COMPLETE MANUAL OF THE 45,000 CYCLE

SUPER HETERODYNE

DISTANCE
SELECTIVITY
SIMPLICITY

Theory and Practical Application

With Graphic Illustrations of Assembly Detail--So Simple That the Novice and Inexperienced May Understand and Easily Construct

Broadcast Station Directory and Log Record for 45,000 Cycle Super Receiver

PRICE $2.50

CONTENTS ON PAGE ONE

First Edition

W·H·A·

The Ideal Radio Receiver. That Most Sensitive of All Circuits Devised for Extreme Long Distance Reception With Small Loop Antenna and Dry Cell or Storage Battery Tubes

"All that could ever be desired in the way of satisfactory radio reception

for Best Results, be sure you get

The "Baldwin-Pacific"

45,000

CYCLE

SUPER-KITS

Leader Products of the Popular "Pacific" Line

Pacific "Quintet" Super-Het Kit $15.00

Molded Bakelite bases and tops on transformers; oscillator, special composition.

Pacific "Ranger" Super-Het Kit $20.00

An extremely attractive kit, beautifully finished with brilliant black crystalline trim over brass-shielded transformers. Genuine molded black bakelite bases and tops. Bakelite oscillator coupler with "double mount" feature.

Pacific "Rainbow" Super-Het Kit $20.00

The same highest grade materials used. Molded Bakelite and brass-shielded transformers. Bakelite double mount oscillator with heavy green silk covered windings. I. F. Transformers have rich maroon baked enamel trim. Filter transformer provides a decided harmonizing color contrast with its striking yellow baked enamel finish. The Pacific "Rainbow" is indeed all that its name implies for unsurpassed beauty in color combination to meet the various demand and advantages for that type of kit.

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"Pacific Quintet" Super-Het Kit

Consisting of 1 Pacific "Ranger" No. 30 Oscillator Coupler, 3 Pacific "Ranger" No. 25 Intermediate Frequency Transformers and 1 Pacific No. 20 "Ranger" Filter Transformer

U.S.S.Maryland.
Navy Yard Puget Sound Wash.
23 September, 1924.

The Baldwin-Pacific Co.
Pacific Building.
San Francisco, California.

Gentlemen:-

In reply to your query of recent date as to the perf--ormance of my "Pacific-Quintet" equipt SUPER-HETERODYNE set, you are advised as follows.

The set is very easily tuned, and extremely quiet in operation, despite the fact that it is located in a room where even the furniture is of metal, and on board a ship where all the machinery is electric driven.

As to its selectivity! I find no difficulty whatever in tuning out CKCK on 420 meters, and bringing in KPO on 423 meters. Or in tuning out KFHR on 283 meters, and tuning in KFSG on 278. This without any interference whatever, and without employing the directive qualities of the loop.

The following stations were received on loud speaker with this set during the past week, Sept 14 to 22.

KFHR	KPO	KFAE
KGO	KFKX	KFSG
KTW	KFOA	CFDC
KFPT	KMO	CNRC
KGB	KDKA	CNRW
WFAA	CFAC	CFQC
KGW	KHQ	KFBL
WOAW	KFI	CKCD
KLX	KHJ	CKCK.

While not an authority on radio sets in general, or the SUPER-HETERODYNE in particular, it is my belief that this circuit, employing your "Pacific-Quintet" kit in its construction, will bring to the reasonable individual, all that could ever be desired in the way of satisfactory radio reception.

Very truly yours.
C. H. Forth.
Lieut C.H.Forth.U.S.Navy.

The above letter is an example of many received certifying to the superior efficiency and marvelous performance of the Baldwin-Pacific Super-Kits.

Baldwin-Pacific & Company

Cable Address: "BALPACO"

Pacific Building

New Orleans
Whitney Central Building

St. Louis
1724 Olive St.

Detroit
1417 Vancouver

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Chicago
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Buffalo
73 W. Eagle St.

Indianapolis
336 Burgess Av.

45,000 Cycle Super Popularity Growing Rapidly

IF YOU have not already experienced the keen pleasure of hearing or operating the 45,000 cycle Super, let it now be briefly said that you have simply missed much of the greatest radio enjoyment to be had today. Thousands of enthusiasts are being rapidly added to the present huge number of owners who approve and recommend it with almost unlimited praise.

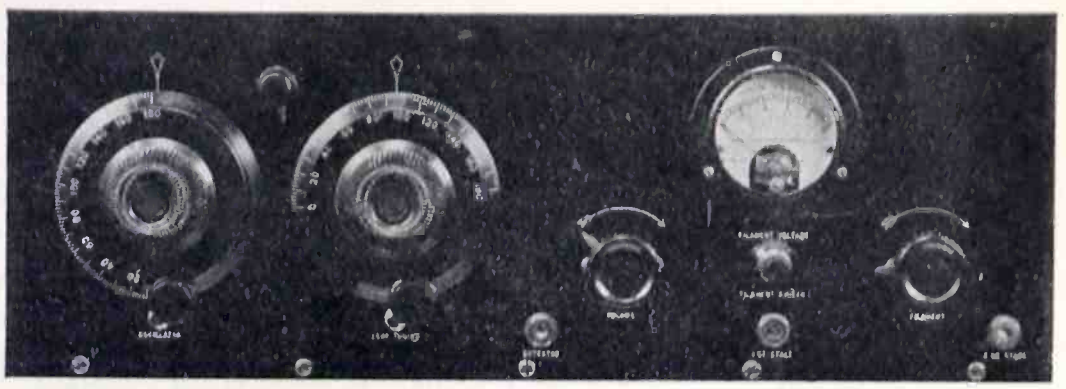
The ease with which long distance records are made through local high power broadcasting stations is only one feature of its proven superiority. Then there is that advantage of no outside aerials, antenna or ground connections which makes for portability if desired, only two dials to tune and no storage battery, unles you want it—dry cells were primarily adapted to this wonderful receiver.

And now, for those who get a kick from "building their own" any one of the splendid models shown may be easily assembled from the simple directions accompanying their description in this book. BUILD YOUR OWN—OR HAVE YOUR DEALER BUILD IT FOR YOU.

CONTENTS

Improved Model "A" 45,000 Cycle Super-Heterodyne

Revised Constructional Details for a Moderate Cost Receiver Unexcelled in Selectivity, Sensitivity, Operating Simplicity and Tone Quality and Practically Non-Radiating With a Loop



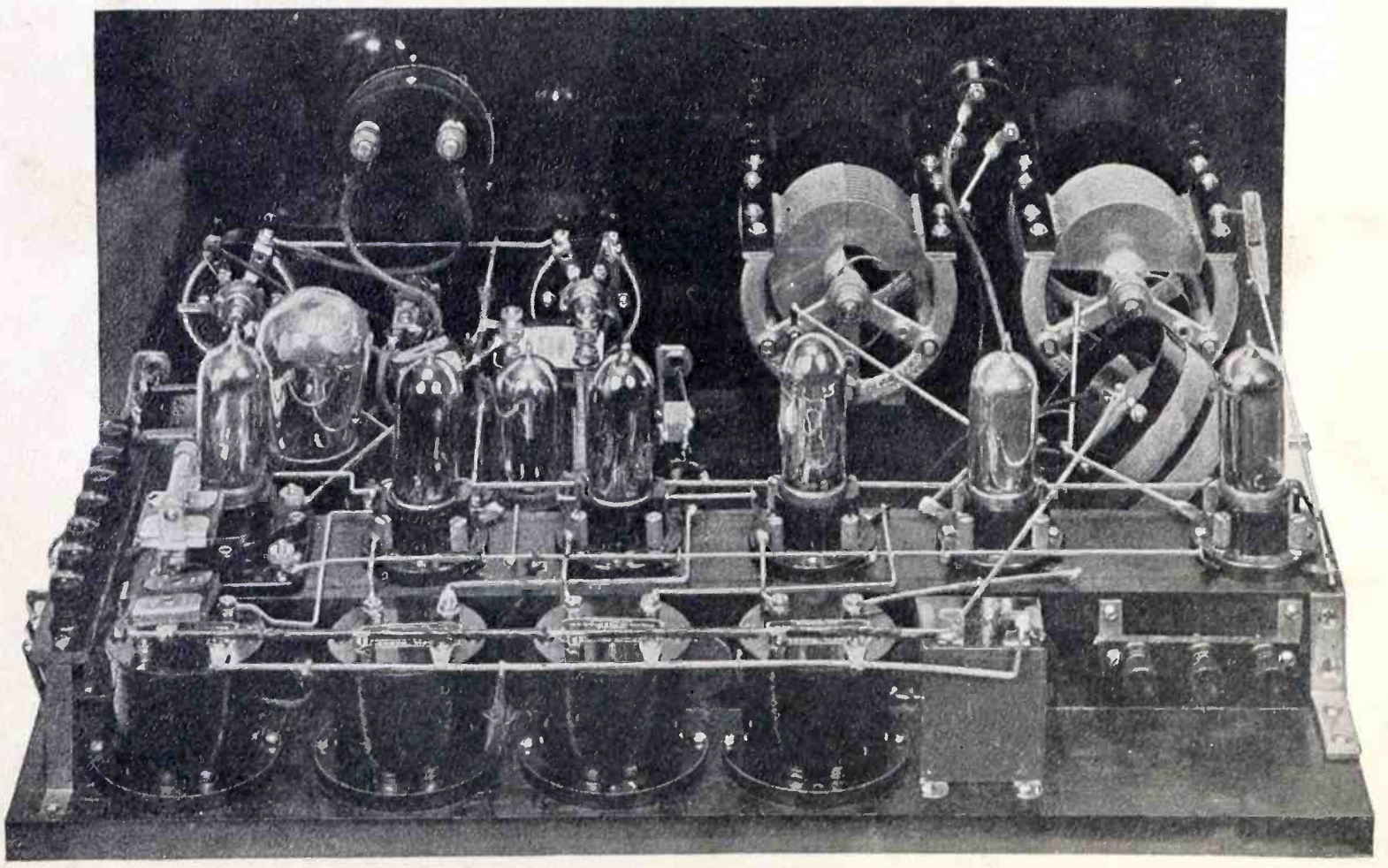
Panel Arrangement "Model A Improved"

EXPERIENCE in building the super-heterodyne receiver first described in May, 1924, RADIO, has demonstrated that an even more efficient set can be made with apparatus now available and by a slight rearrangement of the parts. This rearrangement consists principally in shortening the panel, arranging the apparatus in a smaller space, deepening the baseboard, and placing most of the tubes on a shelf, thereby shortening the connecting leads. The power output of the set is greatly increased by replacing the last stage of audio frequency amplification with a 201-A tube. No extra controls have been added, and the use of the *C* battery has been retained, since a practical method of eliminating it seems to be beyond the capabilities of most radio constructors.

Without going into the detailed theory of the super-heterodyne, it is desirable to describe briefly what takes place in the various parts of the receiver. The incoming frequency, which is intercepted by the loop or outdoor antenna, is fed into the first detector tube. This frequency varies from 600,000 to 1,500,000 cycles per second, depending upon the station wavelength.

As it is difficult to amplify this high frequency with the ordinary vacuum tube, due to inter-electrode capacity as well as other causes, some means of lowering the incoming frequency to a value somewhere within the range of efficient operation of the amplifier must be found. Hence, by introducing into the first detector tube an additional frequency, different in value from the incoming frequency, a third frequency, equivalent to the difference between the first two, is produced. This process is known as heterodyning, the word from which the circuit derived its name.

As successful multi-stage amplifiers are more easily constructed for frequencies below 100,000 cycles, this third frequency should be below that value. A careful analysis proved that the most satisfactory frequency lay between 40,000 and 50,000 cycles, leading to the



Rear View of "Improved Model A" Baldwin-Pacific 45,000 Cycle Super-Heterodyne

For prices on parts required to assemble receiving sets shown herein see page 25.

choice of 45,000 cycles as a desirable frequency for this set.

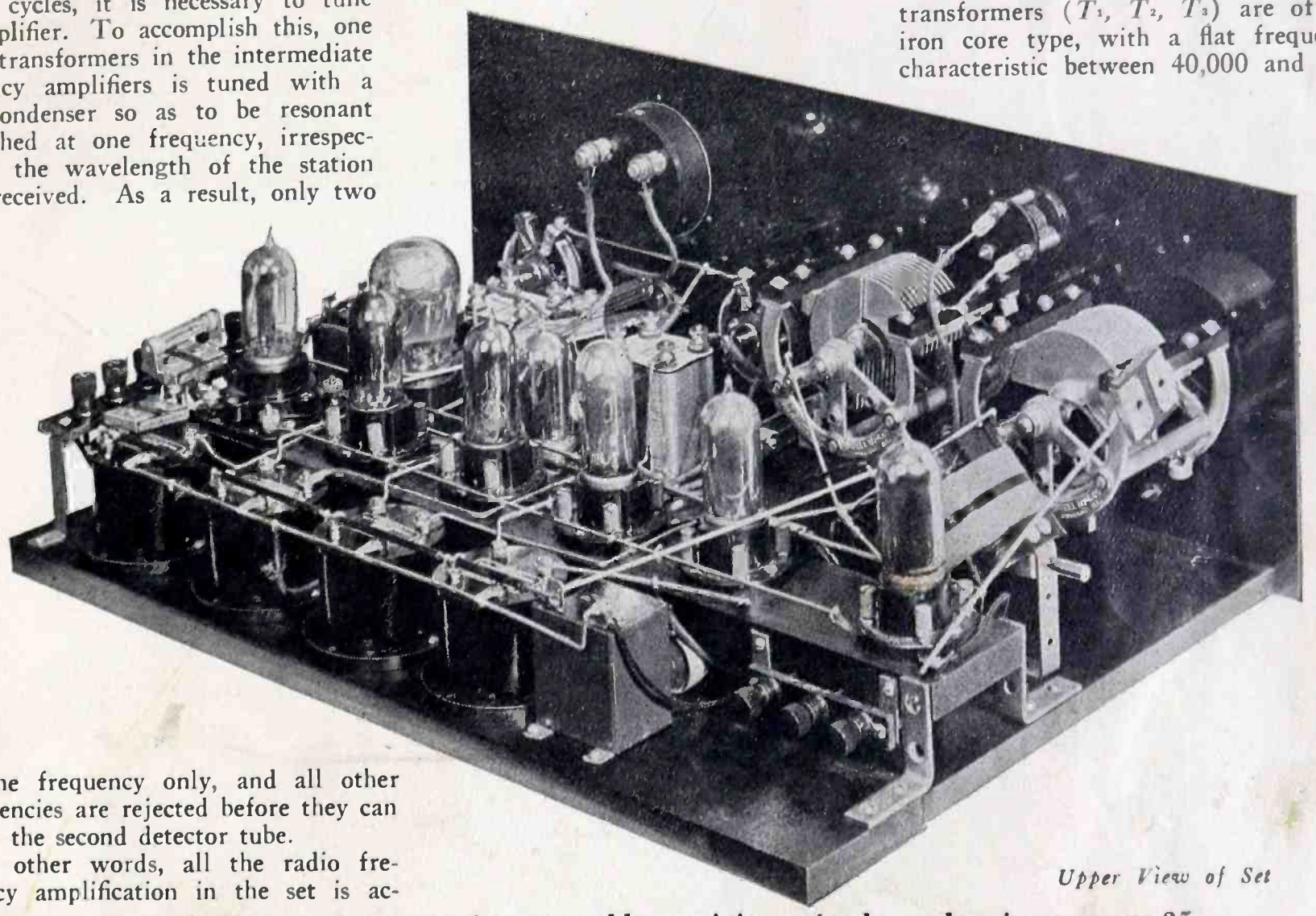
Therefore, assuming that the incoming frequency is 1,000,000 cycles, it is only necessary to set the oscillator, or generator of the second frequency, at 45,000 cycles above or below 1,000,000 cycles to produce a third frequency of 45,000 cycles. This frequency can then be amplified by three stages of transformer coupled amplification, finally passing into a second detector tube, where the voice or music superimposed on the carrier can be made audible, or further amplified by audio frequency stages.

In order to make the intermediate amplifier efficient at one frequency only, 45,000 cycles, it is necessary to tune the amplifier. To accomplish this, one of the transformers in the intermediate frequency amplifiers is tuned with a fixed condenser so as to be resonant complished at one frequency, irrespective of the wavelength of the station being received. As a result, only two tuning controls are necessary, one for the loop antenna and one to control the oscillator tube. One-control super-heterodynes have been designed, but they possess the disadvantage of being able to select only one point for the oscillator, for any given wavelength, whereas it is often very convenient to have the two settings of the oscillator, in order to avoid interference from other stations.

Theory of Circuit

Fig. 1 shows the schematic circuit diagram. It consists of four parts: (1) The local oscillator, for generating the second frequency, and the first detector, which receives the incoming frequency and mixes it with the locally generated frequency (marked *OSC* and *1st Det.* on circuit diagram); (2) Three stages of intermediate amplification, tuned to 45,000 cycles (marked IF_1, IF_2, IF_3 on diagram); (3) The second detector which makes the signal audible (*2nd Det.*); (4) The audio frequency amplifier permitting the use of a loud speaker (AF_1 *and* AF_2).

The set requires eight tubes, seven UV-199 or C-299 and one UV-201-A or C-301-A. The three stages of intermediate frequency amplification require four transformers which are efficient at 45,000 cycles, the fourth transformer (T_4) being of the tuned type, with an air core. The first, second and third transformers (T_1, T_2, T_3) are of the iron core type, with a flat frequency characteristic between 40,000 and 50,-



at one frequency only, and all other frequencies are rejected before they can reach the second detector tube.

In other words, all the radio frequency amplification in the set is ac-

Upper View of Set

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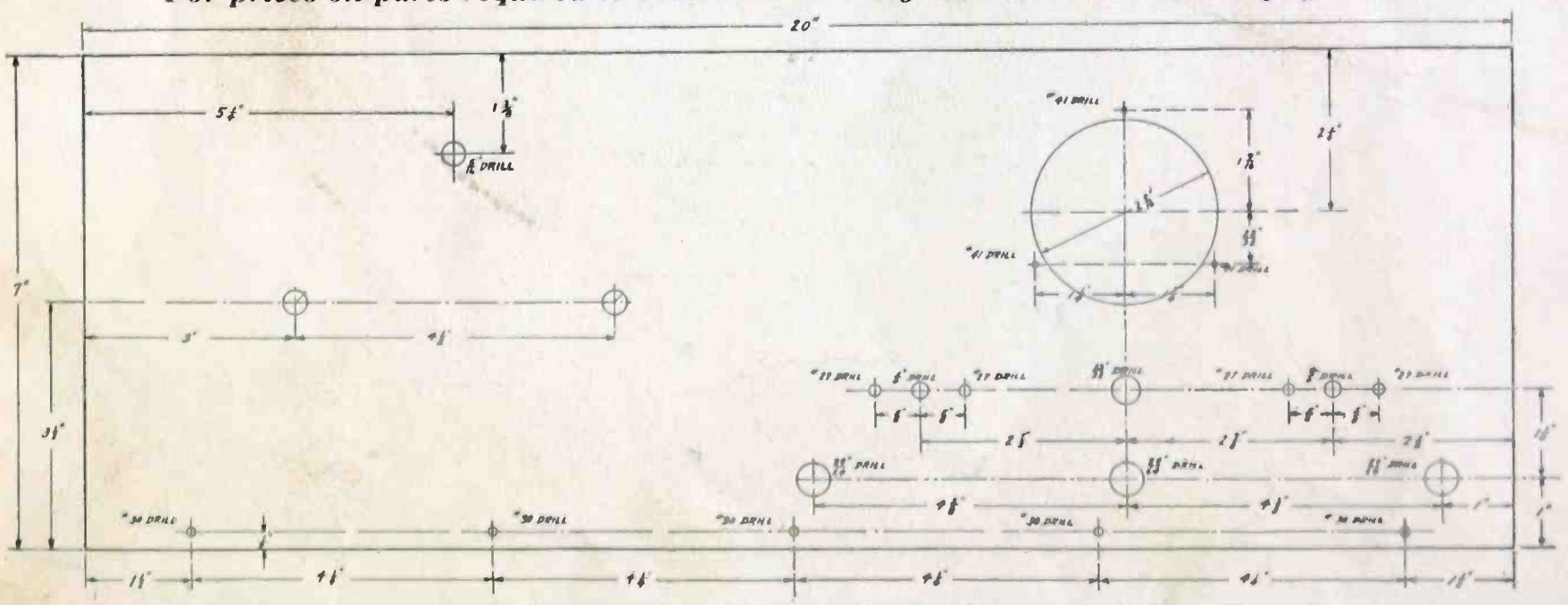

Specifications for Panel Layout of "Improved Model A" Baldwin-Pacific 45,000 Cycle Super-Heterodyne

Full Size Panel Template Sent Postpaid, 25 Cents

Improved Model "A" 45,000 Cycle Super-Heterodyne

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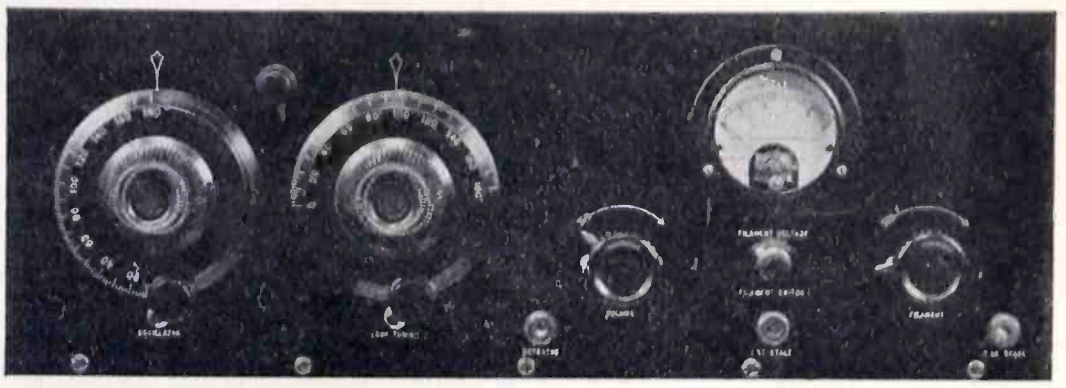

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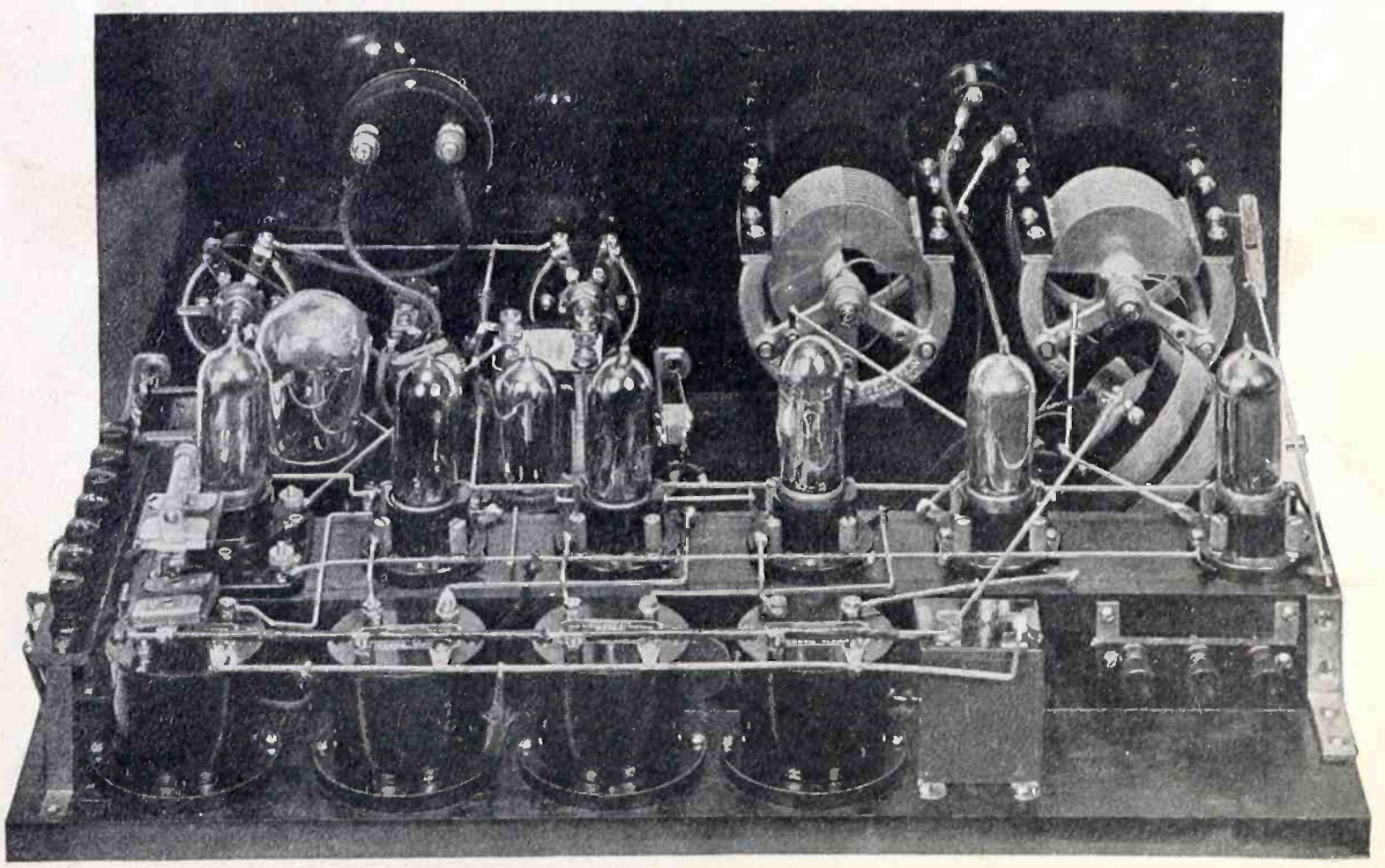

Rear View of "Improved Model A" Baldwin-Pacific 45,000 Cycle Super-Heterodyne

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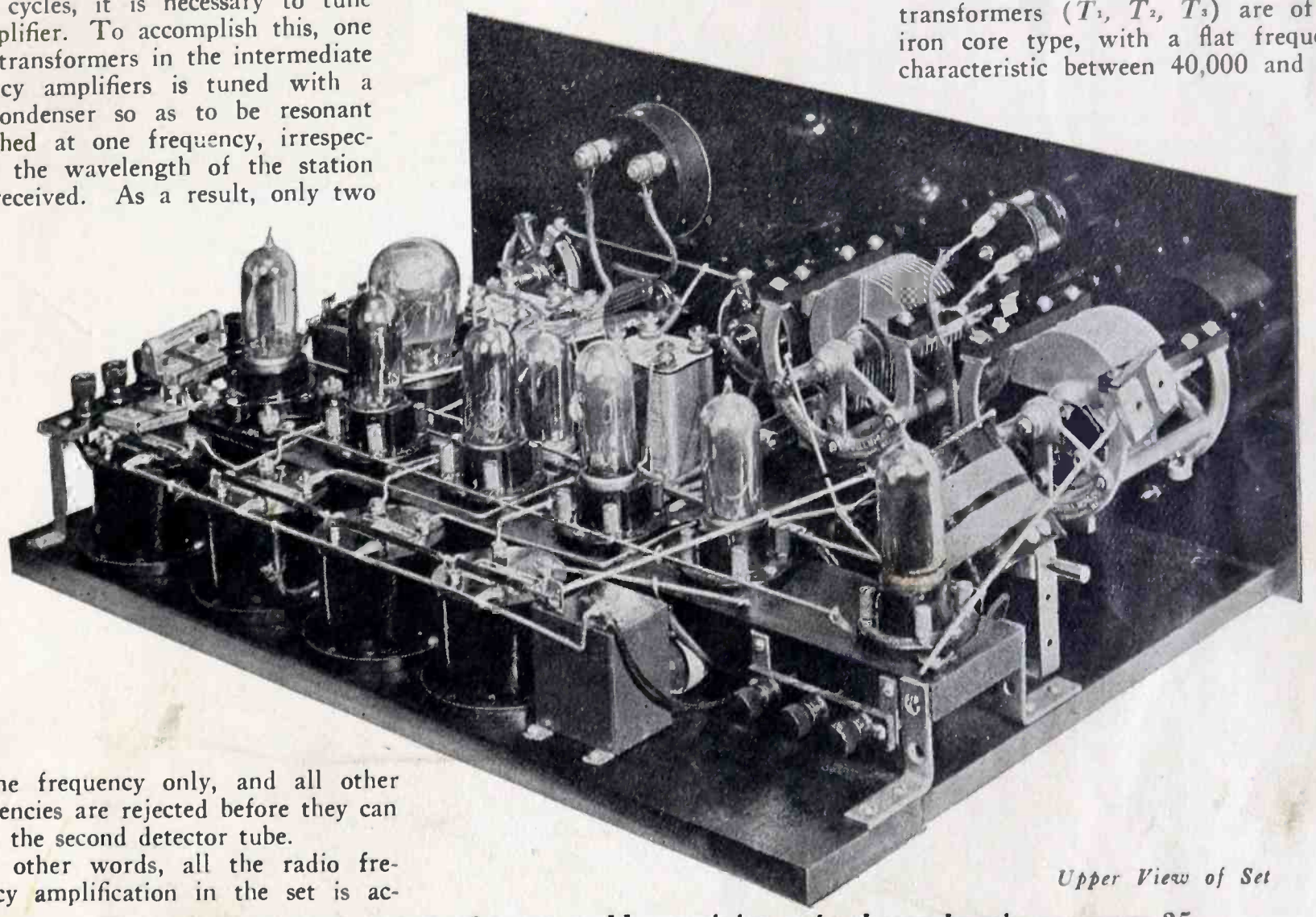

Upper View of Set

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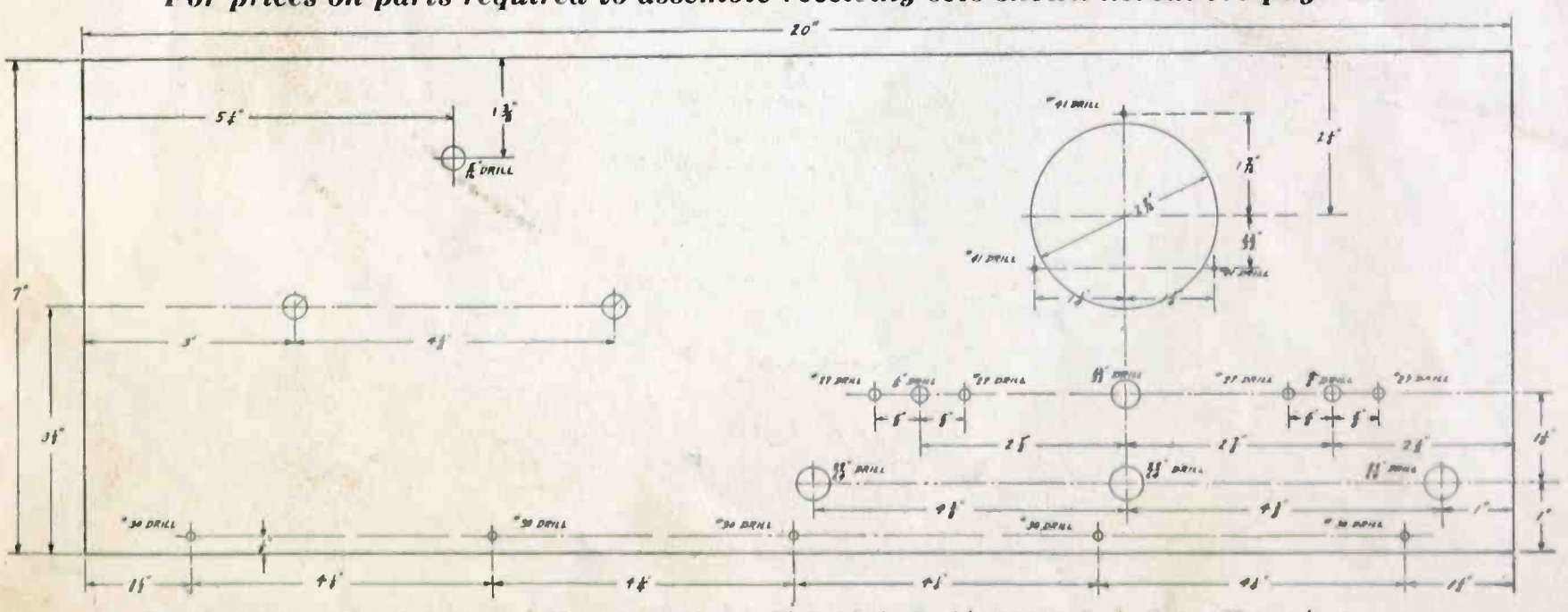


Specifications for Panel Layout of "Improved Model A" Baldwin-Pacific 45,000 Cycle Super-Heterodyne

Full Size Panel Template Sent Postpaid, 25 Cents

PARTS FOR 45,000 CYCLE MODEL "A" SUPER-HETERODYNE

No. Required	Part	Circuit Designation	Brand Used
3	Untuned I. F. Transformer	T_1, T_2, T_3	Baldwin-Pacific No. 25
1	Tuned I. F. Transformer	T_4	Baldwin Pacific No. 20
2	A. F. Transformer (2:1 ratio preferred)	T_5, T_6	Thordarson
2	Jack	JK_1, JK_2	Federal 1422W
1	Jack	JK_3	Federal 1435W
1	Oscillator-Coupler	L_1, L_2, L_3	Baldwin-Pacific No. 30
2	Rheostat	R_1	Federal 18
		R_3	Federal 23
2	Variable Condenser	C_1, C_2	Trans Atlantic
1	Midget Condenser	C_{10}	Chelton
5	Small Tube Socket		Flewelling 199
2	Small Tube Socket	Cushioned	Benjamin
1	Large Tube Socket	Last A. F.	Standard

No. Required	Part	Circuit Designation	Brand Used
1	Voltmeter	O-5	Weston 301
1	Jack Switch	Fil. SW.	Carter
2	2 mfd. Fixed Condenser	C_4, C_9	Kellogg 62
1	.006 " " "	C_3	Dubilier
2	.0025 " " "	C_5, C_8	Dubilier 640
1	.00025 " " "	C_6	Dubilier
1	.0005 " " " With grid leak mntg.	C_7	
1	Grid Leak	2 megohm	
1	Controlling Resistance	R_2	Amperite 1-A
10	Binding Post	Terminals	Eby
1	"C" Battery	1½, 6, 7½	Burgess 5540
1	Panel	7x20x3/16	Bakelite
1	Baseboard	10x19x½	

For prices on parts required see page 25.

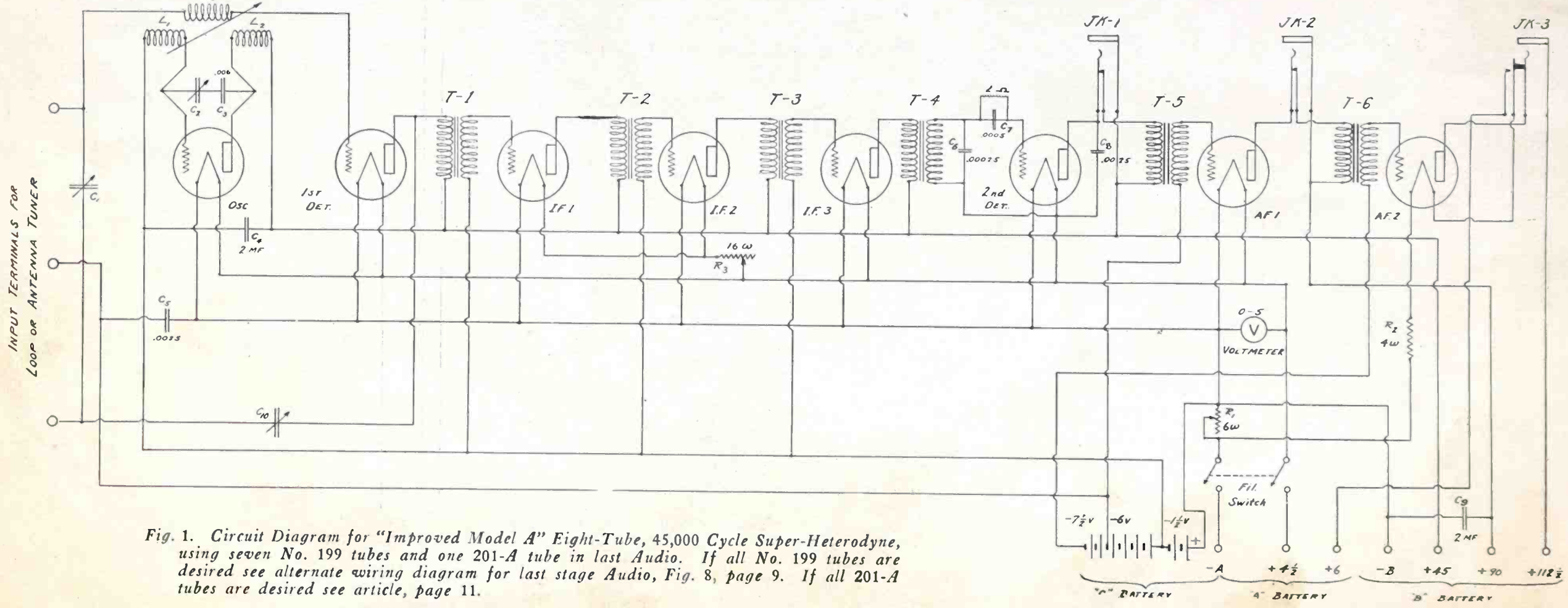
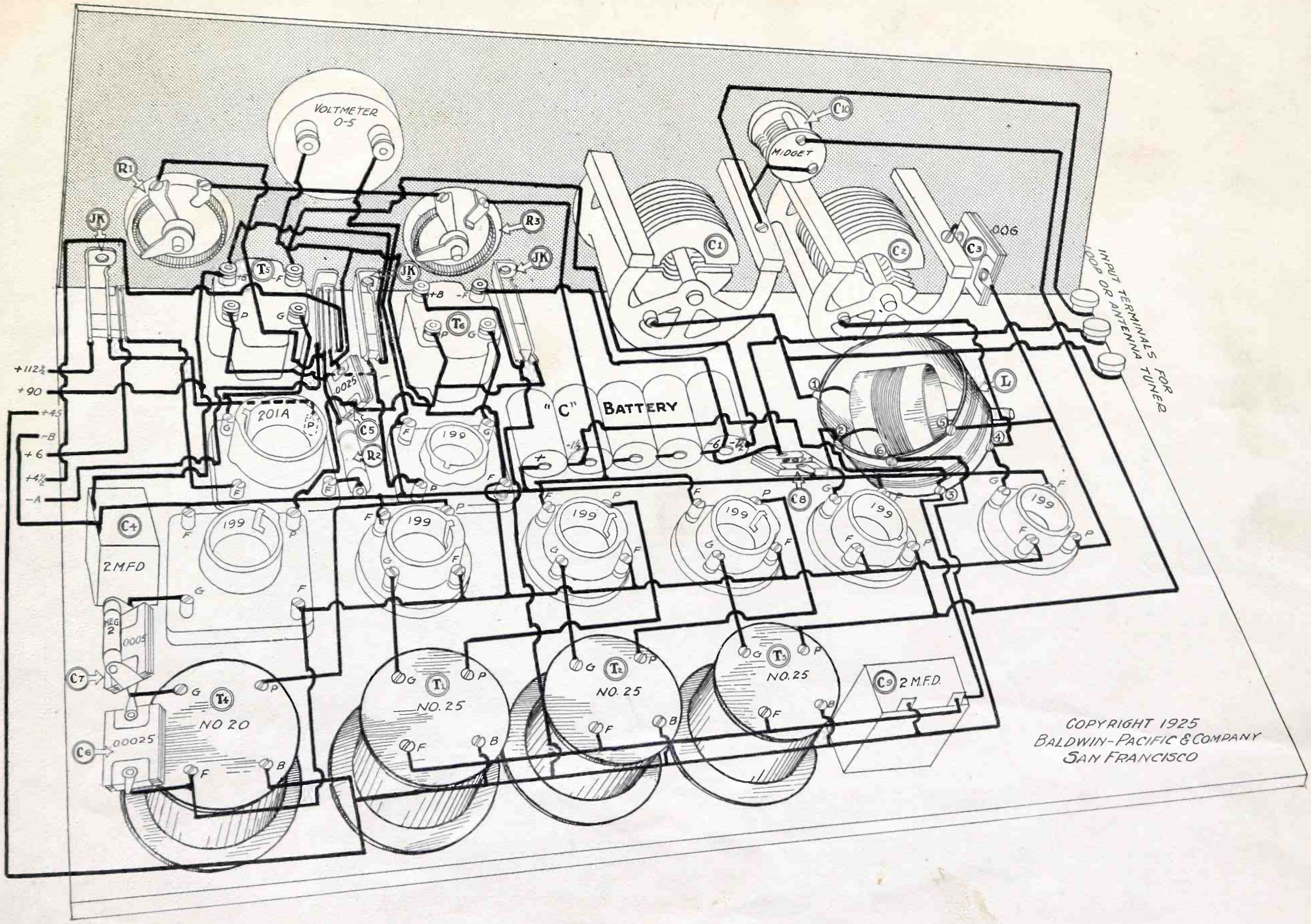


Fig. 1. Circuit Diagram for "Improved Model A" Eight-Tube, 45,000 Cycle Super-Heterodyne, using seven No. 199 tubes and one 201-A tube in last Audio. If all No. 199 tubes are desired see alternate wiring diagram for last stage Audio, Fig. 8, page 9. If all 201-A tubes are desired see article, page 11.

Pictorial Assembly and Wiring Detail of Baldwin-Pacific "Improved Model A" 45,000 Cycle Super Heterodyne Equipped with "Pacific Ranger" Super-Het Kit



000 cycles. In the audio stages, a low ratio transformer of good frequency characteristic should be used, in order to deliver good quality of signal at the output of the set.

L_1, L_2, L_3 is the oscillator coil system, which consists of two similar windings on a 2½-in. fiber tube, with a third winding arranged on a smaller tube so that it can be varied with respect to the first two windings. C_1 and C_2 are variable air condensers for tuning the loop and oscillator coil respectively. C_3 is in series with C_2 to prevent an accidental short circuit in C_2 from damaging the tube filaments. It does not affect the tuning of C_2. By-pass condensers C_4 and C_5 are used to localize the current in the oscillator and first detector circuits, the former also serving as a by-pass in the *B* battery circuit. These condensers should be mounted as close to the oscillator tube and coil as is possible, in order to prevent high frequency from getting into other parts of the set, with resultant broadness in tuning.

Condenser C_6 tunes the secondary of the last intermediate frequency transformer, which is of the air core type. C_7 is the grid condenser, and is shunted by a 2 megohm leak, although a high negative grid bias may be used instead of the grid condenser, if desired, as is done in the first detector tube.

In order to obtain stability of operation, and a reduction in noise, detection in the first detector is accomplished by biasing the grid with a 6-volt dry cell battery, so that the tube will operate at the bend in its plate current-grid volt age curve. The positive end of the 6-volt *C* battery is connected to the negative end of the filament, and the negative voltage is then fed through the loop and grid coil, to the grid of the tube. This procedure reduces the plate current almost to zero, and causes the tube to present a high impedance to the loop circuit, thereby improving the selectivity of the loop.

C_8 should be shunted across the primary of the first audio frequency transformer to by-pass the high frequency current present in the transformer. If this condenser is much below .0025 mfd. it will not by-pass enough of the high frequency, and if it is above .003 mfd. it will tune the transformer to some audio frequency and spoil the quality of the signal. C_9 should be either 1 or 2 mfd., and is used to by-pass audio frequency across the 90-volt *B* battery.

It should be noted that three *B* battery voltages are used, 45, 90 and 112½ volts. The negative end of the *B* battery is connected to the negative end of the filaments, between the tubes and the filament rheostat. This, in connection with C_3, obviates any chance of burning out the filaments of the tubes due to short circuits in the *B* battery wiring.

The filament rheostat, R_1, should be 6 ohm resistance, and is used to regulate the voltage of the seven 199 tubes. The 201-A tube in the last stage is regulated by the self-adjusting resistance unit R_3. The voltage regulation of the seven 3-volt tubes is indicated by a voltmeter, a necessity if tube life and battery economy is desired. The volume control rheostat, R_2 is 16 ohms, and is connected to the filaments of the first and second intermediate amplfiiers. A Carter jack switch is used in the *A* and −|−4½-volt leads, in order to open the filament circuits of both the 3 and 5-volt tubes.

It will be noted that no shielding is shown in the illustration, either on the back of the panel or between groups of apparatus. Some shielding may be necessary if the receiver is close to a high powered station, or if troublesome power lines are nearby. The best material to use is either sheet copper or brass of sufficient thickness to stay in place when tacked to the interior of the cabinet. A partition may also be desirable to separate the oscillator and first detector circuits from the rest of the set. In that case, a rather heavy piece of brass will be necessary, holes being drilled to pass the leads connecting the apparatus on each side of the shield.

Jacks are provided for the detector and both audio frequency tubes, in order that any combination of tubes may be used. A filament control jack is used in the last stage so that the "A" tube may be cut out when not needed.

The loop circuit involves the use of a center tap, in order to improve the directional balance of the circuit, and permit a slight amount of regeneration by means of a small condenser, C_{10}, ranging in value from 1 to 15 micro-microfarads. This regeneration reduces the loop resistance, thereby increasing the selectivity as well as the signal strength. It is not absolutely necessary to the success of the circuit, however, and may be omitted if desired. One side of the loop goes to the grid coil in the oscillator circuit, and the other side to C_5, while the center tap goes to the 6-volt tap on the *C* battery. The *C* battery should be in a central position, so that the leads from it will not be too long.

Description of Parts

The accompanying table gives a complete list of parts used in building the set here illustrated. No specific recommendation for any of these parts is implied, the list being made up from those most generally available at radio stores. The panel and base-board layouts are drawn for the parts actually used and should be modified to meet the dimensions of any alternative parts that may be used by those following these directions. There are undoubtedly other parts, not here listed, that will suffice. Using the most expensive parts listed, the total bill of material for the complete set will be about $80, exclusive of vacuum tubes and batteries.

To facilitate laying out the panel drilling and the apparatus on the base-board a full size drawing of the panel is available. (See page 3). Paste the template on the panel, and with a center punch mark the centers of the holes directly through the paper.

The panel layout shows drillings for the parts given in the first list, and if other parts are used, the template will not be correct. The hole for the voltmeter, however, will fit either the Weston or Jewell voltmeter. Where flat head machine or wood screws are used the holes in the panel should by countersunk.

The intermediate frequency transformers should be such as to give good amplification at 45,000 cycles, and the input impedance of each primary should approximate the output impedance of the tubes, an important consideration. The iron core construction of the untuned stages limits the stray field and permits of close spacing, without shielding. The tuned transformer should be of the same type as used in the set here illustrated if it is to operate with the fixed condenser specified in the circuit diagram. If another tuned transformer is used, it would be best to use a fixed condenser of the value specified by the manufacturer of the transformer in the circular accompanying the apparatus.

The audio frequency transformers, T_5 and T_6, should have a low turns ratio, preferably not over 2:1, and a well constructed core with plenty of iron. The various fixed condensers should be of standard manufacture, and in the case of C_6 should be very accurate.

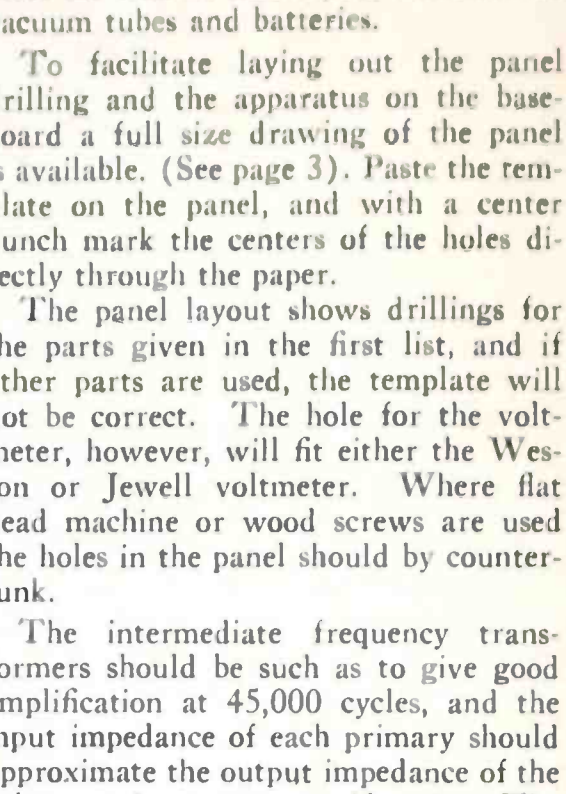


Fig. 2. Dimensional Drawing of Three-Tap Loop

For prices on parts required to assemble receiving sets shown herein see page 25.

For providing the various negative grid potentials the Burgess No. 5,540 7½-volt *C* battery is specified because it has enough taps to accomplish the desired results. The vacuum tube sockets should be of a good grade, and in the case of the second detector and audio stages, should be of the cushioned type, to avoid howling due to mechanical coupling between tubes.

The three-tap loop required has the dimensions given in Fig. 2. It is not necessary to use the exact type of loop shown. Several very good loops are now on the market, it usually being necessary with these to make an additional tap at the center of the loop to adapt it to the circuit. A swivel base is advisable so as to readily change the direction of the loop and take advantage of its directional properties. The loop should be wound with 12 turns of No. 18 lamp cord, or its equivalent. It is not necessary to use Litzendraht, as no advantage is to be gained at the radio cast wavelengths now used.

For those who wish to use an antenna with this outfit, the circuit diagram showing the additional apparatus needed is pictured in Fig. 3. The coupler consists of a standard 180-degree variocoupler, similar to the oscillator-coupler used in the receiving set. The antenna circuit should consist of a .0005 mfd. (23-plate) variable condenser, not necessarily of the vernier type, a 75-turn honeycomb or other compact inductance coil, and the rotor of the coupler. In order to prevent the reception of a large amount of noise, static and interference, it will be necessary to operate the antenna coupler at minimum coupling, doing most of the tuning with the antenna series condenser. It would be well to shield the inside of the box containing the antenna tuner so as to increase the selectivity. Many have tried grounding one side of the loop antenna, with good results, although the directional properties of the loop will be somewhat impaired. However, for remote districts where local interference is not known, this would certainly improve the signal strength on distant stations.

Assembly of Parts

On the baseboard, which is 10x19x½ in., lay out the various parts as indicated in the drawing, without fastening the panel to the board until all the assembly work, and some of the wiring, is completed. The additional template for the tube shelf will indicate the size of the fittings, and in Fig. 5, dimensions are given for the two brass legs necessary to support the shelf. It will be seen that mounting the sockets on the shelf will greatly shorten the leads to the transformers, as well as provide additional space underneath for other apparatus.

After drilling the panel, the two condensers, voltmeter, rheostats, Chelten condenser, rheostats, jacks and filament switch, may be mounted. As much of the wiring as possible should be completed before fastening to the baseboard.

The tube shelf should be mounted last, after all the connections to the apparatus underneath are run. The *C* battery is held in place by a piece of heavy copper wire fastened at each end by screws to the tube shelf. The bakelite strip for mounting the battery binding posts is indicated in Fig. 6, and is mounted at one end of the tube shelf with two wood screws. The fixed condensers may be screwed directly to the baseboard and shelf, with wood screws. Most condensers are now supplied with soldering lugs, making the work of soldering easy. Clips for mounting *C* are supplied with the transformer so

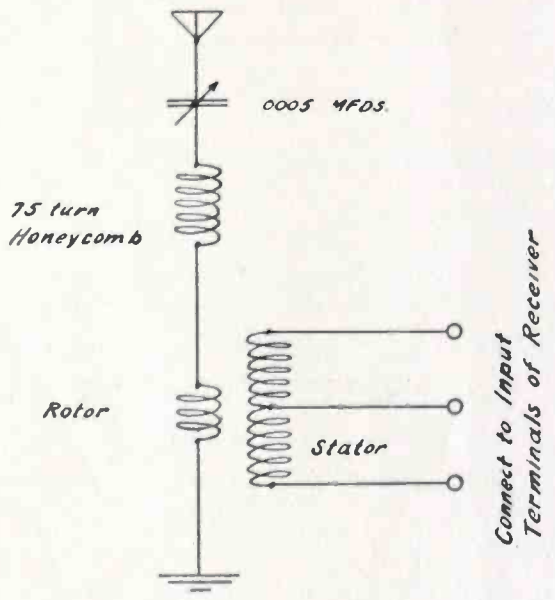


Fig. 3. Circuit Diagram of Antenna Adapter

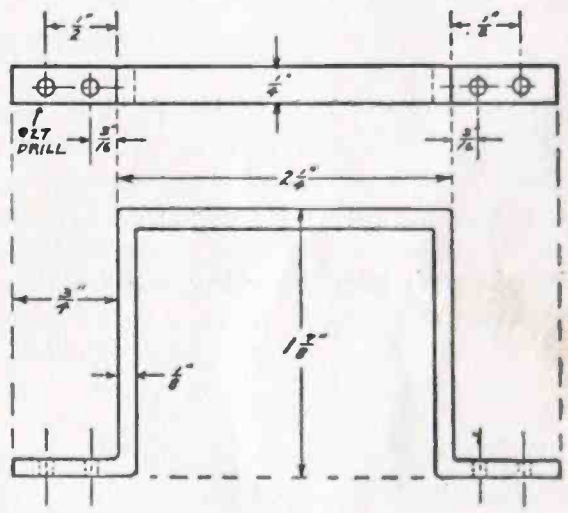


Fig. 5. Dimensions of Shelf Supports

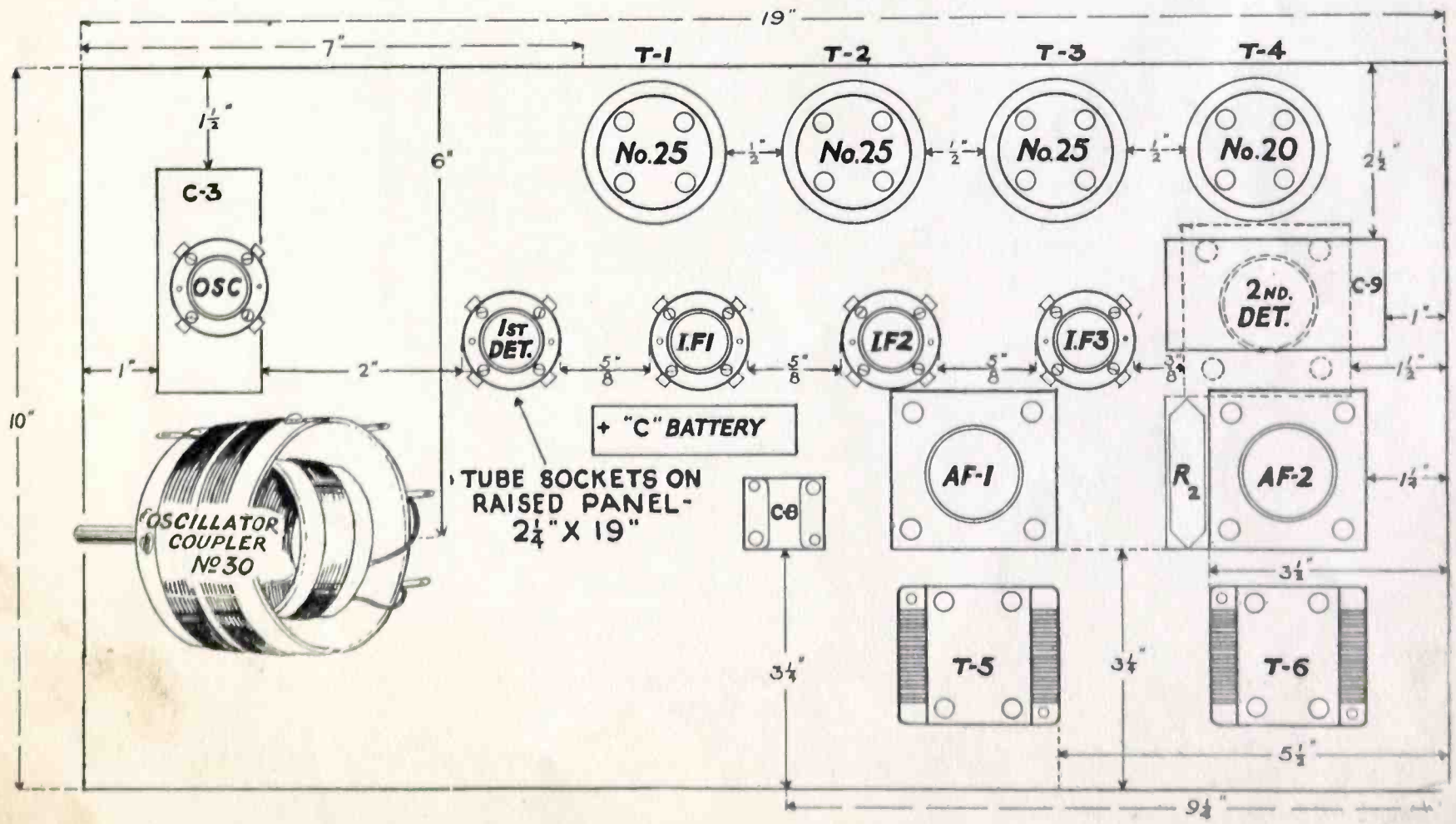


Fig. 4. Baseboard Layout "Improved Model A"

that it will be suspended directly alongside. The bakelite strip for mounting the three loop binding posts is shown in Fig. 7 and should be screwed to the tube shelf back of the oscillator and first detector tubes.

The use of No. 14 or No. 16 gauge tinned square wire is recommended, as the wiring will thus be rigid, and in most cases spaghetti will not be needed. In cases where it is apparent that some of the wires may touch, spaghetti insulation should be employed, but not otherwise. There will be rather long leads from the second detector tube to the first audio frequency transformer, and it is suggested that these leads be run in twisted pair, using a convenient size of twisted bell wire or other good insulated wire.

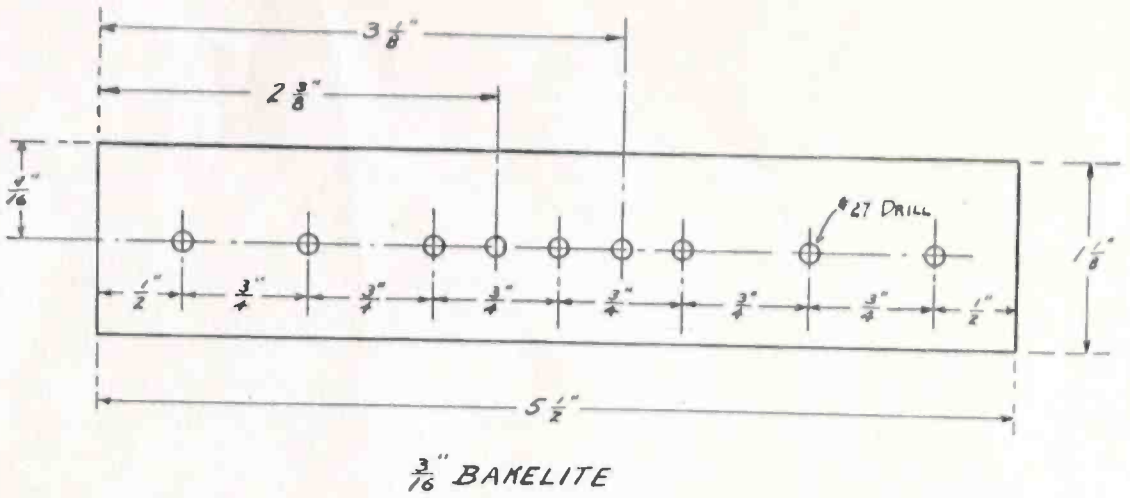


Fig. 6. Mounting for Battery Binding Posts

Testing the Set

After all wiring is finished, an accurate check of all connections should be made before inserting the tubes in the sockets or connecting the batteries.

Connect the loop or antenna coupler to the three binding posts at the left end on the rear of the baseboard, the center tap being connected to the center binding post. One of the outside loop terminals should be connected to the binding post and the other to the lower, the two connections being reversible without causing any change.

The *B* batteries should now be connected to the terminals, the battery consisting of two 45-volt units and a 22½-volt unit, the latter providing extra voltage for the last audio tube only. After connecting the batteries in series, connect the negative terminal to the binding post marked —*B*, bring out a tap at 45 volts, connecting the tap to -|-45 binding post and take out another tap at the second 45-volt point to provide 90 volts. The final tap, 112½ volts, goes to the binding post at the extreme end of the strip and should under no circumstances be allowed to touch any other part of the circuit.

After the *B* battery has been attached, plug in the phones or loud speaker in the last phone jack, turn on the filament switch and volume control rheostats, and watch the voltmeter for any deflection. If such deflection occurs, an error in the *B* battery wiring has occurred, and the trouble should be located and cleared before the tubes are placed in their sockets.

If no deflection of the voltmeter needle occurs, the *A* battery can be connected. This should consist of four dry cells, or more if a parallel arrangement is desired, the first three cells providing the necessary voltage for the 3-volt tubes and the fourth cell providing an additional 1½ volts for the C-301-A tube. Turn on the filament rheostat and see that the voltmeter reads 4½ volts. If it does, the wiring in the battery circuits is correct, and the tubes may now be inserted. If trouble appears, in the shape of a deflection of the needle off the scale, the *B* battery *is* crossed with the filament circuit somewhere, and the trouble must be located before inserting the tubes.

After mounting all the tubes in their sockets, turn on the filament rheostat, and adjust the voltage to 3 volts. Be sure to turn the volume control rheostat as far to the right as it will go when making the adjustment. Next it will be necessary to adjust the fixed resistance in 201-A tube. This tube should have a voltage of 5 across the filament, and as the battery will have a voltage of 6, a resistance of 4 ohms is necessary to cut the voltage to the correct value. The Amperite unit will provide this resistance automatically and needs no adjustment. An easy way to check the voltage is to disconnect the negative terminal of the voltmeter from the permanent lead running to it, and run temporary wires from this terminal to the lugs on the 201-A tube socket. This will enable the voltage to be read without an extra voltmeter.

Adjustment and Operation

If everything is found to be O. K. the necessary adjustments are now in order. These adjustments should be made when a good radiocasting station, located within 100 miles of the receiver, is in operation. In normal operation, tuning is accomplished by means of the loop and oscillator dials, the volume being controlled by the volume control rheostat. The rotor of the coupling unit and the condenser C_{10} are adjustable, but once set should not be further adjusted unless a change is made either in the loop or tubes used. Set condenser C_{10} so that the stator and rotor plates are not inter-spaced. Set the rotor of the coupling unit half way between the minimum and maximum coupling positions.

Turn the volume control to its highest position and set the loop condenser at a point near the zero setting, say 15 degrees. Slowly turn the oscillator dial back and forth, from zero to 25 degrees, at the same time listening for signals. If none are heard, change the loop condenser setting to 25 degrees, and slowly move the oscillator dial through an arc from 10 to 40 degrees. This process should be repeated until a station is heard, changing the setting of the loop condenser about 5 degrees each time and slowly turning the oscillator condenser from a point at least 10 degrees below the loop setting to 10 degrees above the loop setting. When tuning distant stations, the same procedure applies, except that it will be necessary to make loop

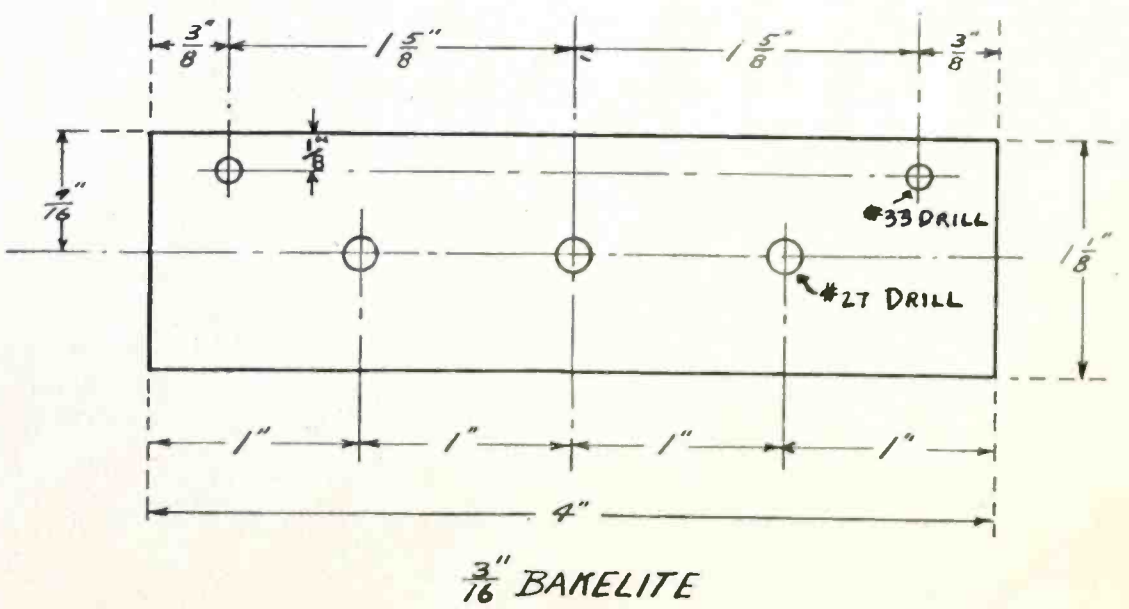


Fig. 7. Mounting for Loop Binding Posts

settings every two degrees or even less if the signal strength of the station to be received is weak.

When a station has been picked up, it will be noted that it can be received at two settings of the oscillator condenser, the lowest one on the dial being the adjustment of the oscillator that gives a beat frequency 45,000 cycles higher than the frequency of the incoming wave, and the upper dial setting being for a beat frequency 45,000 cycles lower than the incoming wave frequency. Signals should be received with about the same intensity for either setting, but often under conditions of interference from other stations, it will be found that one setting gives better results and less interference than the other.

If the volume from the station being received is too great, and distortion occurs, the volume can be lowered by cutting in resistance in the volume control rheostat. After one station has been received and the operator becomes familiar with the adjustment of the dials, others will be picked up more readily. Each time a station is heard the setting should be noted and marked for future reference. This is important not only for tuning in the same station at some other time, but to facilitate the location of stations whose wavelengths are known to be slightly above or below the station for which settings were recorded.

When a station at least 1,000 miles distant has been tuned in, the rotor of the coupling unit should be adjusted to as near a minimum position as is possible without causing a decrease in signal strength. Once this adjustment has been made, the rotor may be locked in place with the set screw provided for that purpose and need never be changed again throughout the life of the oscillator tube. When a new oscillator tube is used, it may be desirable to make the adjustment over again.

The adjustment of condenser C_{10} should be made while a station of low wavelength, between 200 and 300 meters if possible, is being received. After the station has been tuned in satisfactorily and the volume adjusted so that the signal is audible, the condenser capacity should be increased until the set oscillates and the signal is destroyed. Then back off the setting of the condenser until oscillation ceases and signals of good quality are being received, and the adjustment is complete. Do not further adjust the condenser for higher wavelengths, as the set will surely oscillate when it is again tuned to the lower wavelengths, and the condenser will have to be adjusted again. It is there only to reduce the loop resistance to a small value and should not be used as a tuning control. It would be far better to do away with the condenser altogether rather than forever be making adjustments with it, as it would surely prove a detriment rather than a benefit in the long run if that were the case.

If, after carefully following the instructions for tuning the circuit, no signals are heard, and at a time when local stations are known to be transmitting, a series of tests should be made to locate the trouble. Touch the grid terminal of the oscillator tube socket, and if the tube is oscillating a click will be heard in the phones when the finger touches the terminal and again when it is withdrawn. If it is not oscillating, the click will be heard only when the terminal is touched, and not when it is withdrawn. Failure of the tube to oscillate can mean that the oscillator coil connections are wired incorrectly, that the tube is defective, or that the socket springs are not making contact with the tube terminals.

If the set oscillates continually at most settings of the volume control rheostat, the condenser C_{10} may be set at too great a capacity value. One of the grid leads in the intermediate frequency amplifier may be open, or the *C* battery is not connected properly in the circuit. An open *C* battery will cause oscillation troubles, and is often hard to find. Try placing the positive terminal of the voltmeter, which has been disconnected from the circuit, to the positive *C* battery, and touch the negative terminal of the voltmeter in turn to the grid spring of each tube socket. If a deflection is noted, there is an open between the *C* battery and the tube, probably in the transformer. The same method should be used for checking out the filament circuit, in case some of the tubes do not light.

A howling in the audio frequency amplifiers is probably due to coupling between transformers. If transformers other than those specified are used, particularly the high ratio type, it would be advisable to connect the cores of the two transformers to the negative *A* battery.

In regard to difficulty due to the heterodyne oscillator's radiating energy through the grid coils and loop, no trouble will be experienced if the directions for adjusting the grid coil of the oscillator coupler are followed carefully. If an antenna tuner is added, the coupling between the antenna and secondary coils must be kept as loose as possible consistent with the proper signal strength. Otherwise, enough energy will be radiated to cause interference in nearby receivers.

Tests made with four of the improved sets installed in four separate rooms of an apartment disclosed the fact that with the grid coupling coils properly adjusted, no noise from the oscillator tubes in the four sets could be heard in any of the receivers and no other source of local interference was noted, either when the sets were all tuned to the same station or to different ones.

For those who do not wish to use the large tube in the last stage, an alternative arrangement in Fig. 8 gives the wiring diagram of the audio stages with 3-volt tubes throughout.

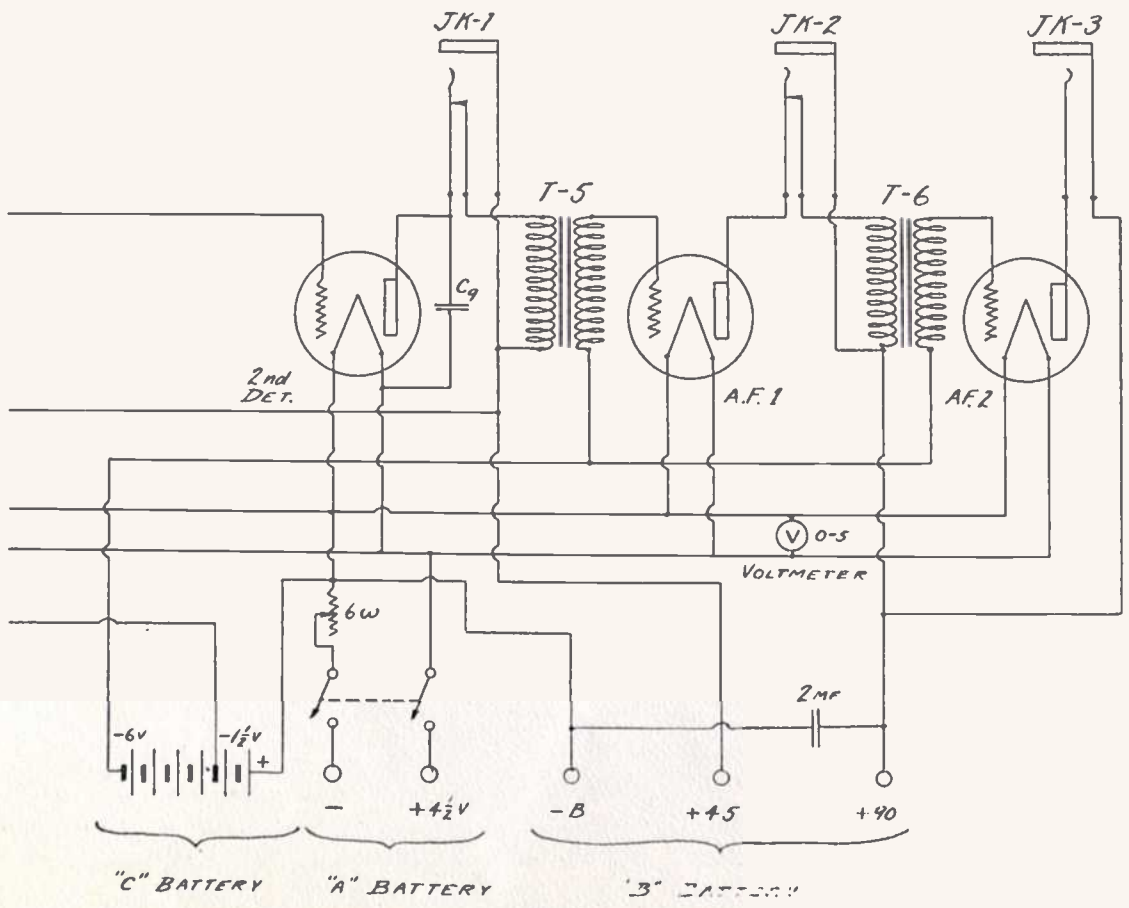


Fig. 8. Alternaitve Wiring Diagram for 3-Volt Tubes in A. F. Amplifier

For prices on parts required to assemble receiving sets shown herein see page 25.

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"Standard Model B" 45,000 Cycle Baldwin-Pacific Super-Heterodyne With All 201-A Tubes

DUE to the steadily increasing demand for the Baldwin-Pacific Super-heterodyne equipped with all 201-A tubes, the following information is given and wherein will be found the minor changes necessary in the assembly if the 201-A tubes are used.

It is possible to satisfactorily use the 201-A tubes in this circuit provided that the necessary filament rheostats (both 6 ohm) and sockets are supplied. No changes will be necessary in the fixed condensers. The same *C* and *B* battery voltages are used as for the 199 tubes. Baldwin-Pacific Super-Het Kits were designed to match the output impedance of the 199 tubes and the core of the intermediate frequency transformers was designed for a certain plate current in mind, being that produced with the 199 tubes. The mutual conductance or ability to amplify the 201-A tubes is considerably greater than that of the 199 and consequently the overall amplification produced by a three stage intermediate frequency amplifier using the larger tube is considerably greater than when using the smaller tube. This set was laid out on our baseboard with the total amplification of the small tube in mind and hence the transformers were placed much closer together than advisable with the large tubes.

If you wish to use the large tubes the following changes are necessary for best results. Shield the back of the panel and the inside of the cabinet and place a partition so that the oscillator coupler No. 30, oscillator tube and condenser are shielded from the rest of the set. (See pictorial assembly and wiring details on page 13.) A partition should also be placed between each intermediate transformer and its associated tube. Shields should be connected to negative A Battery and to a good waterpipe ground. What is occurring when you use the large tubes is that as you approach the efficiency point of operation the gain in the amplification is so great that it begins to oscillate and this, of course, ruins the quality unless reduced to a minimum as provided for in these changes. It has also been found advisable at times to apply a .002 capacity fixed condenser between the filament and plate of the second intermediate frequency stage. This, however, is not usually necessary unless the intermediate frequency tubes have a tendency to violently oscillate and in which case they will be stabilized through the use of the condenser referred to.

Successful results have been had with the large tubes by forgetting about the shielding and placing the grids of the three intermediate amplifiers on a potentiometer or "losser" as it is sometimes called. This enables the user to place a sufficient loss in the grid circuits of the intermediate stages to cut out oscillation but the device produces a heavier drain on the *B* battery and is therefore usually very undesirable as it also introduces a very sensitive control which requires considerable readjustment for each station coming in. It would be possible to use the large tubes in the second detector and two audio stages with considerably improved results. Unless you desire to experiment on your own account, we suggest that the methods for handling the assembly with all 201-A tubes be used as described in the foregoing paragraphs and that the "losser" method be eliminated.

For prices on parts required to assemble receiving sets shown herein see page 25.

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WAR DEPARTMENT

OVERSEAS DISCHARGE AND REPLACEMENT DEPOT.

IN REPLY REFER TO

FORT McDOWELL, CALIFORNIA.

Discharge Office,
January 9, 1925.

Baldwin Pacific & Company,
435 Pacific Bldg.,
San Francisco, Calif.

Gentlemen:

I wish you to know how pleased I am with the Super-Heterodyne receiver built with the Pacific Quintet Super-Het Kit which I purchased from the Radio Den three months ago.

To date, I have worked over one hundred stations including the following:

WEDH, Chicago	WYG, Chicago
WGY, Schenectady	WLW, Cincinnati
WTAM, Cleveland	WPAB, Fort Worth
WBAP, Kansas City	WHB, Kansas City
WOC, Davenport, Iowa.	KGU, Honolulu

I have experienced no difficulty in working any station this side of Pittsburgh, Pennsylvania. Station KDKA, at that place, comes in almost as loudly and fully as clearly as our local KPO.

I find the set to be extremely selective, and experience no difficulty in cutting thru KPO to CFAC, Calgary, with a wave difference of only seven meters, or thru KFRC to KFSG, Los Angeles, with a two-meter wave differenc I have never had the slightest trouble with interference from any local station. KPO and KGO are cut out in less than half of one graduation on either dial.

I can not speak too highly of the performance of your set, nor of the treatment I have received from your firm

Cordially yours,

hjt/

Jack Tanner

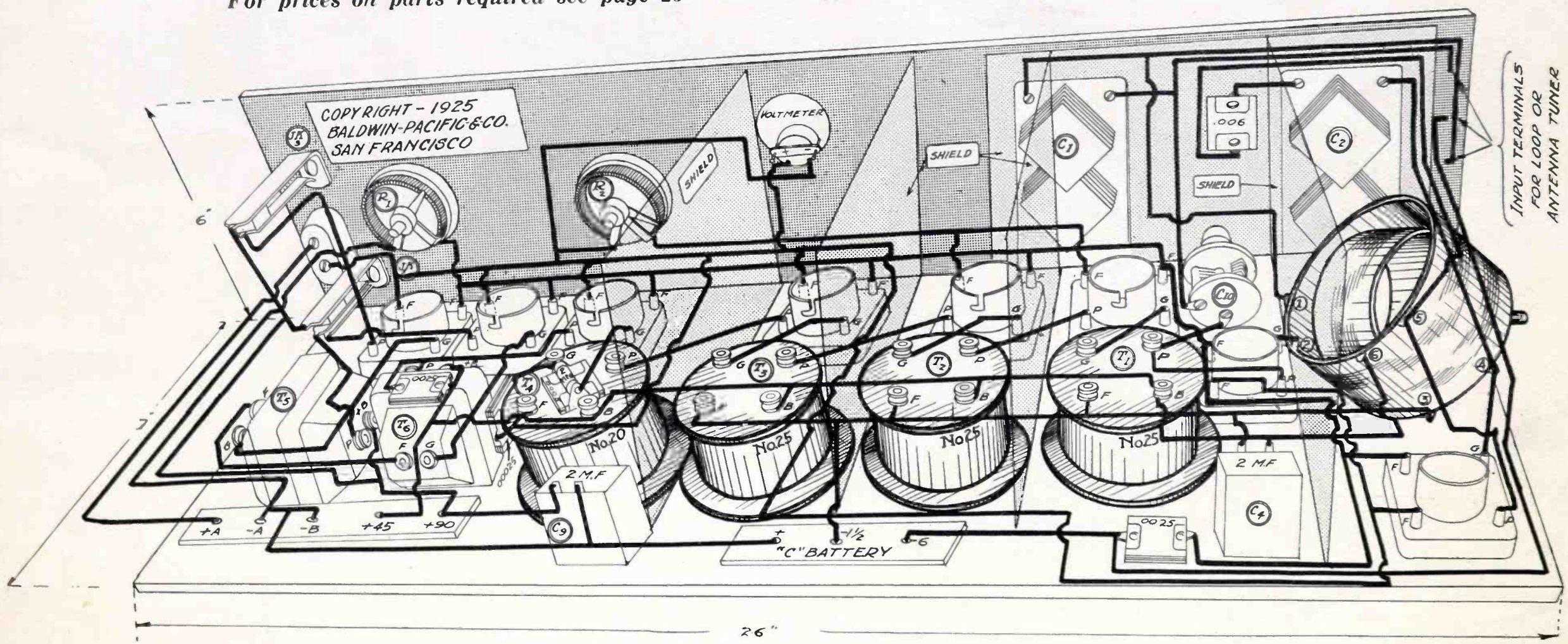
Jack Tanner,
1st Sgt., U. S. A.

U.S.D.B. Alcatraz, Cal. 12-20 22 2000

Pictorial Assembly and Wiring Detail of "Standard Model B" 45,000 Cycle 201-A Tube Super-Heterodyne

For prices on parts required see page 25

See Article Page 11



Key to Placement of Principal Parts

T_1, T_2, T_3 } Baldwin Pacific "Ranger" No. 25 Intermediate Frequency Super Transformers

T_4 Baldwin Pacific "Ranger" No. 20 Output Frequency Super Transformer.

T_5 Audio Frequency Transformer

T_6 Audio Frequency Transformer

JK_3 Jacks: Double Circuit first stage; single circuit second stage.

L_1, L_2, L_3 } Baldwin Pacific "Ranger" Oscillator Coupler No. 30

R_1 6-Ohm Rheostat

R_2 6-Ohm Rheostat

C_1, C_2 } .0005 Variable Condensers

C_4 2 MFD. Fixed Condenser

C_9 2 MFD. Fixed Condenser

C_{10} Midget Condenser

An Efficient "C-W" Super-Heterodyne

Reprinted through courtesy of
E. A. SAHM,
Assistant Divisional Manager,
A. R. R. L., Southern Texas

IT HAS long been my wish to build a Super-Heterodyne that was as simple to operate as the average regenerative receiver, equally as efficient on amateur C-W signals as on radiophone, and immune from the disadvantages of which the average super is the heir. Another item I could not overlook was the cost. In most cases this type of receiver has been above the average man's pocket book. I believe I have very closely approached my desire. I realize that a great many circuits are appearing in our periodicals. I was at first hesitant to add another. Yet the results obtained were so successful that I feel obliged to pass on the data I obtained during some rather extended and thorough experiments.

The intermediate transformers, filter and oscillation coupler were those manufactured by Baldwin-Pacific & Company, San Francisco. (Their Pacific Ranger Super-Het Kit.) The accompanying circuit (see Figure 1, page 4; Figure 8, page 9), is also theirs, and I am publishing it through their courtesy.

Looking at the circuit it will be seen that the first detector loop is a modified Hartley oscillator. And herein lies the reason for the superb sensitivity of the set. All the advantages of the regenerative receiver are to be had in addition to the signal strength and sensitivity of the long wave amplifier. The condensre, C_{10}, and the plate inductance obtained by tapping the loop, produce both capacitative and inductive coupling and thereby make the first detector regenerative and capable of oscillation. On phone signals any degree of regeneration desired may be obtained by tuning this condenser. The best point, of course, is just before oscillation begins. For the reception of C-W, however, it is necessary to make the loop oscillate to detect them. This makes a second oscillator unnecessary for the reception of this type of signal. Loops are very poor radiators, and for that reason there is little danger of producing the single-circuit type of interference for your neighbors. This condenser can be any type of two-plate vernier or a midget.

No trouble was experienced from the intermediate amplifier oscillating nor from long wave interference, yet to be doubly sure to obviate this trouble, I would recommend shielding part of the circuit. It is, of course, unnecessary to say that all connections should be as short as possible, especially the plate and grid connections. All joints should be firmly soldered with rosin flux. The tuning and oscillator condensers should be of about .0005 mfd. capacity and of the low-loss type. They should also be supplied with vernier dials as the set is very selective. The coupling dial and the small condenser should be mounted inside the set as they require setting only once for a given purpose (C-W or fone). This simplifies the set considerably and eliminates body capacity.

The set is very simple to tune. The rheostats should be turned up equally until the familiar hissing sound is heard. They should then be turned back a little until this sound just stops. The receiver is then ready for reception. The tuning dial should then be set, preferably near the lower end of the scale, and the oscillator dial then turned slowly. A characteristic click indicating resonance will be heard. Here the station will come in if there is one on that wave. If not, move the tuning dial up a few degrees and repeat the process. The volume may then be increased by bringing up the rheostats.

As to results obtained it will be sufficient to say that KDKA was heard in broad daylight at a distance of twelve hundred miles. European, Australian, and New Zealand amateurs were copied with ease at night on a small loop. Of course, such reception is perhaps possible only under good conditions. Yet I compared the signals with those obtained on two good low loss low wave sets and the performance of the super was far superior on the loop to either of the others using an antenna. Amateurs on the 150-200 meter band could be copied without changing the set. Yet it would tune up high enough to get KSD on 550 meters. This was accomplished by taking advantage of the higher frequency of the oscillator to produce the necessary beat in receiving amateurs and the lower oscillator frequency to receive long waves. There are always two settings of the oscillator condenser that produce the intermediate frequency; one above, the other below. A small loop, or one with part of the turns short-circuited, is necessary to tune down that low. A peculiar phenomenon was noticed in the course of the experiments. NKF sending on about 71 meters was logged; this was made possible by coupling the oscillator closely so as to make it oscillate in harmonics. The detector would then also break into nodes and furnish the desired frequency. The only danger here is that the oscillator and detector will become sympathetic and oscillate in resonance. The result will be apparent paralysis of the set. The coupling will then have to be relieved to reinstate stability.

For those wishing to use the set for the 40 to 80 meter bands, I would recommend building a special coupler. The three coils can be wound as follows. They should be basket wound, by winding ten turns alternately around the inside and outside of two pegs at a time. About fifteen pegs should be set equidistant in a three inch circle. This makes a very beautiful and efficient coil. Number 20 dcc. wire may be used. The coils should be mounted side by side, half inch apart for coupling. The inside coil used as the grid series coil. There is no need for variable coupling for this narrow band of signals. The loop should likewise be reduced to about eight turns tapped in the middle. For those wanting a flexible set, I would suggest putting flexible leads on the two oscillators (both mounted in the set) and connecting either oscillator at will. A short circuiting switch can easily be put on the loop also. The two coils should be shielded, each from the other, for best results.

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RAYBESTOS BRAKE LINING INSTALLED THE FACTORY WAY, BY SPECIAL MACHINERY

Sept. 24, 1924

Baldwin Pacific & Co.,
Pacific Bldg.,
San Francisco, Cal.

Gentlemen:-

I have thoroughly tried and tested the "Super-Het kit" you shipped me some time ago and have found it very satisfactory. In fact on a seven tube set I have been hearing K.G.O. every good night we have had for the last two weeks with enough volume to hear the music plainly all over the house and speech being clearly understandable in the same room with the set.

Please ship me another kit on same price basis as the last one parcel post or express COD and oblige. Do you make any better price in half dozen lots?

P.S. Please send me literature on your other products also discounts on same.

Very truly yours
D. C. McCoy.

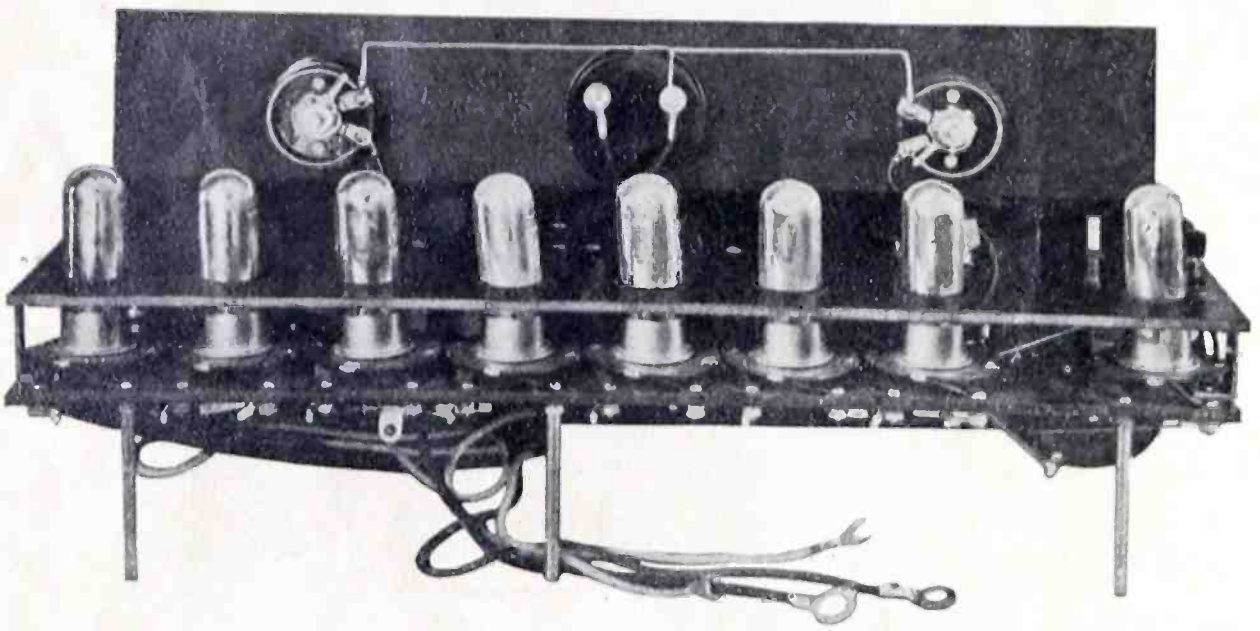
When in trouble Call Cap. 33, we'll get you

If Radio had been known in Captain Kidd's day it might have been like this.

Radio concerts between dips in the ocean is the hobby of this San Francisco daughter of the sea.

"Favorite Model C" Baldwin-Pacific 45,000 Cycle Super-Heterodyne

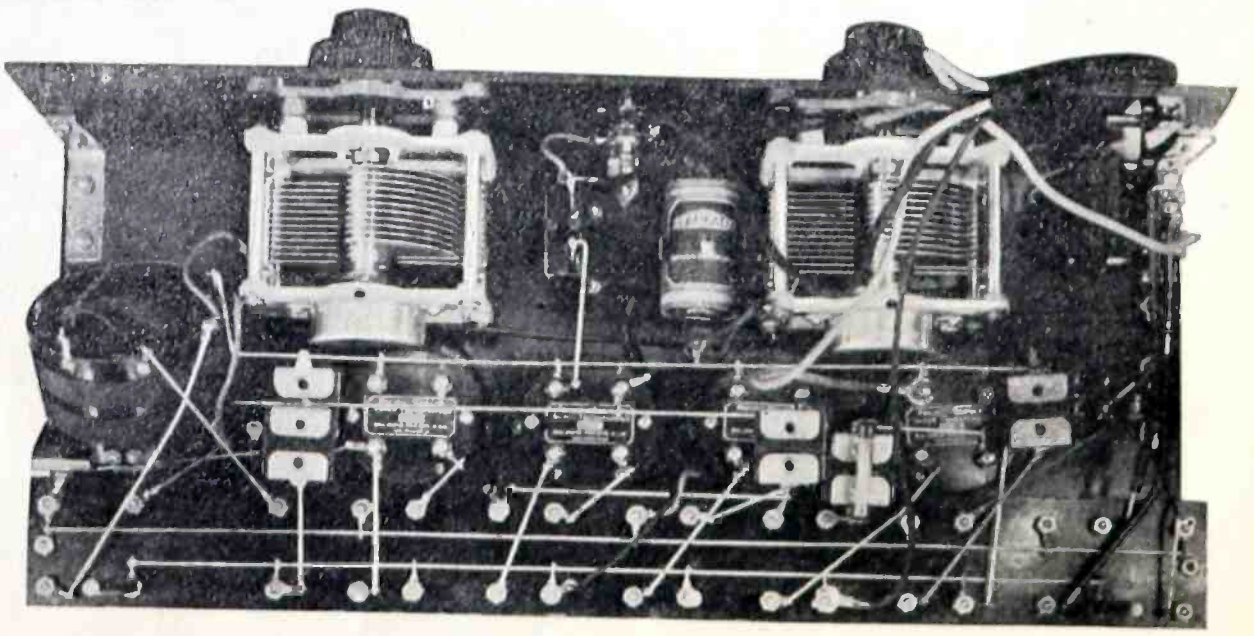
Beauty, superb performance, simplified wiring and compactness are combined features of this advanced design super receiver. Details incident to the production of this typical "Favorite" model have been carefully worked out. Skill and experienced forethought are exemplified in every phase of its exceedingly becoming appearance with retention in every respect of the 45,000 cycle Super's usual and far famed remarkable efficiency.



Rear Top View of "Favorite Model C"

Natural appeal of this design is quickly reflected from a casual glance at illustration at left. When observed in the cabinet it presents a marked impression of simplicity heretofore unknown. Bereft of all the usual unsightly wiring the gaze is met with a small expanse of black bakelite sub-base, protruding thru which by underneath suspension in straight line eight form are the customary vacuum tubes, so arranged that whether they are lighted may be quickly determined. Full size sub-base and front panel drilling templates post paid, $1.00 each.

Ease and simplicity of wiring this model is indicated in the illustration at right. Although wiring is reduced to a minimum it is also of value to note in those connections where the "short lead" principle should be maintained (particularly the grid connections) that the layout arrangement provides for effectively doing so.

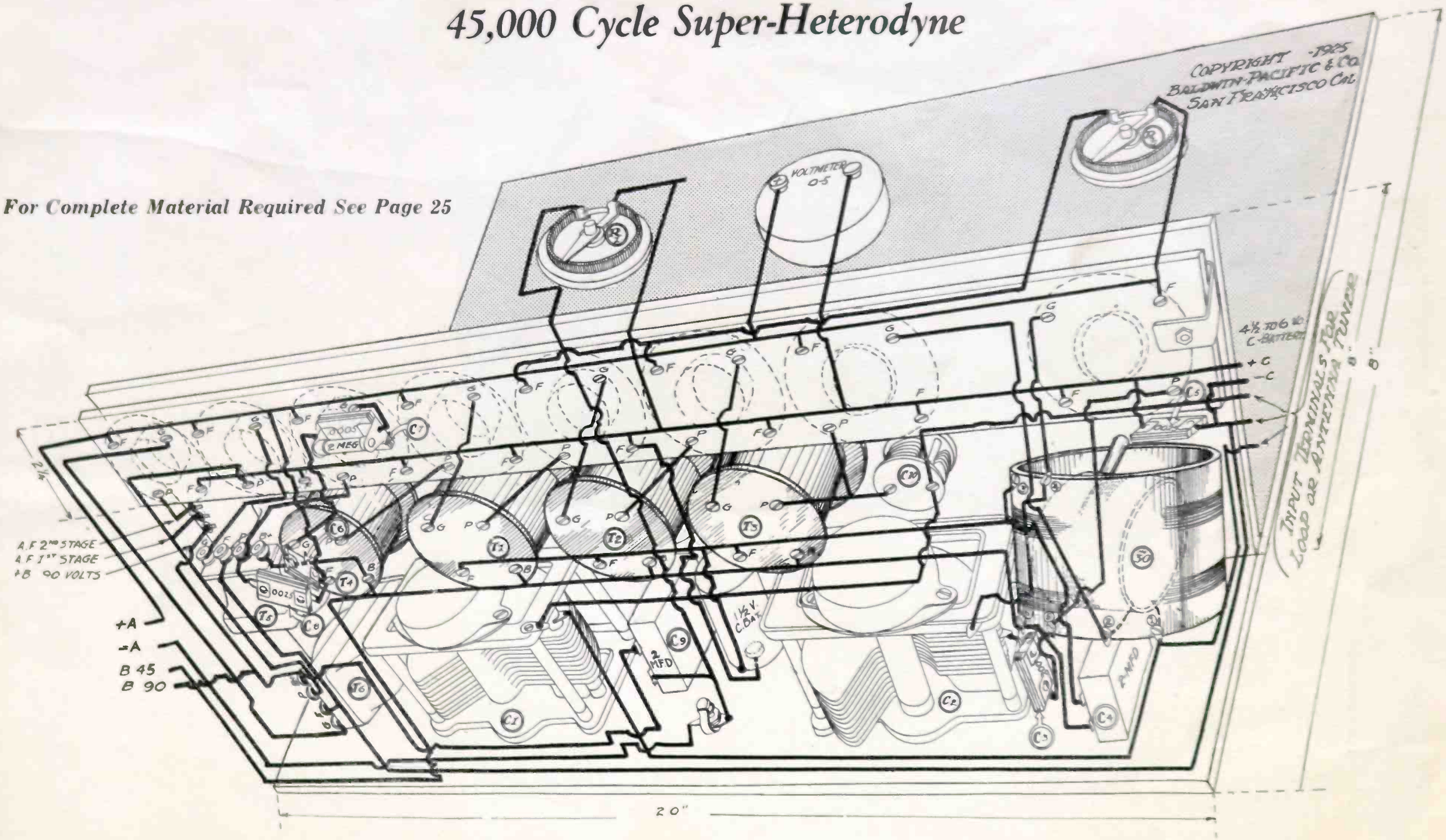


Bottom View "Favorite Model C"

For prices on parts required to assemble receiving sets shown herein see page 25

Pictorial Assembly and Wiring Detail of "Favorite-Model C" Baldwin-Pacific 45,000 Cycle Super-Heterodyne

For Complete Material Required See Page 25



Key to Placement of Principal Parts

T_1, T_2, T_3, T_4 Baldwin Pacific "Ranger" No. 25 Intermediate Frequency Super Transformers; Baldwin Pacific "Ranger" No. 20 Output Frequency Super Transformer

T_5 Audio Frequency Transformer

T_6 Audio Frequency Transformer

L_1, L_2, L_3 Baldwin Pacific "Ranger" Oscillator Coupler No. 30

R_1 6-Ohm Rheostat

R_2 20-Ohm Rheostat

C_1 .0005 Variable Condenser

C_2 .0005 Variable Condenser

C_3 .006 MFD. Fixed Condenser

C_4 2. MFD. Fixed Condenser

C_5 .0025 MFD. Fixed Condenser

C_6 .00025 MFD. Fixed Condenser

C_7 .0005 MFD. Fixed Condenser with 2 meg. grid leak.

C_8 .0025 MFD. Fixed Condenser

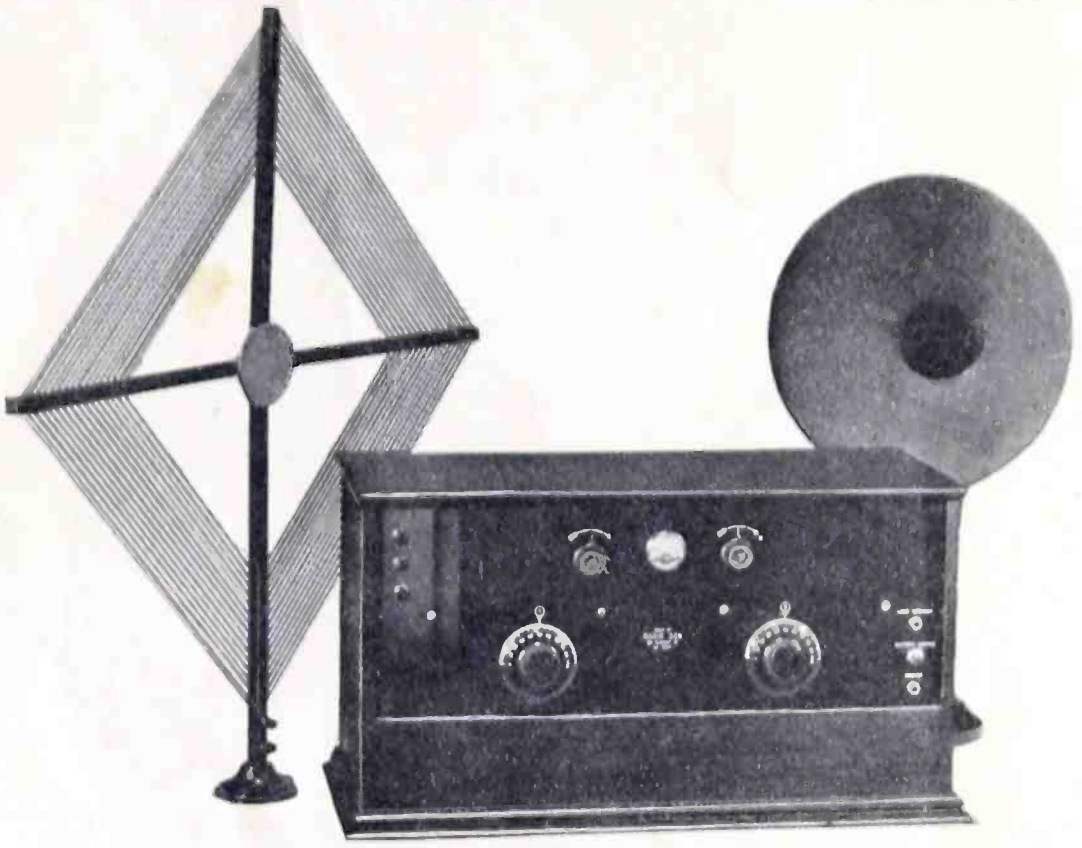
C_9 2. MFD. Fixed Condenser

C_{10} Midget Condenser

O_1 Voltmeter

"Compact Model D" Baldwin-Pacific 45,000 Cycle Super-Heterodyne

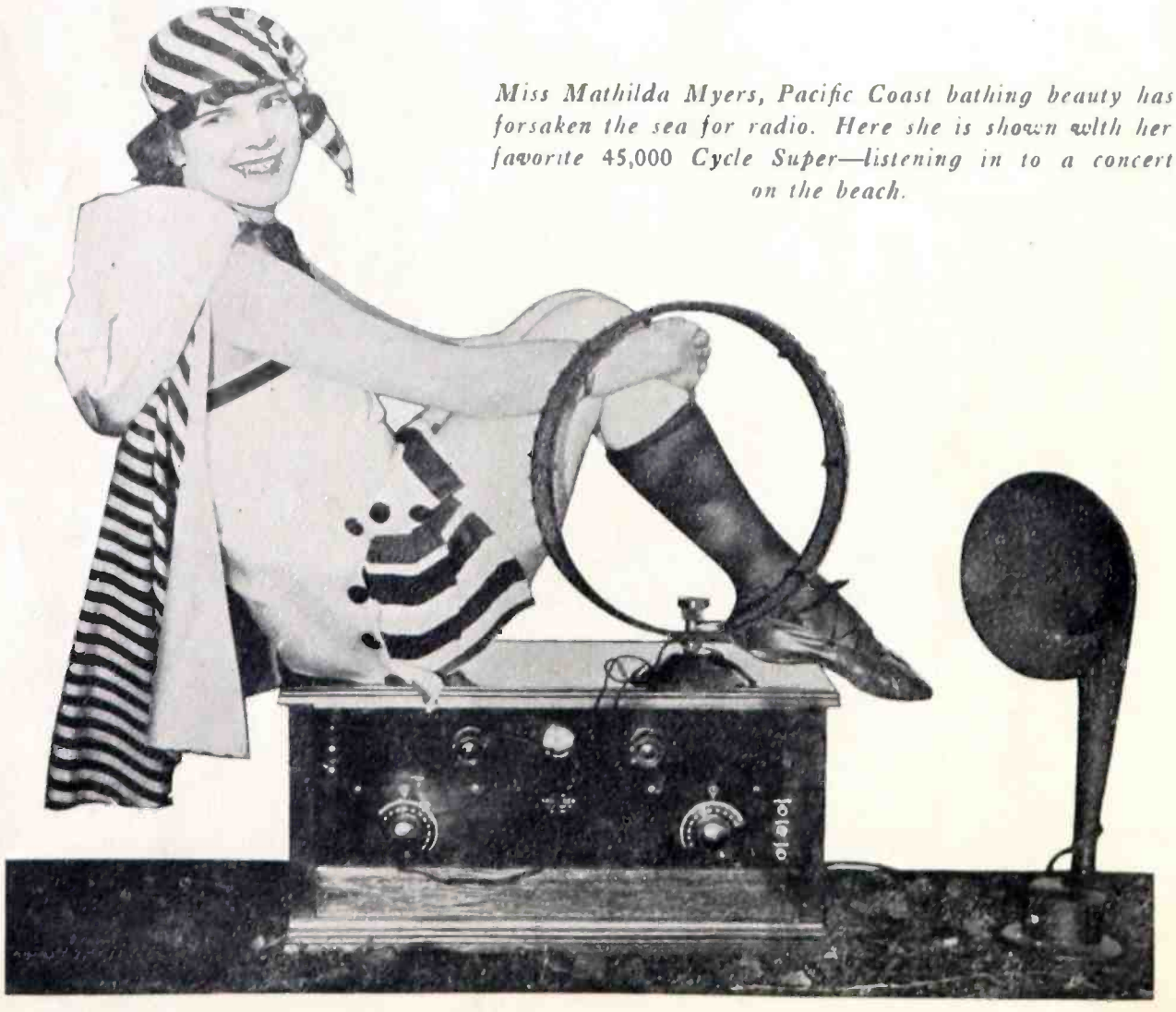
THE COMPACT model is quite similar to the "Favorite" shown on preceding pages but at the same time is different in several respects as will be readily noted from illustrations. Information provided is for the benefit of those who desire to completely "build their own" of the compact type, handling every phase of the various constructional detail themselves, but may not have the facilities or equipment to satisfactorily construct the sub base to accommodate use of tubes as shown in other models.



At the beginning of the Super Heterodyne period that set usually occupied more room, with its necessary accessories, than the piano or the kitchen stove. Improvements have been made in design, size has been decreased until now it occupies hardly more room than the regulation detector and two step.

From the illustration on following page showing back of panel arrangement it will be noted that every possible advantage has been taken of space with the result that the parts are all situated very closely to each other. The usual base board is dispensed with and the instruments are mounted upon a sub base which is placed across the center of the panel proper. This supporting device is of copper, brass or aluminum and serves as a shield as well as a support for the apparatus.

PACIFIC COAST "FOTO-RADIOTORIAL"



Miss Mathilda Myers, Pacific Coast bathing beauty has forsaken the sea for radio. Here she is shown with her favorite 45,000 Cycle Super—listening in to a concert on the beach.

Results Like These

Are Not Unusual With the Baldwin-Pacific 45,000 Cycle Super-Heterodyne

Henry Motor Co.

GARAGES AND PAINT SHOP
BODIES---FENDERS---TOPS

Pullman, Washington Nov. 1, 1924. 192...

Baldwin-Pacific & Company,
SanFrancisco, Cal.

Gentlemen:

The Super(Model) machine shipped us on October 2nd has everything cheated in this part of the country. Practically every station inthis Hemisphere has been in on the Loud Speaker,Cuba to Honolula,Alaska to Mexico, and N.Y. every afternoon.

This sure speaks for the BALDWIN PACIFIC QUINTET SUPER-HETERODYNE KIT. We have another Super in stook and by changing the coils or transformers to the Baldwin made a very much better machine.

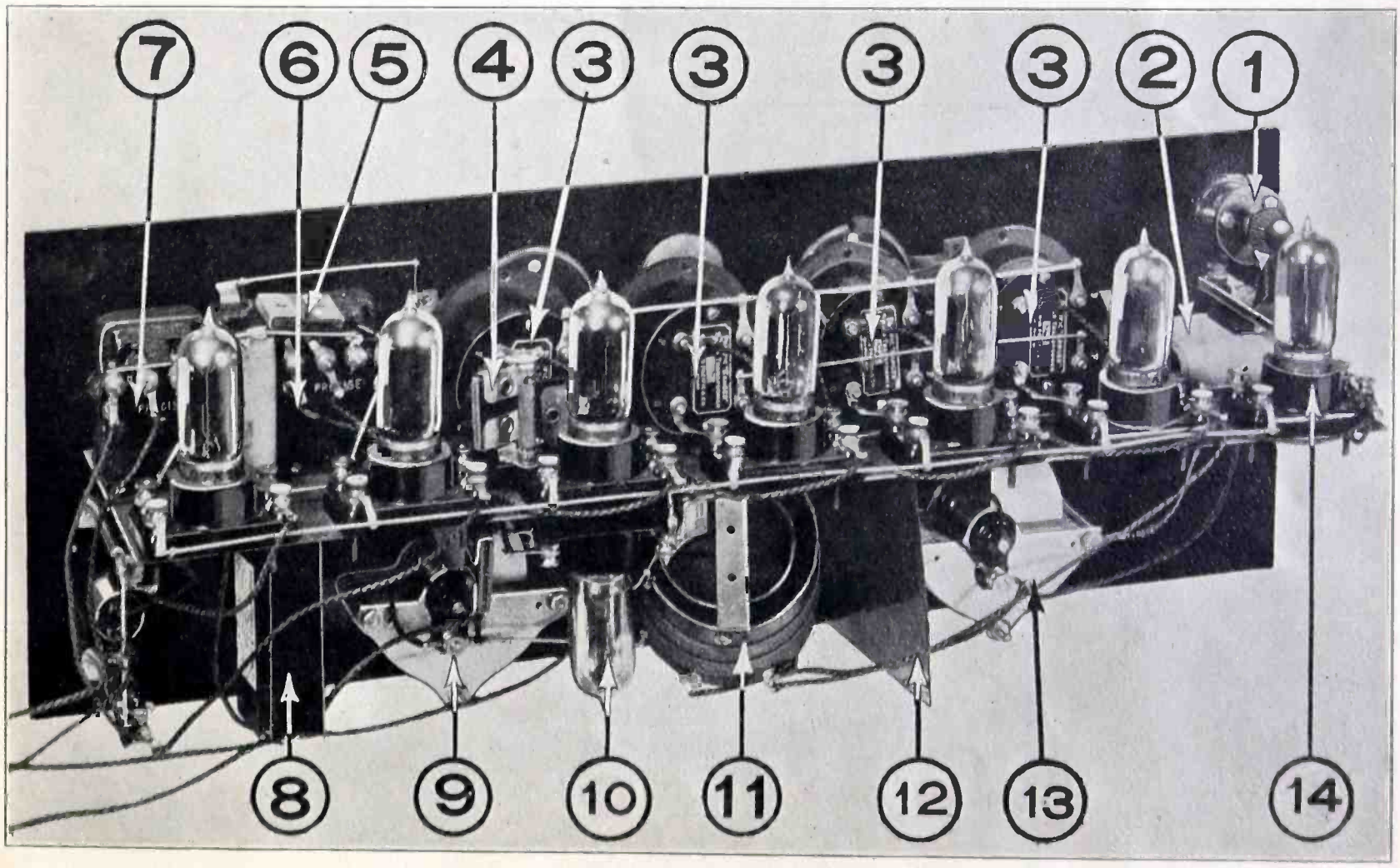
At what figure can you supply us with Supers like the one shipped us before? Also what other sets do you have or Kits do you sell with Panels bored ready for asembly? We are having many calls about sets and kits that will give a good Volume on the Loud Speaker with a minimum of tubes and a cheap price.

Thanking you for past favors, we remain,

Yours truly

Radio Dept. Henry Motor Co.
by Wilbur D Henry

For prices on parts required to assemble receiving sets shown herein see page 25.

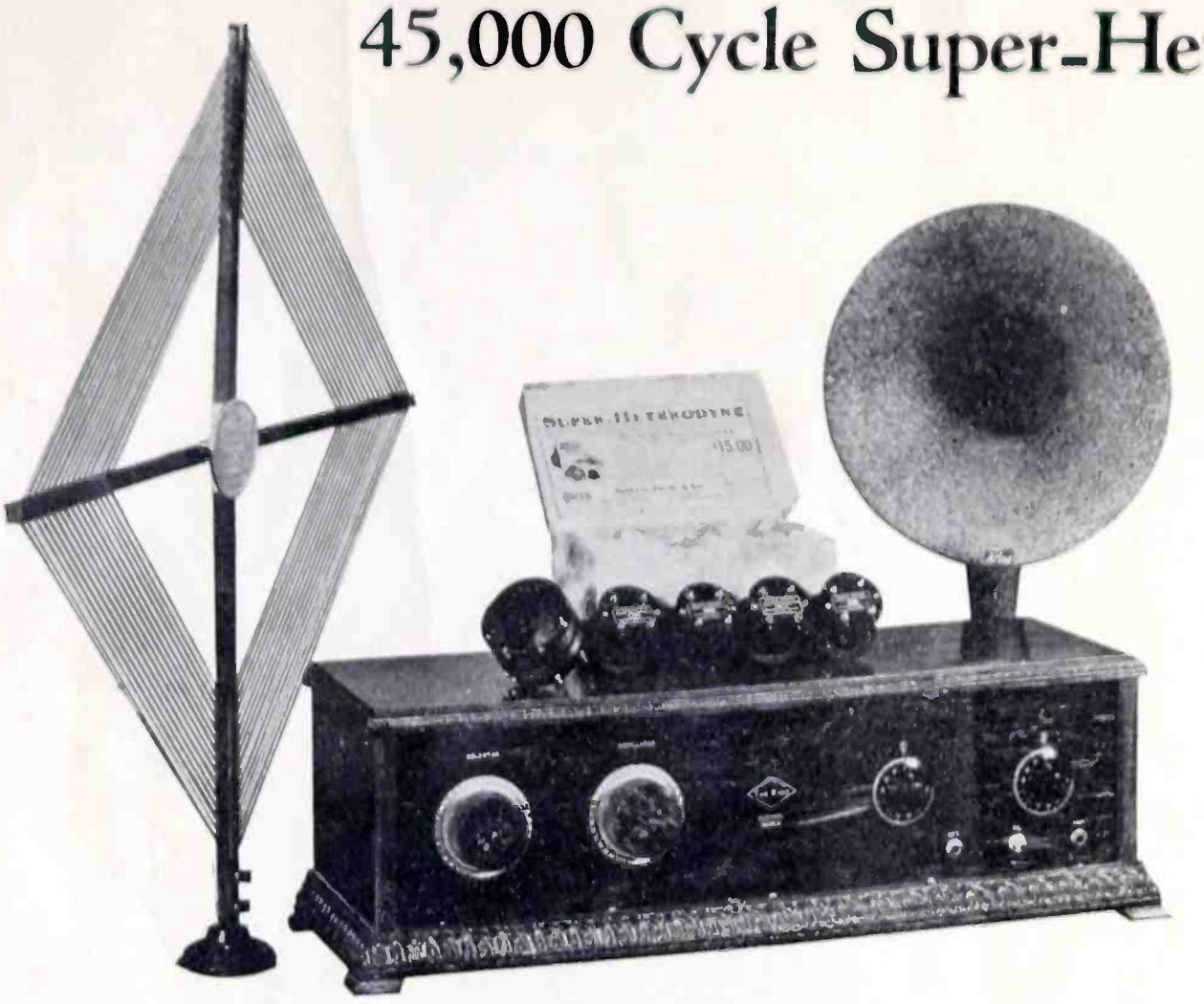


Placement of Principal Parts "Compact-Model D," 45,000 Cycle Super Receiver

Hook-up according to circuit diagram Fig 1, page 4 and Fig. 8, page 9

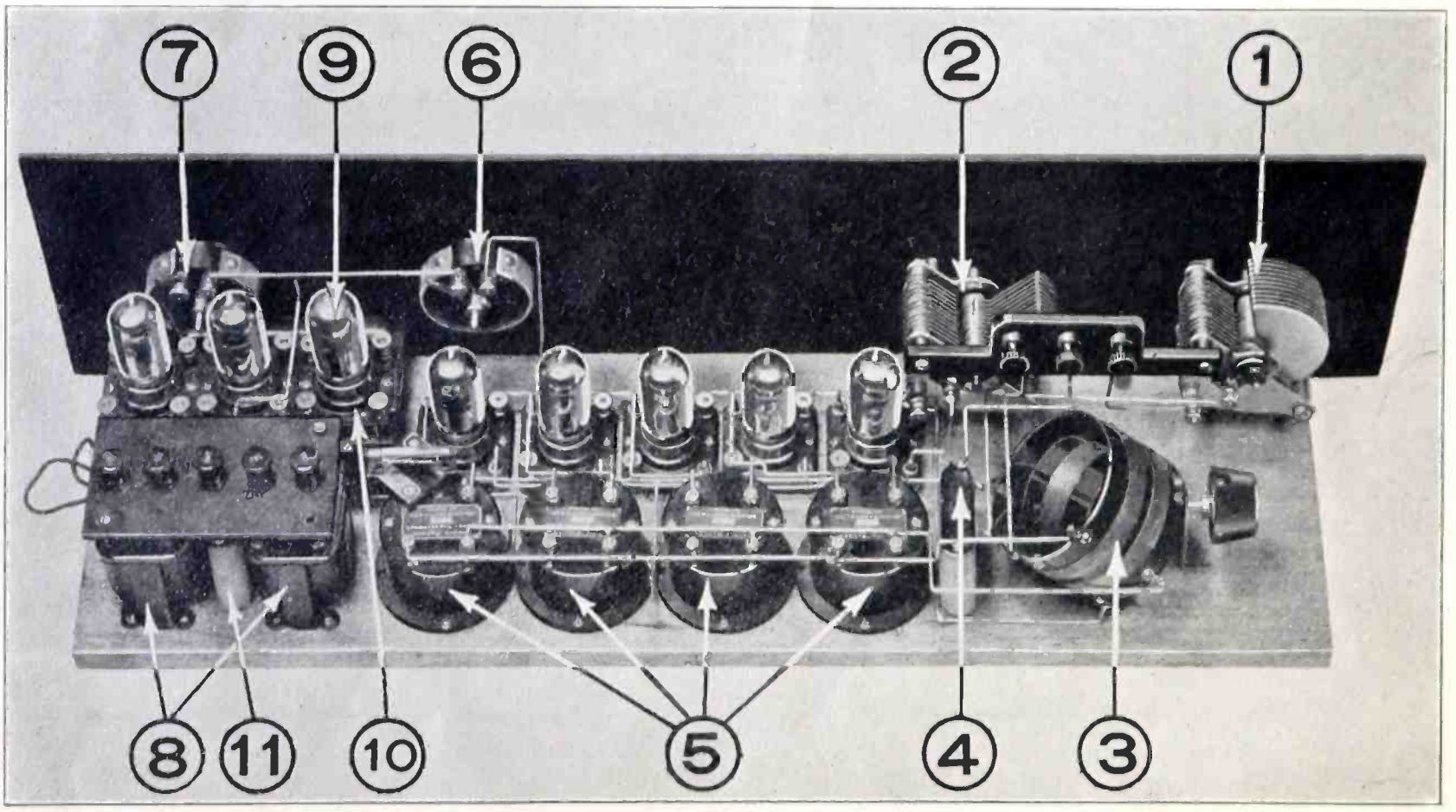
1 is the regeneration feed-back condenser; 2, 2 MFD. condenser; 3, Baldwin-Pacific Super transformers, consisting of three No. 2 I. F. transformers and one No. 20 I. F. transformer; 4, the grid leak and condenser on the second detector; 5, by-pass condenser across the first audio frequency transformer; 6 and 7, the audio frequency transformers; 8, 2 MFD. condenser; 9, oscillator condenser; 10, oscillator tube; 11, Baldwin-Pacific No. 30 oscillator coupler; 12, shielding; 13, tuning condenser; 14, first detector.—Photo copyright Baldwin-Pacific & Co.

"Popular Model E" Baldwin-Pacific 45,000 Cycle Super-Heterodyne



WITH the "Popular" model it will be noted that the arrangement of the parts is substantially as they appear on the hook-up, i. e., oscillator, first detector, intermediate frequency stages, second detector, first and second audio. It is the same sequence as followed in drawing the plan of the circuit. (See Fig. 1, page 4 and Fig. 8, page 9.) Under this system, the wiring is very easy for the inexperienced as well as the placement of the parts and therefore this model is rightly termed the "Popular" as being particularly adapted for those who want to build their own, most economically and without regard to dimensions as to be found in other types.

For prices on parts required to assemble receiving sets shown herein see page 25.

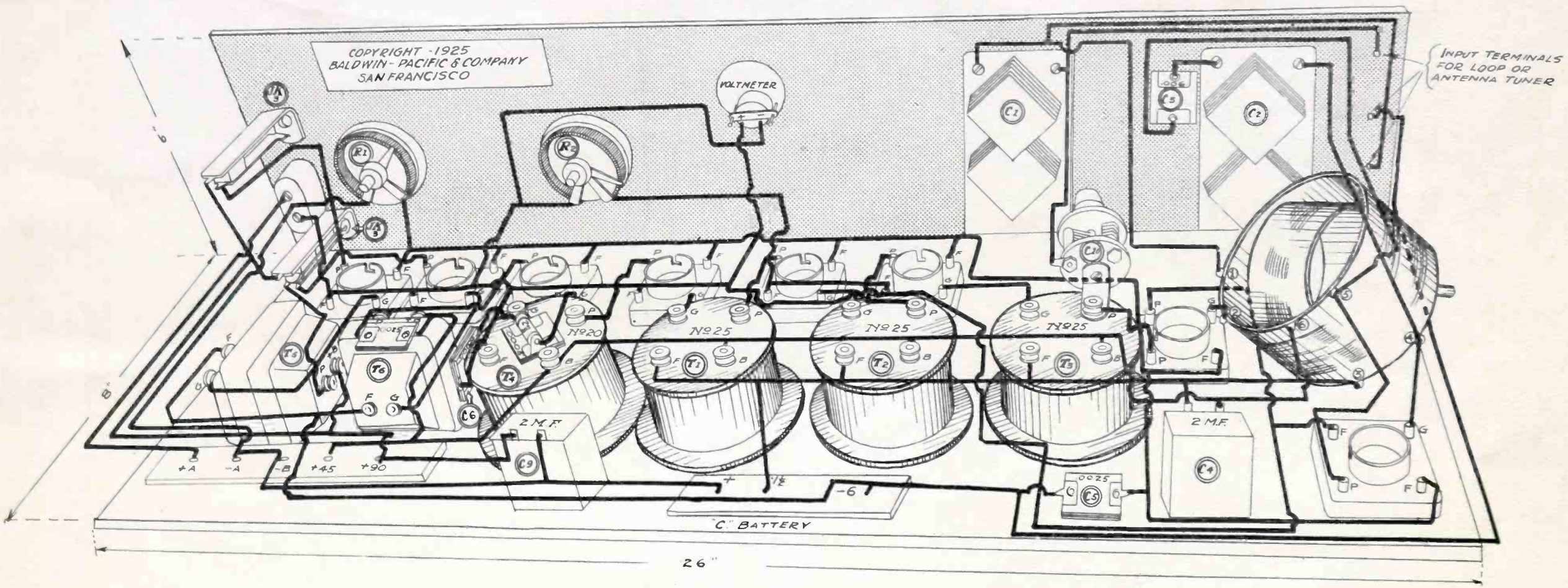


Placement of Principal Parts "Popular Model E," 45,000 Cycle Super Receiver

Hook-up according to circuit diagram Fig 1, page 4 and Fig. 8, page 9 as featured in illustrative assembly detail on following page. A simple method of mounting and assembling a Super-Heterodyne is the "open" plan as shown above. It simplifies wiring but entails the use of more space than some of the other plans shown. 1 is the oscillator condenser and 2 is the tuning condenser; 3, Baldwin-Pacific No. 30 oscillator coupler; 4, 2 MFD. condenser: 5 Baldwin-Pacific Super transformers, consisting of three No. 25 I. F. transformers and one No. 20 T. F. transformer; 6 and 7, Rheostats; 8, audio frequency transformers; 9, second detector; 10, gang sockets; 11, by-pass condenser.—

Pictorial Assembly and Wiring Detail of "Popular Model E" Baldwin-Pacific 45,000 Cycle Super Receiver

For Complete Material Required See Page 25



Key to Placement of Principal Parts

T_1, T_2, T_3 } Baldwin Pacific "Ranger" No. 25 Intermediate Frequency Super Transformers
T_4 Baldwin Pacific "Ranger" No. 20 Output Frequency Super Transformer
T_5 Audio Frequency Transformer
T_6 Audio Frequency Transformer.

JK_3 Jacks, first stage double circuit; second stage single circuit.
L_1, L_2, L_3 } Baldwin Pacific "Ranger" Oscillator Coupler No. 30
R_1 6-Ohm Rheostat
R_2 20-Ohm Rheostat
C_1 .0005 Variable Condenser
C_2 .0005 Variable Condenser
C_3 .006 MFD. Fixed Condenser
C_4 2 MFD. Fixed Condenser
C_5 .0025 MFD. Fixed Condenser

C_6 .00025 MFD. Fixed Condenser
C_7 .0005 MFD. Fixed Condenser with 2 meg. grid leak
C_8 .0025 MFD. Fixed Condenser
C_9 2 MFD. Fixed Condenser
C_{10} Midget Condenser

Call	Meters	Owner, Slogan and Location	Power	Dial 1	Dial 2	Date	Time
KDKA	326	Westinghouse Elec. & Mfg. Co. "The Pioneer Broadcasting Station of the World." E. Pittsburgh, Pa.	1000				
KDPM	270	Westinghouse Elec. & Mfg. Co. Cleveland, Ohio.	500				
KDPT	244	Union Tribune & Southern Electric Co. "Radio for All." 3rd and E St., San Diego, California	50				
KDYL	360	Newhouse Hotel, Salt Lake City, Utah	100				
KDYM	280	The Savoy Theatre, San Diego, Calif.	100				
KDYQ	360	The Oregon Institute of Technology. "The Radio School." Portland, Ore.	100				
KDYW	360	Smith Hughes & Co., Phoenix, Ariz.	20				
KDZB	240	Frank Seifert, Bakersfield, Calif.	100				
KDZE	270	Rhodes Dept. Store, Seattle, Wash.	100				
KDZK	278	Bellingham Pub. Co., Bellingham, Wash.	50				
KFAD	360	McArthur Bros., Central and Madison, Phoenix, Ariz.	100				
KFAE	330	State College of Washington. "Your Service Station." Pullman, Wash.	500				
KDZF	278	Automobile Club of Southern California, Figueroa St. at Adams, Los Angeles	500				
KFAF	360	Western Radio Corp. "Out Where the West is." Denver, Colo.	50				
KFAJ	360	University of Colorado, Boulder, Colo.	100				
KFAR	280	Studio Lighting Service Co., Hollywood, Calif.	100				
KFAW	268	The Radio Den. "Kept from Awful Winters." 115 N. Broadway, Santa Ana, California	10				
KFAY	283	Virgin's Radio Service, Medford, Oregon	50				
KFBB	360	F. A. Buttrey & Co., Havre, Mont.	50				
KFBC	278	W. K. Azvil, 5038 Cliff Place, San Diego, Calif.	20				
KFBE	360	R. H. Horn, San Luis Obispo, Calif.	10				
KFBG	360	First Presbyterian Church, S. 10th and G Sts., Tacoma, Wash.	50				
KFBK	283	Kimball Upson Co. "The Gateway to Calif." 610 Calif. St., Sacramento Cal.	100				
KFBL	224	Leese Bros. "The Way to Port Gardner Bay." 2818 Rucker Ave., Everett, Washington	10				
KFBS	280	Chronicle News and Trinidad Gas & Elec. Co., Trinidad, Colo.	10				
KFBU	283	The Cathedral, Laramie, Wyo.	50				
KFCB	238	Nielsen Radio Supply Co. "When Its Winter Time in Michigan Its Summertime Down Here." 311 N. Central Ave., Phoenix, Ariz.	20				
KFCF	360	Frank A. Moore, 707 Baker Bldg., Walla Walla, Wash.	100				
KFCH	360	Electric Service Station, 14 30th St., Billings, Mont.	10				
KFCL	236	Leslie E. Rice, Union Stock Yards, Los Angeles, Calif.	500				
KFCM	244	Richmond Radio Shop. "Out Where the West Ends." Richmond, Calif.	100				
KFCP	360	Ralph W. Flygare, 2421 Jefferson, Ogden, Utah	25				
KFCV	360	Fred Mahaffey, Jr., 14 5th St., Houston, Texas	10				
KFCZ	258	Omaha Central High School, Omaha, Neb.	50				
KFDD	252	St. Michael's Cathedral, Boise, Idaho	10				
KFDH	268	University of Arizona. "Climate, Copper, Cattle, Cotton." Tucson, Ariz.	150				
KFDJ	360	Oregon Agricultural College, Corvallis, Ore.	50				
KFDL	226	Knight-Campbell Music Co., 1228 Corona St., Denver, Colo.	5				
KFDX	360	First Baptist Church, Shreveport, La.	100				
KFDY	273	South Dakota College of Agric. and Mechanical Arts, Brookings, S. D.	100				
KFDZ	231	Harry Q. Iverson, 2510 Thomas, S. Minneapolis, Minn.	5				
KFEC	248	Meier & Frank Co., Portland, Ore.	50				
KFEJ	360	Guy Grenson, 1724 S. Jay St., Tacoma, Wash.	10				
KFEL	254	W. L. Winner Radio Shop. "The Best in the West." 435 14th St., Denver, Colorado	50				
KFEQ	268	Scroggin & Co., Bank, Oak, Neb.	100				
KFER	231	Auto Elec. Service Co., 12 N. 10th St., Ft. Dodge, Iowa	10				
KFEX	261	Augsburg Seminary, 8th and 21st, Minneapolis, Minn.	100				
KFEY	360	Bunker Hill & Sullivan Mining & Concentrating Co. "The Voice of the Coeur d'Alenes." Kellogg, Ida.	10				
KFFB	240	The Jenkins Furniture and Owybee Hotel, Boise, Ida.	10				
KFFE	360	Eastern Oregon Radio Co. Inc., Pendleton, Ore.	10				
KFFP	266	First Baptist Church, 600 Rollins St., Moberly, Mo.	50				
KFFR	226	Nevada State Journal, Sparks, Nev.	10				
KFFV	360	Graceland College, Lamoni, Iowa	100				
KFFY	275	Pincus & Murphey, Inc. "Alexandria, in the Heart of Louisiana, Alexandria, Louisiana.	50				
KFGC	254	Louisiana State University, Baton Rouge, La.	100				
KFGD	248	Chickasha Radio & Elec. Co. "Queen of the Washita." Chickasha, Okla.	200				
KFGH	273	Stanford University, Calif.	250				
KFGL	234	Arlington Garage, Arlington, Ore.	5				
KFGQ	226	The Crary Hardware Co., Boone, Iowa	10				
KFGX	250	First Presbyterian Church, Orange, Texas	500				
KFGZ	268	Emmanuel Missionary College. "The Radio Lighthouse." Berrien Springs, Michigan	500				
KFHA	252	Western State College of Colo., Gunnison, Colo.	50				
KFHD	220	Utz Elec. Shop Co., 12th and Faraon St., St. Joseph, Mo.	100				
KFHH	261	Ambrose A. McCue, Neah Bay, Wash.	50				
KFHJ	360	Fallon & Co. "The Paradise of Southern California." 23 W. Figueroa St., Santa Barbara, Calif.	100				
KFHR	240	Star Elec. & Radio Co. "The Voice of the Charmed Land." 1637 Westlake Ave., Seattle, Wash.	50				
KFHS	275	Clifford J. Dow, Lihue, Hawaii	30				
KFI	469	Earle C. Anthony, Inc., 1000 S. Hope St., Los Angeles, Calif.	1000				
KFIF	360	Benson Technical Student Body, Portland, Ore.	100				
KFIO	252	North Central High School, Spokane, Wash.	50				
KFIQ	242	First Methodist Church, Yakima, Wash.	50				
KFIU	226	Alaska Electric Light & Power, Juneau, Alaska	10				
KFIX	240	Reorganized Church of Jesus Christ, Independence, Mo.					
KFIZ	273	The Daily Commonwealth and O. A. Huelsman, 22 Forest Ave., Fon du Lac, Wisconsin	100				
KFJB	248	Marshall Electric Co., Marshalltown, Iowa	10				
KFJC	270	Seattle Post Intelligencer. "Hello Folks." Seattle, Wash.	100				
KFJF	252	National Radio Mfg. Co. "Radio Headquarters." 106 N. Hudson St., Oklahoma City, Okla.	20				
KFJI	252	Liberty Theatre, Astoria, Ore.	10				
KFJK	233	Delano Radio & Electric, 407 N. Main St., Bristow, Okla.	100				
KFJL	242	Hardsocg Mfg. Co. "When the West is At Its Best." Ottumwa, Iowa	10				
KFJM	280	University of North Dakota, Grand Forks, North Dakota	100				
KFJQ	280	Electric Construction Co., De Mers Ave., Grand Forks, N. Dak.	5				
KFJR	258	Ashley C. Dixon & Son. "The Bitter Root Valley Broadcasting Station." Stevensville, Mont.	5				
KFJV	226	LeGrand Radio Co. "The Smallest Tower in the U. S. With a Broadcasting Station." Towanda, Kansas	10				
KFJX	280	Iowa State Teachers College, Cedar Falls, Iowa	50				
KFJY	246	Tunwall Radio Co., 13 N. 10th St., Ft. Dodge, Iowa	50				
KFJZ	254	Headquarters Troop, 112th Calvary, Texas Nat'l. Guard, Ft. Worth, Texas	20				
KFKA	273	Colorado State Teachers College, Greeley, Colo.	50				
KFKB	286	Brinkley-Jones Hospital Assn. "Kansas First, Kansas Best." Milford, Kan.	500				
KFKQ	250	Conway Radio Laboratories. "Known for Knowledge Quest." Conway, Ark.	100				
KFKV	234	F. F. Gray, 3200 Richardson St., Butte, Mont.	50				
KFKX	285	Westinghouse Elec. & Mfg. Co., City Park, Hastings, Nebr.	1000				
KFKZ	231	Nassour Bros. Radio Co., 120 E. Pikes Peak Ave., Colorado Springs, Colo.	10				
KFLA	283	Abner R. Willson, 1321 W. Platinum, Butte, Mont.	5				
KFLB	248	Signal Elec. Mfg. Co., Menominee, Mich.	5				
KFLD	234	Paul E. Greenlaw, Franklinton, La.	30				
KFLE	268	National Educational Service, Inc. "The Station with the Good Modulation." 939 S. University, Denver, Colo.	100				
KFLQ	261	Bizzell Radio Shop, Little Rock, Ark.	20				

Call	Meters	Location, Slogan and Owner	Power	Dial 1	Dial 2	Date	Time
KFLR	254	Korber Wireless Station. "The Sunshine Center of America." Albuquerque, New Mexico	100				
KFLU	236	San Benito Radio Club. "Heart of Magic Valley." San Benito, Texas	50				
KFLV	229	Swedish Evangelical Mission, 1503 4th Ave., Rockford, Ill.	100				
KFLW	234	Missoula Elec. Supply Co. "Missoula, the Scenic Center of Montana." Missoula, Mont.	5				
KFLX	240	Geo. R. Clough, 1214 40th St., Galveston, Texas	10				
KFLY	231	Fargo Radio Supply Co. "Radio Satisfaction." Fargo, N. Dak.	20				
KFLZ	273	Automobile Club of Atlantic, 7 West 3rd St., Atlantic, Iowa	100				
KFMB	254	Christian Church, Little Rock, Ark.	100				
KFMQ	263	University of Arkansas, Fayetteville, Ark.	10				
KFMR	261	Morningside College, Sioux City, Iowa					
KFMT	231	Dr. Geo. W. Young. "Dr. Young's Minneapolis Station." 909 W. Broadway, Minneapolis, Minn.	10				
KFMW	226	M. G. Sateren, 127 Blanche St. "The Copper Country Station." Houghton, Michigan	5				
KFMX	283	Carleton College, Northfield, Minn.	500				
KFNF	266	Henry Field Seed Co., 323 Sycamore St., Shenandoah, Iowa	500				
KFNG	254	Wooten's Radio Shop. "Service Thru the Air." Coldwater, Miss.	10				
KFNL	240	Radio Broadcast Assn., Paso Robles, Calif.	10				
KFNV	234	L. A. Drake, Santa Rosa, Calif.	5				
KFNY	261	Montana Phonograph Co., Helena, Mont.	5				
KFNZ	231	Royal Radio Co., Burlingame, Calif.	10				
KFOA	455	Rhodes Dept. Store. "Pacific Northwest Station." Seattle, Wash.	500				
KFOB	224	Glenwood Technical Assn. 920 5th Ave. N., Minneapolis, Minn.	5				
KFOC	236	First Christian Church, Whittier, Calif.	100				
KFOD	224	The Radio Shop, Wallace, Idaho	10				
KFOF	240	Rohrer Electric Co., Marshfield, Ore.	10				
KFOJ	246	Moberly High School Radio Club, Moberly, Mo.	5				
KFON	234	Echophone Radio Shop, Long Beach, Calif.	100				
KFOO	261	Latter Day Saints University, Salt Lake City, Utah	10				
KFOQ	240	Ora W. Chancellor, 3216 Ave., Galveston, Texas	50				
KFOR	226	David City Fire & Elec. Co., 343 N. 5th St., David City, Nebr.	10				
KFOT	231	College Hill Radio Club, Wichita, Kansas	50				
KFOU	254	Hommel Mfg. Co., Richmond, Calif.	100				
KFOV	234	David Elec. Corp., 510 Pierce St., Sioux City, Iowa	10				
KFOX	248	Technical High School, Omaha, Nebr.	100				
KFOY	226	Beacon Radio Service, St. Paul, Minn.	50				
KFPB	224	Edwin J. Brown, Seattle, Wash.					
KFPG	238	Garretson & Dennis, 826 W. 7th St., Los Angeles, Calif.	100				
KFPL	242	C. C Baxter, 205 Grafton St., Dublin, Texas	20				
KFPM	242	New Furniture Co., Greenville, Texas	10				
KFPN	242	Missouri Nat'l. Guard, Headquarters Co. 70th Inf. Brigade, Jefferson, Mo.	10				
KFPO	231	Colorado Nat'l. Guard, 45th Div. Tank, 1321 Acoma St., Denver, Colo.	500				
KFPP	236	C. & G. Radio Elec. Shop, Olympia, Wash.	20				
KFPR	231	Los Angeles County Forestry, Los Angeles, Calif.	500				
KFPV	236	Heintz & Kohlmoos, 219 Natoma St., San Francisco, Calif.	50				
KFPW	268	St. Johns Church, Carterville, Mo.	20				
KFPX	242	First Presbyterian Church, Pine Bluff, Arkansas	100				
KFPY	283	Symons Investment Co., Spokane, Wash.	100				
KFQA	261	The Principia, 5539 Page Ave., St. Louis,, Mo.	50				
KFQB	254	Searchlight Publ. Co., Ft. Worth, Texas	100				
KFQC	227	Kidd Brothers, Radio Shop, 311 Second St., Taft, Calif.	100				
KFQD	280	Chovin Supply Co., Anchorage, Alaska	100				
KFQE	224	Dickenson Henry Radio Lab., Colorado Springs, Colo.	5				
KFQF	224	Minneapolis Radio Repair Shop. "The Flour City of the World." 2544 Pleasant Ave. S. Minneapolis	50				
KFQG	226	Southern Calif. Radio Assn., Armory, Los Angeles, Calif.	100				
KFQH	231	Radio Service Co. "Keep Faith, Quit Hammering." 274 Middlefield Road, Burlingame, Calif.	100				
KFQI	234	Thomas H. Ince Co., Culver City, Calif.	100				
KFQJ	236	Harbour-Longmire Co., Oklahoma City, Okla.	50				
KFQK	236	Democrat Leader, Fayette, Mo.	10				
KFQL	252	Oklahoma Free State Fair Assn., Muskogee, Okla.	20				
KFQM	268	Texas Highway Bulletin, Austin, Texas	100				
KFQN	283	Third Baptist Church, Portland, Ore.	10				
KFQO	261	Meier Radio Shop, Russell, Kans.	10				
KFQP	224	Geo. S. Carson, Jr., 906 College St., Iowa City, Iowa	10				
KFQR	250	Walter LaFayette Ellis, Oklahoma City, Okla.	10				
KFQS	246	Dickenson Henry Radio Lab., Manitou, Colo.	10				
KFQT	252	Texas Nat'l. Guard, Denison, Texas	10				
KFQU	234	W. Riker ,Holy City, Calif.	100				
KFQV	231	Omaha Grain Exchange, Omaha, Nebr.	100				
KFQW	248	Photo Radio & Elec. Shop, North Bend, Wash.	50				
KFQX	233	Alfred M. Hubbard, 310 Green Bldg., Seattle, Wash.	250				
KFQY	273	Farmers' State Bank, Belden, Neb.	10				
KFQZ	240	Taft Radio Co., Hollywood, Calif.	250				
KFRA	240	Marwin S. Olson, Carver, Minn.	500				
KFRB	248	Hall Bros. Beeville, Texas	250				
KFSG	278	Echo Park Evangelistic Assn., Los Angeles, Calif.	500				
KFSY	261	The Van Blaricom Co., Helena, Mont.	10				
KGB	252	Tacoma Daily Ledger, Tacoma, Wash.	50				
KGG	360	Hallock & Watson. "The Rose City." Portland, Oregon	50				
KGO	312	General Electric Co., Oakland, Calif.	1000				
KGU	360	Marion A. Mulrony, Honolulu, Hawaii	500				
KGW	492	The Morning Oregonian. "Keep Growing Wiser." Portland, Ore.	500				
KGY	258	St. Martins College, Lacey, Wash. "Out Where Cedars Meet the Sea." Lacey, Washington	50				
KHJ	395	Times-Mirror Co., Los Angeles, Calif.	500				
KHQ	360	Louis Wasmer, Seattle, Wash.	100				
KJQ	273	Gould, the Light Man, Stockton, Calif.	5				
KJR	283	Northwest Radio Service Co., 1328 Sixth Ave., Seattle, Wash.	50				
KJS	360	Bible Institute of Los Angeles. "King Jesus Service." Los Angeles, Calif.	750				
KLS	360	Warner Bros. 22nd and Telegraph Ave., Oakland, Calif.	250				
KLX	509	Oakland Tribune. "Where Rail and Water Meet." Oakland, Calif.	500				
KLZ	283	The Reynolds Radio Co. "'Tis a Privilege to Live in Colorado, Denver, Colo.	500				
KMJ	248	San Joaquin Light & Power Corp., Fresno, Calif.	50				
KMO	360	Love Electric Co., Tacoma, Wash.	10				
KNT	263	Grays Harbor Radio Co., Aberdeen, Wash.	250				
KNV	256	Radio Supply Co., Los Angeles, Calif.	100				
KNX	360	Electric Lighting Supply Co., Los Angeles, Calif.	100				
KOB	360	New Mexico College of Agri. and Mech. Arts. "Sunshine State of America." State College, New Mexico	500				
KOP	286	Detroit Police Dept. "Safety First." Detroit, Mich.	500				
KPO	423	Hale Brothers. "The City at the Golden Gate." San Francisco, Calif.	500				
KQP	360	Apple City Radio Club. "The Home of Hood River Apple." Hood River, Ore.	10				
KQV	270	Doubleday Hill Elec. Co., 719 Liberty Ave., Pittsburgh, Pa.	500				
KQW	360	Chas. G. Herrold. "The Voice of the Garden City." San Jose, Calif.	50				
KRE	275	Berkeley Daily Gazette, Berkeley, Calif.	50				
KSD	546	Post-Dispatch, 12th and Olive Sts., St. Louis, Mo.	500				
KSS	360	Frost & Dean Radio Co. and Radio Research Society, Long Beach, Calif.	20				
KTW	360	First Presbyterian Church, Seattle, Wash.	750				
KUO	360	Examiner Printing Co., San Francisco, Calif.	150				
KUS	360	City Dye Works & Laundry Co., Los Angeles, Calif.	100				

GARDENVILLE, N. Y.--"*The First Night I Tuned In Over Forty Stations*"

LEWIS F. SEEDORF, PRES. PHILIP KIEFER, SEC'Y

GHS

GARDENVILLE HIGH SCHOOL

H. C. LEEGE, PRINCIPAL

GARDENVILLE, N. Y., March 10 1925

Baldwin Pacific & Co.,
San Francisco, Calif.

Gentlemen:

It may be interesting to you to know of the results that I have had with my Super-Heterodyne built from your "Quintet" Kit. It has given perfect satisfaction.

The first night that I had it, I tuned in over 40 broadcasters, amateurs, coast stations, and ships at sea. KFI over 2000 miles away came in with full loud speaker volume. WFAA and WBAP, a thousand miles away, can be heard at any time. Since then I have logged 137 stations and I am still going strong.

Two audio stages give enough volume for a large hall. Tonal quality is perfect.

Selectivity is high and no interference is experienced. WGR, a few miles away is tuned out and KOA Denver is brought through.

This certainly speaks well for Baldwin Pacific quality. No other receiver could have given me the results that this one has.

Trusting that this letter is welcome, I remain,

Very truly yours,

L a Eggleston

L.A.Eggleston

United States Broadcasting Station Directory and Log Record for 45,000 Cycle Super

Call	Meters	Owner, Slogan and Location	Power	Dial 1	Dial 2	Date	Time
KUVQ	450	Kreetan Co., Johnswood, Drummond Is., Michigan	1000				
KUY	256	Coast Radio Co., El Monte, Calif.	50				
KWG	360	Portable Wireless Telephone Co., Stockton, Calif.	100				
KWH	360	Los Angeles Examiner, Los Angeles, Calif.	500				
KXD	252	Modesto Herald Publ. Co., Modesto, Calif.	5				
KYQ	270	The Electric Shop, Honolulu, Hawaii	100				
KYW	536	Westinghouse Station. "The Twenty-four Hour Station." Chicago, Ill.	1000				
KZM	360	Western Radio Institute, 13th and Harrison, Oakland, Calif.	50				
KZN	360	The Deseret News, Salt Lake City, Utah	500				
WAAB	268	Valdemar Jensen, 137 S. St. Patrick, New Orleans, La.	100				
WAAC	360	Tulane University of La., New Orleans, La.	400				
WAAD	360	Ohio Mechanics Institute, Cincinnati, Ohio	25				
WAAF	286	Chicago Daily Drovers Journal, 844 Exchange Ave., Chicago, Ill.	200				
WAAM	263	I. R. Nelson Co. "Elec. Repairing and Mfg." Bond Street, Newark, N. J.	250				
WAAN	254	University of Missouri, Columbia, Mo.	50				
WAAW	286	Omaha Grain Exchange. "Where Agriculture Accumulates Wealth." Omaha, Nebraska	500				
WABB	266	Dr. J. B. Lawrence, 2006 Market St., Harrisburg, Pa.	10				
WABD	283	Parker High School, 1st and St. Clair Sts., Dayton, Ohio	10				
WABE	283	Y. M. C. A., Washington, D. C.	100				
WABH	240	Lake Shore Tire Co., 1014 Hancock St., Sandusky, Ohio	10				
WABI	240	Bangor Railway & Electric Co. "The Pine Tree Wave." Bangor, Maine	100				
WABK	252	First Baptist Church, Worcester, Mass.	10				
WABL	283	Connecticut Agricultural College, Storrs, Conn.	100				
WABM	254	F. E. Doherty, 901 Genesee Ave., Saginaw, Mich.	100				
WABN	244	Ott Radio, Inc. "La Crosse, Wis., the Beautiful." La Crosse, Wis.	500				
WABO	252	Lake Ave. Baptist Church, Lake Ave., Rochester, N. Y.	10				
WABP	266	Robt. F. Weinig, 522 Wooster Ave., Dover, Ohio	100				
WABQ	261	Haverford College Radio Club, Haverford, Penna.	50				
WABR	270	Jesup W. Scott High School, Toledo, Ohio	50				

Above illustration shows the attractive and compact manner in which complete parts for the various models of the Baldwin-Pacific 45,000 cycle Super-Heterodyne are to be had. Parts for each model are carefully selected as being especially adapted for their intended purpose. Each kit therefore represents an exceptional value. In buying the complete parts at one purchase much "shopping around" at half a dozen or more stores, as is often necessary to procure the best, is entirely done away with.

SEND YOUR DEALERS NAME--USE THE ORDER BLANK BELOW BE SURE TO STATE "MODEL" DESIRED AND WRITE PLAIN

TERMS: 10% or more cash with order, balance C. O. D. Prices do not include tubes, batteries or cabinet. If specially designed collapsible center tap loop is desired see provision in order blank for ordering:

Improved—"Model A"—All parts including 7-inch by 20 inch drilled panel bus bar wire, miscellaneous screws and nuts, ... $75.00

Standard "Model B"—(Using 201-A Tubes.) All parts including 6-inch by 26-inch drilled panel, metal panel shield, intermediate metal shielding plates, miscellaneous screws and nuts.... $80.00

Favorite "Model C"—All parts including 8-inch by 20-inch drilled panel, 8-inch by 19½-inch drilled bakelite sub base, 2¼-inch by 19½-inch drilled bakelite socket mounting strip, brackets, bus bar wire, miscellaneous screws and nuts, ... $85.00

Compact "Model D"—All parts including 8-inch by 20-inch drilled panel, sub base, intermediate shielding plates, bus bar wire, miscellaneous screws and nuts, ... $80.00

Popular "Model E"—All parts including 6-inch by 26-inch drilled panel, bus bar wire, miscellaneous screws and nuts, ... $70.00

ORDER

Baldwin-Pacific & Co.,
Pacific Bldg., San Francisco.

Herewith find $..... for which ship to the undersigned "..... Model ....."
balance C. O. D. Fill in type of receiver

.... City..... State.....
Name Address City State

My dealer's name is..... .....
Address

Note: If special collapsible center tap Super Loop at $6.50 is also wanted check [ ]

Call	Meters	Location, Slogan and Owner	Power	Dial 1	Dial 2	Date	Time
WABT	252	Holliday-Hall Elec. Engineers, Geo. Wash. Hotel, Washington, Penn.	100				
WABU	226	Victor Talking Mach. Co., Point and Linden Sts., Camden, N. J.	100				
WABW	234	The College of Wooster, Dept. of Physics, Wooster, Ohio	20				
WABX	270	Henry B. Joy, 1830 Penobscot Bldg., Detroit, Mich.	150				
WABY	242	John Magahll, Jr., 815 Kimball St., Philadelphia, Pa.	50				
WABZ	263	Colliseum Place Baptist Church, "The Station With a Message." New Orleans, Louisiana	50				
WBAA	283	Purdue University, W. Lafayette, Ind.	250				
WBAD	360	Sterling Elec. Co., 31 S. 5th St., Minneapolis, Minn.	100				
WBAK	400	Pennsylvania State Police, Harrisburg, Penna.	500				
WBAN	244	Wireless Phone Corp., 193 Ellison St., Paterson, N. J.	100				
WBAO	275	James Millikin University, Decatur, Ill.	50				
WBAP	476	The Star Telegram, Fort Worth, Texas	1000				
WBAV	390	Erner & Hopkins Co. "We Broadcast a Variety" (WBAV). 146 N. Third St., Columbus, Ohio	500				
WBAX	360	John H. Stenger, Jr. "In Wyoming Valley." Box 104, Wilkes-Barre, Pa.	100				
WBAY	492	Western Elec. Co., 463 West St., New York City, N. Y.	500				
WBBA	240	Plymouth Congregational Church, Newark, Ohio	20				
WBBD	234	Barbey Battery Service, Reading, Pa.	50				
WBBE	246	Alfred H. Marcy, 113 W. Raynor St., Syracuse, N. Y.	10				
WBBG	248	Irving Vermilya. "The Voice from Cape Cod." Mattapoisett, Mass.	500				
WBBH	246	John J. Bell, 1511 Gordon St., Port Huron, Mich.	50				
WBBI	234	The Indianapolis Radio Club, 1721 N. Somerset St., Indianapolis, Ind.	20				
WBBJ	258	Neel Electric Co., West Palm Beach, Fla.	50				
WBBL	283	Grace Covenant Church, Richmond, Va.	50				
WBBM	226	Frank Atlass Products Co., 110 Park Place, Lincoln, Ill.	200				
WBBN	275	A. B. Blake, 225 N. Front St., Wilmington, N. C.	10				
WBBP	246	Petoskey High School, Petoskey, Mich.	10				
WBBR	244	Peoples Pulpit Assn., Rossville ,N. Y.	100				
WBBT	234	Lloyd Bros., 3157 Frankford Ave., Philadelphia, Pa.	5				
WBBU	224	Jenks Motor Sales Co., Monmouth, Ill.	10				
WBBV	248	Johnstown Radio Co., 324 Market St., Johnstown, Penn.	5				
WBBW	222	Ruffner Junior High School, Norfolk, Va.	50				
WBBY	268	Washington Light Infantry, Charlestown, So. Car.	20				
WBBZ	227	Noble B. Watson, 233 Iowa St., Indianapolis, Ind.	50				
WBL	254	T. and H. Radio Co., Anthony, Kansas	100				
WBR	286	Pennsylvania State Police, Capitol Bldg., Butler, Penna.					
WBS	360	D. W. May, Inc., 325 Central Ave., Newark, N. J.	100				
WBT	360	Southern Radio Corp. "The Queen City of the South." 1116 Realty Bldg., Charlotte, N. C.	500				
WBZ	337	Westinghouse Elec. & Mfg. Co., 82 Worthington St., Springfield, Mass.	1000				
WCAD	280	St. Lawrence University. "The Voice of the North Country." Canton, N. Y.	250				
WCAE	462	The Pittsburgh Press and the Kaufman & Baer Co. "The Workshop of the World." Pittsburgh, Pa.	500				
WCAG	268	Clyde R. Randall. "The Little Noise from New Orleans." 2813 Calhoun St., New Orleans, La.	50				
WCAH	286	Entrekin Elec. Co., 321 W. 10th St. "The Heart of Ohio." Columbus, Ohio	100				
WCAJ	280	Nebraska Wesleyan University. "Where Culture Aids Justice." (WCAJ). University Place, Neb.	500				
WCAK	263	Alfred P. Daniel. "Where 18 Railroads Meet the Sea." Houston, Texas	10				
WCAL	360	St. Olaf College, Dept. of Physics. "The College on the Hill." Northfield, Minnesota	500				
WCAO	360	Sanders & Stayman Co., 319 N. Charles St., Baltimore, Md.	50				
WCAP	469	Chesapeake & Potomac Telephone Co., 725 13th N. W., Washington, D. C.	500				
WCAR	360	Southern Radio Corp. of Texas. "The Gateway to Mexico." San Antonio, Texas	100				
WCAS	280	The William Hood Dunwoody Industrial Inst. "The Flower City of the World." 818 Superior Blvd., Minneapolis, Minn.	100				
WCAT	240	South Dakota State School of Mines, Rapid City, S. D.	100				
WCAU	286	Durham & Co., 1936 Market St., Philadelphia, Pa.	100				
WCAV	360	J. C. Dice Elec. Co., 113 W. Capitol Ave., Little Rock, Ark.	20				
WCAX	360	University of Vermont, Burlington, Vt.	50				
WCAY	266	Milwaukee Civic Broadcasting Assn., Inc., Hotel Antlers, Milwaukee, Wis.	250				
WCBA	280	C. W. Heimbach, Queen City Radio Broadcasting Station. "Sunshine Jollicrs." 1015 Allen St., Allentown, Pa.	10				
WCBC	280	University of Michigan, Dept. of Elec. Eng., Ann Arbor, Mich.	200				
WCBD	345	Wilbur Glenn Voliva. "Where God Rules Man Prospers." Zion, Ill.	500				
WCBE	263	Phalt Radio Co., 4521 Chestnut St., New Orleans, La.	5				
WCBF	236	Paul J. Miller, 1133 Creedmore Ave., Pittsburgh, Pa.	50				
WCBG	254	Howard S. Williams, Evangelist, Pascagoula, Miss.	10				
WCBH	242	University of Mississippi, Oxford, Miss.	20				
WCBI	226	Nicoll, Duncan & Rush, Bemis, Texas	100				
WCBJ	244	J. C. Mans, 822 Main St., Jennings, La.	20				
WCBK	266	E. Richard Hall, 2801 Central Ave., St. Petersburg, Fla.	500				
WCBL	280	Northern Radio Mfg. Co., Houlton, Maine	50				
WCBM	229	Chas. Swartz, Charles St. and North Ave., Baltimore, Md.	50				
WCBN	266	James P. Boland, Lieut. U. S. A., 3rd F. A., Fort Benjamin Harrison, Ind.	50				
WCBO	250	Radio Shop, Inc., 189 Union Ave., Memphis, Tenn.	20				
WCBQ	236	First Baptist Church, Nashville, Tenn.	100				
WCBR	246	Chas. H. Messter, 42 Doyle Ave., Providence, R. I.	5				
WCBT	238	Clark University, Worcester, Mass.	250				
WCBU	254	Arnold Wireless Sup. Co. "The Fifty Watt Station in the Fifty Kilowatt Town." Arnold, Pa.	50				
WCBV	252	Tullahoma Radio Club, Tullahoma, Tenn.	10				
WCBW	226	Geo. P. Rankin, Jr. and Maitland Soloman, Macon, Ga.	10				
WCBY	268	Forks Electrical Shop, Buck Hill Falls, Pa.	10				
WCBZ	248	Coppotelli Bros. Music House. "Where the Lincoln and Dixie Highways Meet." Chicago, Heights, Ill.	50				
WCK	360	Stix, Baer & Fuller, Washington St., St. Louis, Mo.	100				
WCX	517	Detroit Free Press. "The Call of the Motor City." 117 Lafayette Blvd., Detroit, Michigan	500				
WDAE	360	Tampa Daily Times, Tampa, Fla.	250				
WDAF	411	The Kansas City Star. "Nighthawks, the Enemies of Sleep." Kansas City, Missouri	500				
WDAG	263	J. Laurence Martin. "Where Dollars Always Grow." (WDAG) Amarillo, Tex.	100				
WDAH	268	Trinity Methodist Church. "The Climatic Capital of America." El Paso, Tex.	50				
WDAR	395	Lit Bros. Dept. Store. "Quaker City Siren." Philadelphia, Pa.	500				
WDAS	360	Samuel A. Waite, 692a Main St., Worcester, Mass.	5				
WDAU	360	Slocum & Kilburn, New Bedford, Mass.	100				
WDAY	244	Radio Equip. Corp. 'The Biggest Little City in the World." 119 Broadway, Fargo, North Dakota	550				
WDBB	229	A. H. Waite & Co., 32 Weir St., Taunton, Mass.	10				
WDBC	258	Kirk, Johnson & Co., Lancaster, Pa.	50				
WDBD	268	H. E. Burns. "We Do Better Daily." (WDBD). Martinsburg, W. Va.	5				
WDBF	246	Robt. G. Phillips, 254 W. Federal St., Youngstown, Ohio	50				
WDBH	268	C. T. Sherer Co., Worcester, Mass.					
WDBI	226	Radio Specialty Co., Inc., 819 Third St. S., St. Petersburg, Fla.	10				
WDBJ	229	Richardson-Wayland Elec. Corp., 106 Church Ave., S. W., Roanoke, Va.	20				
WDBN	252	Maine Elec. Light & Power Co., Bangor, Maine	5				
WDBO	240	Rollins College, Winter Park, Fla.	50				
WDBP	261	Superior State Normal School, Superior, Wis.	50				
WDBQ	234	Morton Radio Sup. Co., Andrews Bldg., Salem, N. J.	10				
WDBR	256	Tremont Temple Baptist Church, Boston, Mass.	100				
WDBS	283	S. M. K. Radio Corp., 39 E. 3rd St., Dayton, Ohio	5				
WDBT	236	Taylor's Book Store, Hattiesburg, Miss.	10				

F. L. CLEMMENS

PHONE WALNUT 6870

COLUMBIA FURNITURE & FIXTURE CO.

MANUFACTURERS OF HIGH GRADE FURNITURE
KERN STATION
PORTLAND, OREGON

April 9 1925

Baldwin Pacific & Co.
San Francisco, Calif.

Gentlemen:

I am enclosing a photo of a Super I built using your Ranger Kit. It is the most reliable of any set I have ever had. I use a loop and tune only with loud speaker. I am able to bring in on a loud speaker at will, all the coast and Canadian stations, with KGW, broadcasting and with no interference.

The following are a list of my loggings for one week. March 16,- WTAM, WCCO, KOA, WOAW, WGR, KSD, WBAP, WJJD, WSAI, WCAL, KFKX. March 17,- KDKA, WGR, WCCO, WGY, WOC, WEBH, KFKX, WOJ. March 18,-WGR, WCCO, WEBH, WGY, KYW, WGN, WSAI, WOJ, WHO, WTAM, WJZ, WOS, KOA, March 19,- WOC, KDKA, WGR, WEBH, WOAW, WGY, KFKX, WCCO, WHAD. March 20,- KDKA, KOA, KFKX, WEBH, WCCO, WOAW, WOS. March 21,- KDKA, WCCO, WOAW, WTAM, WOC, KOA, WEBH, WQI, WDAF. March 22,-KDKA, WGR, KOA, WCCO, WOS, KYW, WFAA, WOC, WCBD, WEBH, KTHS, WGY, WHB, Hastings was often rebroadcasted from Pittsburg.

I did not count stations unless volume was enough to hear the announcer or the music clear. I am within one block of a street car and high power lines.

Yours truly,
F. L. Clemmens

PACIFIC COAST "RADIOTORIAL"

Radio waves and not sea waves have captured these winsome bathing beauties. Here is shown a group of California's finest listening in on a Baldwin-Pacific Model 45,000 Cycle Super-Receiver.

United States Broadcasting Station Directory and Log Record for 45,000 Cycle Super

Call	Meters	Owner, Slogan and Location	Power	Dial 1	Dial 2	Date	Time
WDBU	258	Somerset Radio Co., 45 Water St., Skowhegan, Maine	10				
WDBW	268	The Radio Den. "The Dimple of the Universe." Columbia, Tenn.	20				
WDBX	233	Otto Baur, 138 Dyckman St., New York, N. Y.	5				
WDBY	258	North Shore Congregational Church, 1011 Wilson Ave., Chicago, Ill.	500				
WDBZ	233	Boy Scouts of America, City Hall, Kingston, N.Y.	5				
WDM	234	Church of hte Covenant, Washington, D. C.	50				
WDZ	278	James L. Bush, Star Store Bldg., Tuscola, Ill.	10				
WEAA	280	Frank D, Fallain. "The Vehicle City." 321 First Ave., Flint, Mich.	100				
WEAF	492	American Telephone & Telegraph Co. "The Voice of the Millions." 195 Broadway, New York City, N. Y.	500				
WEAH	280	Board of Trade. "Kansas Grows the Best Wheat in the World." 120 S. Market St., Wichita, Kansas	50				
WEAI	286	Cornell University, School of Elec. Eng., Ithaca, N. Y.	500				
WEAJ	283	University of South Dakota. "University of S. D. for South Dakotans." Vermillion, S. D.	100				
WEAM	252	Mayor W. L. Smalley, North Plainfield, N. J.	100				
WEAN	273	The Shepard Stores, Providence, R. I.	100				
WEAO	360	Ohio State University, Elec. Eng. Dept., Columbus, Ohio	500				
WEAP	360	Mobile Radio Co., 313 Chatham St., Mobile, Ala.	100				
WEAR	360	Baltimore American & News Publ. Co., Baltimore, Md.	50				
WEAS	360	Hecht Bros. Washington, D. C.	100				
WEAU	275	Davidson Bros. Co. "The Heart of the Corn Belt." Sioux City, Iowa	100				
WEAY	360	Iris Theatre, Radio Dept., Houston, Texas	500				
WEB	273	The Benson Radio Co., Inc. "A Wave Length Ahead." 918 Pine St., St. Louis, Missouri	500				
WEBA	233	The Electric Shop, 131 Church St., New Brunswick, N. J.	35				
WEBC	242	Walter C. Bridges, 1011 N. 21st St., Superior, Wis.	10				
WEBD	246	Electrical Equip. & Ser. Co., Anderson, Ind.	10				
WEBE	248	Roy W. Waller, 319 Wall Ave., Cambridge, Ohio	10				
WEBH	370	The Edgewater Beach Hotel-Chicago Evening Post Broadcasting Station, 5525 Sheridan Rd., Chicago, Ill.	1000				
WEBI	242	Walter Gibbons, 121 Dock St., Salisbury, Md.	15				
WEBJ	273	Third Avenue Railway Co., 2396 Third Ave., New York, N. Y.	500				
WEBK	261	Grand Rapids Radio Co., Grand Rapids, Mich.	20				
WEBL	226	Radio Corp. of America	100				
WEBP	242	E. Budd Peddicord, 815 Roosevelt St., New Orleans, La.	10				
WEEI	303	Edison Elec. Illuminating Co., Boston, Mass.	500				
WEV	360	Hurlburt-Still Elec. Co. "Heavenly Houston." McKinley Ave. and San Jacinto St., Houston, Texas	50				
WEW	280	St. Louis University, University Sta., St. Louis, Mo.	100				
WFAA	476	The Dallas News & Dallas Journal. "Working For All Alike." (WFAA). Dallas, Texas	500				
WFAB	234	Carl F. Woese, 802 McBride St., Syracuse, N. Y.	100				
WFAM	360	Times Publ. Co., 18 N. Sixth St., St. Cloud, Minn.	100				
WFAN	286	Hutchinson Elec. Serv. Co. "Gateway to Minnesota's Ten Thousand Lakes." Hutchinson, Minn.	100				
WFAT	258	New Columbus College, Sioux Falls, S. D.	50				
WFAV	275	University of Nebraska. "The Home of the Cornhuskers." Lincoln, Neb.	250				
WFBB	261	Eureka College, Eureka, Ill.	150				
WFBG	261	The Wm. F. Gable Co. Store. "The Original Gateway to the West." Altoona, Pennsylvania	100				
WFBH	273	Concourse Radio Corp, New York, N. Y.	500				
WFI	395	Strawbridge & Clothier Store, Philadelphia, Pa.	500				
WGAN	360	Cecil E .Lloyd, 216 W. Romana St., Pensacola, Florida	50				
WGAQ	252	W. G. Patterson, Youree Hotel Bldg., Shreveport, La.	150				
WGAZ	275	South Bend Tribune. "Broadcasting from the Hoosier State." So. Bend. Ind.	250				
WGI	360	American Radio and Research Corp. "Amrad—The Voice of the Air." Medford Hillside, Mass.	100				
WGL	360	Thomas F. J. Howlett, 2303 N. Broad St., Philadelphia, Pa.	500				
WGN	370	Chicago Tribune, Drake Hotel, 140 E. Walton Pl., Chicago, Ill.	1000				
WGR	319	Federal Tel. Mfg. Corp., Hotel Statler. "Key City of Industry." Buffalo, New York	750				
WGY	380	General Elec. Co., Schenectady, N. Y.	1000				
WHA	360	University of Wisconsin, Madison, Wis.	500				
WHAA	484	State University of Iowa, Iowa City, Iowa	500				
WHAD	280	Marquette University, Grand Ave., Milwaukee, Wis.	100				
WHAG	222	University of Cincinnati, Dept. of Elec. Engr., Cincinnati, Ohio	100				
WHAK	258	Roberts Hardware Co., Clarksburg, W. Va.	15				
WHAM	283	Eastman School of Musc. Univ. of Rochester, Gibbs St., Rochester, N. Y.	100				
WHAP	360	Otta and Kuhns, 160 S. Water St., Decatur, Ill.	50				
WHAR	275	Seaside Hotel, Atlantic City, N. J.	200				
WHAS	400	The Courier-Journal and The Louisville Times, 326 W. Liberty St., Louisville, Kentucky	500				
WHAV	360	Wilmington Elec. Spec. Co., Inc. "Down Where the Peaches Grow." 405 Delaware Ave., Wilmington, Delaware	100				
WHAZ	380	Rensselaar Polytechnic Institute. "Broadcasting from the Oldest Engineering School in America." Troy, N. Y.	500				
WHB	411	Sweeney School Co. "The Heart of America." Sweeney Bldg., Kansas City, Missouri	500				
WHK	283	The Radiovox Co., 5005 Euclid Ave., Cleveland, Ohio	100				
WHN	360	Loew's State Theatre Bldg. "The Voice of the Great White Way" and "The Human Interest Station." Broadway at 45th St., New York City, N. Y.	500				
WHQ	300	E. M .Tellefson, Mackinac Island, Mich.	2000				
WHO	526	Bankers Life Co., Des Moines, Iowa	500				
WIAB	252	Joslyn Automobile Co., 320 Church St., Rockford, Ill.	50				
WIAC	360	Galveston Tribune, Galveston, Texas	100				
WIAD	234	Howard Miller. "The Voice from the Birthplace of Liberty." 6318 N. Park Ave, Philadelphia, Penna.	100				
WIAF	234	Nola Radio School, 327 St. Charles St., New Orleans, La.	10				
WIAK	278	Daily Journal-Stockman, Stock Yards, Omaha, Nebr.	200				
WIAR	360	Paducah Evening Sun, Paducah, Kentucky	100				
WIAS	283	Home Elec. Co. "Burlington on the Mississippi." Burlington, Iowa	100				
WIAU	360	American Trust & Savings Bank, Le Mars, Iowa	30				
WIK	234	K. & L. Elec. Co., 427 Olive St., McKeesport, Pa.	100				
WIP	509	Gimbel Bros. "Watch Its Progress." (WIP). Philadelphia, Penna.	500				
WJAB	229	American Elec. Co., 1521 "O" St., Lincoln, Nebraska	100				
WJAD	360	Jackson's Radio Engineering Laboratories, 801 Austin St., Waco, Texas	150				
WJAF	360	Muncie Press & Smith Elec. Co., Muncie, Ind.	10				
WJAG	283	Daily News. "The World's Greatest Country Daily." Norfolk, Neb.	250				
WJAK	254	Rev. Clifford L. White. "The Radio Parson." Church of Christ, Greentown, Indiana	30				
WJAN	280	Peoria Star Co. "The Grand View City of Illinois." Peoria, Ill.	100				
WJAR	360	The Outlet Company. "The Southern Gateway to New England." Providence, R. I.	500				
WJAS	286	Pittsburgh Radio Supply House. "World's Jolliest Aerial Station." Pittsburgh, Penna.	500				
WJAX	390	Union Trust Co. "The Wave from Lake Erie." Cleveland, Ohio	500				
WJAZ	268	Chicago Radio Laboratory, 332 S. Michigan Ave., Chicago, Ill.	20				
WJD	229	Denison University. "The College on the Hill." Granville, Ohio	50				
WJH	273	Wm. P. Boyer Co., 812 Thirteenth St. N. W., Washington, D. C.	50				
WJY	405	Radio Corp. of America, New York, N. Y.	500				
WJZ	455	Radio Corp. of America, 33 West 42nd St., New York, N. Y.	500				
WKAA	268	H. F. Paar (Republican Times), 1444 E. 2nd Ave., Cedar Rapids, Iowa	100				
WKAF	360	W. S. Radio Sup. Co., 725 10th St., Wichita Falls, Texas	100				

HIRAM PERCY MAXIM PRESIDENT
CHAS H STEWART VICE-PRESIDENT
F H SCHNELL TRAFFIC MANAGER
A A HEBERT TREASURER
K B WARNER SECRETARY

THE AMERICAN RADIO RELAY LEAGUE, INCORPORATED

A MAGAZINE DEVOTED EXCLUSIVELY TO THE WIRELESS AMATEUR

CABLE ADDRESS
QUIST HARTFORD
OFFICIAL ORGAN QST
KENNETH B WARNER EDITOR

ARRL HEADQUARTERS----SOUTHERN TEXAS SECTION.
Box 567, New Braunfels, Texas.

December 22, 1924.

Baldwin-Pacific Co.,
San Francisco, California.

Dear Sirs:

A few days ago I adjusted a super-heterodyne built from one of your kits by a friend. I wish to congratulate you on the wonderful circuit and parts and also on the very attractive price. The circuit functions equally well on amateur CW signals. The ease with which oscillation in the intermediate amplifier can be controlled makes this possible.

Using a small center tapped loop I heard nearly every broadcast station in the United States, Canada and Mexico. All of these were heard on the loudspeaker using only the first audio stage and UV199 tubes. Amateurs from every district were copied with ease.

Wishing you every success with this meritorious circuit and parts I beg to remain

Yours truly,

E.A. SAHM E. A. Sahm.
Assistant Division Manager,
Southern Texas.
Radio 5XAV-5GW

United States Broadcasting Station Directory and Log Record for 45,000 Cycle Super

Call	Meters	Owner, Slogan and Location	Power	Dial 1	Dial 2	Date	Time
WKAP	360	Dutee W. Flint, Cranston, R. I.	200				
WKAQ	360	Radio Corp. of Porto Rico. "The Island of Enchantment." P. O. Box 868, San Juan, Porto Rico	500				
WKAR	280	Michigan Agricultural College, East Lansing, Mich.	500				
WKAV	254	Laconia Radio Club, Laconia, N. H.	50				
WKBF	286	Dutee Wilcox Flint, Cranston, R. I.	500				
WKY	360	WKY Radio Shop, Oklahoma City, Okla.	500				
WLAG	417	Cutting & Washington Radio Corp., 18 W. Franklin St., Minneapolis, Minn.	500				
WLAH	234	Samuel Woodworth, 425 Brownell St., Syracuse, N. Y.	100				
WLAL	360	Naylor Elec. Co. "Oil Capital of the World." 24 W. 2nd, Tulsa, Okla.	100				
WLAP	286	W. V. Jordan, 306 W. Brokenridge St., Louisville, Ky.	20				
WLAW	360	Police Dept. City of New York, New York, N. Y.	500				
WLBL	278	Wis. Dept. of Markets. "Wisconsin, Land of Beautiful Lakes." (WLBL). Whiting Hotel, Stevens Point, Wis.	500				
WLS	345	Sears, Roebuck & Co., Sherman Hotel, Chicago, Ill.	500				
WLW	423	Crosley Radio Corp, Cincinnati, Ohio	500				
WMAC	261	Clive Meredith, Fernwood St., Cazenovia, N. Y.	200				
WMAF	360	Round Hills Radio Corp. "The Voice from Way Down East." So. Dartmouth, Mass.	100-500				
WMAH	254	General Supply Co. "We Make a Hit." ((WMAH). 144 N. 13th St., Lincoln, Nebr.	100				
WMAK	360	Lockport Board of Commerce, Lockport, New York	500				
WMAL	256	Trenton Hardware Co. "The Home of Good Music." Trenton, N. J.	50				
WMAN	286	The First Baptist Church, Broad & Jefferson Ave., Columbus, Ohio					
WMAP	246	Utility Battery Service, 665 Northampton St., Easton, Pa.	150				
WMAQ	448	The Daily News, Hotel LaSalle, Chicago, Ill.	500				
WMAV	254	Alabama Polytechnic Institute, Auburn, Ala.	250				
WMAW	254	Wahpeton Elec. Co., 224 Dakota Ave., Wahpeton, N. Dak.	50				
WMAY	280	Kingshighway Presbyterian Church. "May Every Byway Hear Kingshighway." Kingshighway and Cabanne St., St. Louis, Mo.	100				
WMAZ	261	Mercer University, Macon, Georgia	100				
WMC	500	Commercial Appeal. "Memphis Down In Dixie." 30 N. 2nd St., Memphis, Tennessee	500				
WMH	309	Ainsworth-Gates Radio Co. "The Station on the Hill." 605 Main Street, Cincinnati, Ohio	750				
WNAC	278	Shepard Stores, Boston, Mass.	100				
WNAD	360	University of Oklahoma, Normand, Okla.	50				
WNAL	258	Omaha Central High School, 20th and Dodge Sts, Omaha, Nebr.	20				
WNAP	275	Wittenberg College, Dept. of Physics, Springfield, Ohio	100				
WNAR	231	First Christian Church, Butler, Missouri	20				
WNAT	360	Lennig Bros. Co., 827 Spring Garden, Philadelphia, Penna.	250				
WNAW	360	Peninsula Radio Club, Fort Monroe, Va.	5				
WNAX	244	Dakota Radio & Apparatus Co., Inc., Wagner Block, Yankton, S. Dak.	100				
WNYC	526	Dept. of Plant and Structures, 2510 Municipal Bldg., New York, N. Y.	1000				
WOAC	266	Page Organ Co., 404 N. Main St., Lima, Ohio	50				
WOAD	360	Friday Battery & Elec. Corp. Sigourney, Iowa	20				
WOAE	280	Midland College, Fremont, Nebr.	15				

Call	Meters	Owner, Slogan and Location	Power	Dial 1	Dial 2	Date	Time
WOAF	360	Tyler Commercial College, Tyler, Texas	10				
WOAI	385	Southern Equip. Co. "The Winter Playground of America." San Antonio, Texas	500				
WOAN	360	Vaughan Conservatory of Music, Lawrenceburg, Tenn.	150				
WOAR	220	Henry P. Lundskow. "The Gateway to Wisconsin." Kenosha, Wis.	100				
WOAT	360	Boyd M. Hamp, 215 Market St., Wilmington, Delaware	50				
WOAV	242	Penna. Natl. Guard, 2nd Battalion 112th Inf. P.N. G., 6th and Parade Sts. "Wayne Rangers." Erie, Penna.	50				
WOAW	526	Woodmen of the World, 1315 Farnum St. "The Gateway to the East and to the West." Omaha, Nebr.	500				
WOAX	240	Franklyn J. Wolff. "The Voice from Trenton." 600 Ingham Ave., Trenton, New Jersey	500				
WOC	484	Palmer School of Chiropractor. "In the State Where the Tall Corn Grows." Davenport, Iowa	500				
WOI	360	Iowa State College, Ames, Iowa	500				
WOO	509	John Wanamaker, Philadelphia, Penna.	500				
WOQ	360	Western Radio Co., Kansas City, Mo.	500				
WOR	405	L. Bamberger & Co. "One of America's Greatest Stores." Newark, N. J.	500				
WOS	440	State Marketing Bureau, Capitol Bldg. "Watch Our State." (WOS). Jefferson City, Mo.	500				
WPAB	283	Penna .State College, Dept. of Elec. Engineering, State College, Penna.	500				
WPAC	360	Donaldson Radio Co., 210 Tiger Bldg., Okmulgee, Okla.	200				
WPAH	360	Wisconsin Dept. of Markets (U. S. Bureau of Agricultural Economics) Waupaca, Wisconsin	500				
WPAJ	268	Doolittle Radio Corp. 39 Center St., New Haven, Conn.	10				
WPAK	283	North Dakota Agricultural College, Fargo, N. Dak.	100				
WPAL	286	Avery & Loeb Elec. Co., 114 N. Third St., Columbus, Ohio	100				
WPAM	275	Auerbach & Guettel, Topeka, Kansas	100				
WPAP	360	Theo D .Phillips, 222 Lexington Ave., Winchester, Ky.	35				
WPAQ	360	General Sales & Engineering Co., Frostburg, Md.	10				
WPAR	236	Ward Battery & Radio Co., 200 W. Main St., Beloit, Kans.	10				
WPAU	286	Concordia College, Moorhead, Minn.	10				
WPAZ	273	Dr. John R. Koch. "The Storehouse of the Nation." Capital and Warrier, Charleston, W. Va.	10				
WQAA	360	Horace A. Beale, Jr., Parksburg, Penna.	500				
WQAC	234	Gish Radio Service. "Where Quality Alone Counts." (WQAC). Amarillo, Texas	100				
WQAE	275	Moore Radio News Station. "Among the Green Hills of Vermont." Springfield, Vt.	50				
WQAF	240	Sandusky Register, 128 W. Water St., Sandusky, Ohio	5				
WQAM	283	Electrical Equip. Co. "Most Southern Radiocasting Station in the U. S." 42 N. W. 4th St., Miami, Fla.	100				
WQAN	280	Scranton Times. "The Voice of the Anthracite." 222 Spruce St., Scranton, Pennsylvania	100				
WQAO	360	Calvary Baptist Church, 123 W. 57th St., New York City, N. Y.	100				
WQAQ	360	Abilene Daily Reporter. "The Capital of West Texas." Abilene, Texas	100				
WQAS	266	Prince-Walter Co. "The Workshop of the World." Lowell, Mass.	100				
WQAV	258	Huntington & Guerry, Inc. "The Textile Center of the South." Greenville, South Carolina	15				
WQAX	248	Radio Equipment Co., 120 W. Madison St., Peoria, Ill.	100				
WQJ	448	Calumet Baking Powder and Rainbo Gardens. "Where Quality Justifies." (WQJ). 4810 No. Clark St., Chicago, Ill.	500				
WRAD	248	Taylor Radio Shop, Marion, Kansas	10				
WRAF	224	The Radio Club, Inc., 719 Michigan Ave., LaPorte, Ind.	20				
WRAL	248	Northern State Power Co. "Royal Order of Interstate Knob Twisters." St. Croix Falls, Wisconsin	100				
WRAM	244	Lombard College, Galesburg, Ill.	100				
WRAN	236	Black Hawk Elec. Co. "We Radiate All News." (WRAN). Waterloo, Iowa	10				
WRAO	360	St. Louis Radio Service Co., 5735 Bertmer Ave., St. Louis, Mo.	20				
WRAV	242	Antioch College, Dept. of Physics. "The Station Under the Bell." Yellow Springs, Ohio	100				
WRAW	238	Avenue Radio Shop, Reading, Penna.	10				
WRAX	268	Flexon's Garage, Gloucester City, N. J.	100				
WRAZ	233	Radio Shop of Newark, 89 Lehigh Ave., Newark ,N. J.	50				
WRBC	278	Immanuel Lutheran Church. "World Redeemed by Christ." Valparaiso, Ind.	500				
WRC	469	Radio Corp. of America, 3308 14th St., N. W. "The Voice of the Capital." Washington, D. C.	500				
WRK	360	Doron Bros. Elec. Co. "The Oldest Station in Existence." Hamilton, Ohio	200				
WRL	360	Union College Radio Club, Schenectady, N. Y.	500				
WRM	360	University of Illinois, Urbana, Ill.	500				
WRR	360	City of Dallas, Police and Fire Signal Dept., Dallas, Texas					
WRW	273	Tarrytown Radio Research Laboratories. "Everything in Radio." Tarrytown, New York	500				
WSAC	360	Clemson Agricultural College, Clemson, S. C.	500				
WSAD	261	Fosters, Jewelers, Dorrance & Weybosset Sts., Providence, R. I.	100				
WSAH	248	A. G. Leonard, Jr., 4801 Woodlawn Ave., Chicago, Ill.	500				
WSAI	309	U. S. Playing Card Co., Cincinnati, Ohio	1000				
WSAJ	254	Grove City College, Grove City ,Penna.	250				
WSAL	246	Franklin Elec. Co., Brookville, Ind.	50				
WSAP	263	Seventh Day Adventist Church, New York, N. Y.	250				
WSAR	254	Doughty & Welch Elec. Co., Fall River, Mass.	10				
WSAU	229	Camp Marienfeld, Chesham, N. H.	10				
WSAV	360	Clifford W. Vick Radio Construction Co., 1801 Carter Bldg., Houston, Texas	100				
WSAX	268	Chicago Radio Laboratory, Chicago, Ill.	20				
WSAY	233	Port Chester Chamber of Commerce, Port Chester, N. Y.	100				
WSAZ	258	Chase Elec. Shop, Pomeroy, Ohio	50				
WSB	429	Atlanta Journal, "The Voice of the South." Atlanta, Georgia	500				
WSK	300	Reiss Steamship Co., Sheboygan, Wis.	1000				
WSL	273	J. & M. Elec. Co., 26 Bank Pl., Utica, N. Y.	100				
WSOE	246	School of Engineering and Wisconsin News. "In the Land of Sky Blue Waters." 415 Marshall St., Milwaukee, Wis.	100				
WSY	360	Alabama Power Co., Birmingham, Ala.	500				
WTAB	266	Fall River Herald, Fall River, Mass.	100				
WTAC	275	Penna. Traffic Co., Washington St., Johnstown, Penna.	10				
WTAH	236	Carment Ferro, Belvidere, Ill.	20				
WTAJ	236	The Radio Shop, Inc. "The Sunrise Gateway of America." Portland, Me.	10				
WTAL	252	Toledo Radio & Elec. Co., 433 Superior St., Toledo, Ohio	1000				
WTAM	390	Willard Storage Battery Co. "The Voice of the Storage Battery." 246 E. 131st St., Cleveland, Ohio.	50				
WTAP	242	Cambridge Radio & Elec. Co., Cambridge, Ill.	100				
WTAQ	254	S. H. Van Gorden & Son. "The Voice of the Wilderness." Osseo, Wis.	100				
WTAR	280	Reliance Elec. Co., Inc. "Down in Old Virginia." 526 Harrington Ave., Norfolk, Virginia	500				
WTAS	286	Chas. E. Erbstein, R. F. D. No. 6, Box 75, Elgin, Ill.	100				
WTAT	244	Edison Elec. Illuminating Co., 39 Boylston St., Boston, Mass.	50				
WTAW	280	Agricultural & Mechanical College of Texas, College Station, Texas	50				
WTAX	231	Williams Hardware Co. "Tappa Kegga Nails." Streator, Ill.	500				
WTAY	283	Oak Leaves Station. "Something for Every Taste." Oak Park Arms Hotel, Oak Park, Illinois	1000				
WTG	485	Kansas Etate Agr. College, Denison Hall, Manhattan, Kans.	100				
WWAD	360	Wright & Wright, Inc. 'Penn City Station WWAD." Phila., Penna.	500				
WWAF	236	Galvin Radio Sup. Co., 521 Market St., Camden, N. J.	500				
WWI	273	Ford Motor Co., Dearborn, Mich.	500				
WWJ	517	Detroit News, Detroit, Mich.	100				
WWL	280	Loyola University, New Orleans, La.					

J. A. McCAFFRY
MANUFACTURERS AGENT
RADIO PRODUCTS
4417 VANCOUVER AVE.

DETROIT, MICH.,

October 24, 1924.

Baldwin-Pacific & Company,
Pacific Bldg.,
San Francisco, Calif.

Gentlemen:

I received the Model Set equipped with the "Pacific Ranger Super-Het Kit"in good time and found only one unsoldered connection which was easily repaired. Last Saturday night I logged nineteen stations, including KGO all with good loud speaker volume. Most Supers that I have heard always had so much noise etc. that signals were not enjoyable. Indeed it was a pleasant surprise to note the volume obtainable, especially using UV-199 tubes, which are none too good at best. I am going to put verrier dials on my Model set and believe I will then be able to get better results, as it was absolutely necessary to do split-hair tuning for maximum volume.

Your sample loop has gone forward and I am enclosing data on its mechanical and electrical properites. The Electrical Record is giving us an editorial write-up this coming month. Also we have secured a quarter page space in"Radio Broadcast". New literature will be ready in a few days and I will forward you a quantity of this.

Yours very truly,

J. A. McCaffry

Canadian Broadcasting Station Directory and Log Record for 45,000 Cycle Super

Call	Meters	Owner Slogan and Location	Power	Dial 1	Dial 2	Date	Time
CFAC	420	The Calgary Herald, Calgary, Alberta					
CFCA	400	Star Publ. & Printing Co., 18 King St. W., Toronto, Ontario					
CFCF	440	Marconi Wireless Telegraph Co. of Canada, Ltd., Canada Cement Bldg., Phillips Square, Montreal, Que.					
CFCH	400	Abitibi Power & Paper Co., Ltd., Iroquois Falls, Ont.					
CFCJ	410	La Cie de L'Evenement, 30 Fabrique St., Quebec, Que.					
CFCK	410	Radio Supply Co., Ltd., 10229 101st St., Edmonton, Alta.					
CFCL	400	Continental Methodist Church. "Where Religion Cheers." Victoria, B. C.					
CFCN	440	W. W. Grant Radio, Ltd. "The Voice of the Prairies." 511 Lougheed Bldg., Calgary, Alta.					
CFCO	450	Semmelhaack-Dickson, Ltd., Bellevoe, Que.					
CFCQ	450	Radio Specialties, Ltd., 791 Dunsmuir St., Vancouver, B. C.					
CFCR	410	Laurentide Air Service, Ltd., Nickle Range Hotel, Sudbury, Ont.					
CFCW	420	The Radio Shop, 77 Dundas St., London, Ont.					
CFDC	430	Sparks Co., Wallace & Fitzwilliam Sts., Nanaimo, B. C.					
CFQC	400	The Electric Shop, 144 2nd Ave. N., Saskatoon, Sask.					
CFRC	450	Queens University, Dept. of Elec. Eng. "The Station of Canada's Famous Rugby Champions." Kingston, Ont.					
CFUC	400	University of Montreal, 185 St. Denis St., Montreal, Que.					
CHAC	400	Radio Engineers, Halifax, N .S.					
CHBC	410	The Albertan Pub. Co., 220 8th Ave. W., Calgary, Alta.					
CHCD	410	Canadian Wireless & Elec. Co., 30 Fabrique St., Quebec, Que.					
CHCE	400	Western Canada Radio Supply, Ltd. "The Voice of the Island." 919 Fort St., Victoria, B. C.					
CHCL	440	The Vancouver Merchants Exchange, Ltd., Vancouver, B. C.					
CHYC	410	Northern Elec. Co., 121 Shearer St., Montreal, Que.					
CKAC	425	La Presse Pub. Co., cor. St. James & St. Lawrence Blvd. Montreal, Que.					
CKCD	410	Vancouver Daily Province, 142 Hasting St. W., Vancouver, B. C.					
CKCE	450	Canadian Independent Telephone Co., Ltd., Wallace Ave. and Ward St., Toronto, Ont.					
CKCK	420	Leader Pub. Co., Ltd. Regina, Sask.					
CKOC	410	Wentworth Radio Supply ,Ltd. "In the Garden of Canada." 31 John St. N., Hamilton, Ont.					
CKY	450	Manitoba Telephone System. "The Gateway of the Golden West." Sherbrooke, St., Winnipeg, Man.					

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Molded Bakelite bases and tops on transformers; oscillator, special composition.

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An extremely attractive kit, beautifully finished with brilliant black crystalline trim over brass-shielded transformers. Genuine molded black bakelite bases and tops. Bakelite oscillator coupler with "double mount" feature.

Pacific "Rainbow" Super-Het Kit $20.00

The same highest grade materials used. Molded Bakelite and brass-shielded transformers. Bakelite double mount oscillator with heavy green silk covered windings. I. F. Transformers have rich maroon baked enamel trim. Filter transformer provides a decided harmonizing color contrast with its striking yellow baked enamel finish. The Pacific "Rainbow" is indeed all that its name implies for unsurpassed beauty in color combination to meet the various demand and advantages for that type of kit.

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