

Philco Radio & Television Corp.

Model: 80

Chassis:

Year: Pre October 1937

Power:

Circuit:

IF:

Tubes:

Bands:

Resources

[Riders Volume 17 - CHANGES 17-5](#)

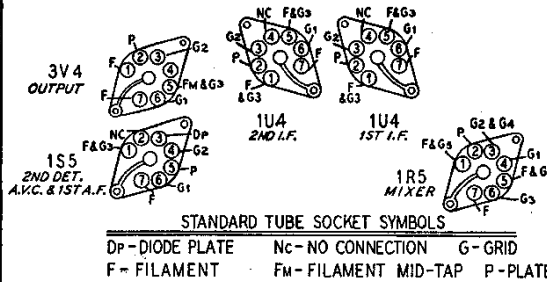
[Radio College Of Canada - PHILCO 24](#)

[Riders Volume 3 - PHILCO 3-25](#)

[Riders Volume 3 - PHILCO 3-26](#)

[Riders Volume 8 - PHILCO 8-88](#)

Revised tube layout for the Montgomery Ward Model 74WG-1054A in which a 3V4 output tube has been substituted for a type 3Q4 tube.



MONTGOMERY WARD 74WG-1054A

This receiver is the same as the 64WG-1054A, shown on pages 15-82 to 15-84 of *Rider's Volume XV* except for the following changes: A 3V4 is used for the output tube so that in the final step of the receiver stage sensitivity measurements the signal generator should be connected through the 0.05- μ f coupling capacitor to pin 6 of this tube. A 2.2-volt input will be required for a 50-milliwatt output for this stage. The schematic shown on page 15-82 holds true for this model without any changes since the 3V4 tube has the same wiring as the 3Q4. The changed socket layout is shown in the accompanying sketch. The C-1 trimmer capacitor in this model has a value of 1.5-12 μ f, and its part number is 17T123.

MONTGOMERY WARD 54WG-2700A 64WG-2700A.—B, 74WG-2700A.—

These models are similar to the 54WG-2500A, shown on pages 15-31 to 15-35 of 15-96 of *Rider's Volume XV* except for the following changes:

Ref. No.	Part No.	Description
C-7	D67501	.0005 mf 400 V Tubular
	12A455	10" Electro dynamic speaker
	28X113	Drive cord tension spring

The frequency range has been very slightly compressed to 540 kc-1600 kc. The issue "B" receivers incorporate a 10-inch electrodynamic speaker, part number 12A455.

MONTGOMERY WARD 64WG-2009B, 74WG-2009B

These models are similar to the 64WG-2009A, shown on pages 15-95 and 15-96 of *Rider's Volume XV* except for the following changes:

A 470-ohm dropping resistor (R-20) has been inserted in the circuit between B+ and the following points: the primary winding of the first i-f transformer (T-3), the screen grids of the 12SA7 mixer tube, and resistor R-2. A .05-mf bypass capacitor (C-28) is connected between the junction of these points and the point marked "X" in the filament line of the schematic on page 15-95.

The components used in these models are the same as those used in 64WG-2009A enumerated on page 15-94 of

Rider's Volume XV except for the following changes and additions:

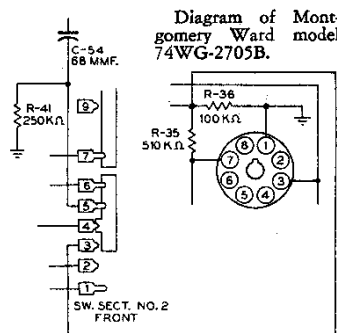
Ref. No.	Part No.	Description
C-1	D67102	.001 mf 400 V Tubular
C-3	B67102	.001 mf 200 V Tubular
C-4		
C-5		
C-14	B67403	.04 mf 200 V Tubular
C-15	B67602	.006 mf 200 V Tubular
C-19	B67253	.025 mf 200 V Tubular
C-23	D67104	0.1 mf 400 V Tubular
C-28	B67503	.05 mf 200 V Tubular
R-20	B85471	470 ohms 0.5 watts

26A426 Tube socket and shield assembly

Montgomery Ward 74WG-2705B

This model is similar to the 74WG-2705A, shown on pages 16-16 and 16-22 to 16-26 of *Rider's Volume XVI* except for the following changes:

R-3 in the screen-grid circuit of the 6BA6 f-m r-f tube has been changed from 15,000 ohms to 27,000 ohms. The part



number is B85273, and it is a 0.5-watt carbon resistor.

R-41, a 250,000-ohm, 0.5-watt carbon resistor, part B83254 has been added to the oscillator grid circuit of the 6BE6 a-m r-f converter, and wiring has been added from contact 3 of switch section 2 front to the junction of R-35 and R-36 as shown in the accompanying diagram.

Arvin 544R, 544AR

These models are the same as models 544 and 544A appearing on pages 15-3 to 15-5 of *Rider's Volume XV*, except for the changes following. The variable capacitor has been changed. The antenna section of this variable capacitor now has a capacitance of 420- μ f. The loop inductance has been made

less to match this larger capacity.

The parts list for the Arvin 544R and 544AR is the same as that enumerated on page 15-5 of *Rider's Volume XV* except for the following changes:

Part No.	Description
A18640-2	Dial scale
A19473	Dial pointer
AC19867-1	Antenna loop assembly
AC19866	Var. capacitor and pulley assy.

PHILCO 80

In the Philco Model 80 the correct voltage on the screen grid of the 36 oscillator-detector tube is about 80 volts and not 165 volts as shown on page 3-25 of *Rider's Volume III* and page 113 of *Rider's Abridged Volumes I—V*.

RCA Receiver Drive Cords

A small amount of beeswax rubbed lightly over a rayon drive cord will prolong the life of the cord. Nylon cord does not require this treatment.

RCA Record Changers

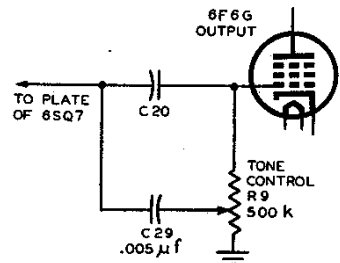
The motors of the RCA record changers Nos. 960001-1, 960001-2, 960001-3, and 960015 will not operate properly from a 50-cycle source. Information about these record changers will be found in the record changer section of *Rider's Volume XV*.

RCA QB12

This is the same chassis as used in model QB11, which will be found on page 15-8 of *Rider's Volume XV*.

RCA 5Q5, Q18

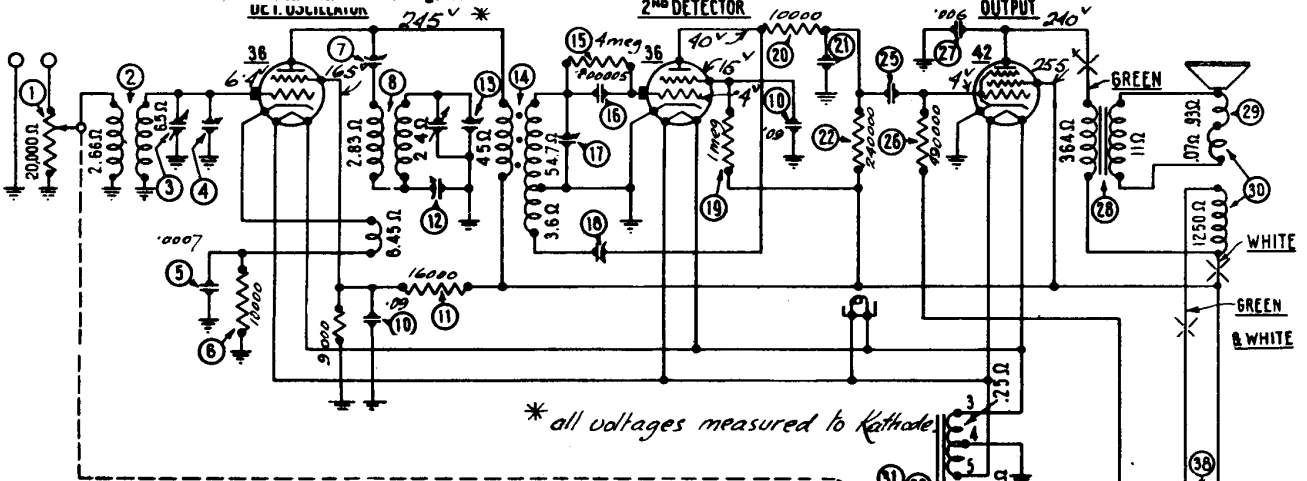
In the second production of the RCA Models 5Q5 and Q18 a tone control was



Tone control in second production of RCA 5Q5, Q18.

inserted in the control-grid circuit of the 6F6G output tube. The revision for this change is shown in the accompanying diagram; the original schematic is shown on page 11-15 of *Rider's Volume XI*.

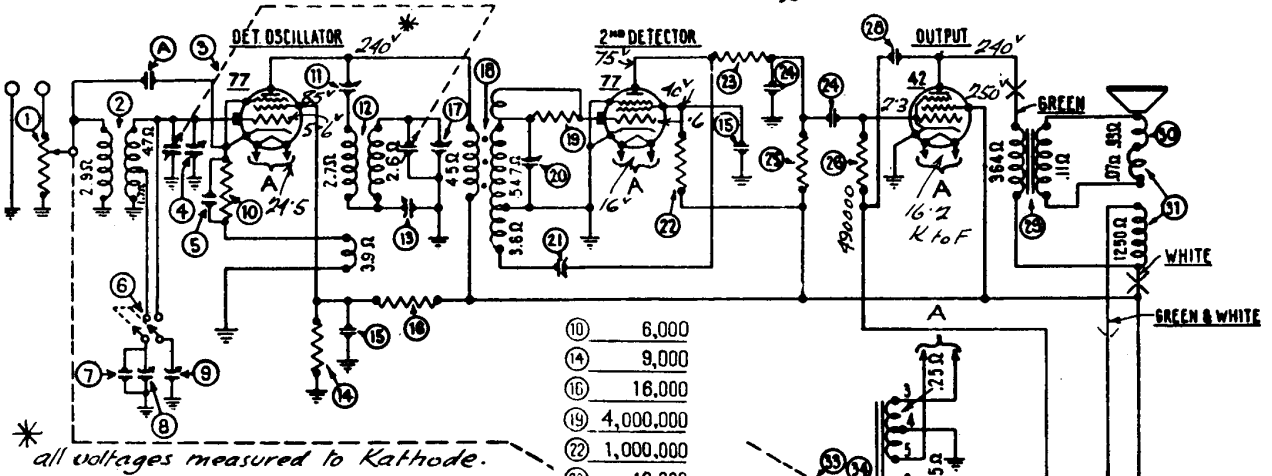
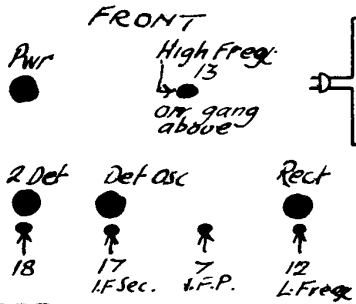
* A number of circuit changes were made on chassis of run No. 5 and above. This run number is rubber stamped in a star on the back of the chassis. Referring to Figs 2 and 3, the condenser ⑦ connects to the B- end of resistor ② instead of to ground. The bucking coil - that section of ⑩ in series with the voice coil - is shorted out. The 10 mfd. dry electrolytic condenser ⑨ is eliminated, and replaced with a substitute .015 section combined with ⑩, part 3793R. The .01 mfd. condenser ⑪ is eliminated. The positions of ⑫, ⑬ and ⑭ are changed in the chassis from that shown in Fig. 3.



Model 80
 1932-33

I.F. 460 Kc.

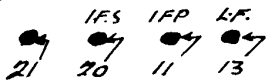
Worms eye view



Model 81
 1932-33

I.F. 460 Kc.

Tube layout as above.



- | | |
|----|-----------|
| 10 | 6,000 |
| 14 | 9,000 |
| 16 | 16,000 |
| 19 | 4,000,000 |
| 22 | 1,000,000 |
| 23 | 10,000 |
| 25 | 240,000 |
| 5 | .0014 |
| 7 | .00041 |
| 15 | .09-.09 |
| 24 | .001-.015 |
| 28 | .006 |
| 35 | .015-.015 |

DATA SHEET

PRINTED IN CANADA

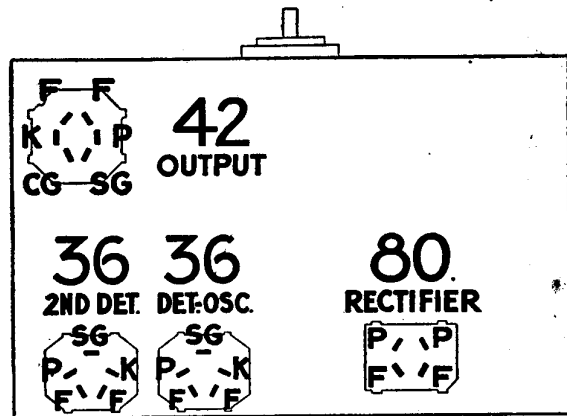
COURTESY
PHILCO-24
 PRODUCTS LTD.

PHILCO RADIO & TELEVISION CORP.

MODEL 80
Voltage, Data

Model 80-

Key No in Wiring Dia	Resistance in Ohms	
	Primary	Secondary
(2)	2.68	6.5
(8)	2.38	2.4
(14)	6.45	54.7
	45	3.6
(28)	364	.11
(29)	93 Voice Coil
(30)	.07 Barking Coil
(33)	1250 Field
	10 42	Fila .25
	80 Fila .15 80 Plate 303



The intermediate frequency for tuning the I.F. transformer is 450 kilocycles. The power consumption of the Model 80 is 46 watts.

F = Filament SG = Screen Grid K = Cathode
P = Plate CG = Control Grid

Fig. 1—Tube Sockets, Under Side of Chassis
CAUTION: Never connect the chassis to the power supply unless the speaker is connected and all tubes are in place.

Table 1—Tube Socket Data*—Power Line Voltage 115 Volts

Tube		Filament Volts F to F	Plate Volts P to K	Screen Grid Volts SG to K	Control Grid Volts CG to K	Cathode Volts K to F
Type	Circuit					
36	Det.—Osc.	6.3	245	165	6.4	8.4
36	2nd Det.	6.3	40	15	.4	0
42	Output	6.3	240	255	4	0
80	Rectifier	5.0	340/Plate

*All of the above readings were taken from the under side of the chassis, using test prods and leads with a suitable A.C. voltmeter for filament voltages and a high resistance multi-range D.C. voltmeter for all other readings. Volume control at maximum and station selector turned to low frequency end. Readings taken with a radio set tester and plug-in adapter will not be satisfactory.

Table 2—Power Transformer Data

Terminals	A.C. Volts	Circuit	Color
1-2	105 to 125	Primary	White
3-5	6.3	Filament	Black
6-7	5.0	Filament	Blue
8-10	630	Plates of 80	Yellow
		Plates of 80	
4	...	Center Tap of 3-5	Black Yellow
9	...	Tracer	Tracer
		Center Tap of 8-10	Yellow Green

Table 3—Resistor Data

Nos. on Figs. 2 and 3	Resistance (Ohms)	Power (Watts)	Color		
			Body	Tip	Dot
Ⓢ	325	..	Wire	Wound	
Ⓣ	9,000	1.	White	Black	Red
Ⓤ	10,000	.5	Brown	Black	Orange
Ⓥ	16,000	5.	Brown	Blue	Orange
Ⓦ	240,000	.5	Red	Yellow	Yellow
Ⓧ	490,000	.5	Yellow	White	Yellow
Ⓨ	1,000,000	.5	Brown	Black	Green
Ⓩ	4,000,000	.5	Yellow	Black	Green

The following changes made on sets above run No. 12

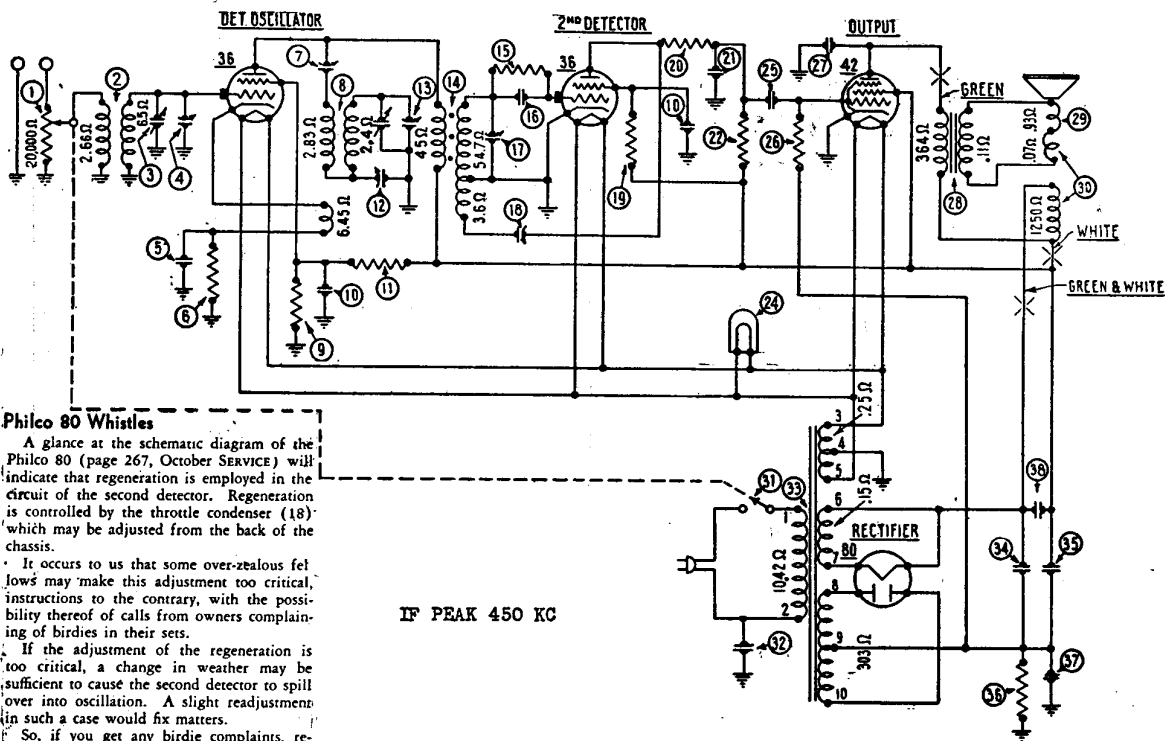
All tube shields were changed to new shield part number 8005.

Coil shield (square type) part number 7406 was changed to (round type) part number 7830. The following additional changes were made at the same time. Antenna coil Ⓣ part number 05831 changed to new coil part number 06888, and the oscillator coil Ⓤ part number 05832 changed to new coil part number 06887; resistor Ⓣ (10,000 ohms) part number 4412 and condenser Ⓣ (710 Mmfd.) part number 4520 becomes part of coil assembly—(part number 06887).

Resistor Ⓣ part number 4412 should be as far away from the I. F. coils as possible. The black and white lead from Ⓣ I. F. coil should be placed as near the chassis as possible over the oscillator coil.

MODEL 80
Schematic
chassis

PHILCO RADIO & TELEVISION CORP.



IF PEAK 450 KC

Fig. 2—Schematic Wiring Diagram

Philco 80 Whistles

A glance at the schematic diagram of the Philco 80 (page 267, October SERVICE) will indicate that regeneration is employed in the circuit of the second detector. Regeneration is controlled by the throttle condenser (18) which may be adjusted from the back of the chassis.

It occurs to us that some over-zealous fellows may make this adjustment too critical, instructions to the contrary, with the possibility thereof of calls from owners complaining of birdies in their sets.

If the adjustment of the regeneration is too critical, a change in weather may be sufficient to cause the second detector to spill over into oscillation. A slight readjustment in such a case would fix matters.

So, if you get any birdie complaints, remember condenser (18) and dive for it.

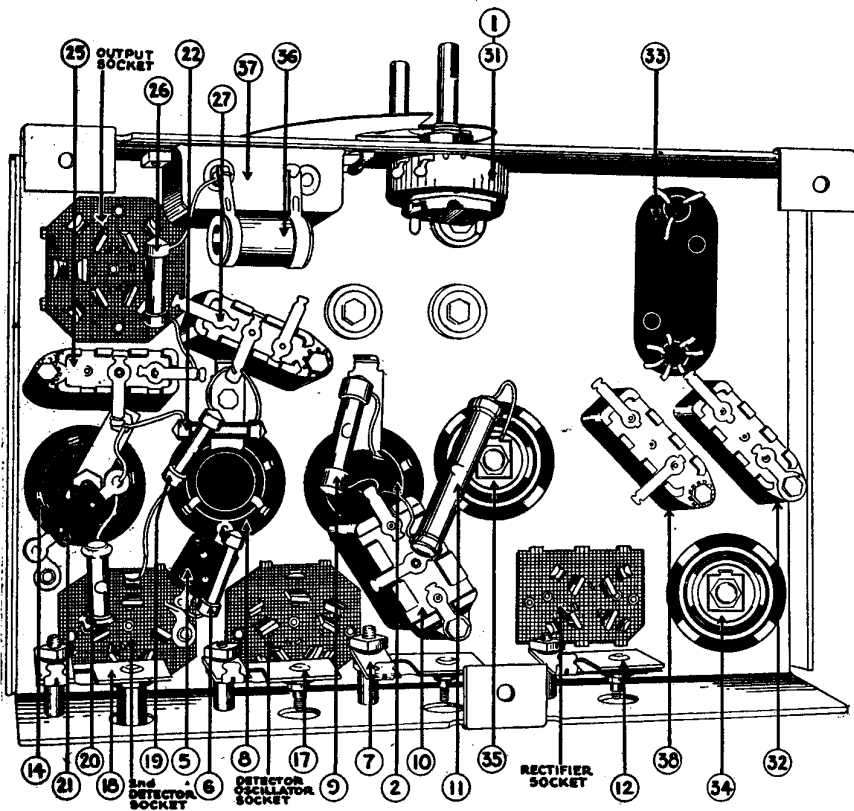


Fig. 3—Bottom View of Chassis, Showing Parts

A condenser (9) was added. This condenser was connected between the electrolytic condenser (9) and the screen grid prong of the output socket.

The following changes were made to extend the frequency range of the Model 80—Tuning condenser assembly (3) part number 05794 was changed to new tuning condenser assembly part number 31-1030. The tuning scale part number 7989 was changed to new tuning scale part number 27-5003. The antenna coil (3) part number 06888 was changed to new coil part number 32-1125. The oscillator coil (3) part number 06887 was changed to new coil part number 32-1120.

The black wire with yellow tracer (filament center tap) of (3) power transformer was disconnected from ground and connected to the yellow wire with green tracer (80 plate center tap). This was connected to lug number 6 of (3) condenser.

The above effective on run number 14.

MODEL 70 (Below Ser. #B22,000)

270

PHILCO RADIO & TELEV. CORP.

MODEL 80

MODEL 81

Alignment, Trimmers

MODEL NO. 80

MODEL NOS. 70 (below ser. #B22,000), 270

Signal Generator Connection	Signal Generator Frequency	Dial Position	Wave Band Switch Position	Trimmer Number	Output Signal
Remove grid clip from 1st det.					
Control grid of 1st det.	260 k.c.	55	...	1	Max.
"	"	"	...	2	Max.
"	"	"	...	3	Max.
Connect grid clip to 1st det.					
Ant.*	1400 k.c.	140	...	4	Max.
"	"	"	...	5	Max.
"	"	"	...	6	Max.
"	600 k.c.	60	...	7	Max.**
"	1400 k.c.	140	...	4	Max.

Signal Generator Connection	Signal Generator Frequency	Dial Position	Wave Band Switch Position	Trimmer Number	Output Signal
Remove grid clip from det.-osc.					
Control grid of det.-osc.	460 k.c.	55	...	1	Max.
"	"	"	...	2	Max.
Connect grid clip to det.-osc.					
Ant.*	1400 k.c.	140	...	3	Max.
"	"	"	...	4	Max.
"	600 k.c.	60	...	5	Max.**
"	1400 k.c.	140	...	3	Max.
Note 1	Note 1	Note 1	...	6	Note 1

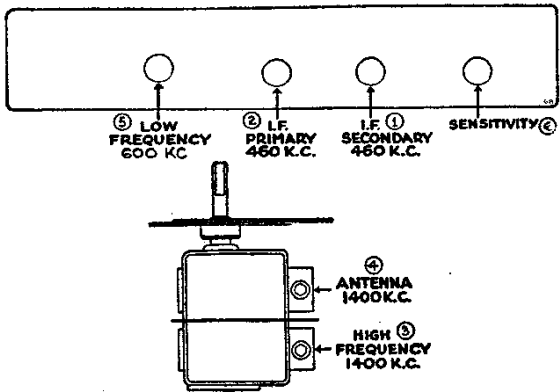
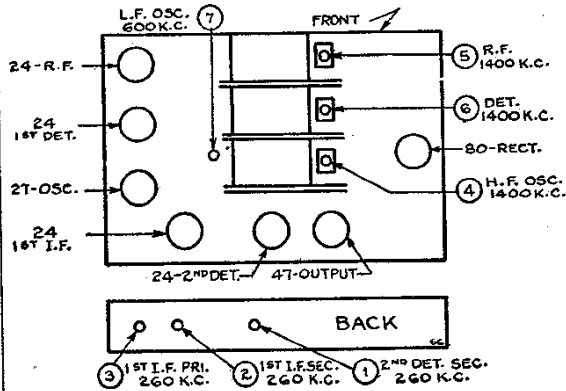
* Connect a 200-mmf. condenser between signal generator and antenna post of set, at the antenna post.

** While rocking.

* Use a 100-mmf. condenser as dummy antenna.

** While rocking.

Note 1.—Connect antenna to receiver. Tune in station, first at about 130 and adjust (8) to a point just before squealing starts. Tune in stations along other points on dial. If squealing is present at any point readjust (8) slightly until there is none at any point along dial. This adjustment may have to be changed if set is moved to different location or if antenna length or 2nd det. tube is changed.



MODEL NO. 81

Signal Generator Connection	Signal Generator Frequency	Dial Position	Wave Band Switch Position	Trimmer Number	Output Signal
Remove grid clip from det.-osc.					
Control grid of det.-osc.	460 k.c.	55	Broadcast	1	Max.
"	"	"	"	2	Max.
Connect grid clip to det.-osc.					
Ant.*	1400 k.c.	140	"	3	Max.
"	"	"	"	4	Max.**
"	600 k.c.	60	"	5	Max.
"	1400 k.c.	140	"	3	Max.
"	2400 k.c.	2400 k.c.	Police	6	Max.
"	1700 k.c.	1700 k.c.	Note 1	7	Max.
Note 1	Note 1	Note 1	Broadcast	8	Note 1

* Use a 100-mmf. condenser as dummy antenna.
 ** While rocking.
 Note 1.—Connect antenna to receiver. Tune in station, first at about 130 and adjust (8) to a point just before squealing starts. Tune in stations along other points on dial. If squealing is present at any point readjust (8) slightly until there is none at any point along dial. This adjustment may have to be changed if antenna length or 2nd det. tube are changed.

