

RADIO DOINGS

THE BROADCAST PROGRAM OF THE LEADING BROADCAST STATIONS — LATEST RADIO NEWS



\$2⁰⁰ A YEAR.

5 CENTS A COPY

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 1000 copies of 1000
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Handwritten: Roy & P...
 Mrs. L...



STRIKING BEAUTY
in this new Kennedy Set

THE KENNEDY MODEL X
 This beautiful inlaid mahogany cabinet encases a complete, self-contained radio receiver (wave length range 150 to 600 meters). Two stages of audio amplification, built-in loud speaker. Formica panel. Dials and metal trimmings gold plated. All dry batteries—three dry battery tubes—phones for weaker signals or individual reception—complete, \$285.00. All Kennedy radio receiving sets are regenerative—licensed under Armstrong U. S. patent No. 1,113,149.

THIS NEW ADDITION to the Kennedy line has a three-fold appeal for you. First, its artistic beauty—simple, refined lines. Second, the faithfulness and unusual tonal purity of its reproduction. Third, it is a self-contained unit, all batteries and loud speaker unit enclosed in the cabinet. Ample volume is assured for dancing or entertainment.

In this set extreme simplicity of operation has been obtained, at the same time retaining the selectivity of tuning and long-distance reception that has distinguished all Kennedy receiving sets. Only two dials are used—one to bring in the desired station, the other to regulate volume. Truly a set of which the Kennedy laboratories can justly be proud.

You can arrange with the nearest Kennedy dealer for a demonstration, or write us direct for descriptive literature.

THE COLIN B. KENNEDY CO.
 SAINT LOUIS SAN FRANCISCO

Kierulff and Ravenscroft
 757 So. Los Angeles St., Los Angeles

K E N N E D Y



Radio Doings

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Los Angeles, Cal.

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Two Dollars a Year

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No. 20

A WORD TO THE WISE

THE holiday season is fast approaching, and with it comes the hustle and bustle of Christmas shopping.

Every year we promise ourselves that we will not be caught napping, yet, we generally keep on putting it off with the excuse that "I am too busy today; tomorrow I will have more time."

The arguments in favor of early Christmas shopping are familiar to us all, better service, larger stock to select from, quicker delivery, the salesman has more time to show you his stock, and many more too numerous to mention.

What to Buy? That is always the big question.

A radio set or parts for the one he is building is, of course, the most acceptable gift for the boy. For those who like to "shake a foot" what more appropriate? For the old folks and "shut-ins" radio has come as the greatest boon; no one can be lonely with a receiver in the home.

The remote control panel now puts the music of the best orchestras in our homes, the football game is played right in our parlor, the stirring notes of the organ fill us all with wonder. The broadcasting stations tell us all the latest news of the world and entertain us nightly with the best vocal and instrumental talent, plays and recitations.

All this without a cent of cost to the listener-in.

A radio set in the home is the best investment anyone can make.

All the Year for Two Dollars

Do not miss a copy of RADIO DOINGS. Have it mailed every week to your home. Simply sign the blank below. Mail it to us or pay your dealer and let him forward it to us.

RADIO DOINGS, 308 Van Nuys Building, Los Angeles, California.

Inclosed find two dollars for subscription to RADIO DOINGS for one year.

Name _____

Address _____

SHORTAGE!

In many of the special parts, which we use in our special sets, known as the Supertone and the Neutrotone, also the special features which we install in our other sets, has caused us to get behind in the delivery of sets.

FOR THIS REASON

We have asked those who are contemplating ordering sets from us, to be delivered shortly, to let us know their requirements now.

EVERY LOCATION

has its peculiar condition to overcome. Our Radio Director can advise you concerning the difficulties, without charge, and make suggestions so that you will get the best results. In order for him to analyze your particular difficulties, and in order for you to have your set at the proper time, you should place your

ORDER NOW

REPAIRS

SUPPLIES

FIXTURES

CONVENIENT CREDIT



WE DO IT BETTER RADIO-ATICALLY

ORDER BLANK

Shipment guaranteed before December 20th, as advertised

HAYDEN'S ELECTRIC SERVICE,

MAIL ORDER DEPT.,
1177 West Jefferson St.,
Los Angeles, Calif.

Gentlemen: Please send Radio Set, guaranteed for local and long distance, as advertised, marked X below.

Supertone, upright grand cabinet. \$500.00	Hayden's Special Junior	\$ 60.00
No. 1 Neutrotone 300.00	Hayden's Special HR-3	150.00
No. 2 Neutrotone 275.00	Hayden's Monarch	200.00
Neutrodyne 225.00	Hayden's Monarch Special	250.00

The above sets are complete—batteries, tubes and loud speaker—and it is understood they are to be regular Hayden's sets as advertised, complete with aerial, ground, ready for installation.

Name

Address

NOTE: If convenient credit is desired, write for information

Batteries

By Frank D. Andrews

For those who intend to leave their set stay put in one place and in the home, rechargeable B Batteries are highly recommended, for by checking these batteries every week or so the exact voltage can be seen and if they fail a bit, they can be recharged and brought back to their normal condition in a very short time. These batteries are designed to do their work under all conditions for many years.

A set of storage B Batteries in possession of the writer have been subject to extraordinary conditions in the laboratory where within two days a full charge will be exhausted which under ordinary conditions would take a radio receiving set of five tubes to exhaust, about a month. These batteries are now four years old.

As the current consumed by the plate of the average radio receiving tube is but a few thousandths of an ampere, and as the plate area of a storage battery is proportional to the current it must supply, the plate area of a battery needed for the plate supply of vacuum tubes is very small. The height and width of the batteries now on the market varies from two to six inches.

Regardless of the size, each storage cell furnishes about two volts. The average vacuum tube is designed to employ from 20 to 100 volts in the plate circuit. Batteries are therefore made up in most cases of 11 or 12 cells arranged in some form of tray and delivering an average of about 20 to 25 volts. By connecting batteries in series, any voltage may be obtained.

One of the greatest advantages in the storage B battery in the operation of the set is the uniform manner in which it delivers the direct current and the high amperage capacity which ranges all the way from $3\frac{1}{2}$ to $4\frac{1}{2}$ amperes. This is a material advantage in receiving as the supply of current is always a little more than the demand which means that there will be no local fluctuations in the battery itself to distort the music or speech.

The one objection to any storage battery is that it must be kept charged. This means it must be connected to a source of direct current every two to four weeks and the energy consumed by the radio set must be replenished. Furthermore, even if the radio set has been idle for a considerable period, the battery must still receive its periodic charge to keep it in proper condition.

A system to keep the battery in condition should be employed where a regular check can be made, just as regular as winding the clock. As stated so many times a good volt meter should be on hand or connected on the battery box so that it is in the line all the time and at a glance the voltage can be ascertained.

For those fortunate enough to live where they are supplied with direct lighting current, the matter of charging is extremely simple. It resolves itself into merely connecting the battery to the lighting system. Care should be used to see that the positive side of the electric power line is connected to the positive side of the battery or the battery will be further discharged and ruined instead of receiving a replenishing charge.

As the average direct current lighting current is 120 or 230 volts, and as the voltage of the plate batteries that the average radio set requires will total around 45 to 100 volts, the battery should not be connected directly to the line, but a voltage reducing resistance should be interposed. This may consist of a 25 to 40 watt lamp of the voltage rating used for lighting, or a charging resistance made with rheostat wire. If the electric bulb is used, the proper polarity may be ascertained by noting the brilliance with which the lamp burns. The circuit should be connected momentarily first in one direction and then in the other. It should be left in the direction which produces the dimmer light condition.

The homes of the majority of buyers of radio receivers are supplied with alternating electric lighting current and a treatise on the use of this current will be given in the next installment.

(To be continued)

AN ENGINEERING ACHIEVEMENT

New Condenser Is 100%

The day of the unstable variable condenser has passed. The Kilbourne and Clark Mfg. Co. hastened it and now have passed it. The new type K-C variable condenser is the answer. This condenser is the outcome of months of study of the faults of all variable condensers. It is the embodiment of all that is desirable. Objectionable, faulty features have been eliminated down to the most minute point.

The K-C variable condenser of the new type is mounted on two moulded end plates. The shaft of the rotor plates revolves in bronze bushings that are moulded in. These bushings give a wear-proof permanent bearing that obviates enlarged shaft holes and resulting short circuits and explosive noises in the head phones. There are no sliding contacts. The rotor plates are connected with a lug by means of flexible Belden braid, affording a direct and positive contact.

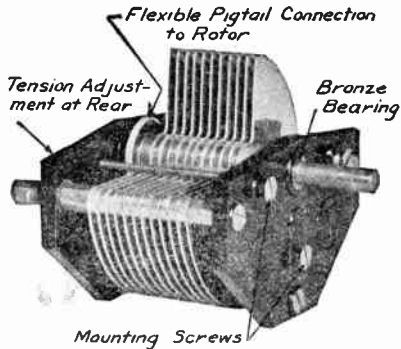
The K-C vernier condenser comes with dial, correctly marked from 0 to 100, and a separate control knob for the vernier adjustment. The vernier is a two-plate extension on the condenser that has been designed to give the greatest breadth of movement in tuning in the faintest of signals.

The prices of the new type K-C condenser follow:

CONDENSER PRICES

Cat. No.	Capacity	No. Plates	List	Cat. No.	Capacity	No. Plates	List
3	.00003 mfd.	3.....	\$2.50	23	.0005 mfd.	23.....	\$3.50
7	.0001 mfd.	7.....	2.75	31	.0007 mfd.	31.....	4.75
13	.0002 mfd.	13.....	3.25	43	.001 mfd.	43.....	5.00
17	.0003 mfd.	17.....	3.35	63	.0015 mfd.	63.....	7.75

For condenser with vernier adjustment add \$2.00 to above prices.



SPECIFICATIONS

MAGNETS: Chrome Steel, heat treated and aged
 WINDINGS: Double Pole, Form Wound
 CASES: Painted Aluminum, Moulded Caps
 DIAPHRAGM: Porous leather, spiradic
 HEADBAND: Adjustable, Light Weight, Nickel Finish, Khaki Band
 CORD: Standard Length, Reinforced, Pin Tips.
 All Head Sets individually adjusted and receivers matched - Wound for 200 ohms per pair
FULL FACTORY GUARANTEE

CLEAR AS A BELL

THE KILBOURNE & CLARK STANDARD HEAD-SET is manufactured to the specifications shown, with the accuracy of a watch. Each set is skillfully tested and receivers matched so that perfect equality of sound in both ears is attained. The use of a consequent pole permanent magnet system gives a light weight receiver and extraordinary efficiency, so that a K & C head-set can be worn for hours without becoming tiresome. The head-band is of tempered spring-steel wire, khaki braid covered, affording a pleasing resiliency and comfort. The receivers can be raised or lowered by a single movement to suit the user.

Every K & C head-set is backed by our well known guarantee and affords you a high grade receiver without the payment of a fancy price. Be sure you see the trade mark.

- K & C Type P-2 Head-set, 2000 ohms.....\$5.00
- K & C Type P-2 Head-set, 3000 ohms..... 6.00

KILBOURNE & CLARK MANUFACTURING CO.

Head Office and Works, Seattle, Washington

BRANCH OFFICES:

Portland, 305 Larrabee Street
 Phone 6156
 San Francisco, 591 Mission Street
 Phone Sutter 40

Los Angeles, 1103 West Tenth Street
 Phone 581-002

New York City, 80 Washington Street

The New Roffy-Hetro Trans.

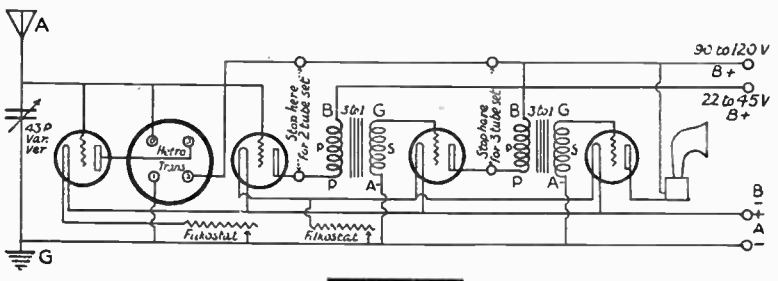
Come in and get free diagram and see the 2, 3 and 4-tube sets. If you are having trouble in balancing your set, see us; we can help you.

2-tube set assembled complete in cabinet, panel engraved (less tubes, batteries and loud speaker) **\$27.50**

3-tube set assembled complete in cabinet, panel engraved (less tubes, batteries and loud speaker) **\$34.00**

4-tube set assembled complete in cabinet, panel engraved (less tubes, batteries and loud speaker) **\$38.50**

4-tube set assembled in cabinet, complete in every way. Leaves you nothing to buy. **\$97.50**



Patterson Electric Company

239 So. Los Angeles Street

LOS ANGELES, CALIF.

Telephone 828-139

High Power Radio

By HALL BERRINGER

(Continued from last week)

Germany undertook the establishment of a high-power station in the United States to work with a similar station near Berlin. Great Britain contemplated an "Imperial Wireless Chain," designed to connect all of her outlying possessions with England by radio.

The United States Navy established its first high-power station at Arlington, just outside of Washington, as the terminus of a projected trans-Continental trans-Pacific High Power Circuit, to connect the Navy Department by radio with our Atlantic, Pacific and Asiatic fleets and to afford our government a means of communicating with our outlying possessions in the West Indies, the Panama Canal Zone, Alaska, the Hawaiian Islands, Samoa, Guam, and the Philippines, either directly or through intermediate radio relay stations, and entirely independent of cable facilities.

The Navy's main high-power circuit was to comprise in addition to the Arlington station, primary high-power stations at points on the California coast, in the Hawaiian Islands, and in the Philippines. It was hoped that reliable trans-continental service could be maintained between the Arlington station and a primary station on the California coast, thence with Hawaii and thence with the Philippines.

Secondary high-power stations in the primary chain were planned, one for the Canal Zone, one for the West Indies, one for Alaska, one for Samoa, and one for Guam; to work with Arlington direct or through one or more of the primary stations. Other stations of medium power were planned, but these nine stations were to be the principal reliances or key stations for exchanging communication with the fleets and with our outlying possessions.

Work was under way without delay, and within five years all of the eight remaining stations were completed and placed in operation, as were also several less important stations.

These nine key stations are located at Arlington, in Virginia, Darien in the Panama Canal Zone, El Cayey in Porto Rico, San Diego in California, Pearl Harbor in the Hawaiian Islands, Cordova in Alaska, Tutuila in American Samoa, Guam in the Mariana Islands and Cavite in the Philippine Islands.

The stations, extending nearly half way around the world, have been maintained in daily operation since their establishment, and they have rendered the service originally expected and required of them, with the exception of Arlington station, this station having been supplanted as the terminus of the high-power circuit by the more powerful station subsequently established at Annapolis, Maryland.

Thus it will be seen that within an interval of about twenty-five years after Marconi's epoch-making demonstrations, when he signalled, without utilizing connecting wires, over distances of from one to eight miles, the United States Navy had in daily operation in the service of its fleets and government in general, a chain of radio stations, whose signals constantly were encompassing the globe, this chain of stations being the most widely extended, most effective and reliable, and comprising the greatest number of high-power radio stations of any country in the world.

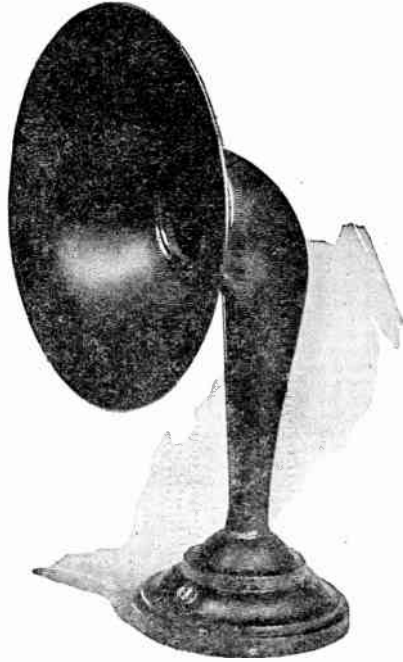
The effective working ranges of these stations throughout all periods of the day and night and all seasons of the year is from 2,000 miles for the less powerful stations, to 6,000 miles for the most powerful stations, such as the Cavite station in the Philippine Islands, and these effective ranges, together with the widely separated locations of the stations and the fact that they are operated practically continuously, results in electrical impulses corresponding to the "dots" and "dashes" of the radio code comprising messages in the English language constantly over the entire earth.

Obviously the establishment and successful operation of this widely extended chain of high-power radio stations involved very great difficulties, not only from the constructional point of view, but also the technical aspects of the situation.

(Continued on Page 44)

C.I.C.

- High Volume Efficiency
- Superior quality of reproduction
- Attractive appearance
- Convenient size
- Moderate price
- Adjustable unit.



“Listen to the Difference”

The price of the C. I. C. Loud Speaker complete with 6-ft. cord and plug is

\$14.50

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MANUAL ARTS RADIO CO.

4154 South Vermont Ave.
Los Angeles

Radio Loops the Loop Around Warsaw Station Without Operator

Engineers of the Radio Corporation of America in the presence of General J. G. Harbord, President of the company, performed a unique feat with radio today while conducting an inter-continent experiment during which an endless loop of telegraph signals was formed encircling two highpower stations, one at New York, the other at Warsaw, Poland; 4,200 miles apart. Causing Radio to control radio thereby producing perpetual signalling around the 8,500-mile circuit is responsible for the achievement adding to the zest of the game in which self-sustained electrical impulses successfully overtook and touched each other as in the game of tag. The energy of each impulse representing a "dot" of the telegraph code raced with the speed of light around the track with the two radio stations marking the course, but finally, due to electrical obstacles in the path, weakened—because exhausted and occasionally had to be re-established by an operator. However, before the weakening and final dampening out of the original dot had occurred the radio wave had persisted for a period of 25 seconds. Since radio waves travel at the rate of 186,000 miles per second, the total miles covered by the impulse is exactly 4,500,000 miles, or about 1/20 the distance to the sun. So far as it is known, this is the first time that a radio station at a distant part of the earth has been made to react upon the original sending station causing a self-persisting repetition of signal impulses around a closed radio circuit.

"This unusual demonstration followed rather unexpectedly after a series of tests with the control relays of the United States-Poland circuit," said F. A. Winterbottom, Traffic Manager of the RCA.

"The control apparatus of this modern radio system which enables an operator, in applying the slightest pressure to a telegraph sending key, to 'trigger off' over 400,000 watts of power generated at the radio transmitter proper some 70 miles away and signal in the radio code at high speeds, involves the use of five electro-mechanical triggers or relays. An impulse of current caused by tapping this key is amplified in these relays until sufficient control energy is produced to open and close a ponderous switch in the circuit with the Alexanderson alternators which generate power for exciting a giant antenna, three miles in length and 400 feet high. Both the New York and Warsaw stations are equipped with these alternators and their control apparatus is identical. During a simultaneous test of these relays it was found feasible to utilize a radio impulse coming in from the distant station to operate the delicate relay in the control circuit of the local transmitter, thus allowing radio to control radio, in other words uniting cause and effect.

"An operator at the control center of the New York office conceived the plan which developed step by step in the following manner:

"At New York a series of short dots was flashed over the circuit to Warsaw which were intercepted by the distant operator. The instant these signals were received across the Atlantic, the Warsaw operator pressed the key of the local transmitting station and flashed a return signal to New York, thus establishing a continuous circuit of telegraph impulses. The process continued until the operator who served as the completing link failed to repeat the signal which echoed in his telephone receivers. Obviously, this arrangement proved a valuable check on the signals sent by the New York operator, in fact, a self-acknowledging system of telegraphing was established.

"The Warsaw operator, unaware of the purpose of this peculiar experiment, asked New York what it was all about and how long his services would be required. The reply soon came back 'Close the circuit at your end by joining the output of the receiving set with the control line to your transmitter through the control relay.' This necessitated the manipulation of a few switches at the command of the Warsaw station operator who then retired as the human element of the circuit in favor of automatic receiving and sending apparatus. The New York operator then pressed the transmitting key again and with the receivers clamped to his ears, listened for the return signal as before. Instantly, the same tele-

(Continued on Page 45)

6-8 A. M.
PACIFIC TIME

RADIO TIME TABLE

7- 9 Mountain Time
8-10 Central Time
9-11 Eastern Time

STATION	METERS	CITY	CALL	SUN.		MON.		TUES.		WED.		THUR.		FRI.		SAT.	
				6:00-6:30	6:30-7:00	7:00-7:30	7:30-8:00	6:00-6:30	6:30-7:00	7:00-7:30	7:30-8:00	6:00-6:30	6:30-7:00	7:00-7:30	7:30-8:00	6:00-6:30	6:30-7:00
Reynolds Radio Co.		Denver	K L Z														
Free Press	517	Detroit	W C X				X										
Detroit News	517	Detroit	W J J				X	X	X	X	X	X	X	X	X	X	X

8-10 A. M. PACIFIC TIME 9-11 Mountain Time 10-12 Central Time 11- 1 Eastern Time

STATION	METERS	CITY	CALL	SUN.		MON.		TUES.		WED.		THUR.		FRI.		SAT.	
				8:00-8:30	8:30-9:00	9:00-9:30	9:30-10:00	8:00-8:30	8:30-9:00	9:00-9:30	9:30-10:00	8:00-8:30	8:30-9:00	9:00-9:30	9:30-10:00	8:00-8:30	8:30-9:00
S. F. Examiner	360	San Francisco	K U O														
Reynolds Radio Co.		Denver	K L Z		X		X	X	X	X	X	X	X	X	X	X	X
Star-Telegram	476	Fort Worth	W B A P		X	X											
News and Journal	476	Dallas	W F A A				X	X	X	X	X	X	X	X	X	X	X
Palmer School	464	Davenport	W O C				X	X	X	X	X	X	X	X	X	X	X
John Wanamaker	509	Philadelphia	W O O				X		X	X	X	X	X	X	X	X	X

“Half the head phones in use are Murdock”

FOR RADIO SERVICE

EDISON STORAGE BATTERIES

WILL LAST ALMOST INDEFINITELY

The Famous Nickel-Iron Battery in Pressed Steel Cases

Type	Capacity	Price New	Special Price Used
A-6	225 A. H.	147.50	25.00
A-8	300 A. H.	190.00	40.00

Prices given above are for batteries of five cells each and are F. O. B. our service station. New batteries are F. O. B. Orange, New Jersey

The available supply of these cells is limited

J. JEROME CANAVAN

PACIFIC COAST DISTRIBUTORS
WALKER ELECTRIC TRUCKS

401 WELLS FARGO BLDG. Phone Douglas 2336 SAN FRANCISCO, CALIF. Ask for Mr. Vaile	1038 EAST NINTH STREET Phone Metropolitan 4567 LOS ANGELES, CALIF. Ask for Mr. Douglas
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10-12 A. M.
PACIFIC TIME

RADIO TIME TABLE

11- 1 Mountain Time
12- 2 Central Time
1- 3 Eastern Time

STATION	METERS	CITY	CALL	SUN.	MON.	TUES.	WED.	THUR.	FRI.	SAT.										
				10.00-10.30	10.30-11.00	11.00-11.30	11.30-12.00	10.00-10.30	10.30-11.00	11.00-11.30	11.30-12.00	10.00-10.30	10.30-11.00	11.00-11.30	11.30-12.00	10.00-10.30	10.30-11.00	11.00-11.30	11.30-12.00	
L. A. Union Stk. Yds.	360	Los Angeles	K F C L																	
L. A. Times	396	"	K H J	X	X															
Earl C. Anthony	469	"	K F I	X	X															
Hale Brothers	423	San Francisco	K P O		X	X														
Tribune		Oakland	K L X	X	X															
Warner Brothers		"	K L S				X													X
Gould		Stockton	K J Q	X	X															
Fallon & Co.	380	Santa Barbara	K F H J	X	X															
Guy Gresson		Tacoma	K F E J				X	X												
Rhodes Co.	455	Seattle	K D Z E		X	X														
First Presby. Church		"	K T W		X	X														
Moler & Frank		Portland	K F E C																	X
Reynolds Radio Co.		Denver	K L Z			X														X
Mews and Journal	476	Dallas	W F A A				X													X
Palmer School	484	Davenport	K D Z		X															X
Winner Radio	380	Denver	W O F C L			X	X													X
Oregonian	482	Portland	M G W			X														X

ANOTHER



WINNER



SENIOR
\$25.00

Little Senior. A Marvel at the Price. with this new model **LITTLE SENIOR** at the popular price of \$19.50 the line of **TRUTONE LOUD SPEAKERS** is complete. **LITTLE SENIOR** is a loud speaker complete with large mica diaphragm and wooden tone chamber in the base. Horn is made of beautiful non-metallic composition with crystalline finish and stands 24 inches high. Price includes 6 ft. of cord. **TRUTONE SENIOR** is supreme for all long-distance work, stands 32 inches high, and price includes 6 ft. of cord. Types A and B are amplifying horns for use with any make of two and single phone receivers respectively. Price for either A or B, \$8.00. Horn only \$6.00. Base only \$2.00.

Send for Illustrated Folder

They Speak for Themselves



LITTLE SENIOR
\$19.50

J. D. COLFORD & CO.

Phone 823-269

400 San Fernando Bldg., Los Angeles

12-2 P. M.
PACIFIC TIME

RADIO TIME TABLE

1- 3 Mountain Time
2- 4 Central Time
3- 5 Eastern Time

NAME OF STATION	CITY	Met.	CALL	SUN.		MON.		TUES.		WED.		THUR.		FRI.		SAT.	
				12:00-12:30	12:30-1:00	1:00-1:30	1:30-2:00	12:00-12:30	12:30-1:00	1:00-1:30	1:30-2:00	12:00-12:30	12:30-1:00	1:00-1:30	1:30-2:00	12:00-12:30	12:30-1:00
L. A. Union Stock Yards.	Los Angeles	380	K F C L														
L. A. Times	"	395	KH J														
L. A. Examiner	"	469	KWH														
Warner Bros.	San Francisco		K L S	X	X												
Hale Bros.	"	423	K P O				X	X									
Herrold Lab'y.	San Jose		K Q W				X	X									
Modesto Herald	Modesto	252	K X D		X	X											
Guy Gresson	Tacoma		K F E J			X	X										
Rhodes Co.	Seattle	455	K D Z E			X	X							X	X		
Honolulu Star Bulltin.	Honolulu		K D Y X	X	X												
Honolulu Advertiser	Honolulu		K G U			X	X										
Reynolds Radio	Denver		K L Z					X	X								
News and Journal	Dallas	476	W F A A	X	X												
Palmer School	Davenport	484	W O C							X	X						
Star	Kansas City	411	W D A F							X	X						
News	Detroit	591	W W J			X	X	X	X								
Radio Corp. of America	New York	455	W J Z			X	X	X	X	X	X	X	X	X	X	X	X



Bristol One Stage Power Amplifier

NO C BATTERY REQUIRED

A unit that can be used as a third stage without howling. The usual objections against a third stage of audio frequency amplification are entirely eliminated by the use of the new "impact" circuit.

The Bristol One Stage Power Amplifier does not require separate "A" or "B" battery. It uses common tubes such as U. V. 201A, 216A and U. T. 2.

A remarkable achievement—a third stage audio that works RIGHT—install one today and give that distant station a chance to come in like the locals.

Ask your Dealer or send for Bulletin 3011-X

Give your loud speaker a treat

THE BRISTOL COMPANY

WATERBURY, CONN.

Pacific Coast Branch Office: 332 Rialto Building, San Francisco, California

2-4 P. M.
PACIFIC TIME

RADIO TIME TABLE

3- 5 Mountain Time
4- 6 Central Time
5- 7 Eastern Time

NAME OF STATION	CITY	Met.	CALL	SUN.		MON.		TUES.		WED.		THUR.		FRI.		SAT.	
				2.00-2.30	3.00-3.30	2.00-2.30	3.00-3.30	2.00-2.30	3.00-3.30	2.00-2.30	3.00-3.30	2.00-2.30	3.00-3.30	2.00-2.30	3.00-3.30	2.00-2.30	3.00-3.30
L. A. Times.....	Los Angeles.....	395	K H J	X	X			X	X	X	X	X	X	X	X	X	X
Elec. Lighting & Sup. Co.	"	360	K N X			X	X			X	X			X	X	X	X
Hale Bros.....	San Francisco.....	433	K P O				X	X						X	X	X	X
S. F. Examiner.....	San Francisco.....	380	K U O				X	X	X	X	X	X	X	X	X	X	X
Tribune.....	Oakland.....		K L X				X	X	X	X	X	X	X	X	X	X	X
Portable Wireless.....	Steckton.....		K W G	X	X									X	X	X	X
Kimball-Uspon.....	Sacramento.....		K F B C				X	X	X	X	X	X	X	X	X	X	X
Calif Radio Lab'y.....	Hanford.....		K F B D				X	X						X	X	X	X
First Presby. Church.....	Seattle.....		K T W		X	X								X	X	X	X
Guy Greenen.....	Tasoma.....		K F E J				X	X	X	X	X	X	X	X	X	X	X
Post-Intelligencer.....	Seattle.....	270	K F J C				X	X	X	X	X	X	X	X	X	X	X
Oregonian.....	Portland.....	482	K G W				X	X	X	X	X	X	X	X	X	X	X
Deseret News.....	Salt Lake City.....		K Z N				X	X	X	X	X	X	X	X	X	X	X
Reynolds Radio.....	Denver.....		K L Z				X	X	X	X	X	X	X	X	X	X	X
Honolulu Advertiser.....	Honolulu.....		K G U			X	X				X	X		X	X	X	X
Star-Telegram.....	Fort Worth.....	478	W B A P		X	X								X	X	X	X
Palmer School.....	Davenport.....	484	W O C				X	X	X	X	X	X	X	X	X	X	X
Daily News-Fair.....	Chicago.....	448	W M A Q				X	X	X	X	X	X	X	X	X	X	X
Star.....	Kansas City.....	411	W D A F				X	X	X	X	X	X	X	X	X	X	X
Free Press.....	Detroit.....	517	W C X	X	X		X	X	X	X	X	X	X	X	X	X	X
News.....	"	517	W W J	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Orisk Hotel.....	Chicago.....	390	W D A P				X	X	X	X	X	X	X	X	X	X	X
Radio Corp. of America.....	New York.....	455	W J Z			X	X	X	X	X	X	X	X	X	X	X	X

MURDOCK "SOLID" NO. 56 HEAD PHONES
Best at Any Price

RADIO ARGENTITE

Trade JUNIOR Mark

THE MOST FOR YOUR MONEY

Radio-Argentite Detectors

Ever since they were originated and placed on the market by the Curry & Coutellier Laboratories, two years ago, have always been much higher in quality than in price. Now, owing to improved manufacturing methods, we are able to offer you a detector nearly twice as efficient as the original Radio-Argentite crystal, and at a lower price. It's the enormous demand for Radio-Argentite detectors that makes this possible.

Radio-Argentite Junior, 40c. Mailed anywhere if your dealer cannot supply.

CURRY & COUPELLIER LABORATORIES

2843 West Ninth Street

Los Angeles, Cal.

- 1 Tube Reflex with Phones.....\$24.50
- 2 Tube Reflex Loops and Phones..... 40.00
- 5 Tube, 2 Radio, 2 Audio and Detector..... 45.00

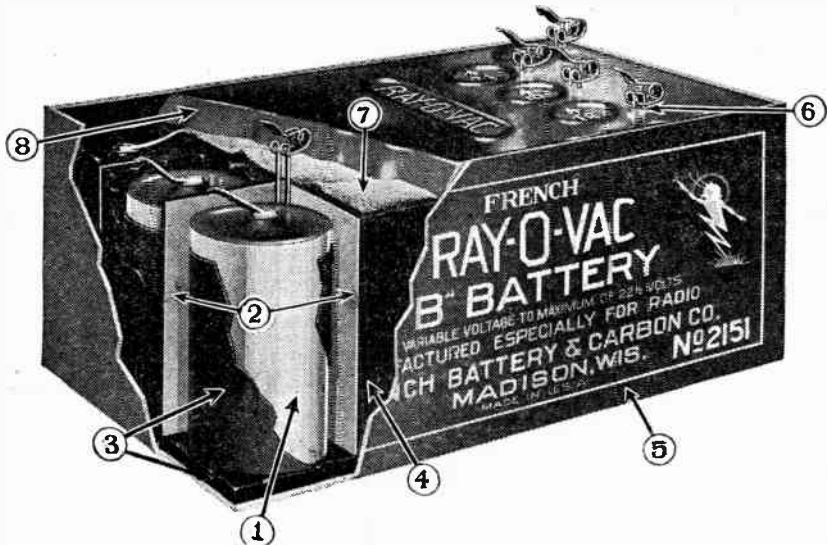
Crystal Sets \$4.50 to \$7.50

RADIO HEADQUARTERS

7430 Moneta Ave.

Los Angeles

Why RAY-O-VAC Batteries Are Better



1. Zinc can of rolled sheet stock.
2. Water and acid proof egg crate partition.
3. Rubbery insulating compound covering outside walls and bottom of individual cells.
4. Hard insulating compound between cells.
5. Waterproof outer container.
6. Patented positive spring clip terminals.
7. Cloth binder in upper seal.
8. Top seal of red wax.

No Other Battery Is Constructed Like It

WE ANNOUNCE TWO NEW BATTERIES

"B" Battery No. 1151—\$2.50
 22½ Volts, 4 Taps
 Size 3½x5½x2½ Inches
 Weight 2¼ Lbs.

"C" Battery No. 231R — 70c
 Tapped 1½, 3, 4½ Volts.
 Size 4x1 7/16x3 Inches.
 Weight 15 oz.

The Braun Corporation

Wholesale Distributors Only

363 New High St.

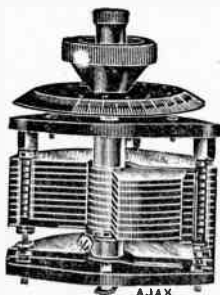
Los Angeles, Calif.

4-6 P. M.
PACIFIC TIME

RADIO TIME TABLE

5- 7 Mountain Time
6- 8 Central Time
7- 9 Eastern Time

NAME OF STATION	CITY	Met.	CALL	SUN.	MON.	TUES.	WED.	THUR.	FRI.	SAT.											
				4:00-4:30	4:30-5:00	5:00-5:30	5:30-6:00	4:00-4:30	4:30-5:00	5:00-5:30	5:30-6:00	4:00-4:30	4:30-5:00	5:00-5:30	5:30-6:00	4:00-4:30	4:30-5:00	5:00-5:30	5:30-6:00		
L. A. Union Stock Yards.	Los Angeles	360	K F C L			X															
E. C. Anthony	"	469	K F I	X	X																
L. A. Herald	"	468	Herald																		
L. A. Examiner	"	468	Examiner				X		X		X		X		X		X		X		X
Hale Bros.	San Francisco	423	K P O			X	X		X	X		X	X		X	X		X	X		X
Oakland Tribune	Oakland		K L X			X		X												X	X
S. F. Examiner	San Francisco	360	K U O			X	X		X	X		X	X		X	X		X	X		X
Maxwell Elec.	Berkeley		K R E																		
Portable Wireless	Stockton		K W G			X	X		X	X		X	X		X	X		X	X		X
Goold	"		K J O			X	X		X	X		X	X		X	X		X	X		X
Radio Den.	Santa Ana	268	K F A W				X		X	X		X	X		X	X		X	X		X
Nielson Radio Co.	Phoenix	238	K F B C			X	X		X	X		X	X		X	X		X	X		X
Post-Intelligencer	Seattle	270	K F J C			X															
Rhodes Co.	"	455	K D Z E																		
First Presby. Church	"		K T W	X	X																
Northwest Radio	"	263	K J R			X	X														
Mullens Elec.	Tacoma	262	K G B			X	X		X	X		X	X		X	X		X	X		X
Guy Greason	"		K F E J																		
Moler & Frank	Portland	360	K F E C			X	X		X	X		X	X		X	X		X	X		X
Hallock & Watson	"		K G G			X	X		X	X		X	X		X	X		X	X		X
Star-Telegram	For. Worth	476	W B A P			X			X	X		X	X		X	X		X	X		X
News and Journal	Dallas	476	W F A A			X	X		X	X		X	X		X	X		X	X		X
Southern Egr. Exp.	San Antonio		W O A I																		
Palmer School	Davenport	484	W O C	X	X	X	X		X	X		X	X		X	X		X	X		X
Daily News-Fair	Chicago	438	W M A Q																		
Free Press	Detroit	617	W C X	X	X	X	X		X	X		X	X		X	X		X	X		X
News	"	580	W W J	X	X	X	X		X	X		X	X		X	X		X	X		X
Star	"	415	W D A F	X	X	X	X		X	X		X	X		X	X		X	X		X
Tribune	Kansas City		K D Y S	X	X																
Drake Hotel	Great Falls	390	W D A P			X	X		X	X		X	X		X	X		X	X		X
Crooley Wfg Co	Chicago	309	W L W			X	X		X	X		X	X		X	X		X	X		X
Radio Corp. of America	Cincinnati	455	W J Z			X	X		X	X		X	X		X	X		X	X		X
John Wanamaker	New York	509	W O D	X	X				X	X		X	X		X	X		X	X		X
	Philadelphia					X	X		X	X		X	X		X	X		X	X		X



VERNIER
23 Plate
43 Plate

AJAX PRODUCTS

are

Guaranteed

PHILMORE
Mfg. Co.

22 Warren St., New York

Presented by

CARL A. STONE CO.



RHEOSTATS
6 Ohm
30 Ohm

538 San Fernando Bldg.

Los Angeles

An Invitation

Los Angeles, Calif., November 12, 1923.

To all Radio Dealers, Jobbers, Manufacturers, Manufacturers' Agents, Manufacturers' Representatives, Distributors, and all Music Dealers Handling Radio Goods in Southern California.

Friends:

The Radio Trade Association of Southern California is extending to you a cordial invitation to attend its big "get together" banquet, to be held at The Elite, 633 South Flower Street, Los Angeles, on Monday evening, November 26, at 7 p.m. sharp. This banquet is FREE. We sincerely ask and hope for your attendance.

Matters of tremendous importance to all those engaged in the radio industry will be discussed. November 25 to December 1 is National Radio Week. We urge you to co-operate with this association by your attendance at this banquet. We can and will make a decided Southern California success of NATIONAL RADIO WEEK.

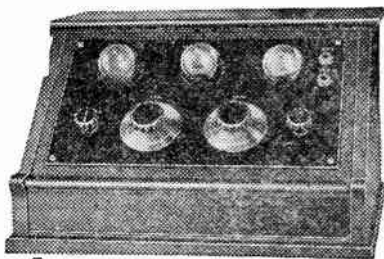
We request the presence of every radio man—from the manufacturer to the merchandiser of the smallest radio goods. ALL ARE WELCOME!

For further particulars or for reservations apply to any officer of the association or to the office of RADIO DOINGS, 308 Van Nuys Building. Phone 876-062.

Remember, this is FREE! You are to be the guests of

Yours for better Radio,

RADIO TRADE ASSOCIATION OF SOUTHERN CALIFORNIA,
By B. H. DENNIS, President.



\$125 complete

Kennedy Sets

*The finest made.
Backed by our 21-
year-old guarantee.
Come in and hear
them.*

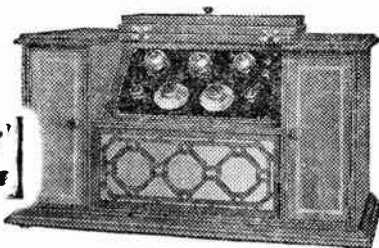
\$285 complete

NEWBERY
ELECTRIC CORPORATION
784-786-5 OLIVE ST.
LOS ANGELES CALIF.

New

872-914

Phone



6-8 P. M.
PACIFIC TIME

RADIO TIME TABLE

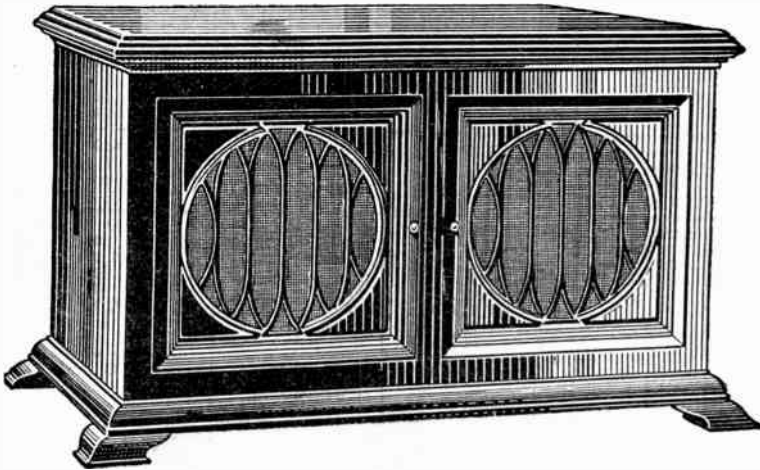
7-9 Mountain Time
8-10 Central Time
9-11 Eastern Time

NAME OF STATION	CITY	Met.	CALL	SUN.		MON.		TUES.		WED.		THUR.		FRI.		SAT.	
				6:00-6:30	6:30-7:00	7:00-7:30	7:30-8:00	6:00-6:30	6:30-7:00	7:00-7:30	7:30-8:00	6:00-6:30	6:30-7:00	7:00-7:30	7:30-8:00	6:00-6:30	6:30-7:00
Bible Institute	Los Angeles	360	K J S	X	X					X	X						
L. A. Times	"	395	KH J		X					X	X						
E. C. Anthony	"	469	K F I							X	X						
S. F. Examiner	San Francisco	360	K U O			X	X	X	X	X	X			X	X		
Maxwell Electric	Berkeley		K R E							X	X			X	X		
Tribune	Oakland	509	K L X				X			X	X			X	X		
Western Radio	Oakland		K Z L							X	X			X	X		
Kimball & Upson	Sacramento	283	K F B K			X	X	X	X	X	X			X	X		
Modesto Herald	Modesto		K X D				X			X	X			X	X		
Cal. Radle Lab'y	Hanford		K F B D		X	X		X	X	X	X			X	X		
Fallen & Co.	Santa Barbara	360	K F H J				X	X	X	X	X			X	X		
Radio Den	Santa Ana	268	K F F A			X	X	X	X	X	X			X	X		
Dr. R. O. Shelton	San Diego	242	K D P T	X	X		X	X	X	X	X			X	X		
Southern Elect.	"	244	K D P T				X			X	X			X	X		
Dr. W. K. Azbill	"	278	K F B C		X					X	X			X	X		
Smith-Hughes Co.	Phoenix		K D Y W		X		X	X	X	X	X			X	X		
McArthur Bros.	"		K F A D				X	X	X	X	X			X	X		
Univ. of Ariz.	Tucson		K F D H						X	X	X			X	X		
Love Elect. Co.	Tacoma		K M O			X	X	X	X	X	X			X	X		
Mullens Elect. Co.	"	252	K G B				X	X	X	X	X			X	X		
Northwest Radio Service	Seattle	283	K J R				X	X	X	X	X			X	X		
Excelsior Motor Cycle	"	280	K H Q						X	X	X			X	X		
First Presby. Church	"		K T W			X								X	X		
State Coll. of Wash.	Pullman	330	K F A E					X			X			X	X		
Oregonian	"	482	K G W	X	X	X	X							X	X		
Hallock & Watson	"		K G G		X	X								X	X		
Meier & Frank	"	360	K F E C				X	X						X	X		
Apple City Radio Club	Hood River	360	K O P				X	X						X	X		
Adler's Music Store	Baker, Ore.		K F D A		X	X		X	X	X	X			X	X		
Boise High School	Boise, Ida.	270	K F A U					X	X	X	X			X	X		
Bunkerhill & Sullivan Co.	Wallace, Ida.		K F E Y			X				X	X			X	X		
Telegram	Salt Lake	360	K D Y L			X	X	X	X	X	X			X	X		
Detroit News	"		K Z N			X	X	X	X	X	X			X	X		
Reynold's Radio	Denver		K L Z		X	X		X	X	X	X			X	X		
Western Radio	"		K F A F					X	X	X	X			X	X		
Sparks High School	Sparks, Nev.	226	K F F R							X	X			X	X		
Star-Telegram	Fort Worth	476	W B A P			X		X	X	X	X			X	X		
News and Journal	Dallas	478	W F A A			X	X	X	X	X	X			X	X		
Palmer School	Davenport	484	W O C		X	X	X	X	X	X	X			X	X		
Daily News-Fair	Chicago	448	W M A Q					X	X	X	X			X	X		
Post Dispatch	St. Louis	548	K S D	X	X			X	X	X	X			X	X		
Westinghouse	Chicago	448	K Y W		X	X		X	X	X	X			X	X		
Sweeney School	Kansas City	411	W H B		X	X		X	X	X	X			X	X		
Star	"	411	W D A F		X	X		X	X	X	X			X	X		
Tribune	Great Falls		K D Y S			X	X			X	X			X	X		
Drake Hotel	Chicago	390	W D A P		X	X								X	X		
Gravel Mfg. Co.	Cincinnati	309	W L W											X	X		
Albertan Pub. Co.	Calgary, Can.	410	C H B C								X			X	X		
Detroit Free Press	Detroit	517	W G X					X	X	X	X			X	X		
Radio Corp. of America	New York	455	W J Z	X	X	X	X	X	X	X	X	X	X	X	X	X	X
John Wanamaker	Philadelphia	509	W O O	X	X	X	X	X	X	X	X	X	X	X	X	X	X

The numeral next to name of station indicates the wave length. Where no number appears, the wave length is 360. The letter indicates that the station is on the air.

MURDOCK "SOLID" NO. 56 HEAD PHONES
Best at Any Price

Radio Corporation
 of America
 WORLD WIDE WIRELESS
 CHICAGO - NEW YORK - SAN FRANCISCO



Radiola IV

Gracing the Music Halls of America's Finest Homes

We carry a complete line of RADIOLAS. Viz., Radiola Grand, Radiola VII, Radiola V, Radiola II, and Radiola Senior. Prices complete from \$65.00 to \$350.00.

The Radiola is the production of the world's leading electrical manufacturers—

**The General Electric Company
 Westinghouse Electrical and Manufacturing Co.**

As a consequence, quality, merit and service are assured to the owner of a RADIOLA.

"The House of Standards"

"Quality"

**ORIGINAL RADIO
 BUGS**

"Service"

1030 So. Figueroa St., Los Angeles

Phone 820-253

8-10 P. M.
PACIFIC TIME

RADIO TIME TABLE

9-11 Mountain Time
10-12 Central Time
11- 1 Eastern Time

NAME OF STATION	CITY	Met.	CALL	SUN.		MON.		TUES.		WED.		THUR.		FRI.		SAT.	
				8:30-9:00	9:00-9:30	8:30-9:00	9:00-9:30	8:30-9:00	9:00-9:30	8:30-9:00	9:00-9:30	8:30-9:00	9:00-9:30	8:30-9:00	9:00-9:30	8:30-9:00	9:00-9:30
L. A. Union Stock Yards	Los Angeles	380	K F C L	X													
L. A. Herald	"	489	Herald			X	X				X	X					
Bible Institute	"	360	K J S	X	X								X	X			
L. A. Times	"	395	K H J	X	X						X	X					
L. A. Examiner	"	469	Examiner	X	X	X	X	X	X	X	X	X	X	X	X	X	X
E. C. Anthony	"	469	K F I	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Hale Bros.	San Francisco	423	K P O	X	X	X	X	X	X	X	X	X					
S. F. Examiner	"	380	K U O										X	X	X	X	X
Warner Bros.	"		K L S						X	X			X	X	X	X	X
Oakland Tribune	Oakland		K L X					X	X			X	X				
Maxwell Electric	Oakland	278	K R E			X	X	X		X	X						
Cal. Radio Lab'y	Hanford		K F B D							X							
Modesto Herald	Modesto	252	K X D			X	X										
Portable Wireless	Stockton		K W G			X	X						X	X			
San Joaquin L. & P.	Freemont	273	K M J	X	X			X	X					X	X		
Herrald Lab'y	San Jose		K A W							X	X						
Kimball-Upton	Sacramento	283	K F B K							X	X						
Abbott-Kinney Co.	Vanice	258	K F A V				X	X						X	X		
Gould	Stockton		K J O			X	X					X	X				
Faflon & Co.	Santa Barbara	360	K F H J							X	X			X	X		
Dr. W. K. Ashill	San Diego	278	K F B C	X	X	X	X					X	X	X	X		
Savoy Theatre	"	252	K D Y M			X	X	X		X	X			X	X	X	X
Southern Elcot Co	"	244	K D P T			X	X	X						X	X	X	X
Univ. of Arts	Tucson		K F D H					X				X					
Mason Radio Sup Co.	Phoenix	238	K F B C											X	X	X	X
Pest-Intelligencer	Seattle	270	K F G			X	X	X	X	X	X	X	X	X	X	X	X
Northwest Radio Service	"	283	K J R			X	X	X	X	X	X	X	X	X	X	X	X
Exceller Motor Co	"	280	K H Q					X				X			X	X	X
Rhodes Co	"	455	K D Z E			X	X	X		X	X	X		X	X		
First Presby Church	"		K T W	X	X												
Dragonian	Portland	492	K G W			X	X		X	X		X	X			X	X
Hallock & Watson	"		K G G							X	X					X	X
Stubbs Elcot	"		K G N							X	X						
Meyer & Frank	"	360	K F E G									X	X				
Apple City Radio Club	Hood River	380	K O P							X	X						
Pacific Radio Co	Eugene, Ore	275	K F A T				X	X		X	X						X
Boise High School	Boise, Ida	270	K F A U			X	X			X	X			X	X		
Virgin Radio Service	Medford, Ore	283	K F A Y			X	X		X	X	X		X	X		X	X
Bunkerhill & Sullivan Co.	Wallace, Ida		K F E Y			X		X		X			X		X		
Deseret News	Salt Lake City		K Z N			X		X		X			X		X		
Reynolds Radio Co.	Denver		K L Z	X	X												
Star Telegram	Fort Worth	476				X	X		X	X		X	X		X	X	
Dallas News	Dallas, Tex.	475	W F A A	X	X				X	X		X	X				
Palmer School	Davenport	484							X	X						X	X
Post Dispatch	St. Louis	548	K S D				X	X		X	X						
Star	Kansas City	411	W D A F		X	X		X	X	X		X	X		X	X	X
Woodmen of World	Omaha	526	W O A W			X		X		X		X	X		X		
Westinghouse	Chicago	245	K Y W												X		
Winnar Radio	Denver	380	K F E L	X	X												
Crescent Mfg. Co	Cincinnati	216	W I W									X	X				
Radio Corp. of America	New York	455	W J Z			X			X				X		X		

The numeral next to name of station indicates the wave length. Where no number appears, the wave length is 360. The letter indicates that the station is on the air.

MURDOCK "SOLID" NO. 56 HEAD PHONES
Best at Any Price

RADIO SUPPLIES

MOST COMPLETE LINE ON THE COAST

Sterling Voltmeter.....	2.75
Filko-stat	\$ 2.00
Marquette Rheostat, 25-ohm, \$1.50; 33-ohm.....	1.75
Parts for Neutrodyne Circuit	
Workrite Variometer and Varicoupler.....	3.50
Erla Reflex Transformers.....	5.00
WD-11, WD-12 Tubes, large stock.....	6.50
UV-199 and C-299, 201-A, 301-A Tubes.....	6.50
Diodide Detector Tube with Socket.....	2.50
All American Transformers.....	4.75
Bristol Loud Speaker.....	22.50
Dictagrand Loud Speaker.....	28.50
Electrad Variohm—Condensor and Gridleak combined.....	2.00
Adapters and Sockets for UV-199 Tubes.....	60c up

Atlas Loud Speaker \$25.00

Sleeper Monotrol The Long Distance Set

Complete with Tubes, Batteries, Loud Speaker and Loop Aerial, \$197.50

SPECIAL SALE OF RADIO BOOKS

	Reg.	Sale
Wireless Telegraphy, by Bucher.....	\$2.25	\$1.15
Experimenters' Manual, by Bucher.....	2.25	1.15
Wireless Stations, by Edelman.....	3.00	1.50
Sleepers—Radio Hook-Ups.....	.75	.50
Radio Phone Receiving.....	1.50	1.00
Radio Instruments and Measurements.....	2.25	1.00
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STATION	METERS	CITY	CALL	SUN.		MON.		TUES.		WED.		THUR.		FRI.		SAT.	
				10.00-10.30	10.30-11.00	11.00-11.30	11.30-12.00	10.00-10.30	10.30-11.00	11.00-11.30	11.30-12.00	10.00-10.30	10.30-11.00	11.00-11.30	11.30-12.00	10.00-10.30	10.30-11.00
L. A. Times.....	395	Los Angeles.....	K H J					X	X	X	X	X	X	X	X	X	X
Post-Intelligencer.....	270	Seattle.....	K L J C					X	X	X	X	X	X	X	X	X	X
Earle C. Anthony.....	489	Los Angel.....	K F I	X	X		X	X	X	X	X	X	X	X	X	X	X
Northwest Radio.....		Portland.....	K G N				X	X									
Oregonian.....	492	Portland.....	K G W					X	X								
W. W. Grant.....	440	Calgary.....	C F C N					X	X								
*Hale Bros.....	423	San Francisco.....	K P O							X	X			X	X	X	X
Herald.....		Calgary.....								X	X						

*Note—Hale Bros., San Francisco, KPO, on Monday, Tuesday, Wednesday and Friday broadcast to 1 a. m.

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TUESDAY— 8:00 to 9:00 p. m. LYMAN'S ORCHESTRA.

WEDNESDAY— 11:00 to 12:00. LYMAN'S ORCHESTRA.

THURSDAY— 8:00 to 9:00 p. m. ROSENFELD'S ORCHESTRA.

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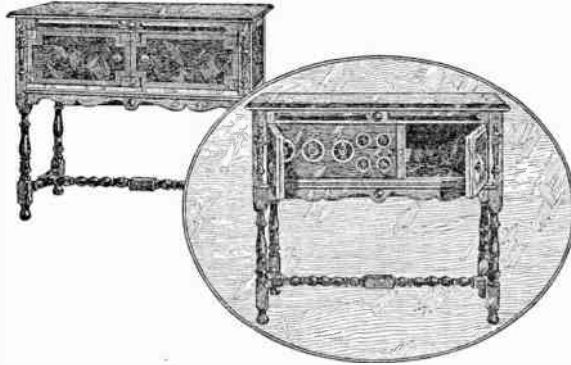
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SUNDAY, NOVEMBER 18—

- 10:00 a. m. Sermon by Dr. William MacCormack, dean of St. Paul's Cathedral.
10:30 to 12:30 p. m. Organ recital and entire religious service of First Methodist Episcopal Church, Rev. Elmer E. Helms, pastor. Arthur Blakeley, organist.
7:00 to 7:30 p. m. Organ recital from First Methodist Episcopal Church. Arthur Blakeley, organist.
8:00 to 10:00 p. m. Program presenting Zoellner Quartet and Dona Ghrey, dramatic soprano. Dr. Ernest Bryant Hoag, lecturer.

MONDAY, NOVEMBER 19—

- 12:30-1:15. Broadcasting Luncheon of the Electric Club from the Ballroom of Biltmore Hotel.
mon. News Items.
2:30 to 3:30 p. m. Silent.
6:45 to 7:30 p. m. Silent.
8:00 to 10:00 p. m. Silent.

TUESDAY, NOVEMBER 20—

- 12:30 to 1:15 p. m. Program arranged by Ruth Thomas, pianist.
2:30 to 3:30 p. m. Matinee musicale, arranged by Ruth Thomas, pianist.
6:45 to 7:30 p. m. Children's program, presenting "The Sandman."
8:00 to 10:00 p. m. Program presenting Fuhrer String Quartet. Tilda Rohr, Swiss contralto, and Constance Campbell, reader.
10:00 to 12:00 p. m. Broadcasting Art Hickman's Orchestra, by line telephony from the Los Angeles Biltmore Hotel.

WEDNESDAY, NOVEMBER 21—

- 12:30 to 1:15 p. m. Program presenting Hazel Clay, soprano, pupil of Raymond Harmon. Fred C. McNabb, of Aggeler and Musser Seed Company, will talk on "Garden Suggestions."
2:30 to 3:30 p. m. Matinee musicale.
6:45 to 7:30 p. m. Children's program, presenting Priscilla Moran, screen juvenile, 4 years of age, and Patrick Williamson, boy soprano, 10 years of age.
8:00 to 10:00 p. m. Program arranged by Harry C. Knox, flutist.
10:00 to 12:00 p. m. Broadcasting Art Hickman's Orchestra, by line telephony from the Los Angeles Biltmore Hotel.

THURSDAY, NOVEMBER 22—

- 12:30 to 1:15 p. m. Music. News Items.
2:30 to 3:30 p. m. Matinee musicale.
6:45 to 7:30 p. m. Children's program arranged by Vera Leavitt Owens, contralto. Mother Trevor's Picture Book. Dickie Brandon, reader, 4 years of age.
8:00 to 10:00 p. m. Program presented through the courtesy of Troy Motor Sales Company, arranged by K. G. Baum. Mabel Pearson, B. S., head of Biological Science, Pasadena High School, will talk, "Biology and Evolution," appearing through the courtesy of the Braun Corporation.
10:00 to 12:00 p. m. Broadcasting Art Hickman's Orchestra, by line telephony from the Los Angeles Biltmore Hotel.

FRIDAY, NOVEMBER 23—

- 12:30 to 1:15 p. m. Program presenting Paul Ford, baritone. News Items.
2:30 to 3:30 p. m. Matinee musicale.
6:45 to 7:00 p. m. Children's program, presenting Richard Headrick, screen juvenile.
7:00 to 7:30 p. m. Organ recital, from First Methodist Episcopal Church. Arthur Blakeley, organist.
8:00 to 10:00 p. m. Program arranged by the Oberlin Alumnae. "Uncle Josh." Walter F. McEntire, lecturer, will talk on "Mission Santa Barbara."
10:00 to 12:00 p. m. Broadcasting Art Hickman's Orchestra, by line telephony from the Los Angeles Biltmore Hotel.

SATURDAY, NOVEMBER 24—

- 12:30 to 1:15 p. m. Music. News Items.
2:30 to 3:30 p. m. Matinee musicale, presenting Edith Lillian Clark's piano pupils, and Caroline Hadley's vocal pupils.
6:45 to 7:30 p. m. Children's program arranged by Harry James Beardsley, baritone.
8:00 to 10:00 p. m. Program presenting the Southern California Saxophone Band, through the courtesy of Kathryn Thompson. Reginald A. Ellis, tenor.
10:00 to 12:00 p. m. Broadcasting Art Hickman's Orchestra, by line telephony from the Los Angeles Biltmore Hotel.

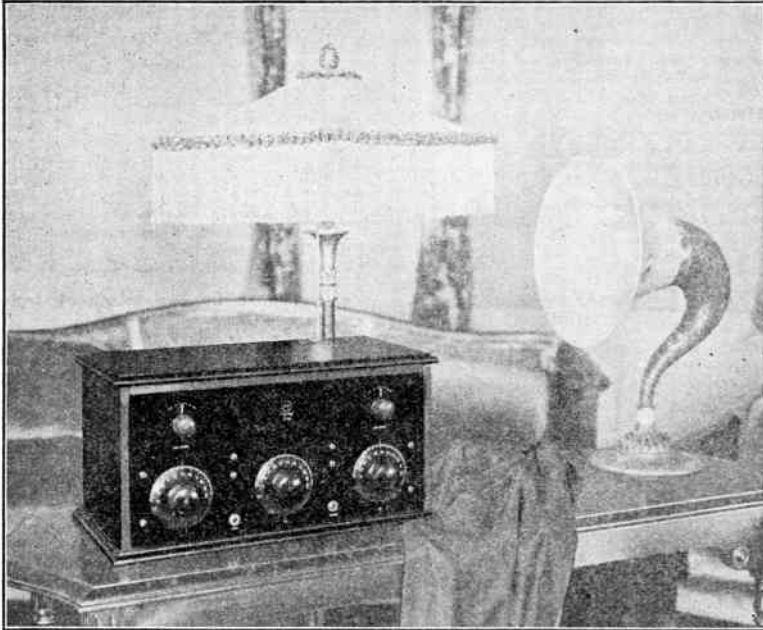
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 LONG BEACH RADIO SHOP, 409 American, Long Beach
 ROBT. L. SMITH, 54 E. Holly St., Pasadena
 G. F. SPARLING, 217 North Commercial, Inglewood.
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Remote Control Stations:

Los Angeles Evening Herald	5:00 to 5:30 p. m. daily except Sunday. 8:00 to 9:00 Monday, Wednesday, Friday.
Los Angeles Examiner	5:30 to 6:00 p. m. daily except Sunday. 9:00 to 10:00 p. m. daily.
Hotel Ambassador	8:00 to 9:00 p. m. Sunday, Tuesday, Thursday. 10:00 to 11:00 p. m. Monday. 11:00 to 12:00 p. m. Wednesday, Friday, Saturday.

Program Detail, Anthony Studio (Pacific Time), November 18th to 24th, Inclusive
(Does not include detail of remote control stations)
(Subject to change)

SUNDAY, NOVEMBER 18TH—

10:00 to 10:45 a. m.	Services by L. A. Church Federation.
4:00 to 5:00 p. m.	Services by Federated Church Musicians.
6:45 to 7:30 p. m.	Concert by Hollywoodland Community Orchestra.
10:00 to 11:00 p. m.	Courtesy Theron Bennett Orchestra Leader.

TUESDAY, NOVEMBER 20TH—

6:45 to 7:30 p. m.	Courtesy Geo. J. Birkel Co.
10:00 to 11:00 p. m.	Courtesy Sol Cohen, Violinist.

WEDNESDAY, NOVEMBER 21ST—

6:45 to 7:00 p. m.	Nick Harris Detective Stories.
10:00 to 11:00 p. m.	Courtesy Gage Christopher, Bass-Baritone.

THURSDAY, NOVEMBER 22ND—

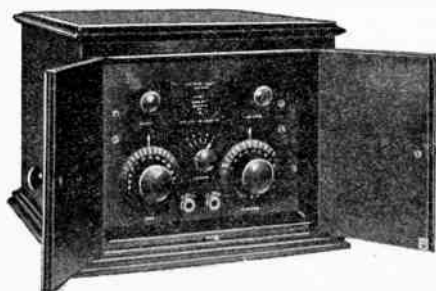
6:45 to 7:30 p. m.	Courtesy Y. M. C. A.
10:00 to 11:00 p. m.	Hollywood Girls Quartette.

FRIDAY, NOVEMBER 23RD—

6:45 to 7:30 p. m.	Paul Ford, Baritone.
10:00 to 11:00 p. m.	Theron Bennett Concert Co.

SATURDAY, NOVEMBER 24TH—

6:45 to 7:30 p. m.	Specal Instrumental Program.
8:00 to 9:00 p. m.	Burbank Choral Club.
10:00 to 11:00 p. m.	Special Popular Concert.



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SUNDAY, NOVEMBER 19—9 to 10 P. M.

Solomon's famous dance orchestra. Yvonne Farr, lyric soprano.

MONDAY—

5:30 p. m. Dr. Ralph L. Power.

9:00 to 10:00 p. m. The Peach Edition Club: Harry McCoy, Norman McNeil, Harry Coe, Charlie Melson and Madelyn Hardy. Talk on styles.

TUESDAY—

9:00 to 10:00 p. m. Concert presented through the courtesy of Sid Grauman.

WEDNESDAY—

9:00 to 10:00 p. m. The Examiner Radio Club, popular numbers by popular singers.

THURSDAY—

9:00 to 10:00 p. m. Program through the courtesy of Lester's Radio Shoppe.

FRIDAY—

9:00 to 10:00 p. m. Program through the courtesy of J. D. Martin of the Martin Music Company, featuring Gulbransen Male Quartet and Gulbransen Instrumental Trio.

SATURDAY—

9:00 to 10:00 p. m. Concert.

SUNDAY—

9:00 to 10:00 p. m. Solomon's Famous Dance Orchestra.

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Metro 4832

Evening Herald Radiophone

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Broadcast by Remote Control from Radio Central Station KFI
Telephone Metropolitan 5100

5:00 to 5:30 p. m. Evening Herald News Bulletin covering the World's News Events up to 5:00 p. m. Closing market quotations by leased wire.

MONDAY—

8:00 to 9:00 p. m. Program by Carl Edward Hatch.

WEDNESDAY—

8:00 to 9:00 p. m. Leon Strachan's Orchestra.

FRIDAY—

8:00 to 9:00 p. m. Marian Ward.

“Half the head phones *in use* are Murdock”

Quit Complaining and Clear Air

Some listeners-in keep complaining that amateurs interfere with broadcasting. They do not actually know who is interfering, but simply that someone transmitting code is interfering with their reception. Half the time it is probably ships which are sending or shore stations handling regular commercial work. What these “knocking” listeners-in should do, Department of Commerce officials say, is to learn to read code so they can identify the senders, getting the calls in order to report the offending stations if violations are found. Besides reporting the call, letters of amateurs breaking the regulations, efforts should also be made to ascertain and report the wave lengths used.

Here is a real service those who own receiving sets can render simply by learning the code and reporting breaches of regulations to the District Radio Supervisors or the Department proper. Present regulations make the air free to amateurs on 150 to 200 meter waves, except between 8 and 10:30 p. m. Amateurs have the right to use spark or tube sets; those owning tube sets can communicate by either code or voice. Broadcasting as such is forbidden amateurs; that is, music and entertainment cannot be sent out, but two station owners may converse, except in the evening broadcasting period. Special amateurs have the privilege of using wave lengths as high as 220 meters.

International Morse is the code used by amateurs, and its rudiments should be mastered within a few months.

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SUNDAY, NOVEMBER 18—

11:30 a. m. DR. R. A. TORREY, sermon. MRS. ROBERTA HARKNESS, soprano solo.
THE HARMONY MALE QUARTET.
6:00 to 6:45 p. m. RADIO VESPER. REV. JOHN A. HUBBARD, Scripture and sermon.
MRS. FERN BARTON, organist. Vocal selections.
8:00 p. m. DR. R. A. TORREY, sermon. M. C. M. BROOKS, Gospel solo. THE HARMONY QUARTET.

TUESDAY, NOVEMBER 20—

7:00 to 7:30 p. m. MR. EDWARD HAMM, tenor. MR. OSCAR WALTON, organist.

THURSDAY, NOVEMBER 22—

8:00 to 9:00 p. m. FLORINE FAY FRY, lyric soprano. MAYBELLE MULVEHILL, violinist. HARRIET OUTCALT, pianist. PAUL S. McCONNELL, organist. GERMAINE MULVEHILL, pianist.

KNX—The Electric Lighting Supply Co. 360 Meters

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MONDAY—

2:30 p. m. California Theatre Orchestra, Carli D. Elinor, Director.

WEDNESDAY—

3:15 p. m. California Theatre Orchestra, Carli D. Elinor, Director.

FRIDAY—

3:15 p. m. California Theatre Orchestra, Carli D. Elinor, Director.

KFAE—State College of Washington—330 Meters

PULLMAN, WASHINGTON

MONDAY, NOVEMBER 19—

7:30-8:30. Fattening Lambs, Prof. Howard Hackedorn.
Musical Numbers.
What Is Geology? Prof. O. P. Jenkins.

WEDNESDAY, NOVEMBER 21—

7:30-8:30. Natural Aptitudes and Vocations, Dr. D. W. Hamilton.
Food Falacies and Truths, Miss Leila W. Hunt, Home Economics.
Are Spreaders Economical in Orchard Spraying? Dr. A. L. Melander.
Musical Numbers.

FRIDAY, NOVEMBER 23—

7:30-8:30. High Cost of Poor Roads, Prof. H. E. Phelps.
A Chat on New Books, Alice Webb.
Artificial Light to Increase Winter Egg Production. A talk by L. W. Cassel.
Musical Numbers.

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 Saturday, 1 to 2 p. m., Fairmont; 3:30 to 5:30 p. m., Palace Hotel, Tea Dansants.
 Sunday church services by Church Federation of San Francisco, 11 a. m. to noon.

EVENING PROGRAMS

- SUNDAY—**
 8:30 to 10:00 p. m. Rudy Seiger's Fairmont Hotel Concert Orchestra.
- MONDAY—**
 8:00 to 10:00 p. m. Studio Program.
 11 p. m. to 1 a. m. Palace Hotel Dance.
 Organ between 9 and 10 p. m.
- TUESDAY—**
 8:00 to 10:00 p. m. Studio Program.
 11 p. m. to 1 a. m. Palace Hotel Dance.
- WEDNESDAY—**
 8 p. m. to 1 a. m. Max Bradfield's Palace Hotel Dance Orchestra.
- THURSDAY—**
 8:00 to 9:00 p. m. Studio Program.
 9:00 to 11:00 p. m. Palace Hotel Dance.
- FRIDAY—**
 8 p. m. to 1 a. m. Max Bradfield's Palace Hotel Dance Orchestra.
- SATURDAY—**
 8 p. m. to midnight. Art Weidner's Fairmont Hotel Dance Orchestra.

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- WEDNESDAY—**
 6:00 to 6:45 p. m. News Bulletin's Bed Time Story. Vocal and Instrumental Concert.
 9:00 to 10:00 p. m. Special Concert.
- THURSDAY—**
 6:00 to 6:45 p. m. News Bulletin's Bed Time Story. Vocal and Instrumental Concert.
- FRIDAY—**
 6:00 to 6:45 p. m. News Bulletin's Bed Time Story. Vocal and Instrumental Concert.
 9:00 to 10:00 p. m. Special Concert.
- SATURDAY—**
 6:00 to 6:45 p. m. News Bulletin's Bed Time Story. Vocal and Instrumental Concert.
- SUNDAY—**
 10:00 a. m. Radio Church Service.

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K G W—The Morning Oregonian—492 Meters

PORTLAND, OREGON

Program for Week November 18 to November 24, 1923

SUNDAY—

- 6:00 p. m. Church services.
 7:00 p. m. George Olsen's Metropolitan orchestra in dinner program of concert music from Portland Hotel; solos by George Brewster, tenor.

MONDAY—

- 11:30 a. m. Weather forecast.
 3:30 p. m. Literary program by Portland Library Association.
 7:30 p. m. Weather forecast and market reports.
 8:00 p. m. Voice recital by pupils of Robert Corruccino.
 9:30 p. m. Community program by Hillsboro Chamber of Commerce.

TUESDAY—

- 11:30 a. m. Weather forecast.
 3:30 p. m. Talk by Jeannette P. Cramer, home economics editor of The Oregonian.
 7:30 p. m. Weather forecast and market reports.
 8:00 p. m. Talk for farmers, provided under direction of Paul V. Maris, extension director of Oregon Agricultural College.
 10:00 p. m. Dance music by George Olsen's Metropolitan orchestra of the Portland Hotel.

WEDNESDAY—

- 11:30 a. m. Weather forecast.
 3:30 p. m. Children's program; piano solos by pupils of Marie Johns; story by Aunt Nell.
 7:30 p. m. Weather forecast and market reports.
 8:00 p. m. Concert by Webber Orchestra.
 9:00 p. m. Business talk by James Albert, representative of Alexander Hamilton Institute.
 10:00 p. m. Dance music by George Olsen's Metropolitan orchestra of the Portland Hotel; piano solos by Myron Champion.

THURSDAY—

- 11:30 a. m. Weather forecast.
 3:30 p. m. Woman's program on Child Training.
 7:30 p. m. Weather forecast and market reports.
 8:00 p. m. Dramatic program.
 10:00 p. m. Dance music by George Olsen's Metropolitan orchestra of the Portland Hotel; piano solos by Mary Anderson.

FRIDAY—

- 11:30 a. m. Weather forecast.
 3:30 p. m. Jess:ie D. McComb, home economics department Oregon Agricultural College; subject: "A Good Work Shop."
 7:30 p. m. Weather forecast and market reports.
 8:15 p. m. Studio program of dance music by George Olsen's Metropolitan orchestra of the Portland Hotel.
 9:00 p. m. Lecture on "Oregon Resources" by Alfred L. Lomax of University of Oregon extension division.
 10:30 p. m. Hoot Owls with Pantages frolic.

SATURDAY—

- 11:30 a. m. Weather forecast.
 3:30 p. m. Children's program; piano solos and story by Aunt Nell.
 7:30 p. m. Weather forecast and market reports.
 10:00 p. m. Dance music by George Olsen's Metropolitan orchestra of the Portland Hotel.



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W F A A—Dallas News-Journal—475 Meters

(PACIFIC TIME) DALLAS, TEXAS

MONDAY, NOVEMBER 19—

10:30-11:00 A. M. Address, Epps G. Knight, old-time humor.

6:30-7:30. Music of the orchestra, Don Albert conducting, and the organ, Emil Velaszko playing. Broadcast from the Palace Theater.

TUESDAY, NOVEMBER 20—

10:30-11:00. Address, DeWitt McMurray, editor Semi-Weekly Farm News, in a medley of humor, pathos and wisdom.

6:30-7:30. Miss Elizabeth Frierson Crawford, presenting Miss Lucille Lechner, singer, and Mrs. Cummings, pianist, both of Terrell, Texas.

9:00-10:00. Mrs. O. Ledford, pianologues and readings.

WEDNESDAY, NOVEMBER 21—

10:30-11:00 A. M. Address, Frank Reedy, on "Mexico, Yesterday and Today." Station WFAA will be silent for remainder of the day.

THURSDAY, NOVEMBER 22—

10:30-11:00 A. M. Music and markets.

6:30-7:30. Elks' Band, from Dallas Lodge No. 71.

FRIDAY, NOVEMBER 23—

10:30-11:00. Address, Dr. Robert Stewart Hyer, Southern Methodist University, on the Sunday School lesson, "Christians Called to Be Missionaries."

6:30-7:30. Joe Fusch in piano recital of popular selections.

SATURDAY, NOVEMBER 24—

10:30-11:00 A. M. Prof. J. D. Boon, Southern Methodist University, in Story of the Stars, a review in astronomy.

6:30-7:30. Grace Methodist Episcopal Church, South, sends its Sunday School orchestra, Earle D. Behrends, director.

9:00-10:00. W. A. Green Company Choral Club, Earle D. Behrends, director.

SUNDAY, NOVEMBER 25—

12:30-1:30 P. M. Radio Bible class, Dr. William M. Anderson, Jr., pastor First Presbyterian Church, teacher; Bible study and Gospel song.

7:30-8:00. E. W. Pfaffenberger and assisting musicians in sacred and favorite song recital.

8:00-9:00. Dizzy Four Orchestra, now called Lee's Foxtrotters.

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Los Angeles, California

WBAP—Fort Worth Star-Telegram—476 Meters

(PACIFIC TIME) FORT WORTH, TEXAS

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SUNDAY, NOVEMBER 18—

9:00 a. m. to 10:15 a. m. Complete services of the First Methodist Church, Rev. J. W. Bergin, D. D., pastor; Will Foster, organist.
3:00 p. m. to 4:00 p. m. Sabbath Day vesper concert. (E. L. O. announcing.)

MONDAY, NOVEMBER 19—

5:30 to 6:30 p. m. Concert arranged by Miss Virginia Jackson, pianist, and assisting artists. (E. L. O. announcing.)
7:30 to 8:45 p. m.—Concert presented by the John Tarleton Agricultural College, Stephenville, Texas, featuring the 40-piece college orchestra. (G. C. A. announcing.)

TUESDAY, NOVEMBER 20—

5:30 to 6:30 p. m. Concert by the Hauulea Hawaiian Music School, Dallas, Texas. (E. L. O. announcing.)
7:30 to 8:45 p. m. Monthly musical program by artists of the Fort Worth Harmony Club.

WEDNESDAY, NOVEMBER 21—

5:30 to 6:30 p. m. Concert by the 25-piece orchestra of the First Baptist Church of Fort Worth, Frank Maco, director. (E. L. O. announcing.)
7:30 to 8:45 p. m. Special concert of Spanish music, honoring Latin America, with announcements in English and Spanish, presented by the Texas Hotel Orchestra. (The Hired Hand announcing.)

THURSDAY, NOVEMBER 22—

5:30 to 6:30 p. m. Dance concert of Tommie's Texans, Meadowmere Club Orchestra. (E. L. O. announcing.)
7:30 to 8:45 p. m. Organ concert presented by Will Foster, organist of the First Methodist Church. (G. C. A. announcing.)

FRIDAY, NOVEMBER 23—

5:30 to 6:30 p. m. Concert by the S. R. P. Choral Club of Jubilee Singers of the Mount Pisgah Negro Church. (E. L. O. announcing.)
7:30 to 8:45 p. m. Concert by the 25-piece orchestra of the North Texas State Teachers College, Denton, Texas; R. S. Riggs, director. (The Hired Hand announcing.)

SATURDAY, NOVEMBER 24—

5:00 to 5:30 p. m. Radio Bible Class and review of the interdenominational Sunday School lesson by Mrs. W. F. Barnum, leader of the Barnum Bible Class, First Methodist Church. Subject, "Christians Called to Be Missionaries." Text, John 17:18, Matthew 28:16-20, Acts 1:6-8. (E. L. O. announcing.)



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Enclosed find five dollars, for which send me one Coast Coupler.

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WOC—Palmer School of Chiropractic—484 Meters

Davenport, Iowa—Pacific Time

SUNDAY, NOVEMBER 18—

6:00 p. m. Church service. Rev. W. M. Boaz, pastor First Presbyterian Church, East Moline, Illinois. Music by church choir.
 7:00 p. m. Musical Program (2 hours). P. S. C. Orchestra, Gerald M. Barrow, director. David Metz, boy soprano: "A Little Bit o' Honey," "He Shall Give His Angels Charge." Charles R. Hall, tenor: "The Earth Is the Lords," "The Rosary," "Invictus," "A Perfect day."

MONDAY, NOVEMBER 19—

6:00 p. m. Musical program (1 hour), Erwin Swindell, musical director. C., R. I. & P. Railroad Employees Association Band, of Silvis, Illinois. Mrs. Carl Nyquist, soprano. Talk by Thos. Straw, welfare worker for Rock Island Lines.

TUESDAY, NOVEMBER 20—

4:50 p. m. Sport News and weather forecast. (No broadcasting after 6 p. m. Tuesday—silent night for WOC.)

WEDNESDAY, NOVEMBER 21—

6:00 p. m. Musical Program (1 hour). Program given by the Temple Chorus of Rock Island, Illinois. J. W. Johnston, director.

8:00 p. m. Artist musical program, Erwin Swindell, musical director. Concert by the Troy Laundry Machinery Co. Band, of East Moline, Illinois. Margaret Patton, reader; Bernice Mason, soprano; Mrs. Harry Palmer, violinist.

THURSDAY, NOVEMBER 22—

6:00 p. m. Musical program (1 hour). P. S. C. Orchestra, Gerald M. Barrow, director, featuring popular selections released through the National Association of Broadcasters, of which WOC is a member. V. B. Rochte, baritone soloist.

FRIDAY, NOVEMBER 23—

6:00 p. m. Musical program (1 hour), Erwin Swindell, musical director. Genesco Male Quartette, of Genesco, Ill. Katharine Lieberknecht, pianist.

SATURDAY, NOVEMBER 24—

7:00 p. m. Orchestra program (1 hour). P. S. C. Orchestra, Gerald M. Barrow, director. Popular selections released through the National Association of Broadcasters, of which WOC is a member. V. B. Rochte, baritone soloist.

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K S D—St. Louis Post-Dispatch—546 Meters

K D S WEEKLY PROGRAM—WEEK OF NOVEMBER 12TH
Pacific Time

MONDAY, NOVEMBER 19—

6:00 p. m. Vocal and instrumental specialties, orchestra and organ music broadcast direct from the Grand Central Theatre.

9:30 p. m. Program by John A. Wynn, baritone; Miss Emma O. Walter and Miss Margaret Dee, pianists.

TUESDAY, NOVEMBER 20—

6:00 p. m. Program to be announced.

9:00 p. m. Dance music played by Silverman's Orchestra, broadcast direct from Hotel Jefferson.

WEDNESDAY, NOVEMBER 21—

5:00 p. m. Program by Abergh's Concert Ensemble, Arne Arneson, violinist, broadcast direct from Hotel Statler.

9:00 p. m. Broadcasting dance music played by Rodemich's Orchestra, direct from Hotel Statler.

THURSDAY, NOVEMBER 22—

6:00 p. m. Broadcasting concert given by St. Louis Symphony Orchestra. Carolina Lazari, contralto, soloist, direct from the Odeon.

FRIDAY, NOVEMBER 23—Silent.

SATURDAY, NOVEMBER 24—

6:30 p. m. Orchestra concert, organ recital and vocal and instrumental specialties broadcast direct from the Missouri Theatre.

MURDOCK "SOLID" NO. 56 HEAD PHONES
Best at Any Price

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*Send a card, write, phone or call for
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Los Angeles

W M A Q—The Chicago Daily News Radio Program

Located on the Roof of the Hotel LaSalle, Chicago, Ill.
Pacific Time—Wave Length 447.5

MONDAY—

2:30. To be announced.

Monday night is silent night in Chicago.

TUESDAY—

2:30. Glenn Dillard Gunn School of Music.

5:00. Weekly Babson report.
Talk by Dr. Edwin L. Barnes.

5:30. Program arranged by Chicago Consulate of Hungary.

7:00. Hotel La Salle Trio.

7:15. Weekly musical program arranged by Lyon & Healy.

WEDNESDAY—

11 a.m. Speeches broadcast from Chicago Association of Commerce luncheon.

2:30. Cosmopolitan School of Music and Dramatic Art.

5:00. Miss Georgene Faulkner, the Story Lady.

5:30. Weekly lecture from Northwestern University.

7:00. Hotel La Salle Trio.

7:15. Program arranged by Lyceum Arts Conservatory.

THURSDAY—

2:30. To be announced.

5:00. Weekly talk to Boy Scouts.

Weekly talk by Rockwell R. Stephens, automobile editor, The Daily News.

Talk by Albert Lasker.

7:00. Hotel La Salle Trio.

7:15. To be announced.

FRIDAY—

2:30. Pupils of Bush Conservatory.

5:00. Wide Awake Club program arranged by Mrs. Frances Ford.

5:30. Weekly musical lecture by Mrs. Marx E. Oberndorfer.

7:00. Hotel La Salle Trio.

7:15. Program arranged by Glenn Dillard Gunn School of Music.

SATURDAY—

6:15. White Wing Band.

7:00. Weekly musical revue from Chicago Theatre.

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A RADIO SPEAKER WITH A REASON

Perfectly Voiced

Positively no vibration—pure clear tones—exact reproductions—absolutely no metal parts. Made in one piece, of "Parembo," the new wonder material — indestructible, unbreakable. Large size, stands twenty-seven inches high. 14x11 inch bell. An ornament to the finest radio sets yet at a price within the reach of everyone.

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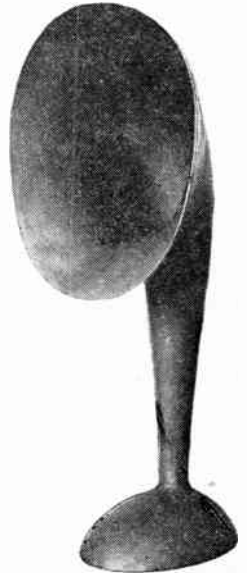
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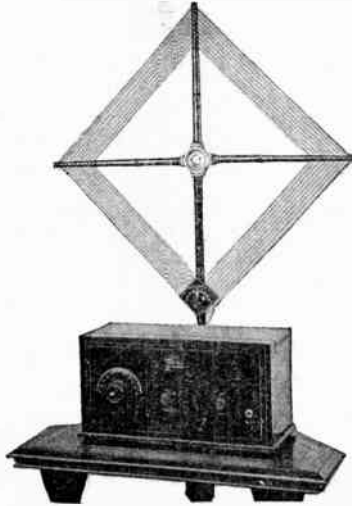


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"SLEEPER MONOTROL"
The Most Perfect Set in America

Licensed—under the Grimes Inverse Duplex Circuit Patents—the only system for using the same tubes in inverse direction for both radio and audio frequency amplification.

No Outside Wires—the only connection is with an indoor loop. No outdoor aerial need be erected and there is no ground connection whatsoever.

The Monotrol Loop—a beautiful Windsor Period loop is furnished complete with every set and reduces static disturbances and other interference to practically zero.



Absolute Clearness—use of radio frequency without regeneration makes distortion impossible. Absolute purity, clarity and naturalness of tone are assured.

Intensity Control—the special patented taps on the Monotrol Loop make it possible to control intensity of volume without disturbing the tuning.

Distance and Volume—3 tubes do the work of 5, giving two stages of radio frequency amplification and two of audio with tube detector. No crystal to search for a sensitive spot over its entire surface.

Any radio set that works will give you a thrill the first time you listen in on the air, but the ambition to hear more and to hear further and better grows so quickly that you might as well buy the best in the beginning as in the end. The SLEEPER MONOTROL (at no higher—even at a lower price) will assure you the most perfect reception for every broadcast program that can possibly be heard through any three-tube set and many which could not be heard except through five-tube sets in any other type of circuit.

Complete with Loud Speaker, Batteries and Tube

\$197.50

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In order that questions be answered promptly and accurately, write plainly, number your questions and make them as brief as possible.

TECHNICAL EDITOR.

HALL BERRINGER

Question—Have a three-tube regenerative set using dry cell batteries on indoor antenna. Please answer in "Radio Doings" what stations I should get on a 30-foot outdoor aerial (one wire), and if masts of water pipe are preferable to wood.

A. S. BARNEY,

341 N. Normandie Place, Los Angeles, Calif.

Answer—It is impossible to tell you the distance you may receive as this depends on time of year, time of day, geographical conditions, etc.

Question 1.—Will you please tell me how to find the wave length of an aerial and what good does it do?

2.—What is the best vacuum tube for a one-tube reflex set for distance and audibility.

EUGENE NEELY,

621 West Sixty-second St., Los Angeles, Calif.

Answer 1.—To find the wave length of any antenna a calibrated wave meter must be used.

To know the wave length of your antenna would not help you unless your receiver was calibrated also. If this was so, you could set your receiver at any desired wave length.

2.—We suggest a C-301-A or U V-201-A tube.

Question 3.—We have a five-tube receiver and it is very fine, except an intermittent rattling noise very often and a rushing noise. We have a Western Electric Company Victrola attachment for loud speaker. Can you tell me how to eliminate that.

R. GREEN,

2271 West Twenty-fifth St., Los Angeles, Calif.

Answer 3.—There are several things that might cause the interference in your receiver. It may be passing street cars, loose connection in circuit. If your receiver was of standard make and you had given us the manufacturer's name, perhaps we could tell you more definitely where to hunt for trouble.

Question 4.—Please inform me through your Question and Answer Department if the Super-Hetrodyne would be a practical receiver for amateur traffic?

DALTON J. ATHERTON, P. O. Box 87, Fullerton, Calif.

Answer 4.—Yes, if you could get a good one. Thousands have been constructed, but we have never met a man who claimed good results when using one.

Question 5.—What type of radio receiver seems to be the most successful in long distance reception, viz.: Neutrodyne, reflex, super-regenerative, Hetrodyne, etc.? Which, in your opinion, is the more sensitive, the Freed-Eismann 5-tube neutrodyne or the Murad receiver? Which is the more selective?

CHAS. EVRIST, 1921 Bailey St., Los Angeles, Calif.

(Continued on Page 43)

**"RADIO" when connected with PREMIER
Means—something**

The Southern California Distributor
(Wholesale only) for

THE PREMIER ELECTRIC CO.

CHICAGO, ILL.

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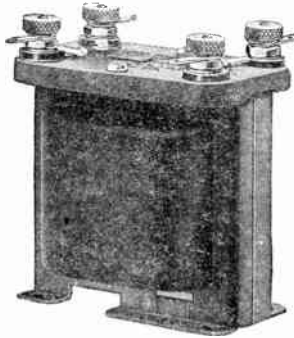
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Los Angeles

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KELLOGG TRANSFORMERS ARE DESIGNED to overcome defects of existing types and to furnish distortionless amplification of all audio frequencies. Built complete by the Kellogg Company, using highest grade wire, maroon enameled metal case, and molded Bakelite top. The primary and secondary winding posts are accessibly marked, so that there need be no error in assembling. Every Kellogg Transformer is thoroughly tested before leaving the plant, and we guarantee the purchaser a product of exceptional efficiency.

No. 501 Transformer (Ratios 3 to 1 and 4½ to 1) \$4.50

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"Always a Place to Park Your Car Nearby—No Parking Limits"

287043

Telephone

281155



(Continued from Page 41)

Answer 5.—It is impossible for us to take any definite stand against or for any of the receivers you mention. We suggest you get in touch with a reliable radio dealer who employs a radio expert. Good results have been obtained by all equipment you mention.

Question 6.—We wish to add our protest to the Commercial and other wireless telegraph stations stirring up the air every night, so as to interfere with all broadcasting programs on wave lengths above 400 meters. We are very well situated here, so we can easily bring in New York and eastern stations, and particularly strong on all large stations from Chicago west to the Pacific Coast, including Texas and Old Mexico, on the South, and Canada on the North, but whenever we undertake to get such stations as WOAW of Omaha and KWG of Portland, we run into the code traffic so strong as to nullify these programs. Could not the Radio Association of Southern California start a movement to get the telegraph stations to lay off monopolizing the air from, say, 7 or 8 to 12 each evening. This would leave them about 20 hours out of every 24 for their business. The general public have some rights.

It may be necessary to go to Congress to get this relief, but it is worth it, and unless we get some consideration voluntarily, I am in favor of starting a movement to have Congress pass a law giving us the relief we need from this source. The radio fans up this way are in sympathy with this movement.

We appreciate your publication very much up this way.

GEO. E. HILL, Rigby, Idaho.

Answer 6.—We are sorry to hear that you are troubled by Commercial interference. It is impossible to get changes in wave lengths for commercial stations at this time. No doubt, in a course of time 600 meter traffic will be raised to a higher wave length. At the present time all amateur traffic is forbidden between eight and ten p. m. We suggest you start the good work by getting your friends to change their receiving circuits to a more selective type.

Question 7.—Here is my hook up which I am trying to use. I wish you would check it over and suggest what might be the trouble?

WILLIAM KELLER, Lancaster, Calif.

(Continued on Page 44)

MURDOCK "SOLID" NO. 56 HEAD PHONES
Best at Any Price

TUBES REPAIRED

Detectors \$2.75—Amps. \$3.25. All Work Guaranteed Good as New.
No Charge for Broken Glass. Discount to Dealers. 15-Day Service Now.

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A Timely Suggestion

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Credit if desired.

MANUAL ARTS RADIO & ELECTRIC SHOP

4154 S. Vermont Ave.

Los Angeles, Calif.

Phone Vermont 7836

?? ? ? ?

(Continued from Page 43)

Answer 7.—We have checked over your circuit and find it to be correct. We suggest you get in touch with the nearest radio dealer. He may help you solve your problem.

Question 8.—I want to thank you for answering my question I sent in to you not long ago. I have another question that I wish you would answer for me. The question is, "Can you tell me what is the best kind of radio frequency to put on a single circuit CR-5 hook up? I now have a det. and two-step audio set. Will you also tell me which radio frequency transformers are the best? I want very much to add radio frequency to my set if it can be done.

WAYNE M. HANCOCK, La Mesa, Calif.

Answer 8.—The most efficient kind of radio frequency amplification is tuned. If you will take suggestions from us, better your tuning before adding radio frequency amplification. There are several ways you can increase the efficiency of your present tuner. With your present circuit if you add radio frequency amplification the tuning will become very broad.

HIGH POWER RADIO

(Continued from Page 9)

In a pioneer undertaking of this kind, when dealing with a new art, whose development was then and is now rightly regarded as being only in its infancy, especially as regards the use of high power, very little authentic information was available as a guide as to what results could actually be expected in service, and the question of suitable type of antenna supports, antenna and ground systems, antenna insulators, types of transmitter, power supply, etc., were matters of theoretical contention, based largely on personal opinions.

Time has proven that experience, and successful experience alone, is the only true guide in designing a radio system. This experience was not then available to the Navy. Nothing is easier than to take a map, mark out radio station sites, connect them by straight lines and call the arrangement a radio system; but nothing is more fallacious in radio. The type of transmitter to be adopted was, of course, of very great importance, as was also the type height and location of antenna supports. Other important features could be modified, if required, after the stations were placed in service, but it would be extremely difficult and a costly matter to replace transmitters or to arrange the antenna supports.

(Continued next week)

A get-together dinner for all branches of the radio industry is being arranged by the Radio Trades Association of Southern California on Monday, November 26, as a fitting start for National Radio Week. A very cordial invitation is extended to all dealers, wholesalers and jobbers to attend. Matters of great interest to the trade will be discussed. The dinner will be held at The Elite, 633 South Flower Street, Los Angeles. Full particulars can be had by communicating with Mr. Farquarson, Secretary, Laughlin Building, 315 Broadway, or from Radio Doings.

Prest and Dean Radio Electric Co.

Complete Line of Radio Sets and Supplies

Colin B. Kennedy Sets—"The Royalty of Radio"

742 East Fourth Street, Long Beach

Phone 635-213

RADIO LOOPS THE LOOP AROUND WARSAW STATION WITHOUT OPERATOR

(Continued from Page 11)

graphic characters which he formed on the control key before him were repeated in his ears. So quick was the action, that before his skillful fingers were raised from the small black button on the key, the partially completed dot or dash which he made echoed in his head receivers. He tried in vain to shorten the duration of the impulse and thus utilize the time element in transmission to combat the terrific speed with which radio repeated the signals of his own creation. But the duration of the shortest dot he could make was greater by far than the time required for radio to travel from New York to Warsaw and back, a distance of 8,500 miles.

"A hasty computation shows this cycle time to be roughly $1/25$ of a second, yet in this brief period a signal started in New York passes over a telegraph line in this city; travels 70 miles to the radio station proper at Rocky Point, Long Island, and is hurled with the speed of light across the 4,200 miles of water and land before reaching Warsaw. It is then intercepted at the Warsaw receiving station, amplified and transferred to a land wire system to the Central Postoffice in Warsaw, thence conducted to the transmitting unit, 10 miles outside of Warsaw before transmission as a radio wave to the shores of America. Telegraph wires then conduct the impulse, after amplification at the Riverhead, Long Island, receiving station, into the Central Radio Office, in the heart of New York City.

"The next step in completely closing the circuit and making the signals self-sustaining was to eliminate the operator at the New York terminal, and in his place substitute an automatic receiving instrument which would repeat the intercepted impulses sent by radio from Warsaw and introduce them in the control line of Rocky Point sending station. The necessary connections were quickly made in the Traffic office at New York.

"The New York relay, the starting point for throwing the radio lasso, was tripped, a short impulse entered the transmitting control apparatus and a wave shot outward, looping about the Warsaw station and returning instantly as if to catch up with itself. The New York receiving instrument repeated the signal through Rocky Point and the wave once more started for Warsaw. Again and again this original dot raced around the circuit without interference from man. After making forty laps around the course, passing through twenty-five vacuum tubes, ten relays, changing its wave length eighty times, first a feeble wire line current, then a mighty electrical wave the first flow of energy weakened, became completely exhausted and withdrew from the race. And all this happened in 25 seconds. In other words the original radio impulse traveled back and forth over the loop at the rate of 186,000 miles per second and since it did this for 25 seconds, it actually covered the huge distance of 4,500,000 miles!

HEATHS' ELECTRIC SHOP

RADIO DEPARTMENT

Agents for Freed-Eisemann and Fada Neutrodyne Parts. Also De Forest Sets.

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HOLLYWOOD

"Out of the Air"

By LISTENER-IN

Remember November 25 to December 1 has been designated NATIONAL RADIO WEEK. We can all help in our small way to make this a success, whether we be listeners-in, amateurs or dealers. We hope the radio dealers all over the country will make a special window display for the week.

Radio Doings will print a SPECIAL NATIONAL RADIO WEEK Edition for the week of November 25 to December 1.

Radio has been a blessing to many, but an instance was called to my attention last week which shows how much it is appreciated by the older generation. An old lady of over eighty has been unable to attend church for years is now able to listen to the church services every Sunday morning from local stations. She looks forward to this all the week and would not miss it for worlds.

The clubhouse, now under construction, of the Southern California Athletic and Country Club at Wilshire Boulevard and Carondelet, Los Angeles, will have one of the largest radio receivers installed. Each room will be connected, so that the occupant will be able to listen-in at will. Radio has become as necessary to the modern hotel and club as the telephone.

The Angelus Temple, located at the head of Echo Park, Los Angeles, will shortly have a powerful broadcasting station. We understand the apparatus has already been shipped and it will have power of 500 watts. Mrs. Aimee Semple McPherson, who is responsible for the building of this beautiful temple and who is drawing such tremendous congregations, will undoubtedly make the broadcasting as interesting to the vast congregation reached by radio as the services she is conducting.

Radio fans in Prescott, Arizona, Ferndale, California, and Warsaw, Indiana, have just reported hearing the programs from K F A E, State College of Washington, in fine shape. Merle Tucker was the Warsaw fan. Harold Ericcson of California says: "I have enjoyed your programs lately and thank you very much for the pleasure derived from them." Jack W. Newman, the Arizona air listener, says: "The selections played by the band were very good. Your entire program came through very clear and loud."

Mr. Paul Sutcliffe, Pacific Coast representative of Adams-Morgan Co., the manufacturers of Paragon Radio Equipment, has just returned from a trip to the factory. He promises a treat when the new style sets arrive. Whilst in New York he attended the Radio Show and pronounced it a big success. We hope that we shall shortly be able to announce that a radio show to be held in Los Angeles has been assured.

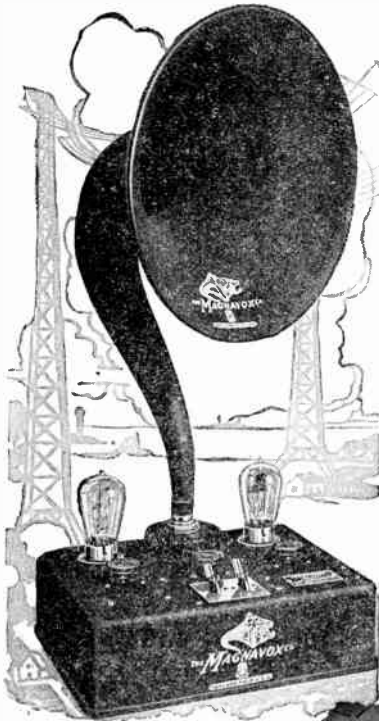
Jefferson High School, Los Angeles, is giving an entertainment on the evenings of November 23d and 24th at 7:00 p. m. The Radio Trades Association has been requested to furnish a speaker on these occasions, and Mr. A. E. Schifferman will be on hand to tell them all about radio.

Broadcasters, radio manufacturers and dealers all over the country are making preparations for special programs and displays during National Radio Week, November 25 to December 1.

Governor James G. Scrugham of Nevada will speak over KFFR, Sparks High School station, on Thursday, November 29th. Thanksgiving Day, from 7:00 to 8:00 p. m.

A Magnavox Reproducer and Power Amplifier in One Unit

AFTER exhaustive study and tests by our engineers, this has been successfully accomplished, and the new instruments of the unit type here illustrated in one and two stages of amplification may now be had through Magnavox dealers everywhere.



Reproducers

- R2 with 18 inch horn \$60.00
- R3 with 14 inch horn \$35.00
- M1 with 14 inch horn; for dry battery sets . \$35.00

Combination Sets

- A1-R consists of Magnavox Reproducer with 14 inch horn and 1-stage Amplifier . . . \$59.00
- A2-R same with 2-stage Amplifier . . . \$85.00

Power Amplifiers

- A1-One-stage . . \$27.50
- AC-2-C-Two-stage 55.00
- AC-3-C-Three-stage 75.00

Magnavox Products can be had of good dealers everywhere. Ask for a demonstration

The new Magnavox Combination Sets A2-R [2-stage] and A1-R [1-stage] insure the utmost in convenient, home radio reproduction.

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ORIGINAL ARGENTITE

Means Better Radio For You



WHY BE SATISFIED

with that faint, far-away music, which comes in "sometimes" with that old crystal?

ORIGINAL ARGENTITE

gives you loud, clear reception and never misses. No fussing around for a sensitive spot—it is all alive—a million points at your service.

Why take a chance on being lucky? We offer you a guaranteed crystal that costs no more than many "just crystals." Original Argentite is tested twice, and, remember, any old rock does not make a radio crystal. Argentite runs as high as 87 per cent in silver.

THE BEST IN THE WORLD IN RADIO CRYSTALS

Three styles—plain crystal, wood-metal mounting for reflex sets, nickel mounting for any set.

Bring out your discarded sets, use Original Argentite and enjoy the wonderful programs of our local stations.

We can't tell you what Original Argentite will do. Let us show you. Each crystal guaranteed.

MINERAL PRODUCTS CO.

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Phone 668-49

Los Angeles

Answering the Question—
How Far Will This Set Reach Out!?

**Kennedy dealers don't talk miles
 when they sell Kennedy Equipment**

-- BUT --

In Bakersfield, California, on the night of October 28th, the following stations were heard, using a Kennedy Model 5 broadcast receiver:

WJZ—NEWARK, NEW JERSEY
 PWX—HAVANA, CUBA
 KLZ—DENVER, COLORADO
 CHAC—CALGARY, CANADA
 CHCJ—CALGARY, CANADA
 CHCB—VICTORIA, B. C.
 WHB—KANSAS CITY, MISSOURI
 KAY—LACY, WASHINGTON
 KFKR—STEPHENSVILLE, MONTANA
 KFBD—DOUGLAS, WYOMING
 KHQ—SEATTLE, WASHINGTON
 KZN—SALT LAKE CITY, UTAH
 KGG—PORTLAND, OREGON
 KGW—PORTLAND, OREGON
 CJCD—VANCOUVER, B. C.
 KPO—SAN FRANCISCO

*See a Kennedy dealer for demonstration or write us direct
 for descriptive literature on the new Furniture Model sets*

K E N N E D Y



We are the exclusive wholesale distributors for Southern California

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Wholesale Distributors

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Los Angeles, Calif.

Radio Doings

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Los Angeles, Cal.

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Five Cents a Copy

Two Dollars a Year

Vol. III Los Angeles, November 10, 1923 No. 19

WE read in the morning papers that Lloyd George spoke to an audience of thirty-seven hundred at the Metropolitan Theater in New York and that for every one who was lucky enough to get a seat there were one hundred applicants. We also read that his speech was broadcast; it would be almost impossible to guess how many thousands in this way were able to hear him. We are safe in saying that the audience that "saw" him speak was only a very small fraction of those who "heard" him.

Again we read that ex-President Woodrow Wilson is going to speak over the radio on Armistice Day.

It is true that we on the Pacific Coast could not hear Lloyd George in New York, nor shall we be able to hear ex-President Wilson, who will speak in Washington, but, the time is not far distant when, we believe, we shall be able to hear distant stations.

Who of us would miss the chance to hear such famous men?

We have heard Hoover, Davis, Bryan, Pershing, Mary Garden and many other famous speakers and singers over local stations, and we shall, no doubt, hear many more.

Of course father and mother want all the children to be able to say that they have heard all the celebrated men and women of the day, and, like going to the circus, father and mother have to go along to see that their offspring are safe, not, of course, so that they can see the show themselves; so it is with the radio set; if you have not got one already, get one, so the kids can hear and whilst they are doing so, the old folks can listen-in.

In days past, many were tardy in getting electric light in the old home, the telephone was a new contraption only of use as a plaything, therefore, the old-fashioned would not think of having one in the house.

Do not be a "mossback," get a radio set, if you have not one now, and join the happy family of "radioland."

All the Year for Two Dollars

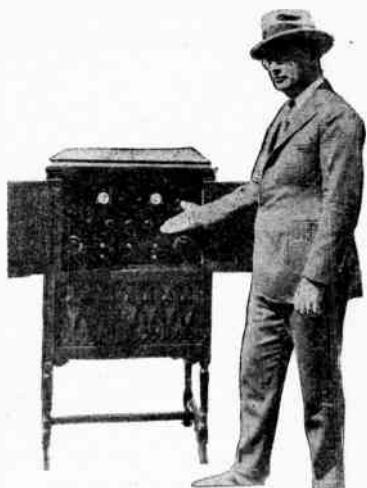
Do not miss a copy of RADIO DOINGS. Have it mailed every week to your home. Simply sign the blank below. Mail it to us or pay your dealer and let him forward it to us.

RADIO DOINGS, 308 Van Nuys Building, Los Angeles, California.

Inclosed find two dollars for subscription to RADIO DOINGS for one year.

Name _____

Address _____



Coming Back at you

Last week a friend asked this question: "How is it that customers will wait several days and weeks if necessary for Mr. Tanner to build them a

Neutrodyne with Tone Control

My answer to him was—that because of his experience and determination to make every set better—"if it is possible to do so." It has given the public confidence in him to the extent of which they are willing to wait—and as one customer has explained it, "Until he is confident it will be right, when installed."

REPAIRS

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1177 W. Jefferson St.
Phone Beacon 3672

506 W. Washington St.
Phone 289-877

WE DO IT BETTER RADIO-ATICALLY

High Power Radio

By HALL BERRINGER

(Continued from last week)

Twenty-seven years ago in February, a young scientist of Italian and Irish parentage journeyed from Italy to England in the hope of interesting the British Government in an invention by the use of which the claim was made that communication could be exchanged without utilizing the ordinary connecting wires or other visible connecting medium. He experienced some difficulty in getting in touch with the British officials, and when he did, his claims were listened to with a degree of skepticism, comparable to that which would probably now confront a man who suddenly claimed to having talked to Mars by radio. It was only natural that such an attitude would prevail, because the only method then known for exchanging rapid communications was the land line telegraph, ocean cable system and telephone, and it was generally believed to be impossible to exchange rapid communications over great distances without wires.

However, we learn that six months after Marconi arrived in England he conducted a series of tests before the British Postoffice officials and military and navy officers on Salisbury Plain, and succeeded in communicating a distance of one and three-quarters miles. One year later Marconi increased the distance to four miles and a few months later to eight miles. This happened in the years 1896 and 1897. At this time the cable systems had been in successful operation only twenty-five years, and a skeptical world was apprised of the remarkable new invention of "wireless telegraphy."

Thus we see introduced into the world within a generation two remarkable inventions enabling the exchange of rapid communications over long distances, namely, the ocean cable and wireless, or radio telegraphy.

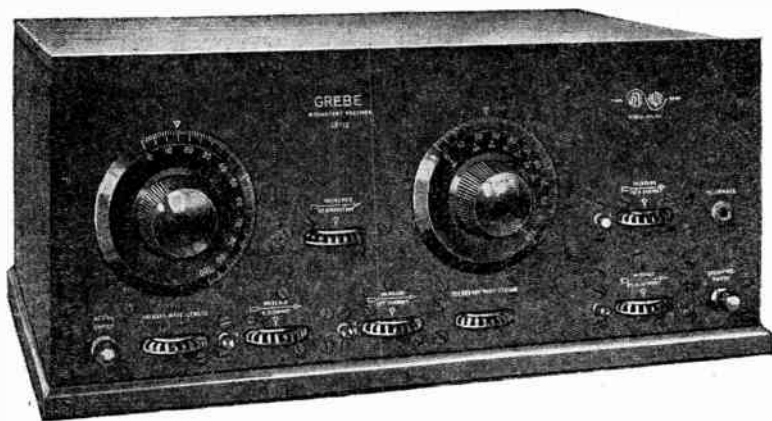
Now, after these systems have been developed and largely perfected, we find ourselves on the threshold of another remarkable development in connection with the exchange of rapid communications over long distances, namely, wireless telephony or the radiophone, about the future possibilities of which it is difficult to hazard even a conservative prediction.

During the interval of time from the years 1897 to 1912, developments took place in wireless or radio telegraphy so rapidly that the range of communication increased from eight miles to as much as three thousand miles under the most favorable conditions, and the application of this method of communication to practical uses, particularly in connection with sea-going ships, especially as regards the preservation of life at sea had been amply demonstrated by the rescue of the passengers and crew of the ill-fated American passenger steamship Republic, on January 23, 1909, before the vessel went down, assistance having been summoned by the stricken vessel by wireless.

About three years later, or on April 15, 1912, the lamentable Titanic disaster occurred. It will be recalled that the one radio operator carried by the steamship Carpathia, while he was preparing to retire for the night, but while still wearing his radio head-phones, almost accidentally overheard the radio distress calls, or S. O. S. signals, of the Titanic, and as a result, the Carpathia, after steaming at full speed throughout the night, arrived in the early morning hours at the position previously given by the Titanic and rescued the occupants of the Titanic's boats after the great vessel had gone down in mid-Atlantic, carrying with her a large number of her passengers and crew. The Titanic disaster convinced the world of the inestimable value of radio as an agency to safeguard life and property at sea, and it resulted in much beneficial legislation being enacted by the various governments of the world, especially as regards the equipping of sea-going passenger-carrying vessels with reliable radio outfits and also the carrying of more than one radio operator. The very great value of radio in naval and military tactics and as an agency to influence world trade was also coming to be generally recognized, and plans began to be formulated by the various leading powers of the world, notably by Great Britain, Germany and the United States, with a view of establishing chains of high-power radio stations on shore to meet the national and trade requirements.

(To be continued)

GREBE CR 12



Employing the perfect combination of *TUNED RADIO FREQUENCY* amplification and *REGENERATION*. This receiver gives better reception than has been previously possible, even though using only a twenty-foot indoor antenna.

**Complete Installed
WITH LOUD SPEAKER**

\$243.50

We are Exclusive Grebe Distributors
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RADIO *Sales and Service*

["We ask no price for trained advice"]

824-627

820 West Seventh Street

Los Angeles

BATTERIES

By Frank D. Andrews

(Continued from last week)

It is interesting to note that most descriptions of radio receiver hook-ups merely indicate the position of the batteries and the way the connections are made. Very little that is being written on this subject gives any authentic information whatever on the care of the batteries themselves. Information on this subject is most important if the operator expects to get the maximum service and efficiency from the batteries used in the circuit. The function of these units is as important as any other part of the receiving equipment and they deserve as great, if not greater, care for satisfactory and economic operation of the set.

The most important single item is that of discharge. The state of charge of the batteries as well as discharge should be watched, for even though the set may be functioning you cannot detect the defects with your ear until it has run so far that it is too late.

B batteries of the dry cell type are very convenient and clean. It is well to ponder over the situation when purchasing the batteries, though, and be sure to get the most efficient set of batteries obtainable suited, of course, to the particular place where the use of them is intended. It is well to look over the various models of dry cells and also the different makes and judge which one is going to meet your requirements best.

Of course, without a milliammeter it is almost impossible to determine what your set is using in current from the batteries.

Dry batteries have a capacity charge, the same as the storage battery, and it ranges from 2 to 3 amperes in the dry cell blocks. When a dry cell B battery is fresh it should have a capacity of 3 amperes at least, or 3000 milliamperes. When operating a three tube set the drain on the A tubes or quarter ampere tubes is approximately two and one-half milliamperes to the tube per hour. From this you can figure about the life of the B battery under ordinary use. In a five-tube set of say, two radio and detector and two audio the drain will be slightly higher, due to the greater current passing from plate to filament in the audio frequency stages.

When choosing the B batteries it is well to examine an old battery of different makes and models to see how much zinc there is in the binders of the cells and compare them. As the amount of the zinc in the cell practically spells the life of it. Small size B batteries have made portable sets possible, but it is well for the owner of a set which he has as a portable set and which he desires to operate in the home for any great period of time to have a large set of B batteries and save the small ones as much as possible on long periods of drain locally. Of course there is a certain deterioration to all the batteries, and they must receive a certain amount of use within a given time. The maker of the batteries usually stamps the expiration of the guarantee on them. This is based upon approximate use and deterioration.

(To be continued)

If the signals which are customarily loud from a station are suddenly found to be quite weak, the difficulty may be caused by one or more of the following:

The transmitting station may have reduced its power.

The crystal detector of the receiving set may be out of adjustment or may have become dirty. In the latter case the metal point which touches the crystal may be filed and the surface of the crystal washed with benzine or alcohol. Care should be taken not to touch the surface of the crystal with the fingers.

The receiving antenna may have become disconnected, or the ground connection may have become ineffective due to existence of insulating paint or gaskets used in making pipe connections.

The plate battery may be exhausted.

The filament battery may have become discharged.

The telephone plug may not be making good contact.—Radio Waves.

Announcement

B. KRUGER & COMPANY wish to advise the trade and the public that they have moved their headquarters to Suite 315-316-317 Stimson Building, Third and Spring Streets, Los Angeles, California, where they have better facilities for distributing "Workrite" and other standard products.

In order to meet the extraordinary demand, and also to facilitate deliveries on the Coast, the Workrite Company of Cleveland, Ohio, have established a branch factory in Los Angeles under the management and supervision of Mr. B. Kruger, M.T.I.M.S.E. (Eng.), for manufacturing LICENSED Neutrodyne sets.



Look out for our five-tube Neutrodyne set listing at \$140.00. We shall be glad to see all interested parties at our new headquarters.

Mail Inquiries Attended to Promptly

We have a fine proposition for Radio Salesmen

B. KRUGER & COMPANY

Phone 824-786

Stimson Building

Los Angeles

No Radio Trust For England

The British Postal authorities have succeeded in stopping what threatened to become a radio broadcasting trust, which would also have controlled the sale of sets, refusing listening-in licenses to all except those whose sets were stamped "B.B.C.," including home-made sets.

The letters "B.B.C." stood for British Broadcasting Company, which through a recent arrangement between the Government and the radio manufacturing industry, was to have exclusive right to broadcasting in the British Isles. This company was to be financed from tariff payments on manufactured receiving apparatus and from license fees to be paid by listeners to the Post Office. It was a condition of the license, that that apparatus of foreign origin, with certain exceptions, would not be available for use under the scheme—all British-made apparatus being marked "B.B.C."

In a report made to the Post Master General on August 23, Major General Sir Frederick H. Sykes, Chairman of the British Broadcasting Committee, says: "The system of marking apparatus and deriving revenue from broadcasting service from royalties on such apparatus gave the company a privileged position; we have had no proof that they have made any improper use of it; but the system is open to objection from several points of view, and should be abandoned as soon as possible." The report admits that the company successfully established a broadcasting service of considerable merit, despite many difficulties, and was partly successful in insuring that the demand for receiving sets during the initial period should mainly benefit British manufacturers, who established the service. But, the scheme "has broken down in certain respects," the report adds, "largely owing to the unforeseen facility, cheapness and popularity of the construction of home-made sets."

Important among many recommendations made in the report which favors broadcasting, but does not want the Government to run it nor a single company to do so exclusively, is the recommendation that a broadcasting board be established by statute to assist the Postmaster General. The broadcasting should be done under Government license, it is believed by the committee, which agrees that the service of the B.B.C. should be continued for a definite period, subject to modifications of the license. "The Government should keep its hands free to grant additional licenses," the report avers.

No part of the cost of broadcasting should fall upon the taxpayer, and the Government should not endeavor to make a profit on the administration, the Committee suggests. Revenues should be derived from receiving license fees of 10 shillings per annum, of which 7s 6d might be allocated toward broadcasting expenses.

New licenses, simple and uniform in type are recommended to be placed on sale at Post Offices without formalities. They would prohibit the use of "back-coupling" but put no other limitations on the apparatus allowed to be used, the report recommends. Statutory powers to enforce such licenses are recommended to aid the Postmaster General.

The committee urges the removal of the restricted hours allotted to broadcasting, and that the wave band be increased from between 350 and 425 meters to two bands—300 to 436 and 461 to 400 meters.

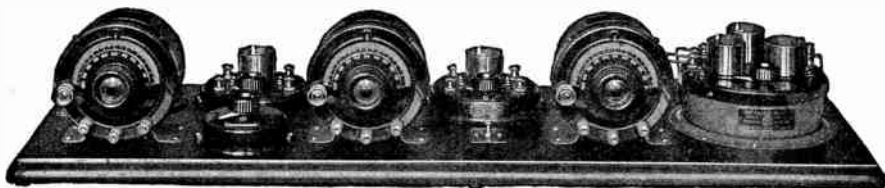
Possibly tact restrains the committee from recommending any protection for the national radio manufacturers against foreign competition; the report admits that this must be dealt with by Parliament as part of the fiscal policy of the country.

Americans Admire Royalty, WJZ Finds

America, the most democratic country in the world, has a weakness for royalty, if the results of a recent talk from station WJZ are any indication. William H. Crawford, the noted journalist and author, well-known to radio audiences for his informal talks about great men he has met, which WJZ has broadcasted on Sunday evenings during the past two months, gave a talk about "Ranching With the Prince," last Sunday, wherein he described the Prince of Wales as he saw him during a month's visit at the Prince's ranch in Canada. Crawford, who spent a month with the next King of Great Britain, wishing to determine just how popular the royal Edward is in this country, offered to send an autographed snapshot of him to anybody who would write him care of station WJZ and enclose a stamped envelope for return. In three days over a thousand democratic Americans replied, all asking for the autographed photo, and it is estimated that close to 1500 will receive the picture before a week has elapsed since the offer was made over the radio. This number of answers comes close to establishing a record for written response to a single talk over the radio; and would certainly seem to indicate that the people of this great Republic are far from being impervious to the romance and glamor which surrounds the royalty of Europe. It would also seem to show that Edward, Prince of Wales, is a decided factor in the friendliness between England and this country—which is not surprising, when his utter likeability is considered.

The reception room at The Palmer School of Chiropractic broadcasting station, WOC, at Davenport, Iowa, has been equipped with a loud-speaking horn, so that the waiting artists and friends of those on the program may enjoy the selections being broadcast from the studio adjoining.

The circuit is so arranged that the horn operates only when the door to the studio is closed, thus preventing any possible "feed-back" on the microphone.



The Atwater Kent

"Radiodyne" Receiving Set

The "Radiodyne" Receiving Set is the greatest development of this Radio season. The set gives maximum selectivity in tuning. With the Radiodyne set any local station may be cut out in preference for another local station or distant signal. The controls are simple and the results sure.

Now on display.

ELECTRIC EQUIPMENT COMPANY

Distributors

1240 So. Hope St., Los Angeles, Cal.

Phone 873-921

Radio Man Awarded Cash Prize of \$500 for Invention

Harold H. Beverage, an engineer of the Radio Corporation of America, was tendered a vote of honor by the membership and board of officers of the Institute of Radio Engineers at their last meeting, for his contribution to radio communication devices of the so-called wave antenna. Beverage was also presented with a cash prize of \$500, the Liebmann Memorial prize, this amount being the annual interest on an investment made by the late Colonel Morris Liebmann, a well known radio engineer. Each year this sum is given to the most deserving individual whose radio inventions or developments are of outstanding practical importance and serve to materially enhance the progress of the art. The "wave antenna," which Beverage invented, has many outstanding characteristics which make it of extreme value in long-distance radio communication. It does not require lofty towers for elevating purposes; consists of a single or double wire about nine miles long for long wave reception and one antenna unit permits of simultaneous reception from several stations. The reduction of atmospheric disturbances makes the "wave antenna" particularly valuable.

Beverage is but 30 years of age. He has specialized in the development of radio receiving apparatus since his graduation from the University of Maine four years ago.

WOC FINDS NATIONAL ASSOCIATION MUSIC VERY POPULAR

Do the radio fans like the music being released, tax free, to broadcasting stations through the National Association of Broadcasters? "Absolutely!" says Stanley W. Barnett, program director at The Palmer School of Chiropractic station, at Davenport, Iowa.

In many cases the radio has created a demand for copies of the songs before the publishers could get them on the market.

"So numerous are the inquiries from listeners," says Mr. Barnett, "that a specially printed form is used to refer the listener to the proper publisher for copies of the numbers requested. Our greatest difficulty is in filling all the requests for 'repeats' on our programs."

TRIMM PHONES

\$5

Light, Easy and Comfortable

Dependable 2400 Ohm. Guaranteed. Highly polished aluminum back. Scientifically correct, matched phones.

\$7.65 Professional

3000 Ohm. Guaranteed 2 years. All Bakelite.

Ask your dealer—if he cannot supply you, write in, giving your dealer's name



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GLOBE ACCESSORIES CO., 309 West Jefferson

CARL A. STONE CO.

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Representing
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315 Foxcroft Building
San Francisco

6-8 A. M.
PACIFIC TIME

RADIO TIME TABLE

7- 9 Mountain Time
8-10 Central Time
9-11 Eastern Time

STATION	METERS	CITY	CALL	SUN.		MON.		TUES.		WED.		THUR.		FRI.		SAT.	
				6:00-6:30	6:30-7:00	7:00-7:30	7:30-8:00	6:00-6:30	6:30-7:00	7:00-7:30	7:30-8:00	6:00-6:30	6:30-7:00	7:00-7:30	7:30-8:00	6:00-6:30	6:30-7:00
Reynolds Radio Co....		Denver.....	K L Z														
Free Press	517	Detroit.....	W C X			X							X				X
Ottawa News.....	517	Detroit.....	W W J					X					X				X

8-10 A. M. PACIFIC TIME 9-11 Mountain Time 10-12 Central Time 11- 1 Eastern Time

STATION	METERS	CITY	CALL	SUN.		MON.		TUES.		WED.		THUR.		FRI.		SAT.	
				8:00-8:30	8:30-9:00	9:00-9:30	9:30-10:00	8:00-8:30	8:30-9:00	9:00-9:30	9:30-10:00	8:00-8:30	8:30-9:00	9:00-9:30	9:30-10:00	8:00-8:30	8:30-9:00
S. F. Examiner	360	San Francisco..	K U O														
Reynolds Radio Co....		Denver.....	K L Z				X										
Star-Telegram	476	Fort Worth.....	W F A P		X	X	X										
News and Journal.....	476	Dallas.....	W F A P			X	X										
Palmer School	484	Davenport.....	W F C O				X										
John Wanamaker.....	509	Philadelphia.....	W O O				X		X				X				X

“Half the head phones in use are Murdock”

FOR RADIO SERVICE

EDISON STORAGE BATTERIES

WILL LAST ALMOST INDEFINITELY

The Famous Nickel-Iron Battery in Pressed Steel Cases

Type	Capacity	Price New	Special Price Used
A-6	225 A. H.	147.50	25.00
A-8	300 A. H.	190.00	40.00

Prices given above are for batteries of five cells each and are F. O. B. our service station. New batteries are F. O. B. Orange, New Jersey

The available supply of these cells is limited

J. JEROME CANAVAN

PACIFIC COAST DISTRIBUTORS
WALKER ELECTRIC TRUCKS

401 WELLS FARGO BLDG.
Phone Douglas 2336
SAN FRANCISCO, CALIF.
Ask for Mr. Vaile

1038 EAST NINTH STREET
Phone Metropolitan 4567
LOS ANGELES, CALIF.
Ask for Mr. Douglas

10-12 A. M.
PACIFIC TIME

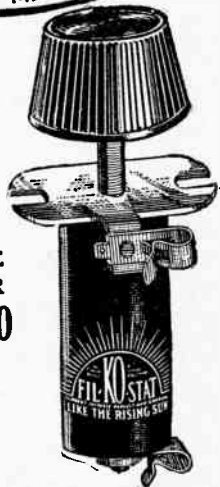
RADIO TIME TABLE

11- 1 Mountain Time
12- 2 Central Time
1- 3 Eastern Time

STATION	METERS	CITY	CALL	SUN.		MON.		TUES.		WED.		THUR.		FRI.		SAT.	
				10 00-10 30	10 30-11 30	11 00-11 30	11 30-12 00	10 00-10 30	10 30-11 00	11 00-11 30	11 30-12 00	10 00-10 30	10 30-11 00	11 00-11 30	11 30-12 00	10 00-10 30	10 30-11 00
L. A. Union Stk. Yds.	269	Los Angeles	K F C L	X	X		X			X			X		X		X
L. A. Times	269	"	K H J	X	X								X				
Earl C Anthony	469	"	K F I														
Hale Brothers	423	San Francisco	K P O	X	X	X											
Tribune		Oakland	K L S	X	X			X		X		X		X			X
Warner Brothers		"	K L S	X	X							X					
Gould		Stockton	K J Q	X	X												
Fallon & Co.	360	Santa Barbara	K F H J	X	X		X	X	X	X				X	X		X
Guy Girouard		"	K F E				X	X									X
Rhodes Co.	455	Seattle	K D Z			X		X		X		X		X			X
First Presby. Church		"	K T W		X	X											
Moler & Frank		Portland	K F E C														X
Reynolds Radio Co.		Denver	K L Z			X	X	X	X	X		X	X	X	X	X	X
News and Journal	476	Dallas	W F A A				X	X	X		X	X	X	X	X	X	X
Palmer School	484	Denverport	W F C			X		X		X		X		X		X	X
Winner Radio	300	Denver	K F E L			X	X	X	X			X		X	X	X	X
Oregonian	482	Portland	M G W				X		X		X		X		X		X



SENIOR
\$25.00

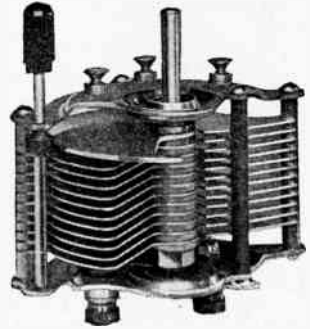


LITTLE
SENIOR
\$19.50

MIGNON

23-Plate Vernier, .0005
\$3.50

43-Plate Vernier, .001
\$4.00



FIL-KO-STAT

MANUFACTURERS' REPRESENTATIVES
J. D. COLFORD & CO.

Phone 823-269

400 San Fernando Bldg., Los Angeles

12-2 P. M.
PACIFIC TIME

RADIO TIME TABLE

1- 3 Mountain Time
2- 4 Central Time
3- 5 Eastern Time

NAME OF STATION	CITY	Met.	CALL	SUN.		MON.		TUES.		WED.		THUR.		FRI.		SAT.	
				12 00-12 30	12 30-1 00	1 00-1 30	1 30-2 00	12 00-12 30	12 30-1 00	1 00-1 30	1 30-2 00	12 00-12 30	12 30-1 00	1 00-1 30	1 30-2 00	12 00-12 30	12 30-1 00
L. A. Union Stock Yards.	Los Angeles	360	K F C L				X										
L. A. Times	"	385	K H J				X	X									
L. A. Examiner	"	469	K W H				X	X									
Warner Bros.	San Francisco		K L S	X	X												
Hale Bros.	"	423	K P O				X	X			X	X					X
Herrold Lab'y.	San Jose		K O W				X	X			X	X					X
Modesto Her'ld	Modesto	252	K X D		X	X											X
Guy Gresson	Tacoma		K F E J				X	X		X	X						X
Rhodes Co.	Seattle	455	K D Z E				X	X		X	X						X
Honolulu Star Bullhtn.	Honolulu		K D Y X	X	X		X	X		X	X		X	X			X
Honolulu Advertiser	Honolulu		K G U				X	X					X	X			X
Reynolds Radio	Denver		K L Z						X				X				X
News and Journal	Dallas	476	W F A A	X	X												X
Palmer School	Davenport	484	W O C			X			X	X			X	X			X
Star	Kansas City	411	W D A F			X	X	X		X	X		X	X			X
News	Detroit	580	W W J			X	X	X		X	X		X	X			X



Bristol One Stage Power Amplifier

NO C BATTERY REQUIRED

A unit that can be used as a third stage without howling. The usual objections against a third stage of audio frequency amplification are entirely eliminated by the use of the new "impact" circuit.

The Bristol One Stage Power Amplifier does not require separate "A" or "B" battery. It uses common tubes such as U. V. 201A, 216A and U. T. 2.

A remarkable achievement—a third stage audio that works RIGHT—install one today and give that distant station a chance to come in like the locals.

Ask your Dealer or send for Bulletin 3011-X

Give your loud speaker a treat

THE BRISTOL COMPANY

WATERBURY, CONN.

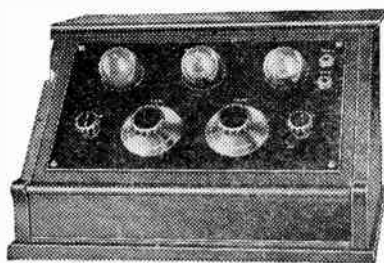
Pacific Coast Branch Office: 332 Rialto Building, San Francisco, California

2-4 P. M.
PACIFIC TIME

RADIO TIME TABLE

3- 5 Mountain Time
4- 6 Central Time
5- 7 Eastern Time

NAME OF STATION	CITY	Met.	CALL	SUN.		MON.		TUES.		WED.		THUR.		FRI.		SAT.	
				2:00-2:30	2:30-3:00	2:00-2:30	2:30-3:00	2:00-2:30	2:30-3:00	2:00-2:30	2:30-3:00	2:00-2:30	2:30-3:00	2:00-2:30	2:30-3:00	2:00-2:30	2:30-3:00
L. A. Times Elec. Lighting & Sup. Co.	Los Angeles	395 360	K H J K N X		X X					X X		X X		X X			
Hale Bros. S. F. Examiner Tribune	San Francisco San Francisco Oakland	433 360	K P O K U O K L X	X X	X X	X X	X X	X X	X X	X X	X X	X X	X X	X X	X X	X X	X X
Portable Wireless Kimball-Upson Calif. Radio Lab'y	Stockton Sacramento Hanford		K W G K F B K K F B D	X X			X X		X X		X X		X X		X X		X X
First Presby. Church Guy Green Post-Intelligencer Oregonian	Seattle Tacoma Seattle Portland	270 432	K T W K F E J K F J C K G W		X X		X X		X X		X X		X X		X X		X X
Ocean News Reynolds Radio Honolulu Advertiser	Salt Lake City Denver Honolulu		K Z N K L Z K G U			X X	X X		X X		X X		X X		X X		X X
Star-Telegram Palmer School Daily News-Fair Star Free Press News Drake Hotel	Fort Worth Davenport Chicago Kansas City Detroit Chicago	476 484 448 411 517 517 390	W B A P W O C W M A O W D A F W C X W W J W D A P		X X		X X		X X		X X		X X		X X		X X



\$125 complete

Kennedy Sets

\$285 complete

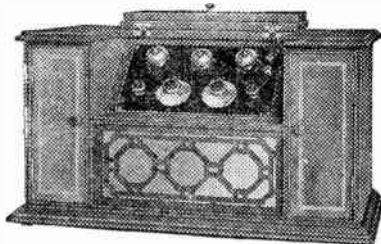
The finest made.
Backed by our 21-
year-old guarantee.
Come in and hear
them.

NEWBERRY
ELECTRIC CORPORATION
724-726 S. OLIVE ST. LOS ANGELES CALIF.

New

872-914

Phone





Price \$71.50

Reliability Plus Low Cost

One of the Reasons Why the

CROSLLEY MODEL XJ

Is So Popular

Other Reasons Are

Distance—Selectivity—Tone Quality

Either Storage or Dry Batteries

Send for descriptive circular

The Braun Corporation

Western Distributors

363 New High Street
Los Angeles



4-6 P. M.
PACIFIC TIME

RADIO TIME TABLE

5- 7 Mountain Time
6- 8 Central Time
7- 9 Eastern Time

NAME OF STATION	CITY	Met.	CALL	SUN.		MON.		TUES.		WED.		THUR.		FRI.		SAT.	
				4-6	7-9	4-6	7-9	4-6	7-9	4-6	7-9	4-6	7-9	4-6	7-9	4-6	7-9
L. A. Union Stock Yards	Los Angeles	360	K F C L			X											
E. C. Anthony	"	469	K F I	X	X												
L. A. Herald	"	469	Herald						X						X		
L. A. Examiner	"	469	Examiner					X		X		X		X		X	X
Hale Bros.	San Francisco	423	K P O				X	X		X	X	X	X	X	X	X	X
Oakland Tribune	Oakland		KLX				X	X		X	X	X	X	X	X	X	X
S. F. Examiner	San Francisco	360	K U O			X	X		X	X	X	X	X	X	X	X	X
Maxwell Elec.	Berkeley		K R E		X												
Portable Wireless	Stockton		K W G			X	X		X	X	X	X	X	X	X	X	X
Geald	"		K J Q			X	X		X	X	X	X	X	X	X	X	X
San Joaquin L. & P.	Fresno	273	K M J	X	X				X	X	X	X	X	X	X	X	X
Radio Dec.	Santa Ana	268	K F A W			X			X			X		X		X	
Nielson Radio Co.	Phoenix	238	K F B C				X	X		X	X				X	X	
Post-Intelligencer	Seattle	270	K F J C			X		X		X		X		X		X	
Rhodes Co.	"	455	K D Z E												X	X	
First Presby. Church	"		K I W	X	X										X	X	
Northwest Radio	"	283	K J R				X	X		X	X		X		X	X	
Mullens Elec.	Tacoma	252	K G B		X	X			X	X	X		X		X	X	
Guy Gresson	"		K F E J				X	X		X	X		X		X	X	
Meyer & Frank	Portland	360	K F E C			X	X		X	X	X		X		X	X	
Hallock & Watson	"		K G G				X	X		X	X		X		X	X	
Star-Telegram	For' Worth	476	W B A P				X	X		X	X		X		X	X	
News and Journal	Dallas	476	W F A A I				X	X		X	X		X		X	X	
Southern Egr. Exp.	San Antonio		W O A I			X	X	X		X	X		X		X	X	
Palmer School	Davenport	484	W O C	X	X	X	X	X		X	X		X		X	X	
Daily News-Fair	Chicago	438	W M A Q	X	X	X	X	X		X	X		X		X	X	
Free Press	Detroit	517	W C X	X	X	X	X	X		X	X		X		X	X	
News	"	580	W W J	X	X	X	X	X		X	X		X		X	X	
Star	Kansas City	415	W D A F	X	X	X	X	X		X	X		X		X	X	
Tribune	Great Falls		K D Y S	X	X												
Drake Hotel	Chicago	390	W D A P				X	X		X	X		X		X	X	
Crosley Mfg Co.	Cincinnati	309	W L W				X	X		X	X		X		X	X	

"Make It An Electrical Christmas"

You cannot choose more affordable gifts than electrical appliances for the home, as they are always warmly welcome.

Our Stock of quality merchandise carries a score of suggestions—Percolators, Waffle Irons, Toasters, Heaters, Curling Irons—in fact everything electrical.

COMPLETE STOCK OF RADIO SETS AND ACCESSORIES

We specialize on Christmas Tree Lamp Decorations.
Either complete new sets or "Fill-ins" for last year's outfit.

WESTINGHOUSE MAZDA LAMPS

STONE ELECTRIC SUPPLY CO.

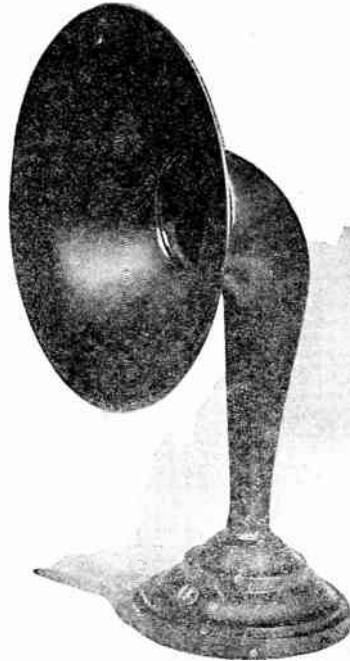
710 West Pico, Masonic Temple Bldg.

(Pico and Figueroa) Los Angeles

"Always a place to park your car nearby—no parking limits"

287043 —Telephone— 281155

C.I.C.



- High Volume Efficiency*
- Superior quality of reproduction*
- Attractive appearance*
- Convenient size*
- Moderate price*
- Adjustable unit.*

“Listen to the Difference”

The price of the C. I. C. Loud Speaker complete
with 6-ft. cord and plug is

\$14.50

DISTRIBUTED BY

GLOBE COMMERCIAL CO.

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AUTHORIZED JOBBERS

COOKS NICHOLS CO.
411 South San Pedro St.
Los Angeles

WALTER W. BIDDICK, INC.
1316 South Grand Ave.
Los Angeles

EQUIPMENT SALES CO.
San Diego

Dealers
MANUAL ARTS RADIO CO.
4154 South Vermont Ave.
Los Angeles

6-8 P. M.
PACIFIC TIME

RADIO TIME TABLE

7-9 Mountain Time
8-10 Central Time
9-11 Eastern Time

NAME OF STATION	CITY	MeL	CALL	SUN.	MON.	TUES.	WED.	THUR.	FRI.	SAT.										
				6:00-6:30	6:30-7:00	7:00-7:30	7:30-8:00	6:00-6:30	6:30-7:00	7:00-7:30	7:30-8:00	6:00-6:30	6:30-7:00	7:00-7:30	7:30-8:00					
Bible Institute	Los Angeles	360	K J S	X	X															
L. A. Times	"	385	KH J		X															
E. C. Anthony	"	469	K F I			X	X													
S. F. Examiner	San Francisco	360	K U O	X	X	X	X													
Maxwell Electric	Berkeley		K R E	X	X															
Tribune	Oakland	509	K L X			X														
Western Radio	Oakland		K Z L				X													
Kimball & Upton	Sacramento	263	K F B K			X	X													
Modesto Herald	Modesto		K X D			X														
Cal. Radio Lab'y	Hanford		K F B D		X	X														
Fallon & Co.	Santa Barbara	360	K F H J			X	X													
Radio Den.	Santa Ana	268	K F J W			X	X													
Dr. R. O. Shelton	San Diego	242	K F F A			X	X													
Southern Elect.	"	244	K D P T			X														
Dr. W. K. Azbill	"	278	K F B C		X															
Smith-Hughes Co.	Phoenix		K D Y W		X															
McArthur Bros.	"		K F A D			X	X													
Univ. of Ariz.	Tucson		K F D H				X													
Love Elect. Co.	Tacoma		K M O			X	X													
Mullens Elect. Co.	"	252	K G B			X	X													
Northwest Radio Service	Seattle	283	K J R			X	X													
Excelsior Motor Cycle	"	280	K H Q			X	X													
First Presby. Church	"		K T W			X														
State Coll. of Wash.	Pullman	330	K F A E			X														
Oregonian	"	492	K G W	X	X	X	X													
Hallock & Watson	"		K G G		X	X														
Meier & Frank	"	360	K F E C			X	X													
Apple City Radio Club	Hood River	360	K Q P			X														
Adler's Music Store	Baker, Ore.		K F D A		X	X														
Boise High School	Boise, Ida	270	K F A U			X	X													
Bunkerhill & Sullivan Co.	Wallace, Ida.		K F E Y			X														
Telegram	Salt Lake	360	K D Y L			X	X													
Deseret News	"		K Z N			X	X													
Reynold's Radio	Denver		K L Z		X	X														
Western Radio	"		K F A F			X	X													
Jim Kirk	Sparks, Nev.	226	K F F R			X	X													
Star-Telegram	Fort Worth	476	W B A P			X	X													
News and Journal	Dallas	476	W F A A			X	X													
Palmer School	Davenport	484	W O C		X	X														
Daily News-Fair	Chicago	448	W M A Q		X	X														
Post Dispatch	St. Louis	546	K S D	X	X															
Westinghouse	Chicago	448	K Y W		X	X	X													
Sweeney School	Kansas City	411	W H B		X	X	X													
Star	"	411	W D A F		X	X	X													
Tribune	Great Falls		K D Y S			X	X													
Drake Hotel	Chicago	390	W D A P		X	X														
Cresley Mfg. Co.	Cincinnati	309	W L W			X	X													
Albertan Pub. Co.	Calgary, Can.	410	C H B C					X												
Detroit Free Press	Detroit	517	W G X				X	X												

The numeral next to name of station indicates the wave length. Where no number appears, the wave length is 360. The letter indicates that the station is on the air.

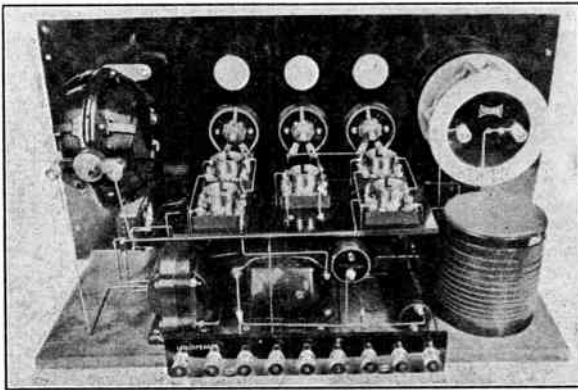
MURDOCK "SOLID" NO. 56 HEAD PHONES
Best at Any Price

PEERLESS INTERNATIONAL

*Has bridged the Continent
San Francisco with Montreal, Canada, and
Also New York City*

The "Peerless International" is *essential* in remote places for clear, loud and distant reception

The "Peerless International" Radio Frequency Receiver consists of two stages of Tuned Radio Frequency Amplification, one Detector and two stages of Audio Frequency amplification (five Tubes)—combined in one beautiful cabinet of solid mahogany.



"If it's in the air Peerless Radio Frequency gets it"

Mr. Deffosset at San Luis Obispo says: "I heard Havana, Cuba, on a 'Peerless International.'"

R. K. Ham, Saratoga, said: "The first evening I was able to tune-in and receive from Seattle and Fort Worth, Texas. My eleven-year-old son gets as good results as I."

Carl Bunderson, Petaluma, Cal., received music from Honolulu on a "Peerless International."

R. H. Horn of San Luis Obispo heard New York City on a "Peerless International."

Hundreds of such compliments point to the excellent receiving qualities of the "Peerless International" Receiver.

THE REASON? RADIO FREQUENCY.

EXCLUSIVE DISTRIBUTORS for SOUTHERN CALIFORNIA

"Dealers and Salesmen Wanted"

"Quality"

ORIGINAL RADIO

"Service"



1030 So. Figueroa St., Los Angeles

Phone 820-253

8-10 P. M.
PACIFIC TIME

RADIO TIME TABLE

9-11 Mountain Time
10-12 Central Time
11-1 Eastern Time

NAME OF STATION	CITY	Met.	CALL	SUN.		MON.		TUES.		WED.		THUR.		FRI.		SAT.	
				8 00-9 00	9 00-10 00	8 00-9 00	9 00-10 00	8 00-9 00	9 00-10 00	8 00-9 00	9 00-10 00	8 00-9 00	9 00-10 00	8 00-9 00	9 00-10 00	8 00-9 00	9 00-10 00
L. A. Union Stock Yards.	Los Angeles	360	K F C L	X		X		X		X		X		X		X	
L. A. Herald	"	469	Herald			X	X			X		X		X		X	
Bible Institute	"	360	K J S	X	X	X	X			X		X		X		X	
L. A. Times	"	395	K H J	X	X	X	X			X		X		X		X	
L. A. Examiner	"	469	Examiner	X	X	X	X			X		X		X		X	
E. C. Anthony	"	469	K F I	X	X	X	X			X		X		X		X	
Hale Bros.	San Francisco	423	K P O	X	X	X	X	X	X	X	X	X		X	X	X	X
S. F. Examiner	"	360	K U O			X	X			X		X		X		X	
Warner Bros.	"		K L S					X	X	X				X	X	X	
Oakland Tribune	Oakland		K L X					X	X				X	X	X	X	
Maxwell Electric	Oakland	278	K R E			X	X	X		X	X						
Cal. Radio Lab'y	Hanford		K F B D			X				X							
Modesto Herald	Modesto	252	K X D			X	X										
Portable Wireless	Stockton		K W G			X	X							X	X		
San Joaquin L. & P.	Fresno	273	K M J	X	X	X											
Herrold Lab'y	San Jose		K A W							X	X						
Kimball-Upson	Sacramento	283	K F B K							X	X						
Abbott-Kinney Co.	Venice	258	K F A V			X	X			X	X			X	X		
Gould	Stockton		K J Q			X	X					X	X				
Farlow & Co.	Santa Barbara	360	K F H J	X	X	X				X	X			X	X		
Dr. W. K. Azbill	San Diego	278	K F B C	X	X	X				X	X	X		X	X	X	
Savoy Theatre	"	252	K D Y M			X	X	X		X	X	X		X	X	X	
Southern Elect Co	"	244	K D P T			X	X	X							X	X	X
Univ. of Arts	Tucson		K F D H					X				X					
Nielson Radio Sup Co.	Phoenix	238	K F B C											X	X		
Post-Intelligencer	Seattle	270	K F C			X	X	X	X	X	X	X	X	X	X	X	X
Northwest Radio Service	"	283	K J R			X	X	X	X	X	X	X	X	X	X	X	X
Excelsior Motor Co	"	280	K H O					X				X		X	X	X	X
Rhodes Co	"	455	K D Z E			X	X	X		X	X	X		X	X	X	X
First Presby Church	"		K T W	X	X	X											
Oregonian	Portland	482	K G W			X	X			X	X	X	X	X	X	X	X
Hallock & Watson	"		K G G							X	X					X	X
Stubbs Elect	"		K G N													X	X
Mier & Frank	"	360	K F E C										X	X			
Apple City Radio Club	Hood River	360	K O P							X	X						
Pacific Radio Co	Eugene, Ore	275	K F A T			X	X			X	X						X
Boise High School	Boise, Ida	270	K F A U			X	X			X	X			X	X	X	X
Vitroln Radio Service	Medford, Ida		K F A Y			X	X			X	X			X	X	X	X
Bunker-hill & Sullivan Co.	Wallace, Ida		K F E Y			X		X		X		X		X		X	X
Deseret News	Salt Lake City		K Z N			X		X		X		X		X		X	
Reynolds Radio Co.	Denver		K L Z	X	X												
Star Telegram	Fort Worth	476				X	X		X	X		X	X	X	X	X	X
Dallas News	Dallas, Tex.	475	W F A A	X	X				X	X		X	X	X	X	X	X
Palmer School	Davenport	484							X	X						X	X
Post Dispatch	St. Louis	546	K S D														X
Star	Kansas City	411	W D A F		X	X		X	X		X	X	X	X	X	X	X
Woodmen of World	Omaha	526	W O A W			X		X		X		X		X		X	X
Westinghouse	Chicago	345	K Y W														
Winner Radio	Denver	360	K F E L	X	X							X	X				
Cresley Mfg. Co.	Cincinnati	309	W L W									X	X				

The numeral next to name of station indicates the wave length. Where no number appears, the wave length is 360. The letter indicates that the station is on the air.

MURDOCK "SOLID" NO. 56 HEAD PHONES
Best at Any Price

RADIO SUPPLIES

MOST COMPLETE LINE ON THE COAST

Filko-stat	\$ 2.00
Westinghouse Crystal Sets, with Brandes Phones	17.50
Marquette Rheostat, 25-ohm, \$1.50; 33-ohm	1.75
Parts for Neutrodyne Circuit	
Workrite Variometer and Varicoupler	3.50
Erla Reflex Transformers	5.00
WD-11, WD-12 Tubes, large stock	6.50
UV-199 and C-299, 201-A, 301-A Tubes	6.50
Diodide Detector Tube with Socket	2.50
All American Transformers	4.75
Bristol Loud Speaker	22.50
Dictagrand Loud Speaker	28.50
Electrad Variohm—Condensor and Gridleak combined	2.00
Adapters and Sockets for UV-199 Tubes	60c up

Atlas Loud Speaker \$25.00

Sleeper Monotrol The Long Distance Set

Complete with Tubes, Batteries, Loud Speaker and Loop Aerial, \$197.50

SPECIAL SALE OF RADIO BOOKS

	Reg.	Sale
Wireless Telegraphy, by Bucher	\$2.25	\$1.15
Experimenters' Manual, by Bucher	2.25	1.15
Wireless Stations, by Edelman	3.00	1.50
Sleepers—Radio Hook-Ups75	.50
Radio Phone Receiving	1.50	1.00
Radio Instruments and Measurements	2.25	1.00
Radio for Everybody	1.50	.90
No. 65 Federal Transformer		7.00

We have for Immediate Delivery

Erla Parts	Fada Neutrodyne Receiver, \$120.00	Neutrodyne Parts
Radiola II	Radiola IV Radiola Grands	Grebe CR-5, CR-8, CR-9
	Gilfillan, Atwater-Kent, Amrad and Remler Parts	
Acme Transformers		Amatran Transformers

Full line Transmitting Parts
Citizens Call Books, 50c
Cabinets, built to order, \$3.50 up
Full line Hazelhurst Condensers
Roffy Transformers, \$8.50

MOTOR CAR SUPPLY CO.

RADIO DEPARTMENT

Open Evenings Till 9 P. M.
920 South Broadway

Telephone 826-063
Los Angeles, California

Write for

OUR NEW AND COMPLETE PRICE LIST

10-12 P. M.
PACIFIC TIME

RADIO TIME TABLE

11-1 Mountain Time
12-2 Central Time
1-3 Eastern Time

STATION	METERS	CITY	CALL	SUN.			MON.			TUES.			WED.			THUR.			FRI.			SAT.		
				10 00-10 30	10 30-11 00	11 00-11 30	10 00-10 30	10 30-11 00	11 00-11 30	10 00-10 30	10 30-11 00	11 00-11 30	10 00-10 30	10 30-11 00	11 00-11 30	10 00-10 30	10 30-11 00	11 00-11 30	10 00-10 30	10 30-11 00	11 00-11 30	10 00-10 30	10 30-11 00	11 00-11 30
L. A. Times.....	395	Los Angeles.....	K H J							X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Post-Intelligencer.....	270	Seattle.....	K L J C																					
Earle C. Anthony.....	469	Los Angeles.....	K F I	X	X		X	X		X	X		X	X		X	X		X	X		X	X	
Northwest Radio.....		Portland.....	K G N							X	X		X	X		X	X		X	X		X	X	
Oregonian.....	492	Portland.....	K G W					X		X	X		X	X		X	X		X	X		X	X	
W. W. Grant.....	440	Calgary.....	C F C N					X					X	X										
*Hale Bros.....	423	San Francisco.....	K P O										X	X					X	X		X	X	
Herald.....		Calgary.....								X			X											

*Note—Hale Bros., San Francisco, KPO, on Monday, Tuesday, Wednesday and Friday broadcast to 1 a. m.

The Ambassador Hotel

SUNDAY— 8:00 to 9:00 p. m. **LYMAN'S ORCHESTRA.**
Broadcast by Remote Control Over KFI
LOS ANGELES, CALIFORNIA
MONDAY— 10:00 to 11:00 p. m. **LYMAN'S ORCHESTRA.**
TUESDAY— 8:00 to 9:00 p. m. **LYMAN'S ORCHESTRA.**
WEDNESDAY— 11:00 to 12:00. **LYMAN'S ORCHESTRA.**
THURSDAY— 8:00 to 9:00 p. m. **ROSENFELD'S ORCHESTRA.**
FRIDAY— 11:00 to 12:00. **LYMAN'S ORCHESTRA.**
SATURDAY— 11:00 to 12:00 p. m. **ROSENFELD'S ORCHESTRA.**

SOMETHING NEW

The Echophone Special

An innovation in the Radio field—an interchangeable unit—a beautifully finished cabinet for the home—a more rugged one for the outing. Come in and let us give a demonstration.

KODAKS *Howland & Dewey Co.* FRAMES

EASTMAN KODAK COMPANY

Authorized Agents for

Radio  **Corporation**
of America
CHICAGO - NEW YORK - SAN FRANCISCO
PRODUCTS

510 SOUTH BROADWAY

LOS ANGELES

The New Roffy-Hetro Trans.

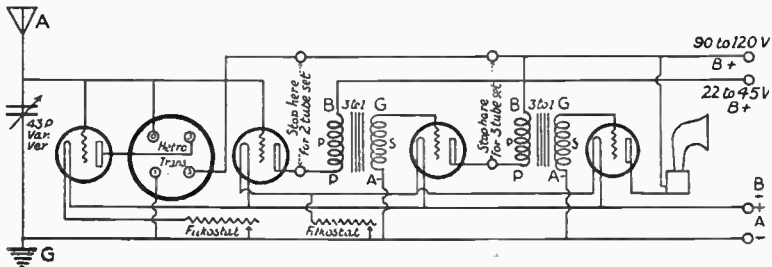
Come in and get free diagram and see the 2, 3 and 4-tube sets. If you are having trouble in balancing your set, see us; we can help you.

2-tube set assembled complete in cabinet, panel engraved (less tubes, batteries and loud speaker) **\$27.50**

3-tube set essembled complete in cabinet, panel engraved (less tubes, batteries and loud speaker) **\$34.00**

4-tube set assembled complete in cabinet, panel engraved (less tubes, batteries and loud speaker) **\$38.50**

4-tube set assembled in cabinet, complete in every way. Leaves you nothing to buy. **\$97.50**



Patterson Electric Company

239 So. Los Angeles Street

LOS ANGELES, CALIF.

Telephone 826-139

Patterson Electric Company

Manufacturers
Quality ~~Radio~~ Apparatus
234 South Los Angeles Street
Los Angeles, California

November 2, 1923.

Radio Stores Corp.
220 W. 34th St.
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Gentlemen:

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Week Commencing November 11th, 1923

SUNDAY, NOVEMBER 11—

- 10:00 to 10:30 a. m. Armistice Day sermon by Dr. Herbert Booth Smith, pastor of Emmanuel Presbyterian Church.
10:30 a. m. Program presented by Hiner's Band.
7:00 to 7:30 p. m. Organ recital, from First Methodist Episcopal Church. Arthur Blakeley, organist.
8:00 to 10:00 p. m. Rev. Charles Coke Wood, of Pasadena, will talk on "Doves of Peace and Eagles of War." Armistice Day continuity program.

MONDAY, NOVEMBER 12—

- 12:30 to 1:15 p. m. News Items. Music.
2:30 to 3:30 p. m. Silent.
6:45 to 7:30 p. m. Silent.
8:00 to 10:00 p. m. Silent.
10:00 to 12:00 p. m. Silent.

TUESDAY, NOVEMBER 13—

- 12:30 to 1:15 p. m. News Items. Music.
2:30 to 3:30 p. m. Matinee Musicale.
6:45 to 7:30 p. m. Children's Program, presenting "The Sandman." Dorothy Bartosh, reader, 10 years of age.
8:00 to 10:00 p. m. Program presenting John Henry Hopkins, cornetist; Burkman Brothers Hawaiian Quartet. Dr. W. C. Morgan, appearing through the courtesy of the Braun Corporation, will talk on "Chemistry."
10:00 to 12:00 p. m. Broadcasting Art Hickman's Orchestra, by line telephony from the Los Angeles Biltmore Hotel.

WEDNESDAY, NOVEMBER 14—

- 12:30 to 1:15 p. m. News Items. Music.
2:30 to 3:30 p. m. Matinee Musicale.
6:45 to 7:30 p. m. Children's Program, presenting Calvin Hendricks, blind pianist.
8:00 to 10:00 p. m. Program presenting Virginia Flohri, soprano; Ronald Faulkner, flutist. Sir Frank Popham Young will give readings.
10:00 to 12:00 p. m. Broadcasting Art Hickman's Orchestra, by line telephony from the Los Angeles Biltmore Hotel.

THURSDAY, NOVEMBER 15—

- 12:30 to 1:15 p. m. News Items. Music.
2:30 to 3:30 p. m. Matinee Musicale.
6:45 to 7:30 p. m. Children's Program.
8:00 to 10:00 p. m. Program arranged by Florence Van Dyke, soprano. Professor John C. Shedd, appearing through the courtesy of the Braun Corporation, will speak.
10:00 to 12:00 p. m. Broadcasting Art Hickman's Orchestra, by line telephony from the Los Angeles Biltmore Hotel.

FRIDAY, NOVEMBER 16—

- 12:30 to 1:15 p. m. News Items. Music.
2:30 to 3:30 p. m. Matinee Musicale.
6:45 to 7:00 p. m. Children's Program, presenting Richard Headrick, screen juvenile.
7:00 to 7:30 p. m. Organ Recital from First Methodist Episcopal Church. Arthur Blakeley, organist.
8:00 to 10:00 p. m. Program presenting Monrovia Trio. Walter F. McEntire will talk on "Mission San Juan Capistrano."
10:00 to 12:00 p. m. Broadcasting Art Hickman's Orchestra, by line telephony from the Los Angeles Biltmore Hotel.

SATURDAY, NOVEMBER 17—

- 12:30 to 1:15 p. m. Program presenting Monte L. Weeks, tenor.
2:30 to 3:30 p. m. Matinee musicale presenting Hamilton's Orchestra and Monte L. Weeks, tenor.
6:45 to 7:30 p. m. Children's program presenting Oscar Sandstram, pianist, 12 years of age, pupil of Ruth Thomas.
8:00 to 10:00 p. m. Program arranged through the courtesy of Hi Dab, of the Powers Studio, and G. Allison Phelps of the Suburban Estates Company. Franklyn K. Matthews, Chief Scout Librarian, will talk on "Boys' Reading."
10:00 to 12:00 p. m. Broadcasting Art Hickman's Orchestra, by line telephony from the Los Angeles Biltmore Hotel.

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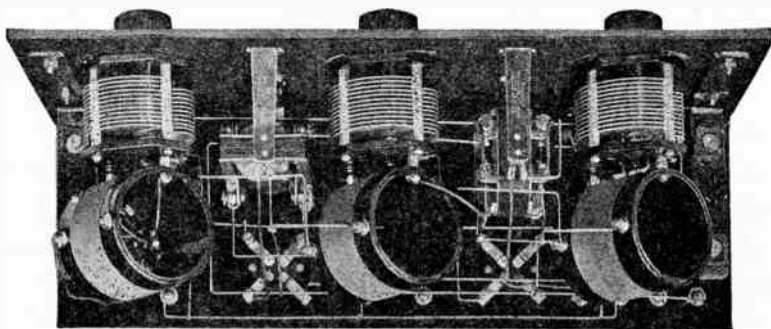
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Remote Control Stations:

Los Angeles Evening Herald	5:00 to 5:30 p. m. daily except Sunday. 8:00 to 9:00 Monday, Wednesday, Friday.
Los Angeles Examiner	5:30 to 6:00 p. m. daily except Sunday. 9:00 to 10:00 p. m. daily.
Hotel Ambassador	8:00 to 9:00 p. m. Sunday, Tuesday, Thursday. 10:00 to 11:00 p. m. Monday. 11:00 to 12:00 p. m. Wednesday, Friday, Saturday.

Program Detail Anthony Studio (Pacific Time), Nov. 11th to Nov. 17th, inclusive.
(Does not include detail of remote control stations)

(Subject to change)

SUNDAY, NOVEMBER 11—

- 10:00 to 10:45 a. m.—Services by L. A. Church Federation.
4:00 to 5:00 p. m.—Services by Federated Church Musicians.
6:45 to 7:30 p. m.—Program by Meryl Wolfe Regnier, soprano.
10:00 to 11:00 p. m.—Program by Theron Bennett, orchestra leader.

TUESDAY, NOVEMBER 13—

- 6:45 to 7:30 p. m.—Courtesy Emma M. Bartlett, chairman of Public School Music, State Federation Music Clubs.
10:00 to 11:00 p. m.—Courtesy Mrs. J. Spenser-Kelly, president Matinee Musical Club.

WEDNESDAY, NOVEMBER 14—

- 6:45 to 7:30 p. m.—Nick Harris, Detective Stories.
10:00 to 11:00 p. m.—Courtesy Anna Priscilla Risher, composer, featuring American composers' music.

THURSDAY, NOVEMBER 15—

- 6:45 to 7:30 p. m.—Courtesy Y. M. C. A.
10:00 to 11:00 p. m.—Woman's Lyric Club, Mrs. W. V. Goodfellow, president.

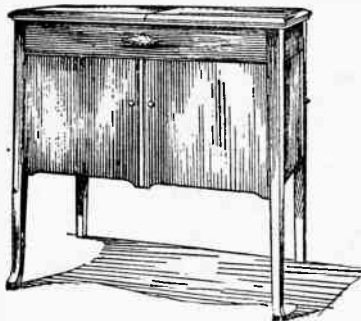
FRIDAY, NOVEMBER 16—

- 6:45 to 7:30 p. m.—Harry Baisden's Orchestra.
10:00 to 11:00 p. m.—K. M. B. Concert Club.

SATURDAY, NOVEMBER 17—

- 6:45 to 7:30 p. m.—Courtesy Theresa Bessler, violinist.
8:00 to 9:00 p. m.—The Arlington Five.
10:00 to 11:00 p. m.—Special Concert, vocal.

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SUNDAY—

Solomon's Famous Dance Orchestra.

MONDAY—

9:00 to 10:00 p. m. The Peach Edition Club. Harry McCoy, famous actor; Norman McNeil, accordionist; Charlie Melson, of Irving Berlin, Inc.; Harry Coe, of Leo Feist, Inc.; Madelyn Hardy.

5:30 to 6:00 p. m. Dr. Ralph Power, director of the Pasadena Glen School for Boys at Sierra Madre.

TUESDAY—

Program through the courtesy of Sid Grauman.

WEDNESDAY—

Special Concert.

THURSDAY—

Program presented by J. C. Lester of Lester's Radio Shoppe.

FRIDAY—

The Examiner Radio Club: Ben McLaughlin, Jimmy Kessell, Leonard Van Berg, Madelyn Hardy.

SATURDAY—

Program presented through the courtesy of Marion Warde, dramatic artists of the Marion Warde Dramatic School.

SUNDAY—

Solomon's Famous Dance Orchestra.

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MONDAY—

8:00 to 9:00 p. m. California Orioles' Orchestra. Mary Nichols Burch, soprano.

WEDNESDAY—

8:00 to 9:00 a. m. Vocal and Instrumental Soloists to be announced.

FRIDAY—

8:00 to 9:00 p. m. John Henning's Guitar and Mandolin Club; Aileen Renison and Mildred Belt, soloists.

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SUNDAY—

11:30 a. m. Dr. R. A. Torrey, sermon. Mrs. Irvin S. Fallis, soprano. The Harmony Male Quartet.
6:00 to 6:45 p. m. Radio Vesper Service. Rev. John A. Hubbard, Scripture and sermon. Mrs. Fern Barton, organist. Miss Frances and Mr. Everett Harrison, violin and saxophone duet.
8:00 p. m. Dr. R. A. Torrey, sermon. Mr. C. M. Books, haritone. Gospel Solo. The Harmony Quartet.

TUESDAY—

7:00 to 7:30 p. m. Miss Evelyn Palmer, organist. Mr. Herbert Richert, bass soloist.

THURSDAY—

8:00 to 9:00 p. m. Organ Recital by Mr. Roy Brignell.

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MONDAY AND FRIDAY—

2:25 p. m. The regular California Theatre concert program given in conjunction with the photo-play, "In the Palace of the King"—California Theatre Concert Orchestra, Carl D. Elinor, director.
Soloists: Charles Calkins, marimbophone; William Van Deeven, flute; Nicholas Ocki Albi, 'cello.

Program:

- (a) Slavische Rhapsodie (Friedemann).
- (b) Serenade (Titl)—Duet for flute and 'cello—William Van Deeven and Nicholas Ocki Albi.
- (c) Raymond Overture (Thomas)—Marimbophone solo—Charles Calkins.
- (d) Syncopated Impressions—Arranged by Mr. Elinor, featuring "Annabelle."

KFAE—State College of Washington—330 Meters

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MONDAY, NOVEMBER 12—

7:30 to 8:30—Psychological Bootlegging, Prof. C. I. Erickson; xylophone duets, Misses Clelah and Regina Cooper, Pullman. Winter Storage of Fruits and Vegetables, B. F. Dana.

WEDNESDAY, NOVEMBER 14—

7:30 to 8:30—How to Discover One's Aptitudes and Abilities, Dr. D. W. Hamilton. Women and Clothes, Miss Helen K. Rohson. Crop Improvement by Breeding, Prof. E. F. Gaines. Musical numbers.

FRIDAY, NOVEMBER 16—

7:30 to 8:30—The Modern Battleship, Prof. R. D. Sloan. Books for Winter Readings, Miss Alice L. Wehh, News Editor. Orchard Thinning, Prof. O. M. Morris. Entertainment program by girls of the Theta Upsilon Sorority, including soprano solos by Alice Pike, Spokane; violin solos by Ruth Coates, Spokane; readings by Gladys Huebner, Yakima.

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Saturday, 1 to 2 p. m., Fairmont; 3:30 to 5:30 p. m., Palace Hotel, Tea Dansants.
Sunday church services by Church Federation of San Francisco, 11 a. m. to noon.

EVENING PROGRAMS

SUNDAY—

8:30 to 10:00 p. m. Rudy Seiger's Fairmont Hotel Concert Orchestra.

MONDAY—

8:00 to 10:00 p. m. Studio Program.
11 p. m. to 1 a. m. Palace Hotel Dance.
Organ between 9 and 10 p. m.

TUESDAY—

8:00 to 10:00 p. m. Studio Program.
11 p. m. to 1 a. m. Palace Hotel Dance.

WEDNESDAY—

8 p. m. to 1 a. m. Max Bradfield's Palace Hotel Dance Orchestra.

THURSDAY—

8:00 to 9:00 p. m. Studio Program.
9:00 to 11:00 p. m. Palace Hotel Dance.

FRIDAY—

8 p. m. to 1 a. m. Max Bradfield's Palace Hotel Dance Orchestra.

SATURDAY—

8 p. m. to midnight. Art Weidner's Fairmont Hotel Dance Orchestra.

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PORTLAND, OREGON

Program for Week of November 11 to November 17, 1923

SUNDAY—

- 6:00 p. m. Church Services.
 8:45 p. m. Talk on World Court.
 7:00 p. m. George Olsen's Metropolitan Orchestra in dinner program of concert music from Portland Hotel; piano solos by Edwin Earl Taylor.

MONDAY—

- 11:30 a. m. Weather forecast.
 3:30 p. m. Literary program by Portland Library Association.
 7:30 p. m. Weather forecast and market reports.
 8:00 p. m. Concert by John Stark Evans, pianist, and Roy G. Bryson, baritone, under auspices University of Oregon School of Music and Eugene Chamber of Commerce.

TUESDAY—

- 11:30 a. m. Weather forecast.
 3:30 p. m. Talk by Jeannette P. Cramer, home economics editor of The Oregonian.
 7:30 p. m. Weather forecast and market reports.
 8:00 p. m. Talk for farmers by Paul V. Maris, extension director of Oregon Agricultural College.
 10:00 p. m. Dance music by George Olsen's Metropolitan Orchestra of the Portland Hotel.

WEDNESDAY—

- 11:30 a. m. Weather forecast.
 3:30 p. m. Children's program; piano solos by Fay Jackson and Edith Forman, pupils of Susie Micheal; story by Aunt Nell.
 7:30 p. m. Weather forecast and market reports.
 8:00 p. m. Program of old-time dance music by Walker Brothers of Forest Grove.
 9:00 p. m. Business talk by James Albert, manager of Alexander Hamilton Institute.
 10:00 p. m. Dance music by George Olsen's Metropolitan Orchestra of the Portland Hotel.

THURSDAY—

- 11:30 a. m. Weather forecast.
 3:30 p. m. Child Training program.
 7:30 p. m. Weather forecast and market reports.
 8:00 p. m. Dramatic program under direction of Doris Smith.
 10:00 p. m. Dance music by George Olsen's Metropolitan Orchestra of the Portland Hotel; piano solos by Sarah Christine Penney.

FRIDAY—

- 11:30 a. m. Weather forecast.
 3:30 p. m. Margery M. Smith, nutrition expert, Oregon Agricultural College on "Child Nutrition."
 7:30 p. m. Weather forecast and market reports.
 8:00 p. m. Solos.
 8:15 p. m. Studio program of dance music by George Olsen's Metropolitan Orchestra of the Portland Hotel.
 9:00 p. m. Lecture on "Oregon Resources" by Alfred L. Lomax of University of Oregon Extension Division.
 10:30 p. m. Hoot Owls with Pantages frolic.

SATURDAY—

- 11:30 a. m. Weather forecast.
 3:30 p. m. Children's program; Webber's Juvenile Orchestra and story by Aunt Nell.
 7:30 p. m. Weather forecast and market reports.
 10:00 p. m. Dance music by George Olsen's Metropolitan Orchestra of the Portland Hotel.



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(PACIFIC TIME) DALLAS, TEXAS

MONDAY—

10:30 to 11:00 a. m. Address, Dr. Ellis P. Schuler, Department of Geology, Southern Methodist University.
6:30 to 7:30 p. m. Music of the orchestra, Don Albert conducting, and the grand organ, broadcast from the Palace Theater.

TUESDAY—

10:30 to 11:00 a. m. Address by DeWitt McMurray, editor Semi-Weekly Farm News, in a medley of humor, pathos and wisdom.
6:30 to 7:30 p. m. Charles Scogin, baritone; William Pennington, tenor and pianist, in recital.
9:00 to 10:00 p. m. Miss Ruth Fabian, singer; Mrs. Clyde F. Magee, reader.

WEDNESDAY—

10:30 to 11:00 a. m. Address by representative of the Dallas Chamber of Commerce. Station will be silent for remainder of the day.

THURSDAY (Shriners' Day)—

10:30 to 11:00 a. m. Address, Judge Hiram F. Lively on "The Man in Fellowman."
6:30 to 7:30 p. m. Masonic musical program.

FRIDAY—

10:30 to 11:00 a. m. Address, Dr. Robert Stewart Hyer, Southern Methodist University, on the Sunday school lesson, "Jesus, a Missionary."
6:30 to 7:30 p. m. Dallas Male Chorus in recital, Paul von Katwijk, director, with Mrs. Albert Smith, vocal soloist.

SATURDAY—

10:30 to 11:00 a. m. J. O. Mahoney, Principal Night Schools, "How to Become Educated."
6:30 to 7:30 p. m. W. A. Green, Choral Club, Earle D. Behrends, director.
9:00 to 10:00 p. m. Florida Morrison and assisting musicians in voice, violin and reading.

SUNDAY—

12:30 to 1:30 p. m. Radio Bible Class, Dr. William M. Anderson Jr., pastor First Presbyterian Church, teacher.
7:30 to 8:00 p. m. City Temple Singers.
8:00 to 9:00 p. m. Britling's Cafeteria Orchestra, Lou Goldberg, director.

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SUNDAY, NOVEMBER 11—

9:00 a. m. to 10:15 a. m.—Complete services of the First Methodist Church, Rev. J. W. Bergin, D. D., Pastor; Will Foster, organist.
3:00 p. m. to 4 p. m.—Sabbath Day Vesper concert. (E. L. O. announcing.)

MONDAY, NOVEMBER 12—

5:30 to 6:30 p. m.—Organ concert presented by Will Foster, organist of the First Methodist Church. (E. L. O. announcing.)
7:30 to 8:45 p. m.—Concert by the Boys' Band of Gainesville, Texas, the largest band in Texas, consisting of 147 musicians between 10 and 17 years of age. C. C. Shell, director. (The Hired Hand announcing.)

TUESDAY, NOVEMBER 13—

5:30 to 6:30 p. m.—Concert by a group of Southwestern artists. (E. L. O. announcing.)
7:30 to 8:45 p. m.—Novelty concert presented by the I. N. McCrary Rubber Company, under the personal direction of Newton McCrary. (The Hired Hand announcing.)

WEDNESDAY, NOVEMBER 14—

5:30 to 6:30 p. m.—Concert by Sam Losh and pupil artists. (E. L. O. announcing.)
7:30 to 8:45 p. m.—Concert of late dance hits presented by George Freeman's Sooner Serenaders, the Texas Hotel Orchestra. (G. C. A. announcing.)

THURSDAY, NOVEMBER 15—

5:30 to 6:30 p. m.—Concert by the 30-piece band of the North Texas Junior Agricultural and Mechanical College of Arlington, Texas. (E. L. O. announcing.)
7:30 to 8:45 p. m.—Concert of orchestra, novelty and solo numbers by the University Club of Fort Worth. (G. C. A. announcing.)

FRIDAY, NOVEMBER 16—

5:30 to 6:30 p. m.—Father and Sons Day concert presented by the Y. M. C. A. of Fort Worth. (E. L. O. announcing.)
7:30 to 8:45 p. m.—Concert presented by the Texas Christian University, featuring student musical organizations, under the direction of Prof. H. D. Guelick, head of the school of music. (G. C. A. announcing.)

SATURDAY, NOVEMBER 17—

5:00 to 5:30 p. m.—Review of the interdenominational Sunday School lesson and radio Bible class by Mrs. W. F. Barnum, leader of the Barnum Bible Class, First Methodist Church. (E. L. O. announcing.)



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With one tube, using our hook-up, connected with a Coast Coupler, you can "tune in" LONG DISTANT STATIONS very distinctly. Manufactured of superior materials which give Coast Coupler accurate operation and long life.

Mail Us \$5.00 and Hear Every Distant Station with Ease

DON'T DELAY—WRITE TODAY—USE THIS COUPON

The Coast Coupler Company Sells the Sleeper Monotrol Set

COAST COUPLER COMPANY

Manufacturers and Dealers

245 EAST SEVENTH ST.

LONG BEACH, CALIF.

COAST COUPLER CO.,

245 East Seventh St., Long Beach, Calif.

Enclosed find five dollars, for which send me one Coast Coupler.

Name

Address.....11-3

WOC—Palmer School of Chiropractic—484 Meters

Davenport, Iowa—Pacific Time

SUNDAY, NOVEMBER 11—

- 7:00 p. m. Organ Recital (1½ hour); Erwin Swindell, organist.
- 5:30 p. m. Sport News
- 5:35 p. m. Armistice Day Lecture by Oscar E. Carlson, attorney, of Aledo, Illinois.
- 6:00 p. m. Church Service—Rev. A. D. Freden, pastor St. Paul Lutheran Church, Orion, Illinois. Musical numbers by mixed quartet.
- 7:00 p. m. Musical program (2 hours); Edwin Swindell, musical director.
- P.S.C.—Orchestra, assisted by Charles Kerns, tenor, and Geo. Caulfield, baritone.

MONDAY, NOVEMBER 12—

- 5:30 p. m. Educational Lecture—"Lutheran Students of America," by Elmer Dahlgren, of Augustana College, Rock Island, Illinois.
- 6:00 p. m. Musical Program (1 hour); Erwin Swindell, musical director.
- Program by Campbell Orchestra of Rock Island, Illinois.

TUESDAY, NOVEMBER 13

- 3:45 p. m. Chimes Concert.
- 4:50 p. m. Sport News and Weather forecast. (No broadcasting after 6 p. m. Tuesday—Silent night for WOC.)

WEDNESDAY, NOVEMBER 14—

- 5:30 p. m. Lecture—Subject, "Observation of Father and Son Week." Speaker, Fred M. Hansen, Iowa State Y. M. C. A. secretary.
- 6:00 p. m. Pipe Organ Recital: Erwin Swindell, organist; Mrs. O. D. Doran, soprano.
- 8:00 p. m. Artist Musical Program—Erwin Swindell, musical director. Program arranged by the Kiwanis Club of Rock Island, Ill., featuring Carlisle Evans and his orchestra.

THURSDAY, NOVEMBER 15—

- 4:50 p. m. Sport News and Weather Forecast.
- 6:00 p. m. Musical Program (1 hour)—P. S. C. Orchestra; Gerald M. Barrow director; V. B. Rochte, baritone soloist.

FRIDAY, NOVEMBER 16—

- 5:00 p. m. Educational Lecture—"Y. M. C. A. Activities." Speaker, Leland Ashe, boys' Y. M. C. A. secretary, of Monmouth, Illinois.
- 6:00 p. m. Musical Program (1 hour); Erwin Swindell, Musical Director—Program presented by a group of artists from Maquoketa, Iowa.

SATURDAY, NOVEMBER 17—

- 3:45 p. m. Chimes Concert.
- 4:30 p. m. Sandman's Visit.
- 4:50 p. m. Sport News and Weather Forecast.

BURROUGHS RADIO CO.

4615 MONETA AVENUE

Phone 2983-18 and representative will call

Sets from \$25.00 up All sets sold on easy terms

TUBES REPAIRED

We repair vacuum tubes and guarantee them to work like new. Money refunded if not satisfied

UV 201—UV 301—A P.'s and	201A—301A	\$3.50
De Forest	C 300 and UV 200	2.75
WD 11—WD 12	UV 199	3.50

Send your tubes direct to the only laboratory in the West

Broken Glass Shells Replaced—No extra charge

AL. D. BERGEZ CO.

172 Fifth Street

San Francisco, California

K S D—St. Louis Post-Dispatch—546 Meters

K D S WEEKLY PROGRAM—WEEK OF NOVEMBER 12TH
Pacific Time

MONDAY—

- 6:00 p. m. Vocal and instrumental specialties, orchestra and organ music broadcast direct from the Grand Central Theatre.
9:00 p. m. Program by Elmer Lutz, tenor.

TUESDAY—

- 6:00 p. m. Program by Flower Show Band. Addresses by Dr. Geo. H. Moore, Lieut. R. P. Luther and H. H. Shackelford.
9:00 p. m. Dance music played by Silverman's Orchestra broadcast direct from Jefferson Hotel.

WEDNESDAY—

- 5:00 p. m. Program by Abergh's concert Ensemble, Arne Arnesen, violinist, broadcast direct from Hotel Statler.
9:00 p. m. Broadcasting dance music played by Rodemich's Orchestra direct from Hotel Statler.

THURSDAY—

Silent.

FRIDAY—

- 6:00 p. m. Program by Mrs. J. Stoddard Robertson, contralto, Irene Moriarity, pianiste, Adelaide Blase, violinist, and Marie Louise Bulte, reader.

SATURDAY—

- 6:30 p. m. Orchestra concert, organ recital and vocal and instrumental specialties broadcast direct from the Missouri Theatre.

MURDOCK "SOLID" NO. 56 HEAD PHONES
Best at Any Price

FREE!

*Send a card, write, phone or call for
a free copy of that new waltz hit!*

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Words and Music by

G. ALLISON PHELPS

This fascinating melody was first introduced over K.H.J.
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Suburban Estates Co.

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744 West 7th Street

Los Angeles

W M A Q—The Chicago Daily News Radio Program

Located on the Roof of the Hotel LaSalle, Chicago, Ill.
Pacific Time—Wave Length 447.5

Program for Week of November 12, 1923 (Subject to Change)

MONDAY—

2:30 p. m. To be announced. Monday night is silent night in Chicago.

TUESDAY—

2:30 p. m. Program by pupils of Glenn Dillard Gunn School of Music.
5:00 p. m. Weekly Babson Statistical Report. Talk by Miss Elsie Glamore of LaSalle Extension University. Program arranged by Chicago Consulate of Germany.
7:00 p. m. Ensemble music from Hotel LaSalle Orchestra.
7:15 p. m. Weekly program arranged by Lyon & Healy.

WEDNESDAY—

11:00 a. m. Speeches broadcast from Chicago Association of Commerce Luncheon.
2:30 p. m. Program arranged by Cosmopolitan School of Music and Dramatic Art.
5:00 p. m. Miss Georgene Faulkner, the Story Lady; stories for children.
5:30 p. m. Weekly lecture from Northwestern University.
7:00 p. m. Ensemble music from Hotel LaSalle Orchestra.
7:15 p. m. Lindbloom High School Orchestra.

THURSDAY—

2:30 p. m. Pupils of Lyceum Arts Conservatory.
5:00 p. m. Weekly talk to Boy Scouts. Weekly talk by Rockwell Stephens, automobile editor of The Daily News.
5:30 p. m. Lecture by Chas. H. Burkholder, secretary of the Art Institute of Chicago.
7:00 p. m. Ensemble music from Hotel LaSalle Orchestra.
7:15 p. m. De Kalb Woman's Club Chorus.

FRIDAY—

2:30 p. m. To be announced.
5:00 p. m. Weekly "Wide Awake Club" program, arranged by Mrs. Frances Ford of The Daily News.
5:30 p. m. Weekly musical lecture by Mrs. Marx E. Oberndorfer.
7:00 p. m. Ensemble music from Hotel LaSalle Orchestra.
7:15 p. m. Program arranged by Bush Conservatory of Music.

SATURDAY—

6:15 p. m. Armour Jubilee Singers.
7:00 p. m. Weekly musical revue broadcast direct from The Chicago Theatre.

Now! CLEAR-RADIO

A RADIO SPEAKER WITH A REASON**Perfectly Voiced**

Positively no vibration—pure clear tones—exact reproductions—absolutely no metal parts. Made in one piece, of "Parembo," the new wonder material — indestructible, unbreakable. Large size, stands twenty-seven inches high. 14x11 inch bell. An ornament to the finest radio sets yet at a price within the reach of everyone.

\$8.50

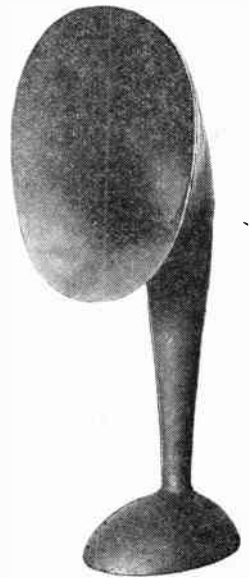
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PAREMBO SALES CO.

741 San Fernando Bldg.

Los Angeles, Cal.

Hear one at your favorite radio shop

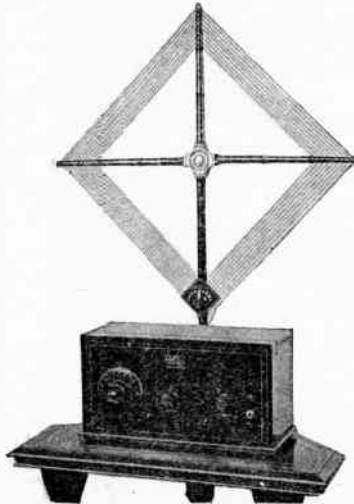


Southern California Distributors
for
"SLEEPER MONOTROL"
The Most Perfect Set in America

Licensed—under the Grimes Inverse Duplex Circuit Patents—the only system for using the same tubes in inverse direction for both radio and audio frequency amplification.

No Outside Wires—the only connection is with an indoor loop. No outdoor aerial need be erected and there is no ground connection whatsoever.

The Monotrol Loop—a beautiful Windsor Period loop is furnished complete with every set and reduces static disturbances and other interference to practically zero.



Absolute Clearness—use of radio frequency without regeneration makes distortion impossible. Absolute purity, clarity and naturalness of tone are assured.

Intensity Control—the special patented taps on the Monotrol Loop make it possible to control intensity of volume without disturbing the tuning.

Distance and Volume—3 tubes do the work of 5, giving two stages of radio frequency amplification and two of audio with tube detector. No crystal to search for a sensitive spot over its entire surface.

Any radio set that works will give you a thrill the first time you listen in on the air, but the ambition to hear more and to hear further and better grows so quickly that you might as well buy the best in the beginning as in the end. The SLEEPER MONOTROL (at no higher—even at a lower price) will assure you the most perfect reception for every broadcast program that can possibly be heard through any three-tube set and many which could not be heard except through five-tube sets in any other type of circuit.

Complete with Loud Speaker, Batteries and Tube

\$197.50

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MOTOR CAR SUPPLY CO.

RADIO DEPARTMENT

Open Evenings Till 9 P. M.
920 South Broadway

Telephone 826-063
Los Angeles, California

?????

In order that questions be answered promptly and accurately, write plainly, number your questions and make them as brief as possible.

TECHNICAL EDITOR.

HALL BERRINGER

Question 1.—What is the approximate distance, the Reflex Set, will receive, as given in the Book "100-RADIO HOOK-UPS," Diagram 70, Page, 37? I am intending using R.C. of A. RFT. AFT. and all other parts Gilfillan.

2.—At what voltage is the tape taken off at on the "B" battery of this Reflex set, as referred to above?

3.—Will a 45-volt "B" battery work satisfactory on this set? It calls for 90 volts. I intend using W.D. 11s, or 12s.

4.—Is it absolutely necessary to have a 43-plate condenser in the aerial of Reflex set, figure 69, page 37, of "100 RADIO HOOK-UPS," and does this set work better with the tube or crystal?

5.—Will either one of these sets (Reflex) work satisfactorily with a loop aerial on the full distance of the sets, using an outdoor aerial, when at home. 100 feet long and 30 feet high, single, grounded to water pipe?

6.—Will either of the above sets work a loud speaker in place of the phones.
R. St. Clair, E. San Diego, Cal.

Answer 1.—It is impossible to give the receiving range of any receiver, due to the fact that this depends on the following: Time of day, time of year, weather conditions and geographical conditions.

2.—C-301-A tubes with 90 volts on plate will give best results in the circuit you are going to use.

3.—See answer to No. 2.

4.—No, but a 43 plate condenser will help tuning.

5.—This circuit will work on a loop, but will give greater range with an outside antenna.

6.—Yes.

Question 1—I am a reader of your magazine and seeing that you have a Question and Answer Department, I want to know why my set won't oscillate over 285 meters? It oscillates on meters 200-285. It made it help out when I put on a .001 condenser across the phones. If you will tell me by return mail what is the matter with my set, I will be much obliged. The turns on my vario coupler is: 100 turns on both stator and rotor. This is my hook-up. It is the same with one step of amplification.

2.—How many megolins should I have for the grid leak?

Taps every ten turns on coupler.

WD-12 tube every once in a while I put two dry cells in parallel and that also helps out to make it oscillate more, but it will not go over 285 meters.

GORDON HOLLAND, 1253 Temple Street, City.

(Continued on Page 43)

**"RADIO" when connected with PREMIER
Means—something**

The Southern California Distributor

(Wholesale only) for

THE PREMIER ELECTRIC CO.

CHICAGO, ILL.

COKER ELECTRIC SUPPLY CO.

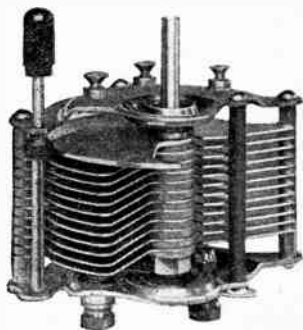
817 West Third Street

Phone 822-237

Los Angeles

Full Information and Price List

MIGNON



23-Plate Vernier, .0005
\$3.50

43-Plate Vernier, .001
\$4.00

Use Two Fil Kostats
And a 43-Plate Mignon
Condenser in building the
Roffy Hetro-trans circuit.

**ROFFY HETRO-TRANS
IN STOCK**

FOR THE BEST IN RADIO
SUPPLIES CALL

COOK-NICKOLS COMPANY

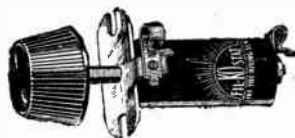
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WHOLESALE ONLY

Phone 871-350

12 & 4 Reasons Why
you should say

FIL-KO-STAT



- 1—Distinctly DESIGNED for vacuum tube adjustment, not adapted to it.
- 2—A REAL Filament control, NOT just a rheostat.
- 3—Permits infinite adjustments of filament HEAT.
- 4—Infinitesimal control electronic flow.
- 5—Permits fine tuning needed for DX.
- 6—Control of small current makes it ideal for WD11's.
- 7—Fine adjustments starts where tube BEGINS to function.
- 8—DEFINITE OFF—indicating A battery disconnection.
- 9—At FULL ON resistance is practically zero.
- 10—No current variations—resistance always constant.
- 11—Resistance element so finely divided further division impossible.
- 12—No discs to break or chip.
- 13—Operation absolutely silent.
- 14—Connection posts with Fahnestock Clips and solder contacts.
- 15—Adjustable mounting—no re-drilling of panel.
- 16—GUARANTEED—Unbreakable, Replaced within one year if broken.

Manufactured and guaranteed by
\$2 DX INSTRUMENT CO. **\$2**
HARRISBURG, PA.



(Continued from Page 41)

Answer 1.—In order to make your set oscillate above 285 meters add more wire on the rotor of your radio-coupler. If this is not possible, shunt your rotor with a fixed or variable capacity not over .001. A fixed by-pass condenser shunted across your phones and B batteries of not over .001 mfd., will improve your circuit.

2.—The size of your grid leak depends on your tube.

Question 3.—I wish to build a detector set, using a Gilfillan vario-coupler, Air-way vario-meter, 23 plate and 43 plate variable condensers, and a Gilfillan detector unit. Do I need a storage battery for a U. V. 200 tube or can it be used with dry cell batteries, and how many dry cell batteries must I have? Please show me a hook-up for this set.

LEWIS ANDROUS, 340 East Third Street, Pomona, Cal.

Answer 3.—If a U. V. 200 tubes is used a storage battery is desirable. Use either WD 12 tubes or UV 199 tubes, with dry cells.

Question 4.—I am wondering if you could tell me why I can't get any of the 360 meters, or below, stations. I have a Freed-Eiseman Neutrodyne, which works fine on all other meters, but when I tune in on 360 it is so noisy that I can't hear a thing. There is an awful hum and a cracking noise?

D. JONES, San Diego.

Answer 4.—Advise you investigate leak in insulators in nearby power line. Your trouble sounds to us like interference from power lines. Your receiver should work just as good at 360 meters as at 420 or over.

Question 5.—I am using the 1-tube Erla circuit with 1 stage of audio, with a jack for each step, and as I want to build the 3-tube Erla, and would like to use a phone jack for each tube. Can it be done, and how and where can I get a hook-up for same?

L. A. BICKEL, 143 East Sixty-third Street, Los Angeles, Cal.

Answer 5.—Suggest you get in touch with the Erla people—that company can give data on all Erla circuits. Take note of advertising in Radio Doings for Erla dealers.

(Continued on Page 45)

MURDOCK "SOLID" NO. 56 HEAD PHONES
Best at Any Price

TUBES REPAIRED

Detectors \$2.75—Amps. \$3.25. All Work Guaranteed Good as New.
No Charge for Broken Glass. Discount to Dealers. 15-Day Service Now.

LESTER RADIO SHOPPE

140 So. Spring St.

Metropolitan 4832

Open 9:00 P. M.

A MESSAGE FROM M.A.R.S.

A Timely Suggestion

Why not a real Radio installed in that new car for Christmas? Ask us.

Credit if desired.

MANUAL ARTS RADIO & ELECTRIC SHOP

4154 S. Vermont Ave.

Los Angeles, Calif.

Phone Vermont 7836

We *Extend*

SERVICE EVERY DAY

We *Grow*

BECAUSE OF APPRECIATION

We *Branch Out*

INTO THE REFINING

OF

ALL PETROLEUM PRODUCTS



GILMORE OIL CO.

700 I. N. Van Nuys Bldg.

Los Angeles, Calif.

?? ? ? ?

(Continued from Page 43)

Question.—I am using a five-tube Neutrodyne Radio set with dry cells and the smaller size tubes. Will you please tell me why I always KFI on the same dial reading while the other stations seem to vary several numbers? Would the use of a loop aerial on the top of a three-story house, elevation about 400 feet, help me get greater distance and detail, when used in connection with my single aerial of 125 feet? If so, what is the best way to make the loop, what size wire ought I use and how should the connection be made to my single aerial? Would it be best to use the loop or aerial singly? What is the best way to prevent lightning and electricity from coming in on aerials? Would an ordinary telephone fuse be sufficient and would it cause interference?

W. E. ALLEN, San Diego, Cal.

Answer.—We think after you have used your receiver for some time you will become more accustomed to it and you will find your stations in the same place. Let us advise you that no three-story house is 400 feet high that we ever heard of. Distance above the ground is what counts, not above sea level. We suggest one wire aerial in preference to loop. Purchase a standard lightning protective device. Your dealers in San Diego can supply you with one.

Question.—I have a Kennedy Type 281 short wave receiver and a home-made two-stage amp. I have only received as far as Salt Lake City, to Portland Oregon. I wish you would tell me how I can fix the thing so that I can receive further stations?

W. H. L., Box 724, Reedley, Cal.

Answer.—Suggest you get in touch with the company who sold you your receiver. They can no doubt test your receiver and locate the trouble.

STAR ENGRAVING COMPANY
 223 EAST FOURTH ST. LOS ANGELES, CALIF.
 15663 TELEPHONE MAIN 5680

ANNOUNCING THE OPENING

— OF —

Highest
Class Radio
Receivers
and
Equipment



Specializing
in Artistic
Cabinets
designed to
harmonize
with any
style
furniture

WM. W. WRIGHT, Proprietor
709 N. Western Avenue

Hollywood, Cal.

"Out of the Air"

By LISTENER-IN

KFHJ, Fallon & Co., Santa Barbara, will broadcast a midnight program on Friday, November 16th. Listen in for them. Mr. S. Hastings, their popular concert manager, promises a treat.

Three new broadcasting stations were licensed during the past week, KFLH, Erickson Radio Co., Salt Lake, 261 meters, 50 watts; KFLP, Everett M. Foster, Cedar Rapids, Iowa, 240 meters, 20 watts; WTAZ, Thomas J. McGuire, Lambertville, N. J., 283 meters, 15 watts.

The Canadian Government is about to install a powerful direction-finding wireless station at Pachena, on the west coast of Vancouver Island, British Columbia, to protect ships of all nations entering the Straits of Juan de Fuca en route to American and Canadian ports. Numerous shipwrecks have occurred in this district, and it is expected that the new radio beacon will enable vessels to determine their exact positions in foggy weather, avoiding many dangerous reefs thereabouts.

Mr. Earl G. De Haven, 5136 Victoria Ave., Los Angeles, called in to see me last week. He has a home-made set, single circuit CR5 type, detector and two stages of audio, WD 12 tubes, single wire antenna, 100 feet. He has been having considerable success in bringing in distant stations lately, among others, PWX, Havana, Cuba; WJAX, Cleveland, Ohio, and WOAI, San Antonio Texas.

The Work Rite Manufacturing Company of Cincinnati, Ohio, in order to meet the increasing demand on the Pacific Coast have opened a branch factory in Los Angeles in order to facilitate deliveries. Mr. B. Kruger will supervise and manage this new project. We are gratified to know that eastern manufacturers are waking up to the fact that the Western and Pacific States are large users of their products and are demanding better and quicker deliveries.

William W. Wright, late manager of the Los Angeles branch of the H. Earl Wright Company, has opened a very attractive radio store, known as Hollywood's Radio Studio at 709 North Western Avenue, Hollywood.

Last Sunday evening we heard some very beautiful organ music over KFI. This is being sent by remote control from one of the large music stores in Los Angeles. It is a secret at this time which store this is, but we will tell you about it soon.

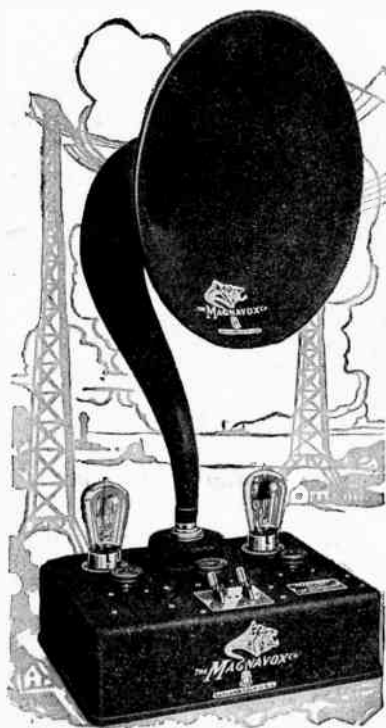
Kennedy Radio Sales Company, located in the Brown Music Company, Pomona, California, was broken into last week and several pieces of radio equipment stolen. Radio dealers, to whom equipment is offered by persons unknown to them should co-operate with the authorities by reporting such.

The question: "How many radio sets are there in the United States? may soon be answered, if a scheme under consideration by officials of the Department of Commerce works out satisfactorily. As an experiment, the Radio Section of the Bureau of Navigation permitted two Class B broadcasters in Washington to request all residents of the District of Columbia who have receiving sets to report to the Department of Commerce by dropping a post card. It is believed that this self-taken census will give an accurate return and, at the same time, save the Government considerable time and money.

The latest authoritative estimate as to the number of sets in the country on June 1, 1923, was 2,250,000. Later predictions state that by June 1, 1924, a million more sets will be in use.

A Magnavox Reproducer and Power Amplifier in One Unit

AFTER exhaustive study and tests by our engineers, this has been successfully accomplished, and the new instruments of the unit type here illustrated in one and two stages of amplification may now be had through Magnavox dealers everywhere.



The new Magnavox Combination Sets A2-R [2-stage] and A1-R [1-stage] insure the utmost in convenient, home radio reproduction.

Reproducers

- R2 with 18 inch horn . . . \$60.00
- R3 with 14 inch horn . . . \$35.00
- M1 with 14 inch horn; for dry battery sets . \$35.00

Combination Sets

- A1-R consists of Magnavox Reproducer with 14 inch horn and 1-stage Amplifier . . . \$59.00
- A2-R same with 2-stage Amplifier . . . \$85.00

Power Amplifiers

- A1-One-stage . . \$27.50
- AC2-C-Two-stage 55.00
- AC3-C-Three-stage 75.00

Magnavox Products can be had of good dealers everywhere. Ask for a demonstration

THE MAGNAVOX CO.
Oakland, Cal.

New York Office: 370 Seventh Avenue
Canadian Distributors:
Perkins Electric Co., Ltd., Montreal

YOU WILL PAY
FOR A
PERFLEX RADIO
WHETHER YOU BUY ONE OR NOT



because —

PERFLEX works on a loop aerial or short piece of wire on the picture molding—

PERFLEX can be tuned with a single control—

PERFLEX has perfect reproduction—

PERFLEX is sold on a guarantee of complete satisfaction—

PERFLEX is made in a model to suit your pocket-book—

The upkeep on another set will cost you the price of Perflex

so —

you had better inquire now about Perflex and Perflex service.

your name —

on the coupon below will bring you more information about "PERFLEX, the wonder set."

----- **TEAR OFF HERE** -----

Without obligation on my part send me further information about **PERFLEX RADIO**.

I have (have not) a set at the present time.

.....
 Name

.....
 Address or R. F. D.

.....
 City

.....
 State

1262
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THE WIRELESS SHOP
A. J. EDGECOMB

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