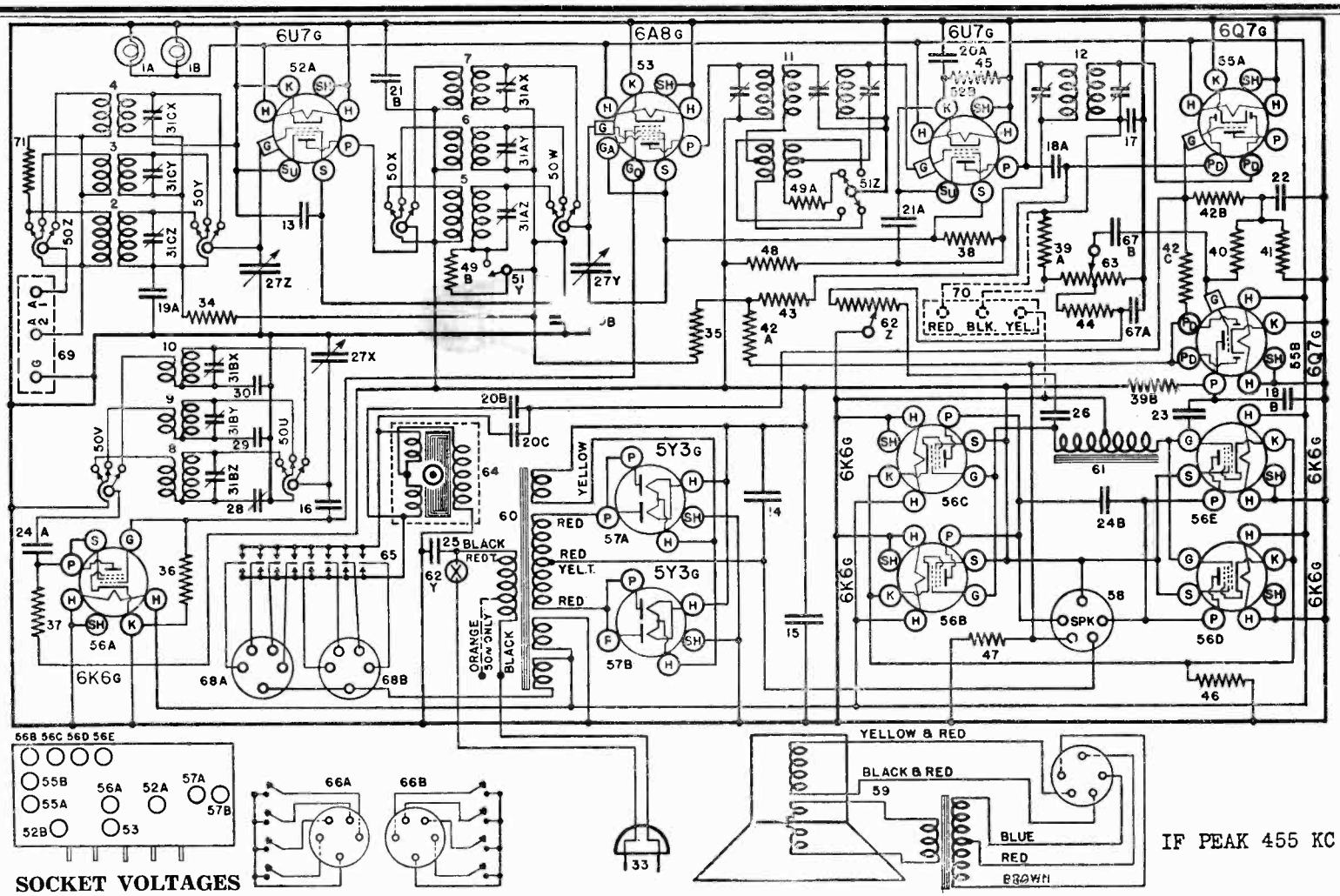


Fig. 4 Phonograph Pickup



SOCKET VOLTAGES

The tube socket voltages are measured from the tube socket contacts to the chassis with a 1000 ohm per volt, 500 volt D. C. voltmeter (except filaments) with the receiver in operating condition and no signal input. The volume control should be turned full "ON," the tone control should be turned to the "TREBLE" position (counter-clockwise), the Local-Distance switch should be turned to the "Distance" position and the condenser gang should be rotated to the minimum capacity position. The filament voltages should be measured with an accurate low range A. C. voltmeter (approximately 0-10 volts). Readings may vary plus or minus 10% of values given.

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	K	Go	Ga
6U7G	R. F. Amplifier	6.3	255	95	0	0	—	—
6A8G	Modulator	6.3	255	95	—	0	95	95
6K6G	Oscillator	6.3	125	125	—	0	—	—
6U7G	I. F. Amplifier	6.3	255	95	3	3	—	—
6Q7G	Det., AVC & "Squelch"	6.3	0	—	—	0	—	—
6Q7G	1st A. F. Amplifier	6.3	185	—	—	0	—	—
6K6G	(4) Output	6.3	245	255	—	22	—	—
5Y3G	(2) Rectifier	5.0	—	—	—	255	—	—

Power consumption approximately 120 watts at 117.5 volts.
Power output approximately 12 watts.
Voltage drop across speaker field 72 volts.

MODEL 1218

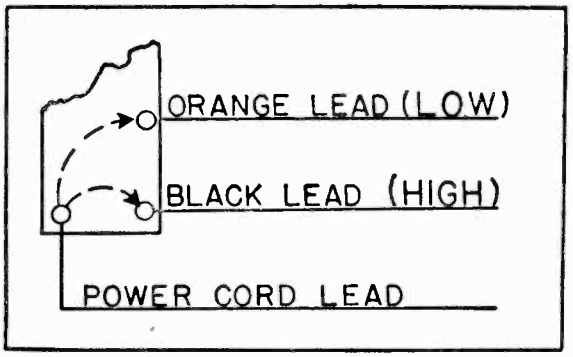
THE CROSLEY CORP.

SPECIAL POWER TRANSFORMER ADJUSTMENT

In localities where the voltage variation on 50 or 60 cycle power supply lines is greater than customary commercial limits, special 50-60 cycle power transformers are available. These transformers have a "high" and "low" voltage tap on the under side of the chassis. The "high" voltage lead (BLACK) and the "low" voltage lead (ORANGE) are connected to a terminal strip near the transformer.

The voltage range of the "low" tap of the 95-130 volt transformer is from 95 to 112½ volts and of the "high" tap is from 112½ to 130 volts. The range of the "low" tap of the 190-260 volt transformer is from 190 to 225 volts and of the "high" tap is from 225 to 260 volts.

The accompanying illustration shows the connections for changing from high to low or low to high line voltage. Note the "jumper" wire which is attached to the terminal at which one side of the power cord is attached. The other end of this jumper wire should be connected to the ORANGE or BLACK lead of the transformer primary, according to the line voltage the receiver is to be used on.



NOTE: Any change made in the power supply circuit of the receiver should be plainly stamped or otherwise permanently recorded on the rear of the chassis.

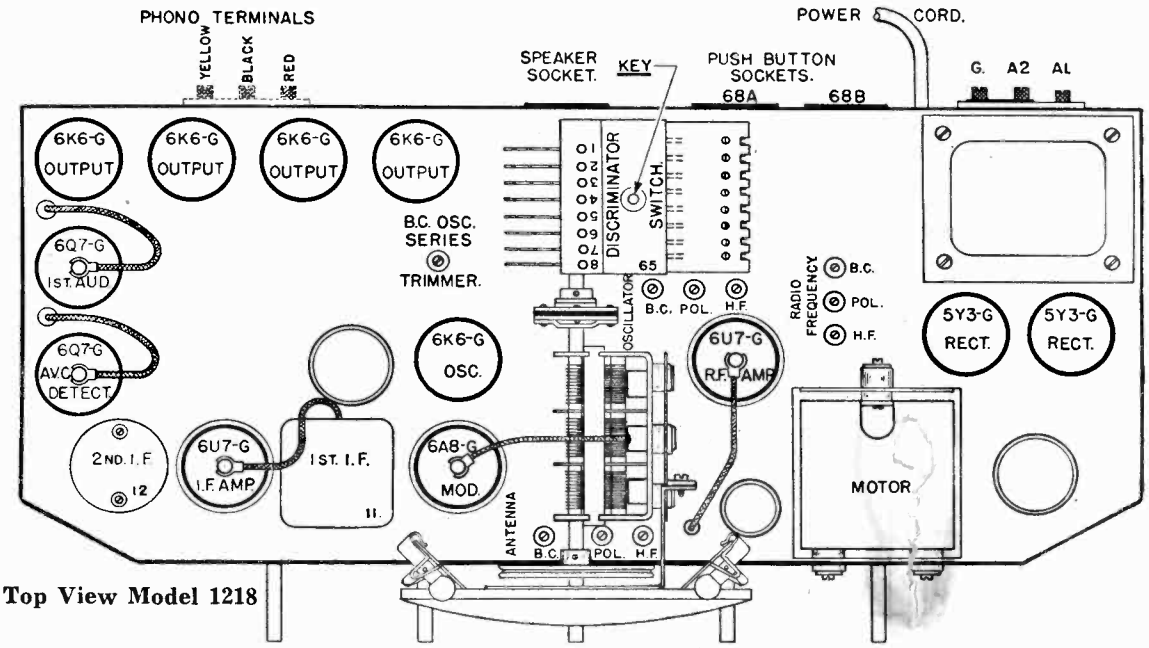


Fig. 2. Top View Model 1218

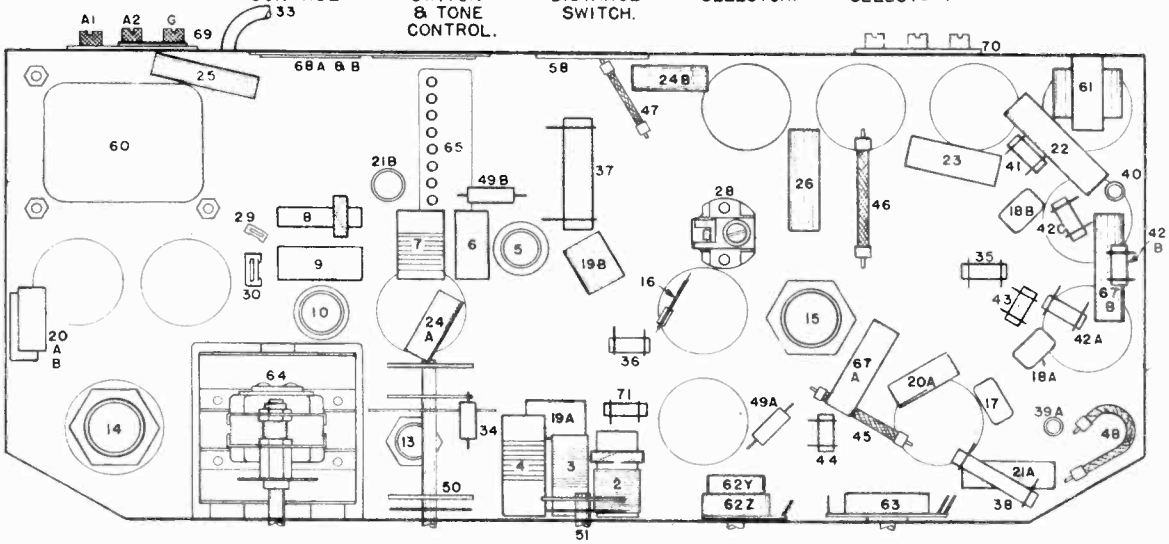


Fig. 3. Bottom View Model 1218

MODEL 7V2
MODEL 1218

THE CROSLEY CORP.

CHASSIS MODEL 1218

ALIGNMENT PROCEDURE
CONNECTING OUTPUT METER

Connect the output meter to the plates of the two 6K6G Output tubes. Be certain that the meter is protected from D. C. by a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

Tuning I-F Amplifier To 455 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6U7G 1st I-F Amp. tube, leaving the tube's clip in place. Connect the ground lead from the signal generator to the ground terminal of the receiver. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Set the band selector switch on the Broadcast Band.

(d) Turn the Local-Distance Switch to the "Distance" position (Right).

(e) Set the signal generator to 455 kilocycles.

(f) Adjust both trimmer condensers located on top of the 2nd I-F transformer for maximum output.

(g) Transfer the signal generator lead to the top cap of the 6A8G tube, leaving the tube's grip clip in place.

(h) Close the middle trimmer of the 1st I-F transformer. (Do not force adjustment screw).

(i) Adjust the top and then the bottom trimmers of the 1st I-F transformer for maximum output.

(j) Adjust the middle trimmer of the 1st I-F transformer for maximum output.

DO NOT ADJUST THE TRIMMER CONDENSERS LOCATED ON THE 2ND I-F TRANSFORMER WITH THE SIGNAL GENERATOR LEAD CONNECTED TO THE 6A8G TUBE.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE READING ON THE OUTPUT METER.

Aligning The R-F Amplifier.

When aligning the R-F amplified the output lead from the signal generator is connected to the "ANT" terminal of the receiver. For the Broadcast Band a 200 mmf. condenser should be connected in series with the output lead of the signal generator and for the High Frequency and Police Bands a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be SHUNT ALIGNED and then SERIES ALIGNED where provision is made for series alignment (Broadcast Band). The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated for each adjustment, ¶ (D) below.

(a) With the station selector adjusted so that the tuning condenser plates are completely out of mesh, adjust the "OSC" shunt trimmer until the MINIMUM CAPACITY SIGNAL (D) is heard (it is not necessary that the receiver tune through this signal).

(b) Adjust the station selector so that the SHUNT ALIGNMENT SIGNAL (D) is tuned-in with maximum output. Then adjust the "R-F" and "ANT" shunt trimmers for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and check the adjustment of the "R-F" and "ANT" trimmers. DO NOT READJUST THE OSCILLATOR TRIMMER.

NOTE: When shunt aligning the Police and High Frequency Bands care must be exercised so that the circuits will be aligned on the correct frequency rather than on the image frequency which is approximately 910 kilocycles less than the fundamental. To check on this increase the output of the signal generator ten times, or more, to try to tune-in the signal both at the generator frequency as indicated on the station selector dial and at approximately 910 kilocycles less than the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct frequency.

(c) To align the series trimmer (See Fig. 2), set the signal generator to the frequency indicated below (D) and then tune-in this signal with the station selector for maximum output. To obtain the best adjustment for the series trimmer, it will be necessary to rotate the station selector back and forth slightly while adjusting the trimmer for maximum output. Minor tolerance variations in series alignment at 2500 kilocycles in the Police Band and at 7000 kilocycles in the High Frequency Band may be compensated for by slight repositioning of the grid lead of the antenna coil in the Band affected.

PUSH BUTTON TUNING SYSTEM

The push button electric tuning system employed in this receiver incorporates eight push buttons, a selector switch and an electric motor. The discriminator switch, item 65—also Fig. 5, incorporates eight metallic discs, each of which operates in conjunction with a different push button to tune-in some favorite station. That is, the 1st push button on the left as you face the front of the cabinet works with No. 1 disc, and the 2nd push button works with No. 2 disc, etc.

SETTING PUSH BUTTONS

To set the electric tuning system, turn the receiver "ON" and depress No. 1 push button. When the dial pointer stops rotating, the key slot in No. 1 disc on the selector switch will be in the "UP" position. Remove the key from its mounting and place it (knob up) through No. 1 hole in the disc identification bracket. If it does not drop into the slot in the disc, push it in with the fingers.

Turn the Local-Distance switch to the "Distance" position. By means of the station selector knob, tune-in AS ACCURATELY AS POSSIBLE, the station whose call letters have been placed in No. 1 push button. Then remove the key.

NOTE: The push button which will ordinarily be used for POLICE calls does not lock in the depressed position. It serves as a release for all other push buttons and should be depressed before operating the manual tuning control.

By means of the manual tuning knob, turn the dial pointer to some other position. Then check the setting by pressing the button which has been set. If the pointer stops too soon or goes too far, a second setting will be necessary.

To make the second setting, observe how far the pointer stops from the second position for that station. Replace the key in the disc and tune far enough to one side of the correct position to make allowance for the difference noted in the first setting.

The electric tuning system is now correctly set for the 1st station. Follow through with this same procedure until the proper adjustments have been made for all eight of the favorite stations. When tuning the receiver by means of the push buttons, the Local-Distance switch should be turned to the "Local" position.

Tuning Motor

Should the clutch on the tuning motor fail to operate satisfactorily, either by not engaging or not releasing when it should, the two tension springs located on the back of the motor should be readjusted.

With the receiver sitting in its normal operating position, bend both tension springs until the clutch will not engage. Slowly decrease the tension on both springs until the clutch engages and releases satisfactorily. Check the operation of the motor several times to be certain that the tension is correct.

(D) SIGNAL INPUT FREQUENCIES

	Min. Cap. Signal	Shunt Align.	Series Align.
American Broadcast Band	1850 Kilocycles	1700 Kilocycles	600 Kilocycles
Police & Amateur Band	6600 Kilocycles	6000 Kilocycles	
High Frequency Band	22 Megacycles	18 Megacycles	

CHASSIS 7V2

General Description . . .

Chassis 7V2 is used in the Dual Seventy and Dual Seventy Lowboy. It is a seven tube dual range receiver covering the regular broadcast band and the next higher frequency band to 5000 Kc. The actual ranges are 535 to 1700 and 1650 to 5000. The chassis is a three gang superheterodyne employing a tuned radio frequency stage in both frequency bands. It has automatic volume control and continuous stepless tone control. The actual tone quality is greatly enhanced through the use of an 8" speaker in the table model and a 10" in the console. The intermediate frequency is 181.5 Kc.

Tubes Used and Their Function . . .

The tubes used are type 58 R.F. amplifier, type 58 oscillator modulator, type 58 I.F. amplifier, type 56 diode, type 56 A.F. amplifier, type 2A5 output and type 80 rectifier The tube voltages are shown in the table below:

All voltages are plus or minus 10%. All D.C. voltages are measured to chassis at 117.5 line with 1000 ohms per volt, 250 volt voltmeter. Power demand is 65 watts at 110 volt, 60 cycles.

Type	Where Used	Ef	Ep	Eg	Ek	Esg	Esup
58	R.F.	2.5	260	0	0	125	0
58	Osc-Mod	2.5	260	31	34	125	0
58	I.F.	2.5	260	0	4	125	4
56	Diode	2.5	0	0	0	—	—
56	A.F.	2.5	50	0	4	—	—
2A5	Output	2.5	250	0	15	260	—
80	Rectifier	4.8	400AC	—	370	—	—

Power Supply System . . .

The power supply system consists of a power transformer, part No. 58 for 110 volt, 60 cycle, part No. 59 for 110 volt, 25 cycle, and part No. 60 for 220 volt, a rectifier tube type 80, wet electrolytic condenser, part No. 26, the speaker field as a filter choke, and dry electrolytic condenser, part No. 27.

Alignment Procedure . . .

To align the I.F. amplifier, it is necessary that there be available a suitable modulated oscillator capable of adjustment to 181.5 Kc. with good accuracy. This oscillator should have an attenuator so that the strength of the oscillator output can be adjusted. Connect the high side of the output of the oscillator, which has been adjusted to 181.5 Kc., to the control grid connection on the top of the 58 oscillator modulator tube through an .02 Mfd. series condenser. The low side of the oscillator is to be connected to chassis. Set the oscillator to a convenient level and adjust the I.F. trimmers for maximum signal output. These I.F. trimmer adjustments are located on the side and top of the chassis, as indicated in the diagram. To make the I.F. adjustment, it is necessary that a standard ¼" (across flats) hexagon socket wrench be used. The wrench should be insulated. Always make these I.F. adjustments very carefully and go over the adjustments several times to be sure that the peak has been reached

To align the receiver at broadcast frequencies, it is necessary that an adjustable oscillator having frequencies of 1400 and 600 Kc., together with a suitable attenuator and dummy antenna, be available. Set the oscillator to 1400 Kc. and connect the high side of the oscillator to the receiver antenna terminal through a .0002 Mfd. (dummy antenna) condenser. Turn the tuning control of the receiver to 140 on the dial. THERE ARE TWO SERIES OF THE 7V2 CHASSIS. IN ONE SERIES THE OSCILLATOR TRIMMER IS LOCATED ON THE TOP OF THE GANG CONDENSER. WHILE IN THE OTHER SERIES A DOUBLE TRIMMER IS LOCATED UNDER THE CHASSIS ALONG WITH THE ANTENNA AND R.F. TRIMMERS. IN THE SECOND SERIES THERE ARE NO TRIMMERS AT ALL ON TOP OF THE GANG CONDENSER SO THAT IT IS VERY EASY TO DISTINGUISH WHICH TYPE OF SET IS BEING SERVICED. For the first series, align the oscillator trimmer on top of the gang for best signal. For the second series, align the oscillator trimmer under the chassis for the broadcast band for best signal In either case then go on and align the antenna and other trimmers located under the chassis for maximum signal. Always work with the weakest possible signal from the modulated oscillator for best accuracy. The performance of the receiver may now be checked at 600 Kc. by setting the modulated oscillator to 600 and the receiver dial to that point around 60 which gives best reception. Sometimes it is possible to make a slight improvement in the performance at this point by bending some of the gang condenser plates. This operation should be done very carefully so that no short circuiting of the condenser plates results.

To align a receiver in the high frequency band, it is necessary that a suitable modulated oscillator capable of covering frequencies of 1700 and 4000 Kc., together with an attenuator, be available. Set the oscillator to 4000 Kc., and for the first series of receivers adjust the dial in the region of 4000 Kc., for best signal. For the second series of receivers, set the dial to 4000 Kc, and adjust the oscillator trimmer located under the chassis for the high frequency band for maximum signal. With either series now go on and adjust the antenna and R.F. trimmers for the high frequency band located under the chassis for best signal. Set the modulated oscillator to 1700 Kc. and the receiver may then be checked at this point.

MODEL 5539
MODEL J5539

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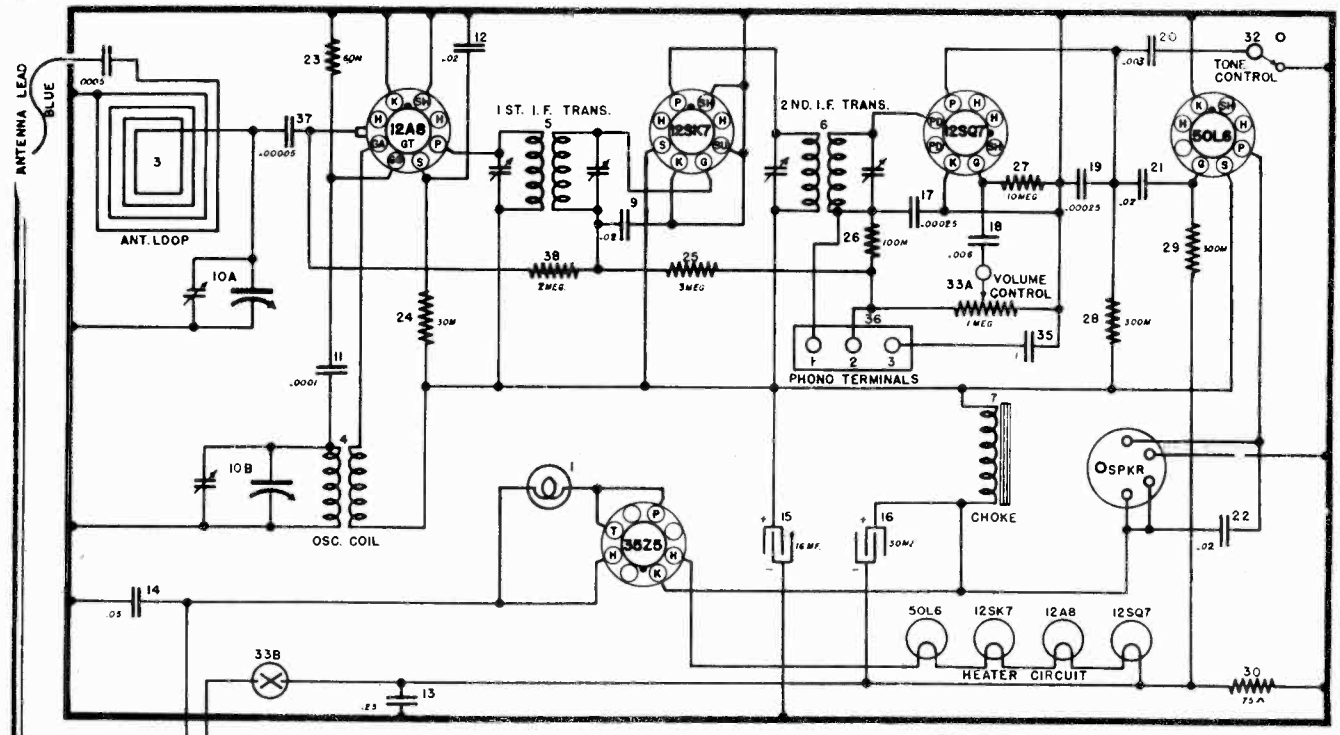

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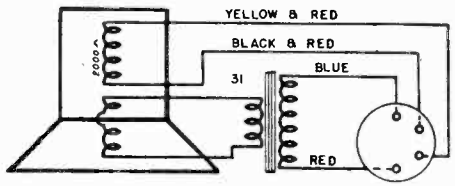
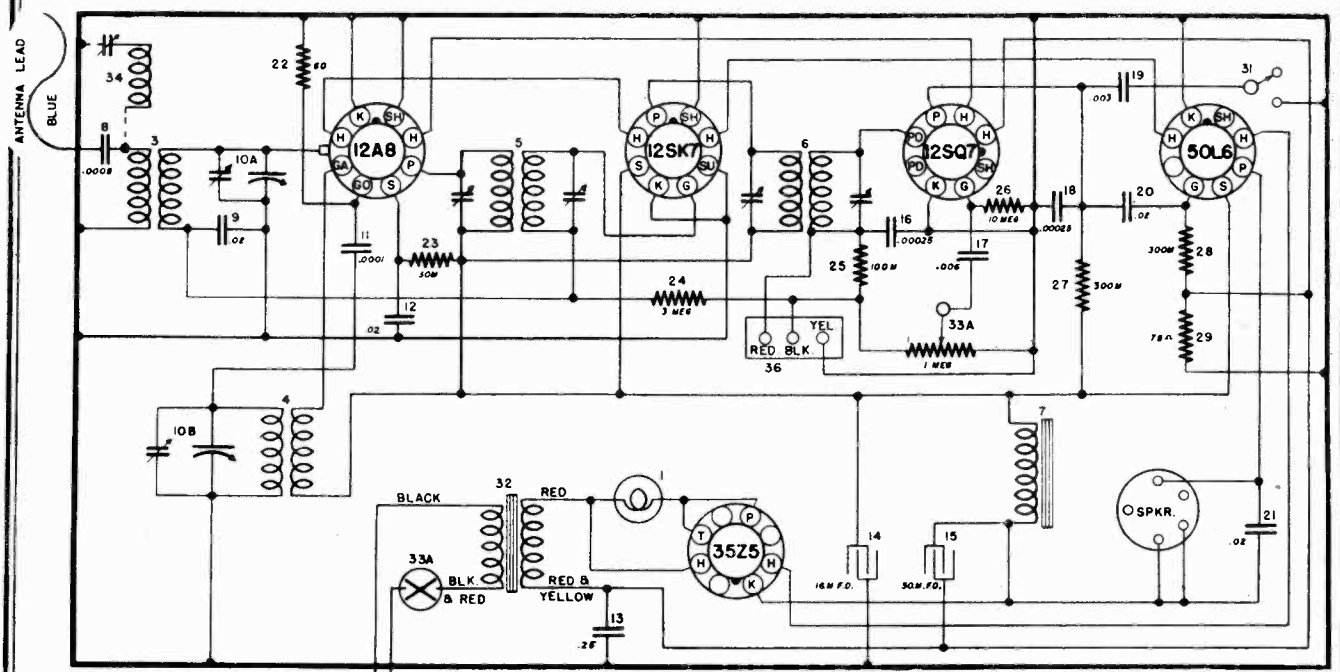
TUBES MAY BE METAL OR GT TYPES EXCEPT 12A8

455 KC. I.F.





455 KC. I.F.

MODEL
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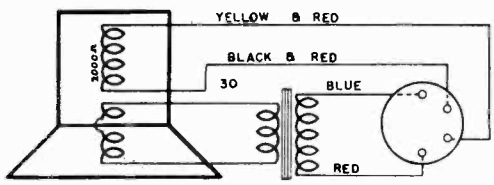


CIRCUIT DESCRIPTION

The filaments of the 1.4 volt tubes are connected in series and have plate current compensating resistors one, item 36, a 250 ohm resistor across the 1A7GT filament and the other, item 37, a 1,400 ohm resistor from the negative leg of the 1A5GT to chassis.

When used on 110 volt power circuits one half the 117Z6GT supplies the filament voltage and the other half the B voltage. The rectified voltage for the filament string is well filtered by the following, item 35, which is a 7½-watt 110-volt miniature lamp and does triple duty—, 1, regulates the voltage—2, acts as a filter—3, as an ON-OFF indicator; item 28 a 375 ohm resistor and item 32A, the relay coil which serves as a choke and their associated electrolytic condensers, i. e., item 15, 16 mf.—item 38, 16 mf. and item 16, 125 mf. The above mentioned miniature lamp (item 35) should always be replaced with an exact duplicate should replacement become necessary.

The "b" voltage is filtered by means of item 25, a 2,600 ohm resistor and item 11—a 16 mf. electrolytic and one section of item 15 (twin electrolytic) 16 mf. condenser.

The relay automatically disconnects the batteries from the circuit when the receiver is operated on 100-volt circuits.

TUBES AND VOLTAGE LIMITS

The following table gives the functions of the tubes used, together with the voltage readings between the tube socket contacts and chassis. Voltage readings should be taken with a 1,000 or more ohm per volt, 50 volt voltmeter with the volume control full "ON" and no signal input. The filament voltages should be measured with an accurate high resistance, low range voltmeter. When measured on a 117.5 volt A.C. line voltage limits may vary plus or minus 10% of values given.

VOLTAGE READINGS—WITH 90 VOLTS "B" AND 6 VOLTS "A"

Tube	Tube Socket Function	PIN NUMBER No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
1A7GT	Oscillator-Modulator	0	1.5	95	54	Neg.	95	—	—
1N5GT	I-F Amplifier	0	4.5	95	95	—	—	3.0	—
1H5GT	Det, AVC, 1st Audio	0	3.0	15	15	—	—	1.5	8 J.B.
1A5GT	Output	0	6.0	92	95	—	8 J.B.	4.5	—
117Z6GT	Rectifier	0	0	0	95	0	0	0	6.0

VOLTAGE READINGS—@ 117.5 VOLT LINE (A. C.)

Tube	Tube Socket Function	PIN NUMBER No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
1A7GT	Oscillator-Modulator	0	1.4	104	62	-3	104	—	—
1N5GT	I-F Amplifier	0	4.5	104	104	—	—	3.0	—
1H5GT	Det, AVC, 1st Audio	0	3.0	17	17	—	Diode	1.5	50 J.B.
1A5GT	Output	0	6.0	100	104	—	30	4.5	—
117Z6GT	Rectifier	58.5 A.C.	117.5 A.C.	117.5 A.C.	135	117.5 A.C.	0	0	124

ALIGNMENT PROCEDURE

The chassis of this receiver is connected to one side of the power supply and for this reason all test equipment should be thoroughly insulated in order that the power supply will not become short circuited while aligning the receiver.

To align the receiver it will be necessary to remove the screws which fasten the Phono-board and carefully lift up front end to gain access to trimmer condensers.

CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 1A5GT output tube. Be certain that the meter is protected from D. C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

Tuning the I-F Amplifier To 455 Kilocycles.

(a) Connect the output of the signal generator through a .02 mf. condenser to the grid cap of the 1A7GT oscillator-modulator tube leaving the tube's grid cap in place. Do not use a ground return from the signal generator unless it is found to be absolutely necessary. If it is found to be necessary, a small condenser (approximately .001 mfd.) should be connected in series with the ground terminal of the signal generator and the receiver chassis. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Set the station selector so that the plates of the condenser gang are completely out of mesh and turn the volume control to the right (ON).

(c) Set the signal generator to 455 kilocycles.

(d) Adjust the 2nd I-F trimmer condensers for maximum reading on the output meter.

(e) Adjust the trimmer condensers located on the 1st I-F transformer for maximum output.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

When aligning the R-F amplifier the output lead from the signal generator should be connected through a .0001 mf. condenser to RED wire connecting to the loop and the ground lead to the receiver chassis (through a condenser).

Before aligning receiver check the position of the pointer by opening gang all the way, the pointer should then split the 1600 kilocycle calibration point.

(a) Set the signal generator to 1400 kilocycles.

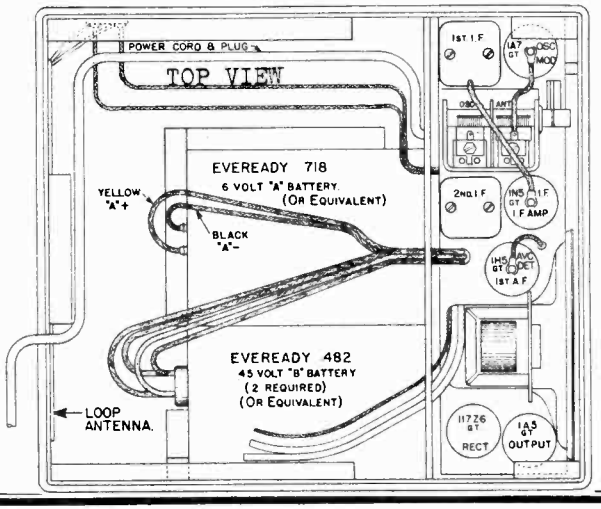
(b) Tune gang to 140 on the dial, then adjust oscillator trimmer (rear section of gang) for maximum output.

(c) Adjust antenna trimmer (front section gang) for maximum output.

RELAY

The receiver, when plugged into 110 volt circuit, will operate on the batteries until rectifier arms up and trips the relay. When relay trips there should be no decrease or dead spot in output as rectifier should be warmed up sufficiently to carry load and give a slight increase in output due to higher plate voltage available.

In earlier models the relays have three sets of contacts and the single side must make contact at all times. The double side must make contact when batteries are used and both contacts (double contact side) must break when operated on 110 volt circuits. Later models the single contact side was omitted and a flexible braid connection used instead.



MODEL 5549

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