

# ATWATER KENT RADIO

## SERVICE DATA

### MODELS 145, 206, 325, 376, 559, 825, AND 944

#### VOLTAGE MEASUREMENTS

Voltages are printed on the diagram of each set. Readings are made from the cathode of each tube, using the 250-volt scale of a 1000-ohm-per volt D. C. voltmeter. Readings are made with the set in operation, no antenna, with the dial tuned to a quiet point, silencing adjustment at minimum, volume control in battery sets full on, and frequency-range switch in broadcast position.

In some models, the socket contacts of the 58 tubes are not accessible from the bottom for testing. To make measurements at these sockets, we suggest use of a 58 tube with eight-inch leads soldered to the plate, screen and cathode contacts. (Use green for plate, blue for screen, and yellow for cathode.) Insert this tube alternately in the different sockets and measure the voltages by making contact to the leads with the voltmeter prongs.

#### INTERMEDIATE FREQUENCIES OF ATWATER KENT SUPERHETERODYNE RECEIVERS

Model	IF KC	Model	IF KC	Model	IF KC	Model	IF KC
H	130	92-F	130	246	262½	555	262½
80	130	93	1000	260	130	558	130
80-F	130	94	130	260-F	130	558-D	130
82	130	94-F	130	266	262½	558-Q	130
82-F	130	96	130	275	264	559	472½
82-D	130	96-F	130	310	130	567	130
82-Q	130	99	130	318	472½	567-F	130
83	130	99-F	130	325	264	612	130
83-F	130	99-P	130	376	472½	627	130
84	130	112	472½	376-D	472½	636	262½
84-F	130	135	264	387	264	655-Q	264
84-D	130	145	264	424	264	665	264
84-Q	130	155	262½	425	264	666	264
85	130	*165	262½	427	264	667	264
85-F	130	**165	264	427-D	264	667-D	264
85-Q	130	165-Q	264	427-Q	264	708	472½
86	130	185	264	447	472½	711	472½
86-F	130	185-A	264	448	130	756	262½
87	130	188	130	465-Q	264	756-B	262½
87-D	130	188-F	130	469	130	768-Q	472½
89	130	206	472½	469-F	130	788	472½
89-F	130	206-D	472½	469-D	130	808	472½
89-P	130	215	264	469-Q	130	808-A	472½
90	130	217	264	480	472½	812	130
90-F	130	217-D	264	510	130	816	264
91	260	228	130	511	472½	825	264
91-B	260	228-F	130	525	264	926	264
91-C	260	228-D	130	525-Q	264	936	264
92	130	228-Q	130	534	450	944	450
						978-Q	472½

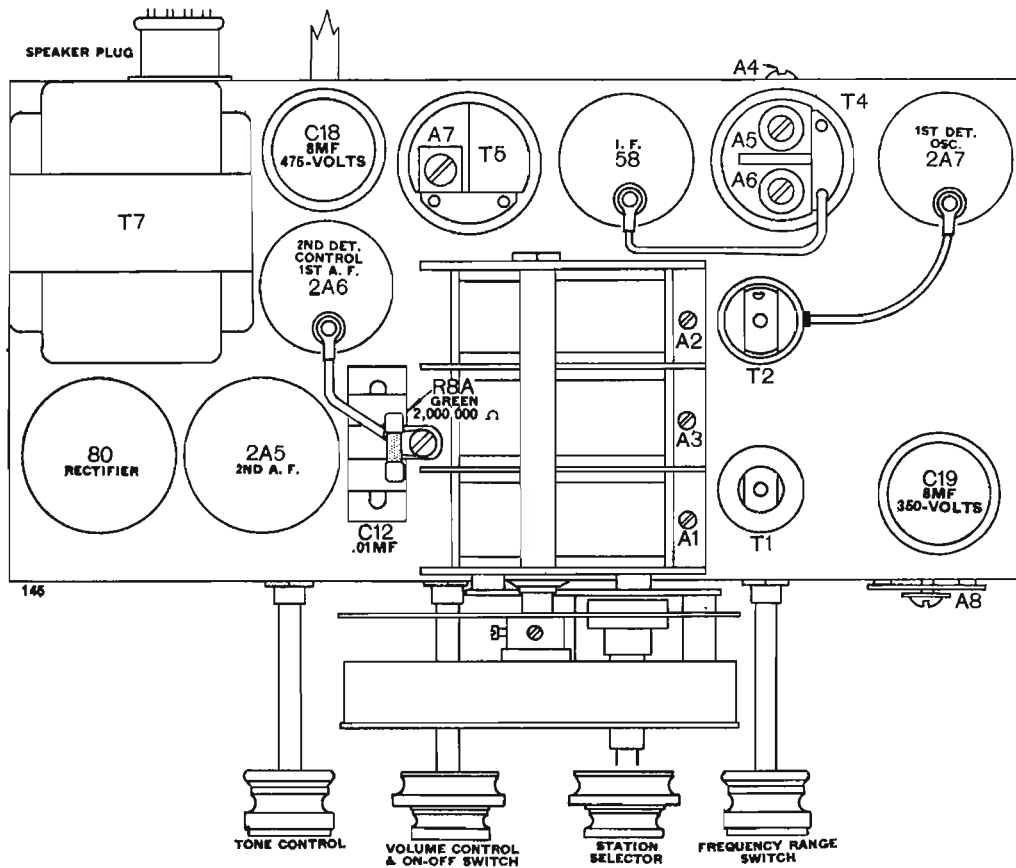
\* Early.

\*\* Late.

# ATWATER KENT RADIO

## MODELS 145 AND 325

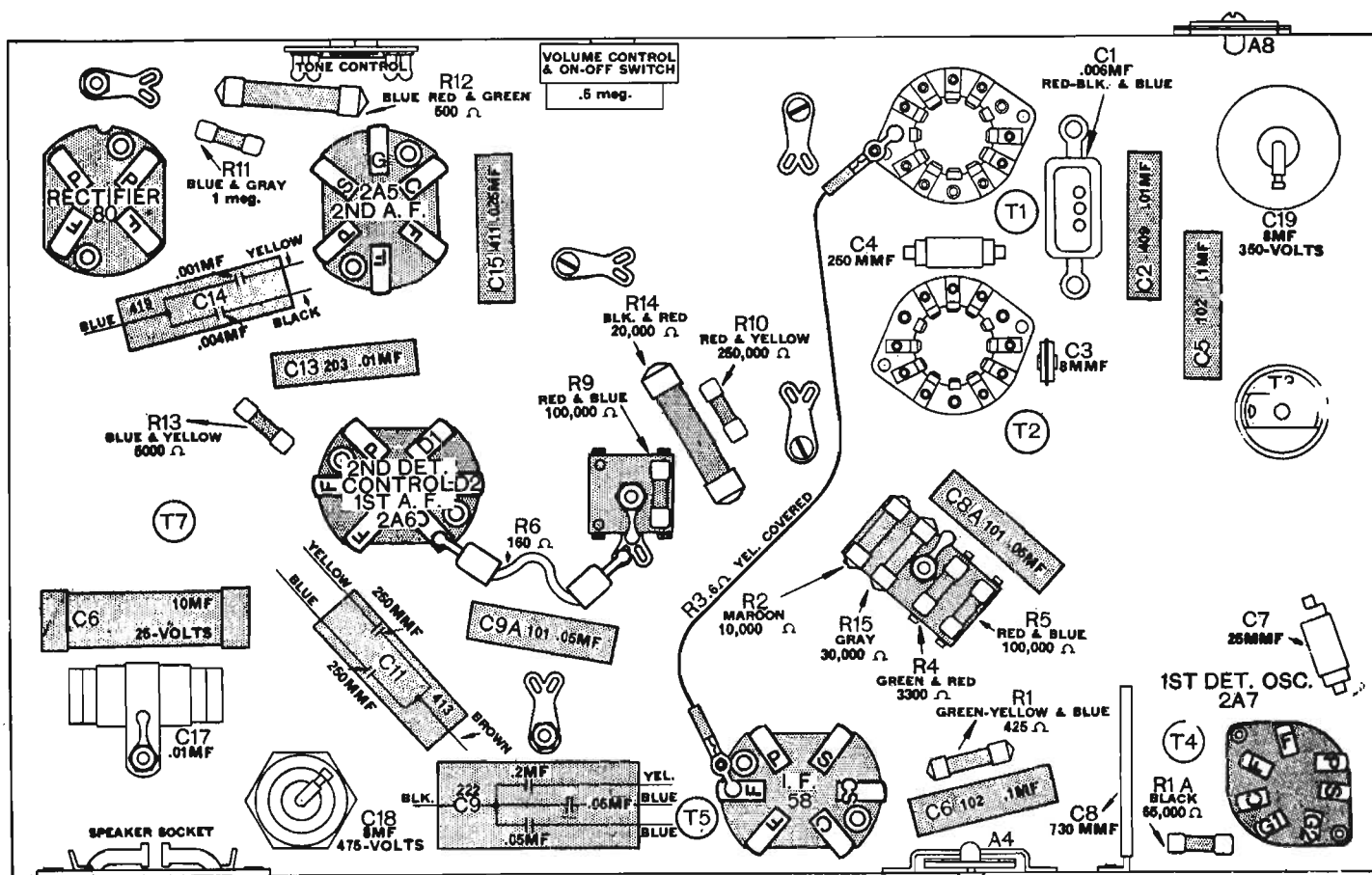
(I. F. = 264 KC.)

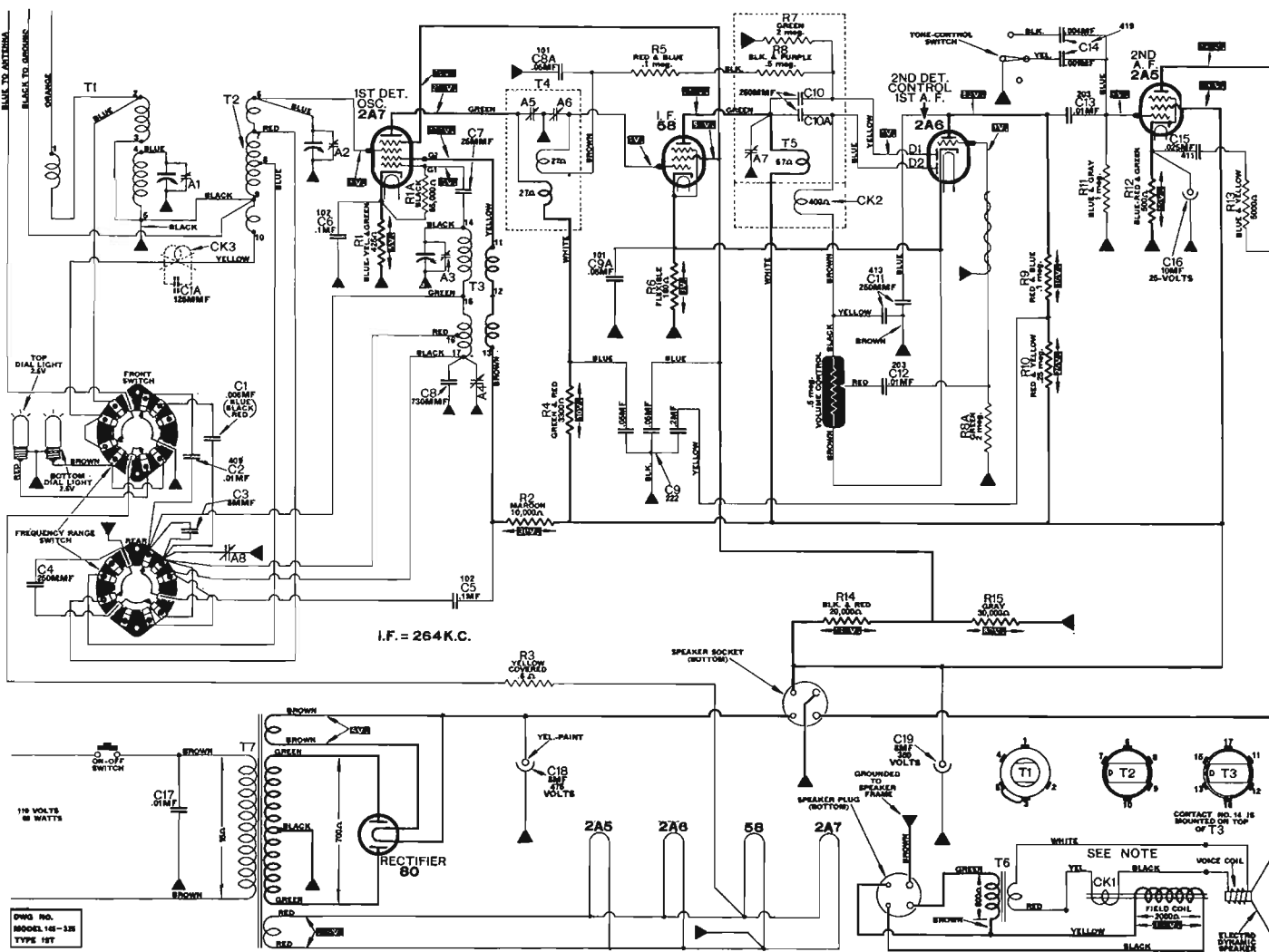


### R. F. TRIMMERS ON MODELS 145 AND 325

	Short-Wave Range	Police Range	Broadcast Range
Antenna	None	None	A1
Detector	None	None	A2
Oscillator	...	None	A8
Tracking	...	None	A4

The I. F. trimmers are A5, A6 and A7.



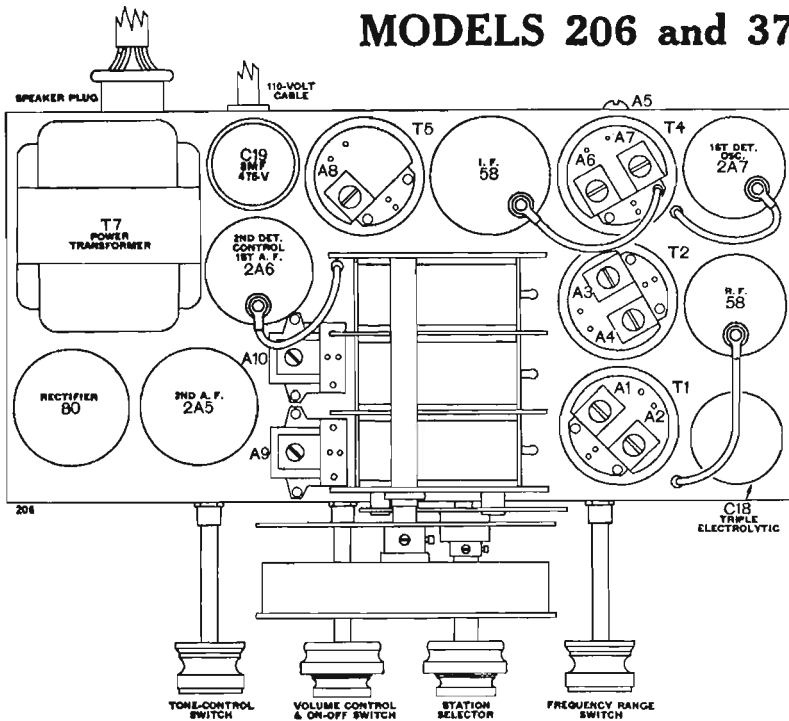


AT WATER KENT RADIO  
MODELS 145 AND 325

In Model 325 the field coil is 1200  $\Omega$  and the voltages throughout are slightly higher than shown in diagram. In later sets C4 is not used, the diode circuit is changed and there are some minor changes in the frequency-switch circuit.

ATWATER KENT RADIO

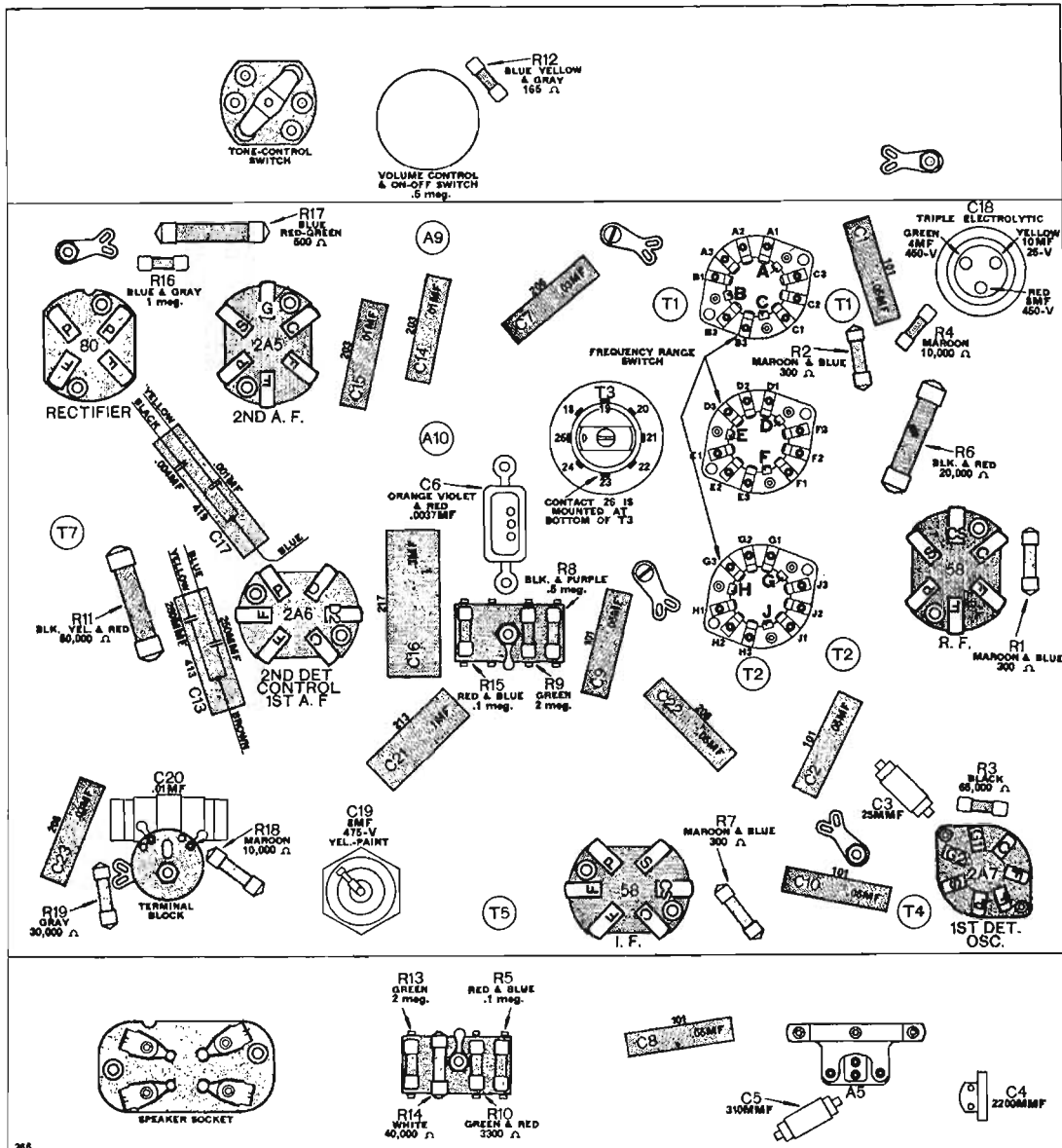
MODELS 206 and 376 (1st TYPE)



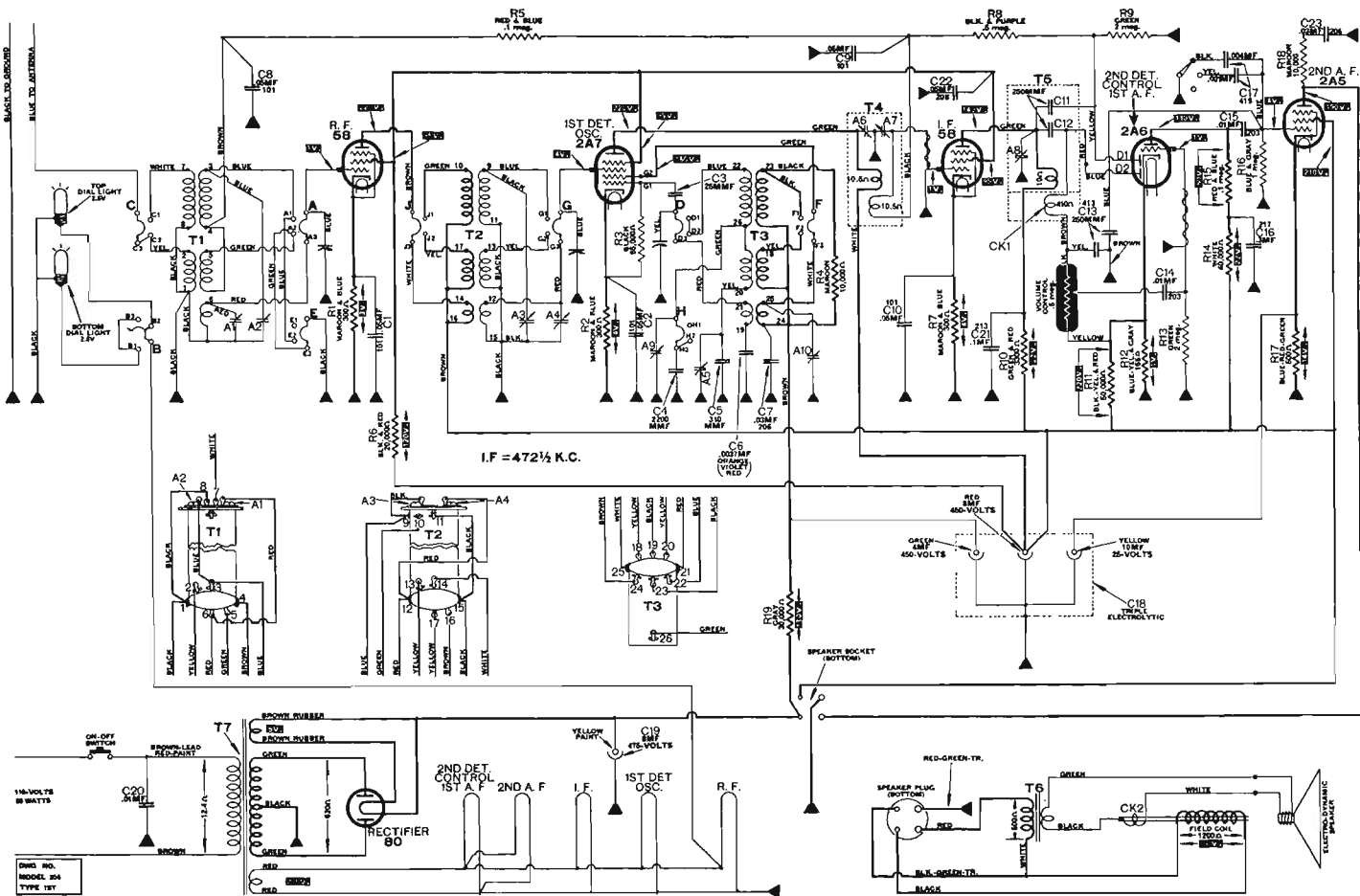
R. F. TRIMMERS ON MODELS 206 AND 376

	Short-Wave Range	Police Range	Broadcast Range
R. F. ....	A1	None	A2
1st-Detector ....	A4	None	A3
Oscillator ....	A10	None	A9
Tracking ....	None	None	A5

The I. F. trimmers are A6, A7 and A8.



ATWATER KENT RADIO  
 MODELS 206 AND 376 (1st TYPE)

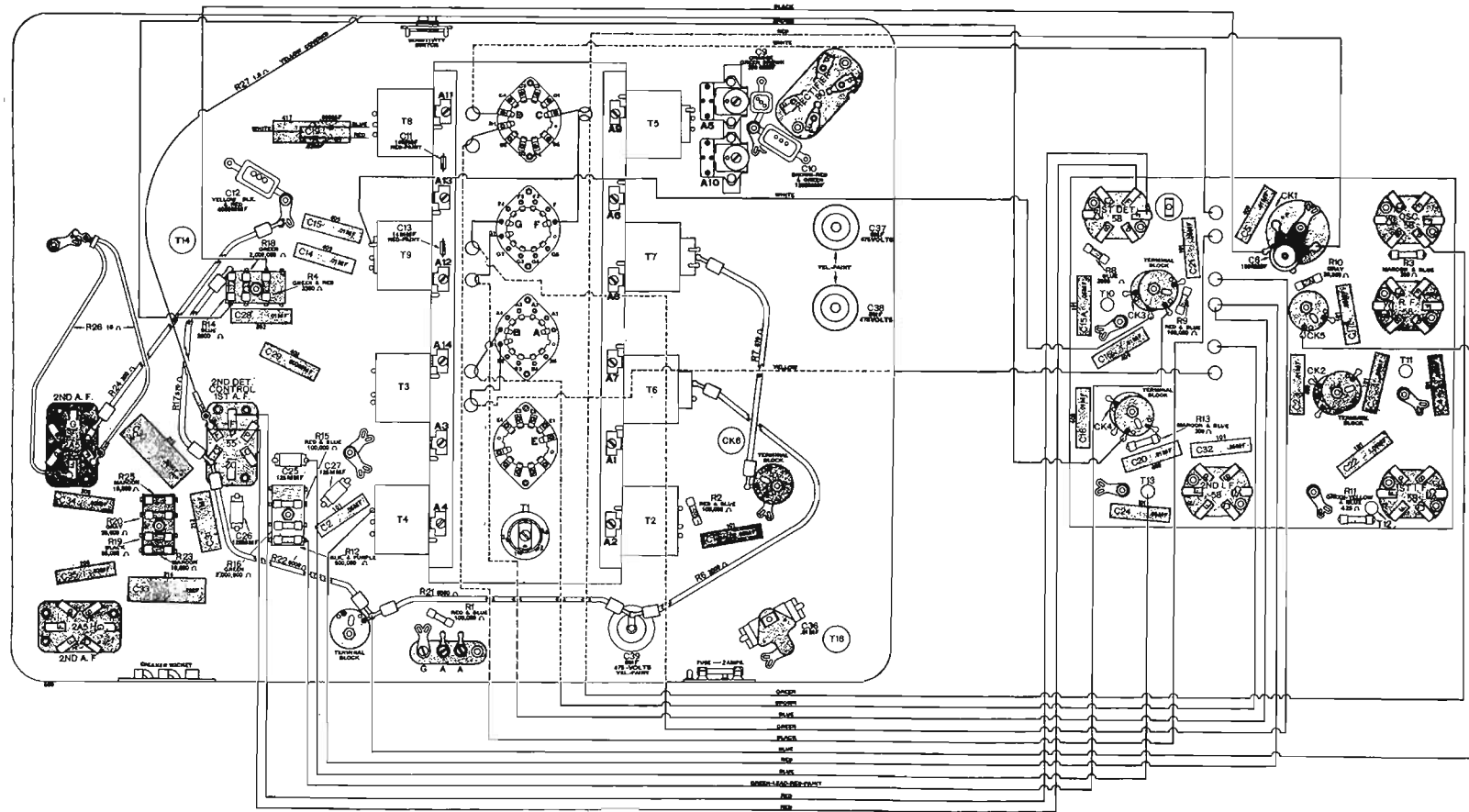


The 1st type of Models 206 and 376 have cylindrical I. F. transformer shields. The 2nd type has square I. F. shields and the circuit is different from that shown above.

## MODEL 559

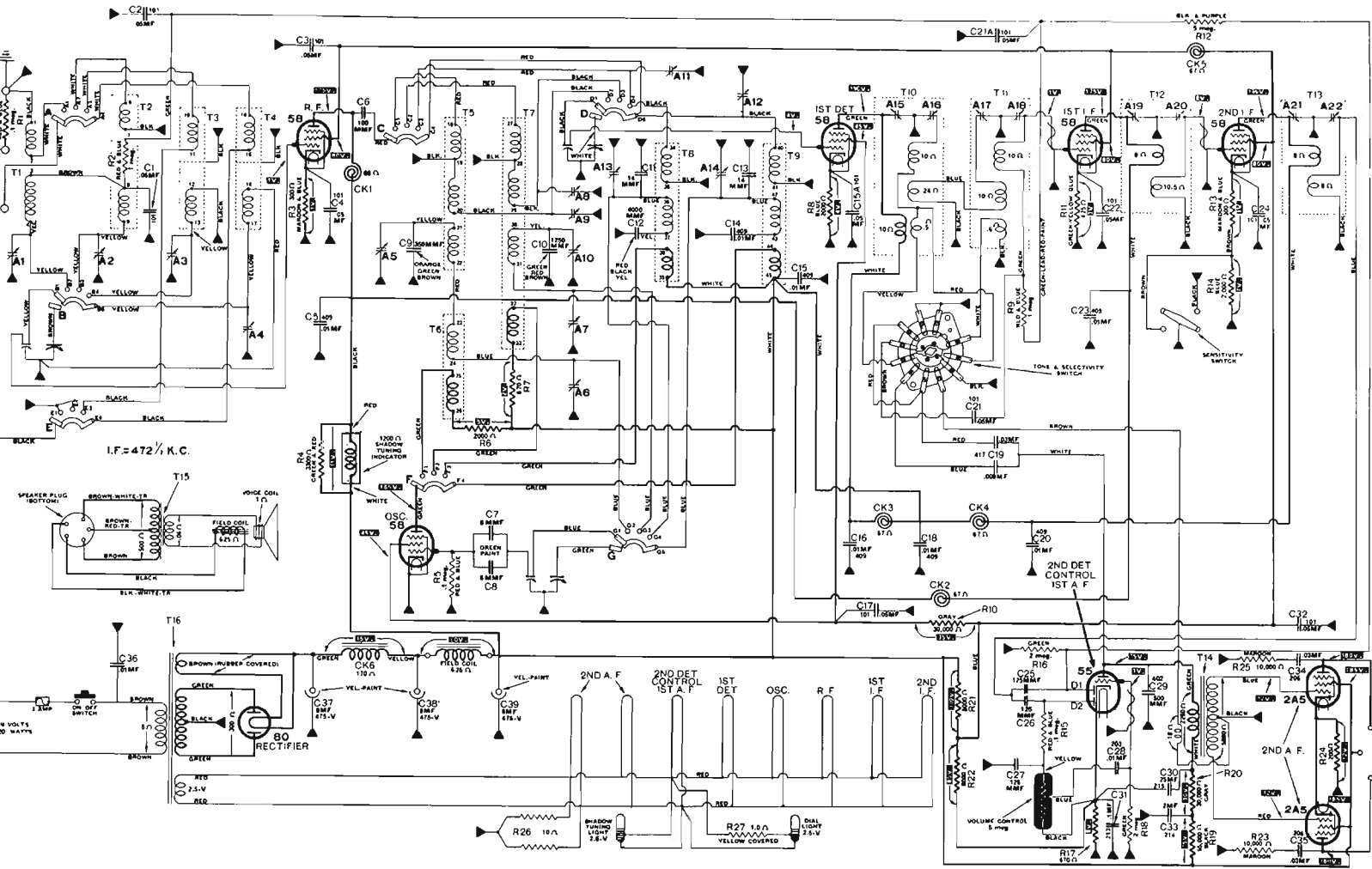
(I. F. =  $472\frac{1}{2}$  KC.)

(For top view, see page 12)



This view shows the connections between the top unit and the main base.

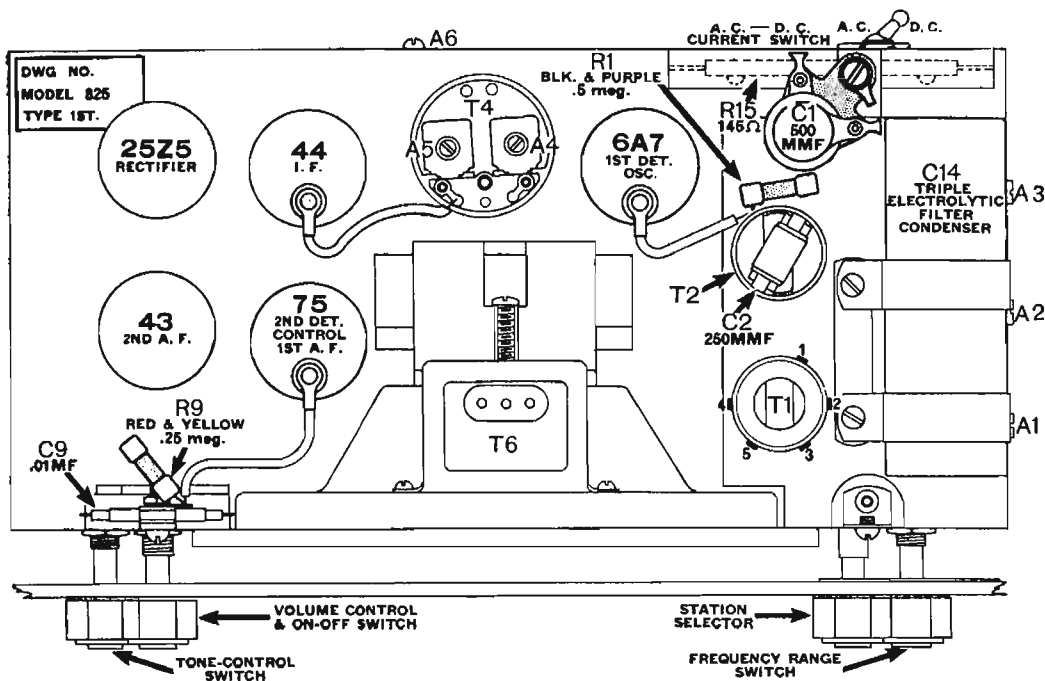
# MODEL 559



Voltage measurements were made with sensitivity switch at "local." The R. F. and I. F. circuit of Model 112 is the same as Model 559.

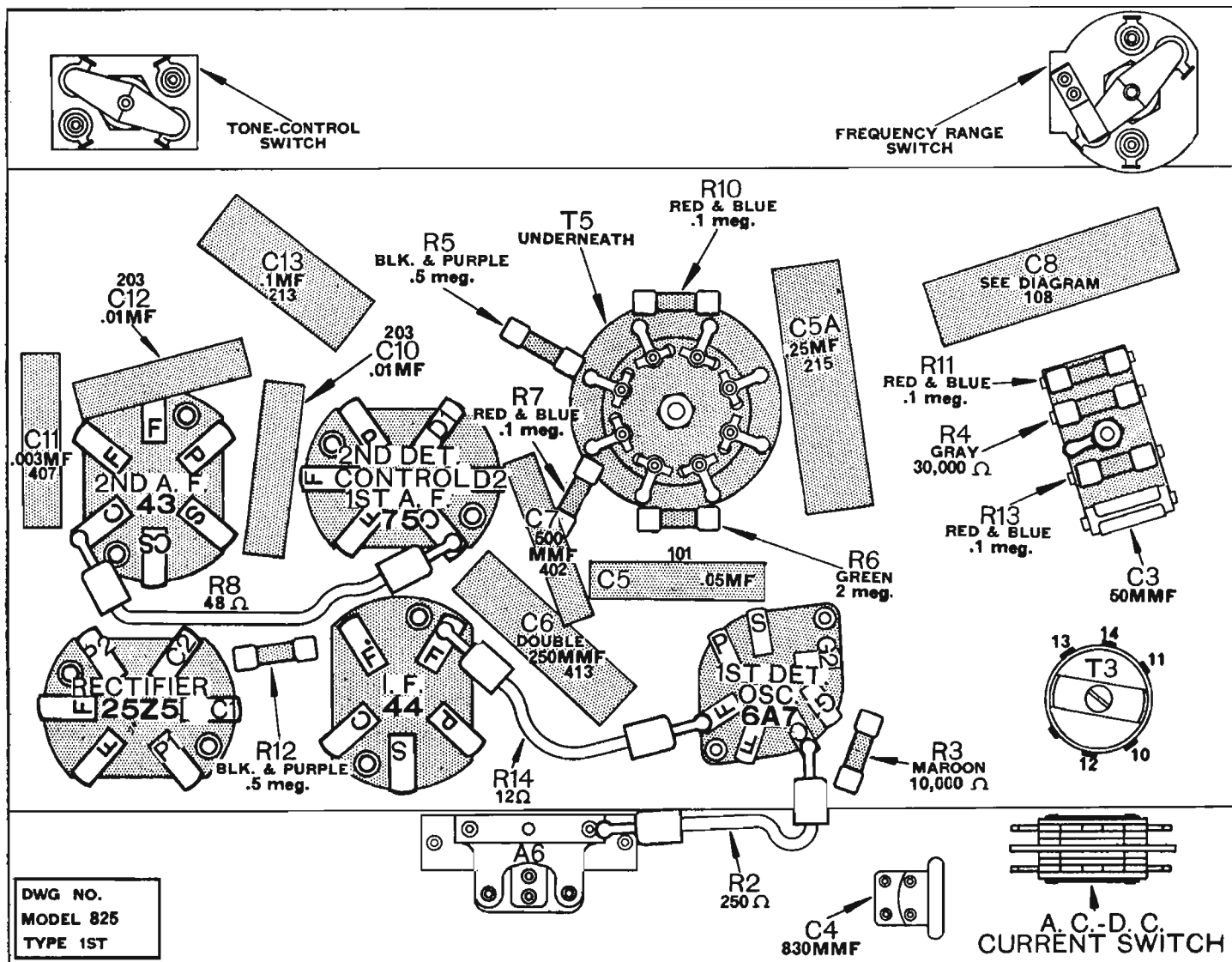
# ATWATER KENT RADIO MODEL 825 (A. C.—D. C.)

(I. F. = 264 KC.)

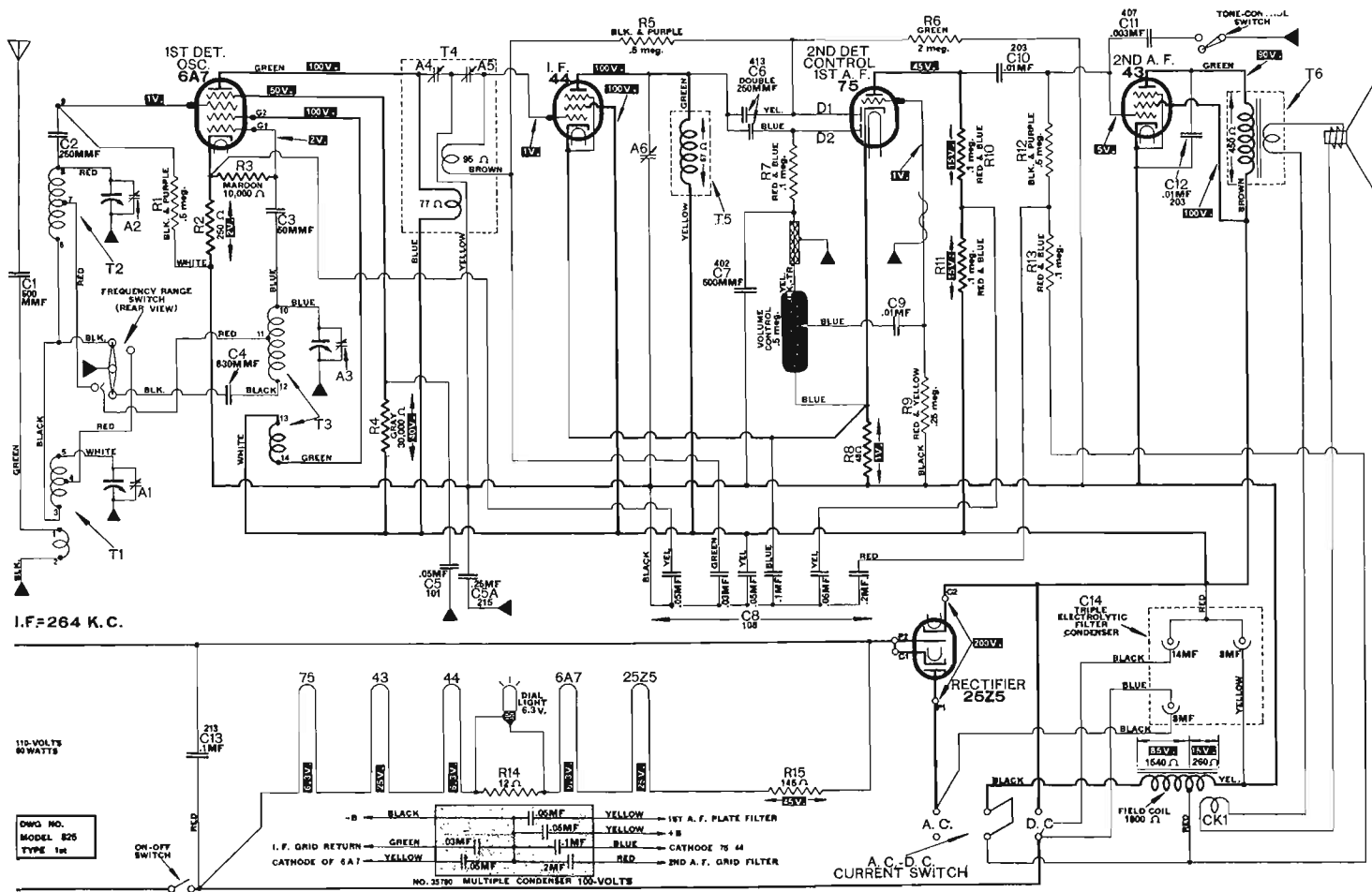


Trimmers A1, A2 and A3 are adjusted at 1500 KC.

A4, A5 and A6 are adjusted at 264 KC.





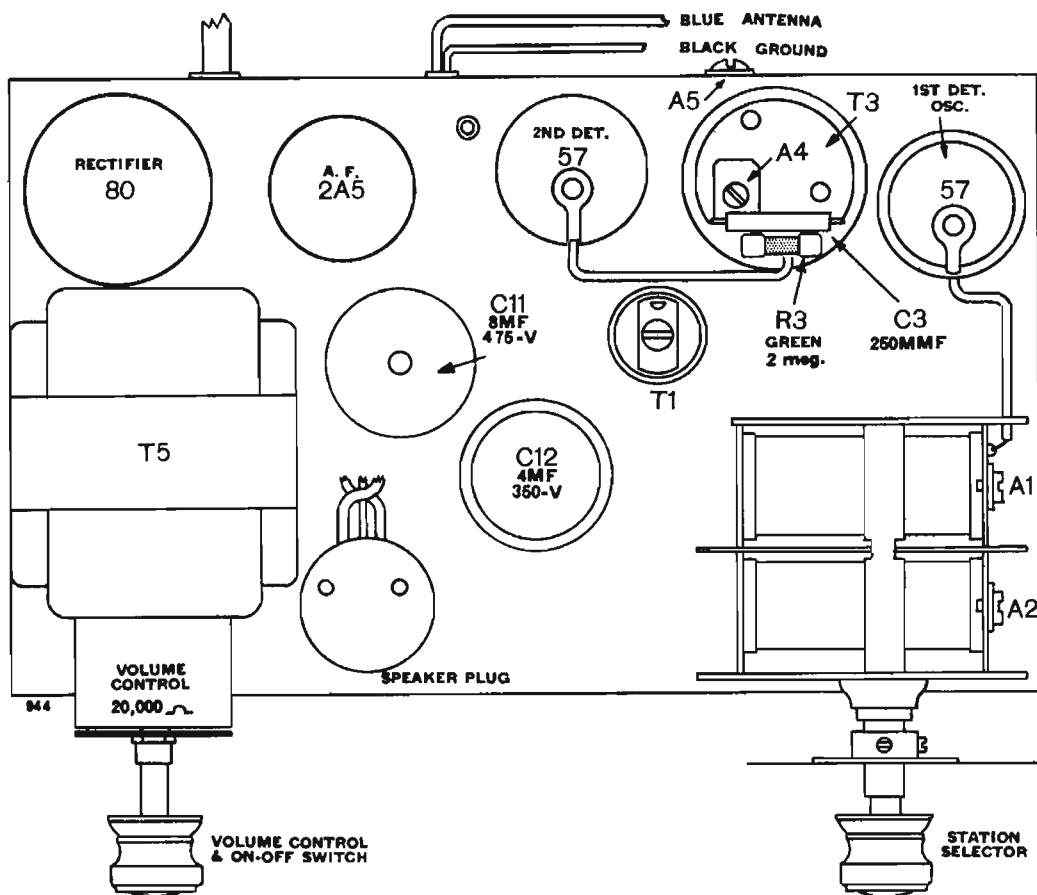


ATWATER KENT RADIO  
**MODEL 825 (A. C.-D. C.)**

ATWATER KENT RADIO

MODEL 944

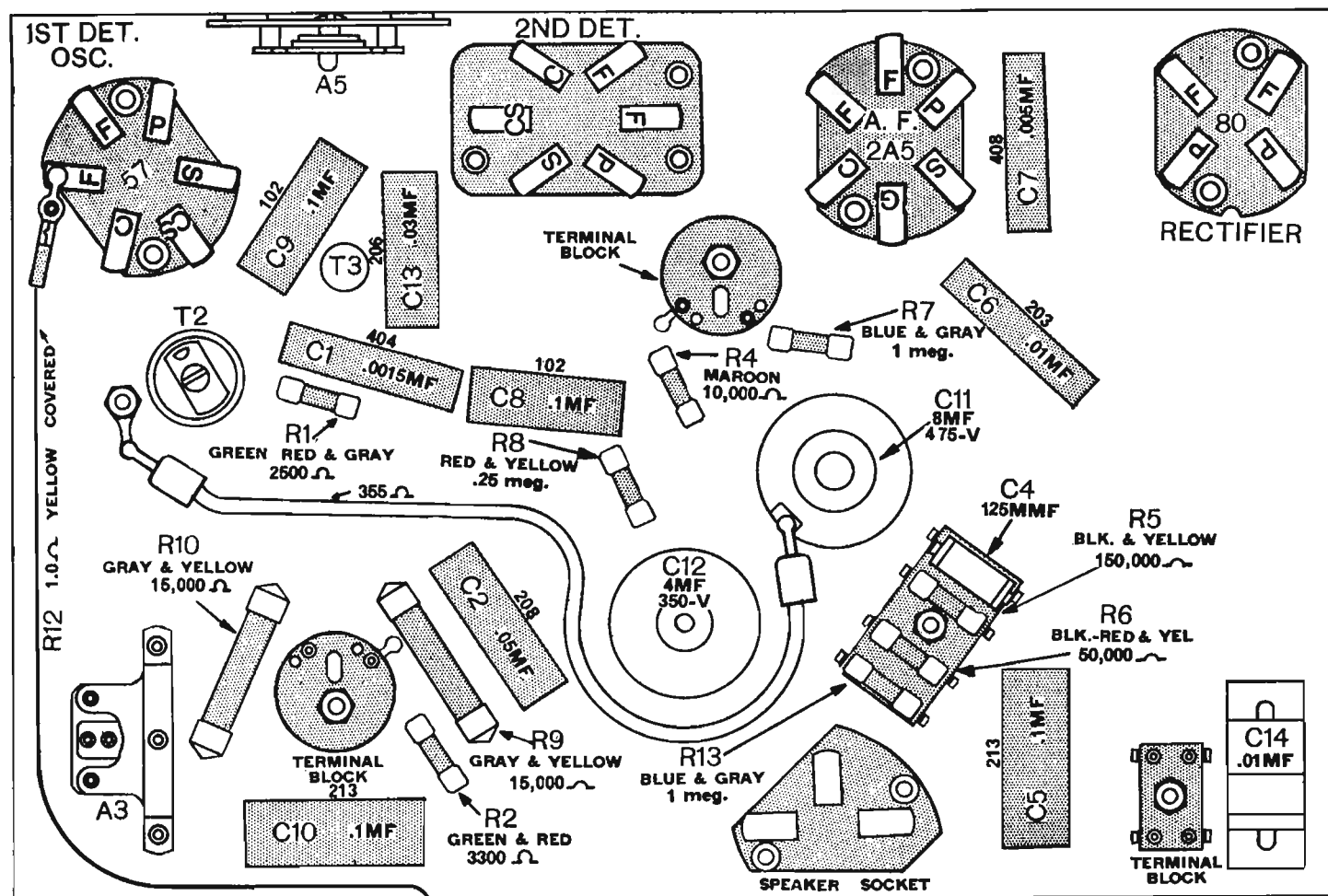
(I. F. = 450 KC.)



Trimners A1 and A2 are adjusted at 1500 KC.

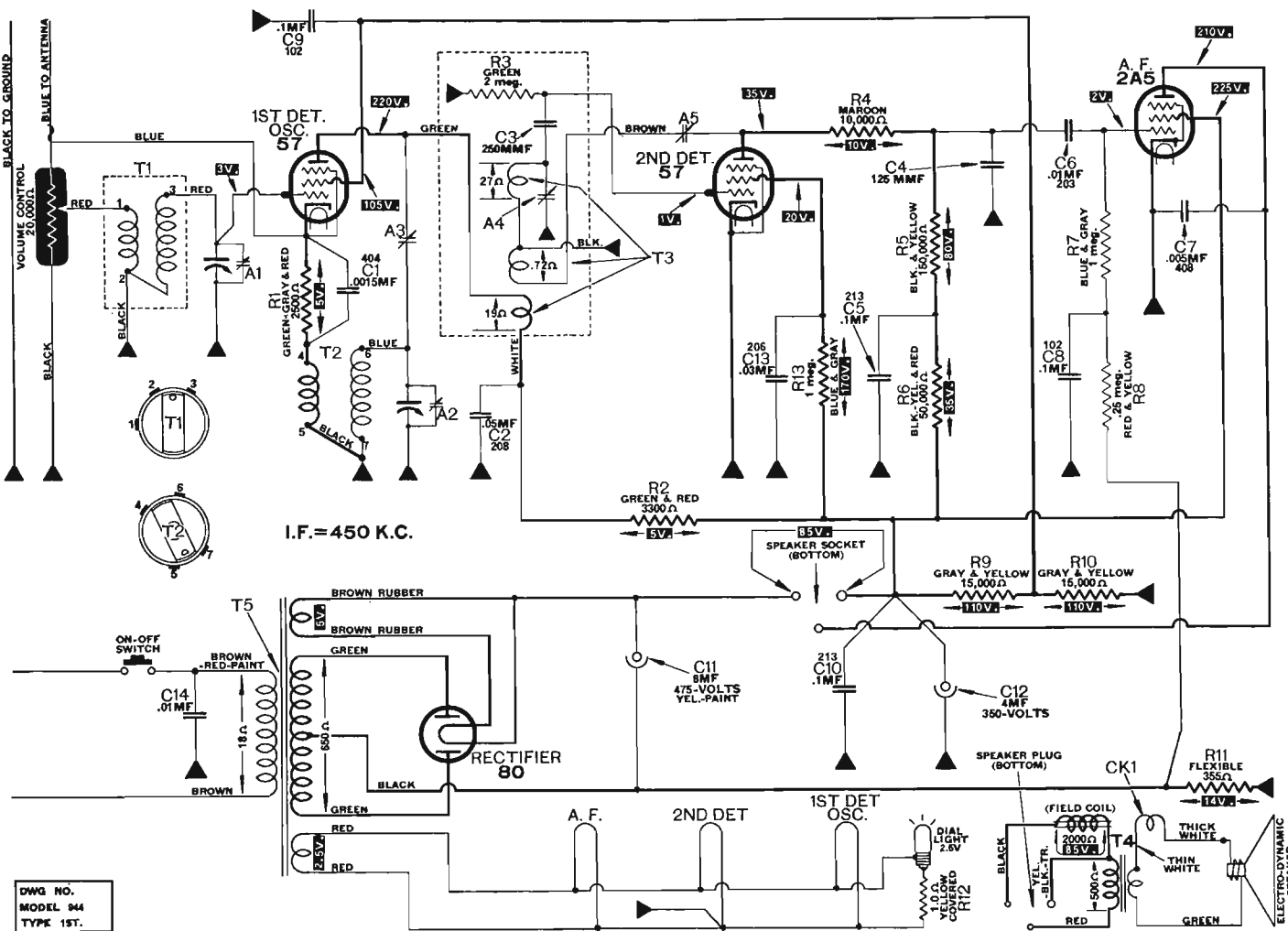
Trimners A3 and A4 are adjusted at 450 KC.

Trimmer A5 controls sensitivity, and is adjusted in accordance with instructions at about 1100 KC.



ATWATER KENT RADIO

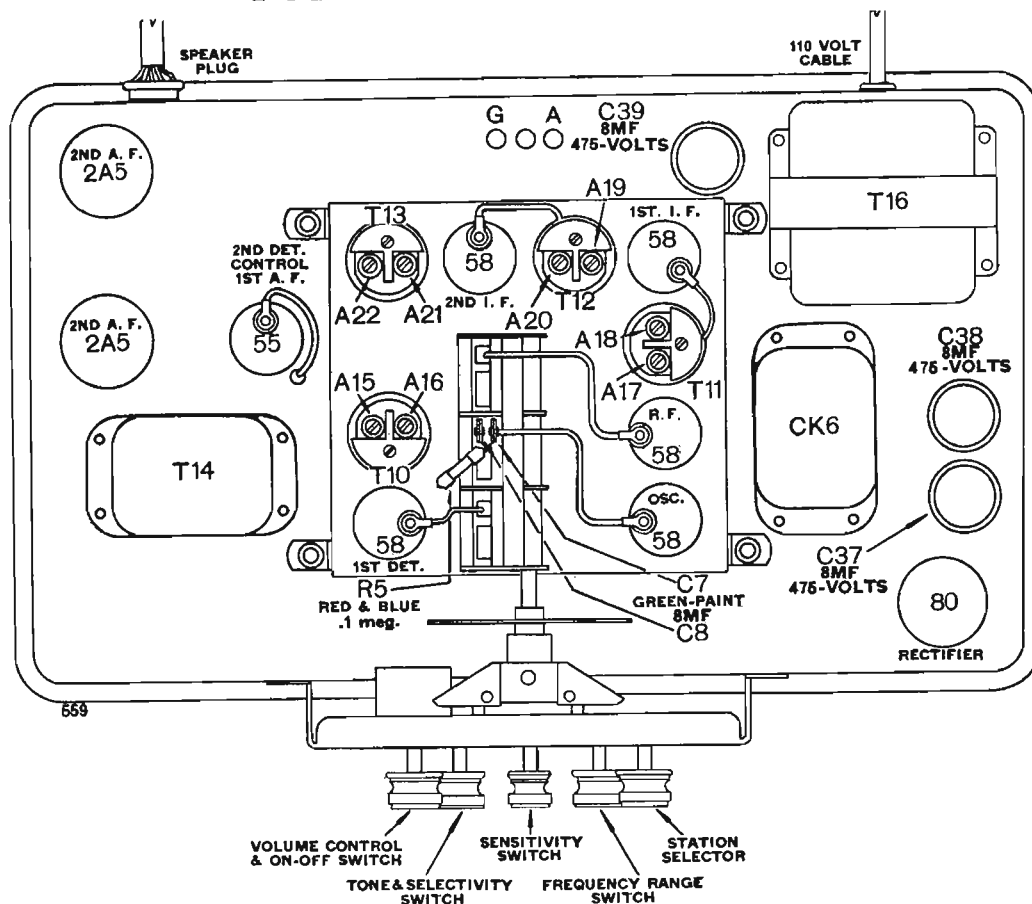
MODEL 944



I.F. = 450 K.C.

DWG NO. MODEL 944 TYPE 1ST.

## ATWATER KENT RADIO TOP VIEW MODEL 559



The location of trimmers on Model 112 is the same on Model 559.

Refer below for names of trimmers on these models.

### R. F. TRIMMERS ON MODELS 112 AND 559

	10-18 MC Range	4-10 MC Range	1.5-4 MC Range	540-1600 KC Range
R. F. ....	A4	A3	A2	A1
1st-Detector ....	A12	A11	A8	A9
Oscillator ....	A14	A13	A7	A6
Tracking ....	None	None	A10	A5

The I. F. trimmers are A15 to A22, inclusive.

## ADJUSTING TRIMMER CONDENSERS

### EQUIPMENT.

1. **OSCILLATOR.** The oscillator should extend from the lowest I. F. frequency (125 KC in Atwater Kent sets) to at least 18 MC. The oscillator should have a good attenuator and should be well shielded. If the oscillator is not well shielded, it may be difficult to peak the pre-selector trimmers on some models, owing to pick-up by the 1st-detector grid circuit. In general, it is advisable to connect an .00025MFD fixed condenser in series with the oscillator pick-up lead at the antenna terminal of the set.

2. **OUTPUT METER.** Use a sensitive output meter and keep the radio volume control turned on full volume. This is necessary to minimize the effect of the automatic-volume-control action of the set which would otherwise prevent sharp peaking of the trimmers.

3. **BALANCING UNIT.** Build two of the Type "A" balancing units and one of the I. F. coupling units shown on right. These are required for correct adjustment of Atwater Kent super-heterodynes. The Type "B" balancing unit, also described, is used on earlier models of Atwater Kent sets.

4. Use a non-metallic screw driver for adjustment of the trimmers.

(Continued on page 13)

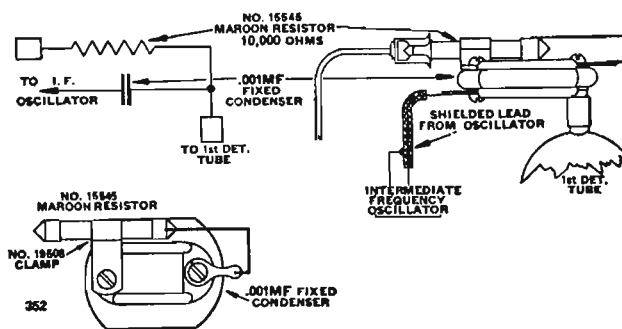


Fig. 1. I. F. Coupling unit.

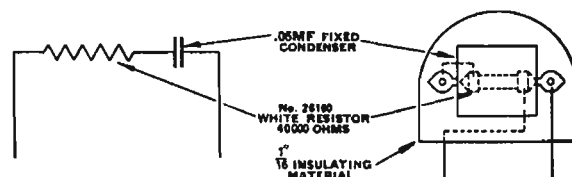


Fig. 2. Balancing unit "A."

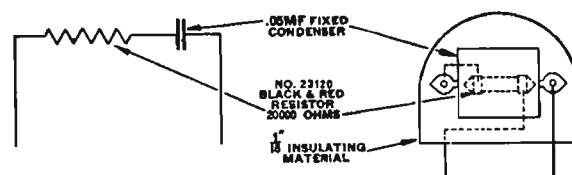


Fig. 3. Balancing unit "B."

## ATWATER KENT RADIO

## ADJUSTING TRIMMER CONDENSERS (Contd.)

## GENERAL NOTES.

1. Do not make any trimmer adjustments and do not disturb the dial gear or the dial indicator adjustments unless absolutely necessary.
2. With all-wave sets, it is very desirable to use a test oscillator that extends to 18 MC (18,000 KC). If you attempt to use harmonics of a broadcast oscillator, you are likely to use the wrong harmonic and set the trimmers incorrectly.
3. When using a test oscillator, you will experience "double-spot" or image reception, particularly on the highest frequency range of the set. The double-spot point is twice the I. F. frequency below the correct point. For instance, if a set has an I. F. frequency of  $472\frac{1}{2}$  kilocycles, and you are tuning in an 18 MC signal, the double-spot or image will be twice  $472\frac{1}{2}$  or 945 KC (.94 MC) below 18. In such a case you will hear the signal at 18 MC and also at 17.06 MC. In properly aligned sets of six tubes or more, the image should be weaker than the desired signal.
4. Because of the facts mentioned in paragraphs 2 and 3 above, it is very desirable, wherever possible, first to check the short-wave dial calibration and determine how far, and in what direction, the readings are "off." This should be done on actual reception of short-wave stations of known frequency. This pre-checking will assist you in selecting the correct harmonic (in case you are using a broadcast oscillator), and it will also minimize possibility of confusing the correct signal and the image signal.
5. On oscillator trimmers there may be two different settings at which the signal is received. Always use the *first* of these two positions as you screw the trimmer in from a loose or minimum-capacity position. **THIS IS IMPORTANT.**
6. On sets with a combined oscillator and 1st-detector tube, tune the set to a quiet point near 1,000 KC while adjusting the I. F. trimmers.

## OSCILLATOR GOVERNS DIAL ACCURACY.

It is essential to understand definitely that in a super-heterodyne the dial calibration depends on the oscillator circuit of the set, providing that the I. F. trimmers are correctly aligned. The pre-selector (R. F. and 1st-detector) trimmers do not affect the dial calibration but simply affect sensitivity.

If the dial calibration of one or more of the frequency ranges of the set is "off", check the oscillator trimmer, the oscillator tracking condenser and tracking trimmer, and the oscillator transformer for the particular range or ranges in question.

The oscillator trimmer is used to adjust the **high-frequency** end of the particular range.

The oscillator tracking condenser adjusts the **low-frequency** end of the particular range.

In Atwater Kent sets the fixed tracking condenser on the broadcast range (and in some models also on the police range) is shunted with an adjustable tracking trimmer condenser. The adjustable tracking trimmer condenser is not used on the high-frequency ranges.

The adjustment of the trimmers for the high-frequency and low-frequency end of a particular range is slightly interlocking. For example, assume that the broadcast range of a set is off calibration. First turn the tuning knob so the dial pointer is at 1500 KC and, using a 1500 KC signal, peak the broadcast oscillator trimmer. Then turn the set to 560 KC and, using a 560 KC signal, peak the oscillator broadcast tracking trimmer for maximum output. This adjustment will have slightly affected the previous adjustment at 1500 KC so it will be necessary to repeat the adjustment at 1500 KC and also possibly at 560 KC.

If adjustment of the oscillator trimmer and the oscillator tracking trimmer does not correct the dial readings, it may be necessary to replace the fixed oscillator tracking condenser or the oscillator transformer for that particular range.

Naturally, the I. F. trimmers should be checked, and adjusted if necessary, before any attempt is made to align the R. F. or oscillator trimmers.

## GENERAL PROCEDURE.

First check the I. F. trimmers. If reception is satisfactory and the dial calibration is correct on the broadcast range, it is safe to assume that the I. F. trimmers are correctly adjusted.

If the dial calibration is "off" (or the set is weak) on only one range, adjust the trimmers for that range only. If this does not correct the trouble, inspect the resistors, condensers, transformers, and switch contacts associated with that particular range.

In checking a set, do not disturb the position of the wiring any more than necessary.

## MODELS 112 AND 559

## I. F. TRIMMERS.

Connect an I. F. test oscillator to the 1st-detector tube by means of the I. F. coupling unit shown in Fig. 1. Adjust the I. F. oscillator to  $472\frac{1}{2}$  KC. Connect a sensitive output meter to the set. Use the weakest possible oscillator signal that will give a reading on the output meter with the radio volume control on full. **Put tone control in 2nd-position from right.**

Put balancing unit A (shown in Fig. 2) across trimmer A21 and peak A22.

Put unit A across A22 and peak A21.

Put unit A across A19 and peak A20.

Put unit A across A20 and peak A19.

Put one unit A across A17 and another unit A across A15; peak A18 and A16.

Put one unit A across A18 and another unit A across A16; peak A17 and A15.

In case of instability while adjusting A21 and A22, place an extra balancing unit A across A18.

Remove the I. F. coupling unit and the balancing units and seal the trimmer screws.

## R. F. TRIMMERS.

Connect an R. F. oscillator to the antenna and ground terminals of the set. Use the weakest possible signal to give a reading on the output meter. Loosen the trimmer screws for the frequency range or ranges that are to be re-adjusted.

*10 to 18 MC range.* Tune oscillator exactly to 18 MC and turn tuning knob of set so indicator is at 18 MC mark. Adjust trimmers A14, A4 and A12 for peak output.

*4 to 10 MC range.* Tune oscillator exactly to 10 MC and turn set to 10 MC mark on the 4 to 10 MC range. Peak trimmers A13, A3 and A11.

*1.5 to 4 MC range.* Tune oscillator to 4 MC and turn set to the 4 MC mark on the 1.5 to 4 MC scale. Peak trimmers A7, A2 and A8. Tune oscillator to 1.5 MC and, with set at 1.5, peak A10. Repeat adjustments on A7 and A10 if necessary.

*Broadcast range.* Tune oscillator and set to 1500 KC. Peak trimmers A6, A1 and A9. Tune oscillator to 560 KC and turn set to the 560 KC mark. Peak A5. Repeat adjustments on A6 at 1500 and A5 at 560 if necessary.

## MODELS 145 AND 325

## I. F. TRIMMERS.

Connect an I. F. test oscillator to the 1st-detector tube by means of the I. F. coupling unit shown in Fig. 1. Adjust the I. F. oscillator to 264 KC. Connect a sensitive output meter to the set. Use the weakest possible oscillator signal that will give a reading on the output meter with the radio volume control on full. Turn the set to a quiet point near 1000 KC.

Peak trimmer A7, A6 and A5. Remove the I. F. coupling unit and seal the trimmer screws.

(Continued on page 14.)

## ATWATER KENT RADIO

### ADJUSTING TRIMMER CONDENSERS (Contd.)

#### DIAL POINTER ADJUSTMENT.

With the variable condenser all the way in, the dial pointer should be set at 535 KC.

#### R. F. TRIMMERS.

Connect an R. F. test oscillator to the antenna and ground terminals of set. Use the weakest possible oscillator signal. Loosen the trimmer screws.

*Short-wave range.* Oscillator at 15 MC, and set turned to 15 MC mark, peak trimmer A3.

*Police range.* There are no trimmer adjustments for this range.

*Broadcast range.* Oscillator at 1500 KC and dial pointer at 1500 KC mark, peak trimmers A8, A2 and A1. Tune oscillator and set to 560 KC. Peak A4. Repeat adjustments on A8 at 1500 KC and A4 at 560 KC if necessary.

### MODELS 206 AND 376 (1st type)

#### I. F. TRIMMERS.

Connect an I. F. test oscillator to the 1st-detector tube by means of the I. F. coupling unit shown in Fig. 1. Adjust the oscillator to 472½ KC. Use the weakest possible signal that will give a reading on the output meter with the radio volume control on full.

Turn the set to a quiet point near 1000 KC.

Peak trimmers A8, A7 and A6 for maximum output. Remove the I. F. coupling unit and seal the I. F. trimmers.

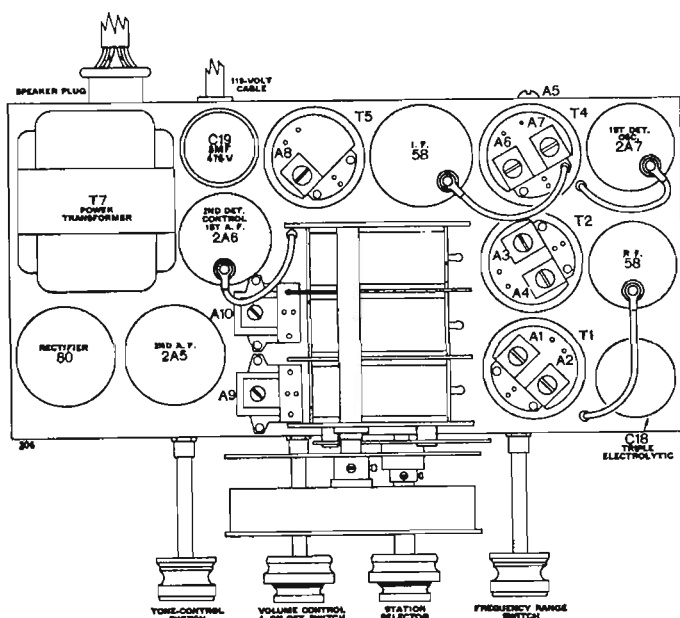
#### DIAL POINTER ADJUSTMENT.

With the variable condenser rotor completely meshed, the dial pointer should be set at 535 KC.

#### R. F. TRIMMERS.

Connect a suitable R. F. oscillator to the antenna and ground terminals of set.

*Broadcast range.* Oscillator at 1500 KC and dial pointer at



#### R. F. TRIMMERS ON MODELS 206 AND 376

	Short-Wave Range	Police Range	Broadcast Range
R. F.	A1	None	A2
1st-Detector	A4	None	A3
Oscillator	A10	None	A9
Tracking	None	None	A5

The I. F. trimmers are A6, A7 and A8.

1500 KC mark, adjust trimmers A9, A2 and A3. Tune oscillator and set to 560. Peak A5. Repeat adjustments on A9 at 1500 KC and A5 at 560 KC if necessary.

*Police range.* There are no trimmer adjustments for this range.

*Short-wave range.* With oscillator at 15 MC and set turned to 15 MC, peak trimmers A10, A1 and A4.

### MODELS 318 AND 447

#### I. F. TRIMMERS.

Connect an I. F. test oscillator to the 1st-detector tube by means of the I. F. coupling unit shown in Fig. 1. Adjust oscillator to 472½ KC. Connect a sensitive output meter to the set. Use the weakest possible oscillator signal that will give a reading on the output meter with the radio volume control on full.

Put balancing unit A (shown in Fig. 2) across trimmer A19 and peak A20.

Put unit A across A20 and peak A 19.

Put unit A across A17 and peak A18.

Put unit A across A18 and peak A17.

Put unit A across A15 and peak A16.

Put unit A across A16 and peak A15.

Remove the I. F. coupling unit and balancing unit and seal the I. F. trimmers.

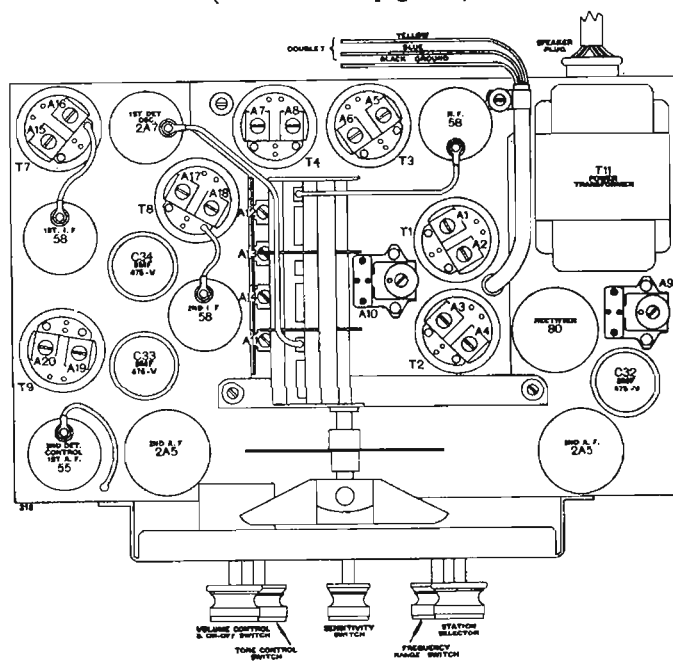
#### R. F. TRIMMERS.

Connect an R. F. test oscillator to the antenna and ground terminals of set. Use the weakest possible oscillator signal that will give a reading on the output meter. Loosen the trimmer screws for the frequency range or ranges that are to be re-adjusted.

*12 to 22.5 MC range.* Oscillator at 18 MC, dial pointer at 18 MC, peak trimmers A13, A4 and A8.

*4.6 to 12.2 MC range.* Oscillator at 12 MC, dial pointer at 12 MC, peak trimmers A14, A2 and A6 for maximum output.

(Continued on page 15.)



#### R. F. TRIMMERS ON MODELS 318 AND 447

	12-22.5 MC Range	4.6-12.2 MC Range	1.6-4.6 MC Range	540-1600 KC Range
R. F.	A4	A2	A3	A1
1st-Detector	A8	A6	A7	A5
Oscillator	A13	A14	A12	A11
Tracking	None	None	A10	A9

The I. F. trimmers are A15 to A20, inclusive.

## ATWATER KENT RADIO

### ADJUSTING TRIMMER CONDENSERS (Contd.)

*1.6 to 4.6 MC range.* Oscillator at 4 MC and dial pointer at 4 MC, peak trimmers A12, A3 and A7. Tune oscillator to 1.7 MC, and with dial pointer at 1.7, peak A10. Repeat adjustments on A12 at 4 MC and A10 at 1.7 MC if necessary.

*Broadcast range.* Oscillator at 1500 KC and dial pointer at 1500 KC mark, peak trimmers A11, A1 and A5. Tune oscillator to 560 KC, turn dial pointer to 560 KC mark, and peak A9. Repeat adjustments on A11 at 1500 KC and A9 at 560 KC if necessary.

### MODEL 944

#### I. F. TRIMMERS.

Connect an I. F. test oscillator to the 1st-detector by means of the I. F. coupling unit shown in Fig. 1. Adjust the I. F. oscillator to 450 KC. Connect a sensitive output meter to the set. Use the weakest possible oscillator signal that will give a reading on the output meter, with the condenser A5 turned well out in counter-clockwise direction (when facing rear of chassis). Peak the I. F. trimmers A3 and A4 for maximum output. Now turn the regenerative control condenser "in" (clockwise from rear of chassis) until a "squeal" or audio howl indicating oscillation of the I. F. stage, then back off about one-quarter turn, or until the audio howl stops. The adjustments of the I. F. trimmers should again be checked for peak—*i. e.*,

the peaking procedure and adjustment of the regenerative condenser should be repeated until maximum output is obtained.

#### R. F. TRIMMERS.

Check the dial setting by turning the gang condenser to maximum position and observing, by means of steel scale held vertically over the condenser shaft axis, whether the 540 KC mark on the dial is perpendicular to a line along the top of the condenser frame in back of the dial. Connect an R. F. oscillator to the antenna and ground terminals of the set. Use the weakest possible signal to give a reading on the output meter. Loosen the trimmer screws. Tune the oscillator to 1500 KC and turn the tuning knob of the set to a dial mark half way between 140 and 150 and perpendicular to a line along the top of the condenser frame. (Determined as explained in setting dial at 540 KC.) Peak the trimmers A1 and A2 for maximum output. Retune oscillator and set to 1100 KC and check regenerative condenser A5 adjustment for maximum sensitivity—*i. e.*, one-quarter turn below audio howl. If oscillation occurs at any other point on the dial after the above adjustments, it will be necessary to again turn back a fraction of a turn on the condenser A5.

*Note.*—1st-detector grid clip must be inside of shield can when adjusting the R. F. trimmers.

## PARTS LIST

MODEL 145	MODEL 145 (Contd.)	MODEL 145 (Contd.)
28839 Cabinet less screen .....	T3 39840 Oscillator T. ....	<b>SOCKETS</b>
27906 Screen .....	T4 27789 No. 1 I. F. T. ....	24494 6 prong .....
27945 Escutcheon and crystal assem. ....	T5 27791 No. 2 I. F. T. ....	24492 4 prong .....
27388 Crystal .....	T6 28621 Output T. ....	21336 Speaker .....
27431 Var. cond. assem. ....	T7 25191 Power T. ....	26111 7 prong .....
27692 Tuning gear .....	<b>RESISTORS</b>	
27574 Dial plate holder .....	(For tubular resistors see page 19.)	
27947 Dial pointer holder .....	R6 28950 Flexible, 160 Ω .....	<b>MODEL 145 SPEAKER</b>
27522 Dial pointer .....	<b>CONDENSERS</b>	42100 Complete speaker .....
27535 Pointer screw .....	(For tubular condensers see page 18.)	28619 Diaphragm assem. ....
27523 Dial plate .....	C1 25035 .006 MF, blue, blk. and red .....	28621 Output trans. (T6) .....
24323 Power trans. cover .....	C3 27650 8 MMF .....	28622 Field coil .....
25056 I. F. T. shield .....	C4 33670 250 MMF, 500-V., mica .....	28623 Choke coil (CK1) .....
27485 Range switch .....	C7 33930 25 MMF .....	
19566 110 V. cable .....	C8 39660 730 MMF .....	<b>MODEL 325</b>
40090 Pilot light assem. ....	C10 33670 250 MMF, 500-V., mica .....	(For parts not listed below refer to
28827 Dial lamp socket .....	C10A 33670 250 MMF, 500-V., mica .....	Model 145.)
26526 Ferrule and bushing .....	C18 22538 8 MF, 475 V. ....	27985 Bottom plate .....
26524 Spring .....	C19 27585 8 MF, 350 V. ....	27946 Escutcheon and crystal assem. ....
22683 Tube shield .....	<b>TRIMMERS</b>	28535 Dial plate .....
28281 Front and back plate assem. ....	A4 39630 Rear .....	40140 R. F. choke (CK2) .....
28594 Tuning shaft assem. ....	A5,6 32880 T4 .....	27865 Shipping container .....
22657 Dial rubber and bushing .....	A7 36570 T5 .....	
25058 I. F. T. shield cover .....	A8 38890 Front .....	<b>MODEL 325 SPEAKER 41800</b>
27676 Pilot lamp, 2.5 V. (frosted) .....	<b>CHOKES</b>	27661 Cone housing .....
27425 Vol. control, .5 U .....	CK1 28623 On speaker .....	25525 Choke (CK1) .....
39620 Tone control switch assem. ....	CK2 40140 R. F. choke .....	21260 Field coil .....
28192 Shaft and blade for above .....		20737 Diaphragm .....
27562 Inst. sheet, F-1149 .....		20657 Cable and plug assem. ....
27867 Shipping container .....		18582 Plug only .....
<b>TRANSFORMERS</b>		19469 Segment .....
T1 39820 No. 1 R. F. T. ....		
T2 39830 No. 2 R. F. T. ....		

## ATWATER KENT RADIO PARTS LIST

### MODEL 206

28834	Cabinet less screen
27908	Screen
27944	Escutcheon and crystal assem.
27388	Crystal
27432	Var. cond. assem.
27692	Tuning gear
27514	Spacer
27959	Screw
28281	Front and back plate assem.
28594	Tuning shaft assem.
22657	Dial rubber
27574	Dial plate holder
27947	Dial pointer holder
27522	Dial pointer
27685	Dial plate
25377	Bushing under var. cond. assem.
28422	Plate under var. cond. assem.
24323	Power trans. cover
25056	I. F. T. shield (early)
27781	Osc. trans. shield
27543	R. F. T. shield
27887	R. F. T. shield insulator
40090	Pilot light assem.
27676	Pilot lamp, 2.5-V. (frosted)
27602	Range switch
25058	I. F. T. shield cover without hole
25059	I. F. T. shield cover with hole
25601	Rubber grommet
39620	Tone control switch assem.
28192	Shaft and blade for above
27425	Vol. control, .5 U
27559	Inst. folder, F-1146
27862	Shipping container

#### TRANSFORMERS

T1	40880	No. 1 R. F. T.
T2	41160	No. 2 R. F. T.
T3	41170	Oscillator T.
T4	*28161	No. 1 I. F. T. (EARLY)
T5	*28162	No. 2 I. F. T. (EARLY)
T6	21672	Output trans.
T7	28084	Power trans.

\* Early style with cylindrical shield. In later sets No. 1 I. F. T. complete with trimmers and shield is No. 28527, No. 2 I. F. T. is No. 28528.

#### RESISTORS

(See table on page 19.)

#### CONDENSERS

(For tubular condensers see page 18.)

C3	33930	25 MMF, 500-V.
C4	40380	2200 MMF
C5	40390	360 MMF
C6	*27598	3700 MMF
C11	33670	250 MMF, 500-V.
C12	33670	250 MMF, 500-V.
C18	27592	4-8-10 MF
C19	22538	8 MF, 475-V. (yel. paint)
C20	23250	.01 MF, line cond.

\* In late sets C6 is No. 27599, 5700 MMF, green, violet and red.

#### TRIMMERS

A1-2	39430	On T1
A3-4	39430	On T2
A5	38890	Rear of chassis on bottom

### MODEL 206 (Contd.)

A6-7	32880	On T4
A8	40610	On T5
A9	40450	Next to A10
A10	39630	Front of chassis along-side of var. cond.

#### CHOKES

CK1	28163	On No. 2 I. F. T.
CK2	25525	On speaker

### 206 SPEAKER No. 41900

25525	Choke (CK2)
28345	Cable and plug
15079	Plug
21672	Output trans. (T6)
19465	Diaphragm
21260	Field coil (1200 Ω)

### MODEL 376

For parts not listed below refer to Model 206.

28517	Base plate
28531	Escutcheon and crystal
27559	Inst. sheet, F-1146
28756	Shipping container

### 376 SPEAKER No. 41800

25525	Choke (CK2)
21260	Field coil (1200 Ω)
20737	Diaphragm
20657	Cable and plug
18582	Plug
19469	Segment

### MODEL 559

27287	Var. cond. assem.
25601	Rubber grommet
27301	Washer
22649	Screw
27286	Range switch
27272	Crank arm
35380	Reflector assem.
27958	Front panel assem.
27321	Vol. control, .5 U
27314	Vol. cont. mtg. bracket
25558	Vol. cont. cover
27289	Tone cont. switch
27317	Mtg. bracket for above
38740	Sensitivity switch assem.
27628	Shaft and blade for above
27472	Antenna jumper
25913	R. F. coil shield
25056	I. F. T. shield
26255	I. F. T. shield insul.
25058	I. F. T. shield cover without hole
25059	I. F. T. shield cover with hole
18534	Fuse
27057	Bottom cover
22683	Tube shield
23743	Aux. tube shield
27334	Tone cont. cond. clamp
27249	Mica for trimmers on strips
17109	Screw for above
17064	Insul. washer for above
27072	Station directory, F-1131
27545	Inst. folder, F-1143
27683	Shipping container

### MODEL 559 (Contd.)

#### PARTS FOR TUNING ARRANGEMENT

27469	Dial gear
27276	Pointer arm
27254	Dial pointer
27332	Counter shaft gear (lge.)
27333	Idler gear (sml.)
27259	Gear screw
27957	Broadcast pinion gear
28116	Gear frame
27351	Screw (5/32" dia.)
27294	Tuning shaft
28016	Tuning bracket
27293	Detention spring
27298	Shaft spacer
27297	Bracket holding pin

#### TRANSFORMERS

T1	38310	No. 1 R. F. T., broadcast.
T2	38340	No. 1 H. F., 1st range
T3	38360	No. 1 H. F., 2nd range
T4	38380	No. 1 H. F., 3rd range
T5	38320	No. 2 R. F. T., broadcast.
T6	38330	Oscillator T., broadcast
T7	38350	No. 2 H. F., 1st range
T8	38370	No. 2 H. F., 2nd range
T9	38390	No. 2 H. F., 3rd range
T10	27448	No. 1 I. F. T.
T11	27449	No. 2 I. F. T.
T12	27451	No. 3 I. F. T.
T13	27452	No. 4 I. F. T.
T14	38610	A. F. input trans.
T15	21370	A. F. output trans.
T16	26395	Power trans.

#### RESISTORS

(For tubular resistors see page 19.)

R6	33230	Flexible, 2000 Ω
R7	33210	Flexible, 670 Ω
R17	33210	Flexible, 670 Ω
R21	24340	Flexible, 8000 Ω
R22	24340	Flexible, 8000 Ω
R24	25950	Flexible, 200 Ω
R26	17077	Flexible, 10 Ω
R27	31860	Dial light res., 1.0 Ω

#### CONDENSERS

(For tubular condensers see page 18.)

C6	22220	100 MMF, 450-V.
C7	25661	8 MMF, 500-V.
C8	25661	8 MMF, 500-V.
C9	27391	350 MMF (orange, green and brown)
C10	27389	1250 MMF (green, red and brown)
C11	34470	14 MMF, 500-V. (red paint)
C12	27392	4000 MMF (red, blk. and yel.)
C13	34470	14 MMF, 500-V. (red paint)
C25	39340	125 MMF
C26	39340	125 MMF
C27	35290	125 MMF
C36	23250	.01 MF, line cond., 450-V.
C37	22538	8 MF, 475-V.
C38	22538	8 MF, 475-V.
C39	22538	8 MF, 475-V.



## ATWATER KENT RADIO

## PARTS LIST

## MODEL 559 (Contd.)

## CHOKES

CK1	17015	R. F. plate choke
CK2	19210	R. F. plate circuit choke
CK3	19210	1st det. plate circuit choke
CK4	19210	2nd I. F. plate circuit choke
CK5	19210	R. F. 1st I. F. screen choke
CK6	36180	B filter choke

## TRIMMERS

38770	Single trimmer
32880	Double I. F. trimmer

## SOCKETS

24494	6 prong (58)
22733	6 prong (2a5-55)
22689	4 prong
21337	5 prong
18449	Fuse

## 559 SPEAKER No. 36500

34630	Field coil (625 $\Omega$ )
20737	Diaphragm
20657	Cable and plug assem.
21370	Output trans.

## MODEL 825

27731	Volume control, .5 U
28796	Cabinet complete
27902	Cloth screen
25865	Escutcheon window
27983	Escutcheon name plate
26283	Dial plate
24892	A. C.-D. C. switch
41050	Range switch
28805	Shaft and blade
41040	Tone control switch
28797	Shaft and blade
27593	Variable condenser

## TRANSFORMERS

T1	35450	No. 1 R. F. T.
T2	35460	No. 2 R. F. T.
T3	35470	Oscillator T.
T4	26326	No. 1 I. F. T.
T5	35910	No. 2 I. F. T.
T6	26501	Output A. F. T.

## RESISTORS

(For tubular resistors see page 19.)

R2	31830	Flexible, 250 $\Omega$
R8	19820	Flexible, 48 $\Omega$
R14	35820	Flexible, 12 $\Omega$
R15	31690	Iron core, 145 $\Omega$

## CONDENSERS

(For tubular condensers see page 18.)

C1	35590	500 MMF, 450-V., mica
C2	33670	250 MMF, 500-V., mica

## MODEL 825 (Contd.)

C3	35840	50 MMF, 500-V., mica
C4	35990	830 MMF, 100-V., mica
C9	23250	.01 MF, 450-V., paper
C14	26158	Triple dry electrolytic 14, 8 and 8 MF

## TRIMMER CONDENSERS

A4, 5	35650	Double I. F. trimmer
A6	35610	Single I. F. trimmer

## SOCKETS

26111	Socket (7 prong)
24494	Socket (6 prong)
24493	Socket (5 prong)

## MISCELLANEOUS PARTS

26706	Vernier shaft
26707	Vernier cap
26708	Ball bearing
26709	Trimmer screw
26711	Trimmer washer
27133	Trimmer mica
26323	T4 shield
21878	Shield disc
24327	T5 shield
26137	T5 shield insulator
24727	Antenna lead and card
26284	Dial light socket
16099	Dial lamp, 6-V.
26451	Tube shield
26014	Top shield
26324	Base cover
26017	Back plate
27563	Instruction and log card, F1150
27866	Shipping container

## SPEAKER

26159	Speaker complete
25603	Diaphragm assembly
26501	Output transformer
26502	Field coil
26503	Choke coil (CK1)

## MODEL 944

28773	Cabinet, less screen
27892	Screen
25213	Foot
27487	Escutcheon name plate
27936	Dial window
27935	Dial assembly
27433	Var. cond. assem.
28089	Vernier cap
28091	Ball bearing
28092	Cap spring
28093	Spring retaining screw
28094	Tuning shaft

## MODEL 944 (Contd.)

28095	Trimmer mica
25199	Pilot light socket and resistor
15404	Pilot lamp, 2.5 V.
24323	Power T. cover
28282	Side mounting angle plate
26312	C11 shield
27567	Vol. control, 20,000 $\Omega$
27095	R. F. shield
27597	I. F. coil shield
27724	I. F. coil shield insulator
27631	Tall tube shield
26451	Short tube shield
25059	I. F. T. cover with hole
25029	Four (4) contact terminal block
28075	Eight (8) contact terminal block
27564	Instruction folder, F-1151
27861	Shipping container

## TRANSFORMERS

T1	38990	No. 1 R. F. T.
T2	39010	Oscillator
T3	27486	No. 1 I. F. T.
T4	21672	Output T.
T5	25191	Power T.

## RESISTORS

(For tubular resistors see page 19.)

R11	20050	Flexible, 355 $\Omega$
R12	31860	Flexible, 1.0 $\Omega$

## CONDENSERS

(For tubular condensers see page 18.)

C3	33670	250 MMF, 500-V., mica
C4	35290	125 MMF
C11	22538	8 MF, yel. paint, 475-V.
C12	27584	4 MF, 350-V.
C14	23250	.01 MF, line cond.

## TRIMMERS

A3	38660	I. F. plate trimmer
A4	36570	2nd detector trimmer
A5	39090	Rear of set

## CHOKE

CK1	23657	On speaker
-----	-------	------------

## SOCKETS

24494	6 prong (1st det. and A. F.)
22733	6 prong (2nd det.)
24492	4 prong
25196	Speaker

## 944 SPEAKER No. 34100

18870	Field coil, 2,000 $\Omega$
21672	Output trans. (T4)
21161	Diaphragm
25179	Cable and plug
25308	Plug (3 prong)
23657	Choke

ATWATER KENT RADIO

**TUBULAR FIXED CONDENSERS**

(By Part Numbers)

Part No.	Value	Type†	Voltage	Superseded by	Code No. printed on late type condensers
24509	.01 & .01	IND.	200	31190	...
26550	.5	NI	200	.....	219
26660	.1	NI	200	.....	213
26820	.05	NI	200	.....	208
27234	.5	NI	200	26550	...
27434	.008, .03	IND.	450	.....	417
27619	.008, .02	IND.	450	.....	418
27630	.01	IND.	200	.....	203
28040	.005	IND.	200	.....	201
28130	.0005	IND.	450	.....	402
29030	.02	NI	450	.....	410
29530	.03	NI	200	.....	206
29890	.005	IND.	450	.....	408
29910	.015	NI	450	.....	414
30240	*250 MMF	IND.	450	33620	...
30250	.025	NI	450	.....	411
30670	250 MMF	IND.	450	33620	...
31140	250 MMF Double	IND.	450	33630	...
31150	.3	NI	100	.....	104
31160	.05	NI	100	.....	101
31190	.01 & .01	IND.	200	.....	220
31330	250 MMF Double	IND.	450	33630	...
31510	.5	NI	100	.....	105
31520	.2	NI	100	.....	103
31530	.1	NI	100	.....	102
31540	.001	IND.	450	33640	...
31890	.05, .05, .5	IND.	100	31920	...
31910	.1, .1, .2	IND.	100	31930	...
31920	.05, .05, .5	IND.	100	.....	110
31930	.1, .1, .2	IND.	100	.....	111
32350	.05, .05, .2	IND.	200	32390	...
32360	.05, .05, .05	IND.	100	32410	...
32370	.0022	IND.	450	33660	...
32390	.05, .05, .2	IND.	200	.....	222
32410	.05, .05, .05	IND.	100	.....	107
32420	.0022	IND.	450	33660	...
32750	.2, .1	IND.	100	.....	106
32760	.2, .1	IND.	100	32750	...
32810	.01	NI	450	.....	409
33620	250 MMF	IND.	450	.....	401
33630	250 MMF Double	IND.	450	.....	413
33640	.001	IND.	450	.....	403
33660	.0022	IND.	450	.....	405
34020	.05 & 250 MMF	IND.	200	.....	221
35420	.08	NI	200	.....	212
35760	.003	IND.	450	.....	407
35780	.2, .1, .05, .05, .05, .3	IND.	100	35790	...
35790	.2, .1, .05, .05, .05, .03	IND.	100	.....	108
35930	.25	NI	200	.....	215
36420	.02	IND.	200	.....	205
36440	.1, .1, .05	IND.	100	.....	109
36450	.05, .05, .005, .005	IND.	200	.....	223
36490	.05	NI	450	.....	412
36650	.0015	IND.	450	.....	404
36660	.0025	IND.	450	.....	406
36670	.007	IND.	200	.....	202
36680	.015	IND.	200	.....	204
36690	.04	NI	200	.....	207
36710	.055	NI	200	.....	209
36720	.065	NI	200	.....	210
36730	.07	NI	200	.....	211
36740	.2	NI	200	.....	214
36750	.27	NI	200	.....	216
36760	.3	NI	200	.....	217
36770	.4	NI	200	.....	218
38160	.03, .015, .008	IND.	450	.....	415
38260	.001, .004, .008	IND.	450	.....	416
39650	.004, .001	IND.	450	.....	419

**TUBULAR FIXED CONDENSERS**

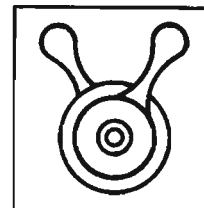
(By Code Numbers)

Code No. printed on late type condensers	Part No.	Value	Type†	Voltage
101	31160	.05	NI	100
102	31530	.1	NI	100
103	31520	.2	NI	100
104	31150	.3	NI	100
105	31510	.5	NI	100
106	32750	.2, .1	IND.	100
107	32410	.05, .05, .05	IND.	100
108	35790	.2, .1, .05, .05, .05, .03	IND.	100
109	36440	.1, .1, .05	IND.	100
110	31920	.05, .05, .5	IND.	100
111	31930	.1, .1, .2	IND.	100
201	28040	.005	IND.	200
202	36670	.007	IND.	200
203	27630	.01	IND.	200
204	36680	.015	IND.	200
205	36420	.02	IND.	200
206	29530	.03	NI	200
207	36690	.04	NI	200
208	26820	.05	NI	200
209	36710	.055	NI	200
210	36720	.065	NI	200
211	36730	.07	NI	200
212	35420	.08	NI	200
213	26660	.1	NI	200
214	36740	.2	NI	200
215	35930	.25	NI	200
216	36750	.27	NI	200
217	36760	.3	NI	200
218	36770	.4	NI	200
219	26550	.5	NI	200
220	31190	.01, .01	IND.	200
221	34020	.05, 250 MMF	IND.	200
222	32390	.05, .05, .2	IND.	200
223	36450	.05, .05, .005, .005	IND.	200
224	27234	.5	NI	200
401	33620	250 MMF	IND.	450
402	28130	.0005	IND.	450
403	33640	.001	IND.	450
404	36650	.0015	IND.	450
405	33660	.0022	IND.	450
406	36660	.0025	IND.	450
407	35760	.003	IND.	450
408	29890	.005	IND.	450
409	32810	.01	NI	450
410	29030	.02	NI	450
411	30250	.025	NI	450
412	36490	.05	NI	450
413	33630	250 MMF Double	IND.	450
414	29910	.015	NI	450
415	38160	.03, .015, .008	IND.	450
416	38260	.001, .004, .008	IND.	450
417	27434	.008, .03	IND.	450
418	27619	.008, .02	IND.	450
419	39650	.004, .001	IND.	450

\* In models where No. 30240 is used as a diode coupling condenser and mounted inside an I. F. transformer assembly, use No. 33670 (small mica type) for replacement. The No. 33620 condenser, which normally supersedes No. 30240, is too large for mounting inside the I. F. transformer shield.

**SMALL BUTTERFLY CONDENSERS**

(500 Volts)  
(Illustration is full size)



Part No.	Color	Angle Between Lugs	Rated Capacity
25661	Green	180°	8 MMF
34460	Bl'k	77°	10 MMF
34470	Red	123°	14 MMF
36220	Blue	123°	7 MMF
36230	Blue	123°	7 MMF
38280	Gray	123°	4 MMF

† Condensers designated as inductive (IND.) are constructed in such a way that the current must travel through one or more turns of the tin-foil plates in order to reach the ends of the plates. Such condensers have a slight inductive effect and are primarily used as low-frequency bypasses where the effect of this slight inductance is negligible.

Condensers designated as non-inductive (NI) are constructed in such a way that the current reaches the entire area of the plates without having to pass through any turns of the plates. Non-inductive condensers are used as high-frequency bypasses.

ATWATER KENT RADIO

1/3, 1/2, 1, and 2 WATT TUBULAR RESISTORS

(When replacing a tubular resistor, use a resistor of the same value and size)



These four illustrations are full size.

RESISTANCE IN OHMS	IDENTIFYING COLOR	1/3 WATT SIZE	1/2 WATT SIZE	1 WATT SIZE	2 WATT SIZE
165	Blue, Gray and Yellow	41330	—	—	—
200	Blue, Yellow and Red	—	37690	—	—
300	Maroon and Blue	—	37530	—	31490
425	Blue, Yellow and Green	—	37540	—	—
500	Blue, Red and Green	39790	—	32010	—
1,100	Black, Red and Blue	31480	—	—	—
1,500	Black and Green	37710	—	—	—
2,000	Blue	33250	—	—	—
2,500	Gray, Red and Green	39130	—	—	—
3,300	Green and Red	30380	26410	19346	—
4,000	Green and Blue	—	—	18049	—
5,000	Blue and Yellow	36430	28050	—	—
6,000	Purple	—	—	20151	28770
7,500	Yellow	—	—	15544	—
10,000	Maroon	30320	20950	15545	27210
12,500	Purple and Yellow	—	—	15941	—
15,000	Gray and Yellow	—	20960	22211	27220
	Gray and Green	—	—	21784	—
20,000	Black and Red	30390	23120	15891	28030
30,000	Gray	31840	20970	15285	29710
40,000	White	—	26160	16724	28750
50,000	Black, Yellow and Red	30330	—	22407	34340
65,000	Black	31980	21040	15592	—
100,000	Red and Blue	30340	20980	16282	28760
150,000	Black and Yellow	—	—	28864	—
250,000	Red and Yellow	31970	20920	19581	—
500,000	Black and Purple	30350	20930	19649	—
800,000	Red and Gray	—	23130	20223	—
900,000	Green and Yellow	—	23170	—	—
1,000,000	Blue and Gray	30360	21050	—	—
2,000,000	Green	30370	20940	15892	—

PARTS NUMBERS OF KNOBS

Model No.	Vol. Control knob	Station Selector, dial or tuning knob	Tone control knob	Frequency range switch knob	Silencing switch knob	Model No.	Vol. Control knob	Station Selector, dial or tuning knob	Tone control knob	Frequency range switch knob	Silencing switch knob
112	27728§	27728§	27494§	27358§	26571†	325	27496‡	{ 24278* 27498† }	27495§	26569§	.....
145	27496‡	{ 24278* 27498† }	27495§	26569§	.....	447	27728§	27728§	27494§	27358§	26571†
206	27496‡	{ 24278* 27498† }	27495§	26569§	.....	511	26569§	26569§	27495§	26571†	27495§
318	27728§	27728§	27494§	27358§	26571†	559	27728§	27728§	27494§	27358§	26571†
						825	27493‡	27493‡	26571†	26571†	.....
						944	27493‡	27493‡	.....	.....	.....

CABINET PARTS FOR CONSOLE SETS

25925	Wing nut	.....
21142	Washer	.....
27704	Clamp (small)	.....
25742	Clamp (large)	.....
25746	Clamp bolt	.....

COMPACT CABINET AND SCREEN NUMBERS

Model Number	Cabinet Less Screen	Cabinet With Screen	Screen
135-Z	.....	28831	27908
145	28839	.....	27906
206	28834	.....	27908
206-D	28834	.....	27908
447	28026	.....	27904
465-Q	.....	28832	27907
768-Q	.....	28629	27904
825	.....	28796	27902
944	28773	.....	27892

\* No. 24278 single knob (front).

† No. 27498 single knob (back).

‡ No. 28114 knob spring 012 tbb

§ No. 28115 knob spring 012 tbb

## DATA FOR CURRENT MODELS

The last figure in the model number indicates the number of tubes; for instance, Model 145 has 5 tubes; Model 511 has 11 tubes, etc. The letter "Q" indicates battery operation; the letter "D" indicates D. C. operation; the letter "Z" indicates 32-volt operation.

All models listed below have tone control, and all models with exception of 465Q and 655Q have automatic volume control. All models have dynamic speakers, with exception of battery sets, which have special magnetic speakers.

MODEL	TYPE	CABINET	POWER SUPPLY	L. F. FREQUENCY	PART NO. SPEAKER	LINE WAYS	OUTPUT WAYS	SHADOW TUNING	SILENCING ADJUSTMENT	FREQUENCY RANGE	TUBES							RECTIFIER	
											R. F.	1ST DET.	OSCILLATOR	I. F.	2ND DET. AVC.	1ST A. F.	2ND A. F.		3RD A. F.
112	All Wave	Console	110V, 60C	472½	36700	150	15	YES	YES	540-18000	58	58	58	58(2)	—2B7—	56	56(2)	2A3(2)	5Z3
145	Standard and Short Wave	Compact	110V, 60C	264	42100	60	3.3	NO	NO	540-1600 1.6-4.8 5.3-16		—2A7—	58	—2A6—	2A5				80
206	Standard and Short Wave	Compact	110V, 60C	472½	41900	80	3.3	NO	NO	540-1600 1.6-5.0 5.7-15.5	58	—2A7—	58	—2A6—	2A5				80
318	All Wave	Console	110V, 60C	472½	41600	120	6.6	YES	YES	540-22500	58	—2A7—	58(2)	—55—	2A5(2)				80
325	Standard and Short Wave	Console	110V, 60C	264	41800	60	3.3	NO	NO	540-1600 1.6-4.8 5.3-16		—2A7—	58	—2A6—	2A5				80
376	Standard and Short Wave	Console	110V, 60C	472½	43700	80	3.3	NO	NO	540-1600 1.6-5.0 5.7-15.5	58	—2A7—	58	—2A6—	2A5				80
447	All Wave	Compact	110V, 60C	472½	41700	90	3.3	YES	YES	540-22500	58	—2A7—	58(2)	—2A6—	2A5				80
511*	Standard and Short Wave	Console	110V, 60C	472½	36700	150	15	YES	NO	540-1600 5.5-15.5	58	—2A7—	58(2)	—2B7—	56	56(2)	2A3(2)	5Z3	
559	All Wave	Console	110V, 60C	472½	36500	120	6.6	YES	YES	540-18000	58	58	58	58(2)	—55—	2A5(2)			80
944	Broadcast	Compact	110V, 60C	450	34100	45	2.0	NO	NO	540-1720		—57—		57	2A5				80
465Q	Standard and Short Wave	Compact	2V	264	42900	**	1	NO	NO	540-1600 1.6-4.8 5.3-16		—1C6—	34	32	30	19			
655Q	Standard and Short Wave	Console	2V	264	43200	**	1	NO	NO	540-1600 1.6-4.8 5.3-16		—1C6—	34	32	30	19			
768Q	All Wave	Compact	2V	472½	43100	††	1	NO	NO	540-22500		—1C6—	34(2)	—30—	32	30	30(2)		
978Q	All Wave	Console	2V	472½	43200	††	1	NO	NO	540-22500		—1C6—	34(2)	—30—	32	30	30(2)		
206D	Standard and Short Wave	Compact	110V, DC	472½	43500	45	2	NO	NO	540-1600 1.6-5.0 5.7-15.5	78	—6A7—	78	—85—	43(2)				
376D	Standard and Short Wave	Console	110V, DC	472½	43600	45	2	NO	NO	540-1600 1.6-5.0 5.7-15.5	78	—6A7—	78	—85—	43(2)				
135Z	Standard and Short Wave	Compact	32V	264	42700	40	2	NO	NO	540-1600 1.6-4.8 5.3-16		—6A7—	78	—75—	43				6Z4
215Z	Standard and Short Wave	Console	32V	264	42800	40	2	NO	NO	540-1600 1.6-4.8 5.3-16		—6A7—	78	—75—	43				6Z4
825	AC-DC	Compact	110V, AC-DC	264	26159	50	1.0	NO	NO	540-1720†		—6A7—	39	—75—	43				25Z5

\* Model 511 has automatic tuning.

† Has switch to tune in the 2400 kilocycle police band.

\*\* "B" drain, 22 MA.

†† "B" drain, 25 MA.