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.

STRIKING BEAUTY in this new Kennedy Set

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

KENNEDY
The Royalty of Radio
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 3½ to 4½ 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 headphones. 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 expansion 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:

<table>
<thead>
<tr>
<th>Cat. No.</th>
<th>Capacity</th>
<th>No. Plates</th>
<th>List</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>.00003 mfd.</td>
<td>3</td>
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<tr>
<td>7</td>
<td>.0001 mfd.</td>
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<tr>
<td>17</td>
<td>.0003 mfd.</td>
<td>17</td>
<td>3.35</td>
</tr>
</tbody>
</table>

Cat. No. | Capacity | No. Plates | List  |
---------|----------|------------|-------|
23       | .0005 mfd. | 23         | $3.50 |
31       | .0007 mfd. | 31         | 4.75  |
43       | .001 mfd.   | 43         | 5.00  |
63       | .0015 mfd.  | 63         | 7.75  |

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

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, 60 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 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
Radio Doings

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 relays 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 establish 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

Distributed By
GLOBE COMMERCIAL CO.
825 West 8th St., Los Angeles

AUTHORIZED JOBBERS

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

WALTER W. BIDDICK, Inc.
1316 South Grand Ave.
Los Angeles
116 E. Fifth St.
Santa Ana

EQUIPMENT SALES CO.
San Diego

Dealers

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. Harbold, 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)
### RADIO TIME TABLE

<table>
<thead>
<tr>
<th>STATION</th>
<th>METERS</th>
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<tr>
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<td>X</td>
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<td>Free Press</td>
<td>Detroit</td>
<td>WCX</td>
<td>X</td>
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<td>Detroit News</td>
<td>Detroit</td>
<td>WWJ</td>
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#### 6-8 A.M. PACIFIC TIME

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<td>News and Journal</td>
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<td>John Wanamaker</td>
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</tbody>
</table>

### "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

<table>
<thead>
<tr>
<th>Type</th>
<th>Capacity</th>
<th>Price New</th>
<th>Special Price Used</th>
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<tr>
<td>A-6</td>
<td>225 A. H.</td>
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<td>25.00</td>
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<td>A-8</td>
<td>300 A. H.</td>
<td>190.00</td>
<td>40.00</td>
</tr>
</tbody>
</table>

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 2338
SAN FRANCISCO, CALIF.
Ask for Mr. Valle

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

10-12 A. M.
PACIFIC TIME

RADIO TIME TABLE

<table>
<thead>
<tr>
<th>STATION</th>
<th>METERS</th>
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<td>KFCG</td>
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<td>KKHJ</td>
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<td>KFI</td>
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<td>Gould</td>
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</tr>
</tbody>
</table>

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

ANOTHER

WINNER

Little Senior. A Marvel at the Price.

Little Senior, the new model of LITTLE SENIOR at the popular price of $19.50, 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

J. D. COLFORD & CO.

Phone 823-269

400 San Fernando Bldg., Los Angeles
12-2 P.M. PACIFIC TIME

RADIO TIME TABLE

<table>
<thead>
<tr>
<th>NAME OF STATION</th>
<th>CITY</th>
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<td>360</td>
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<td>365</td>
<td>K H J</td>
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<td>K W H</td>
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<td>Tacoma</td>
<td>485</td>
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<td>476</td>
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<td>W D A F</td>
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<td>487</td>
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<td>491</td>
<td>W J Z</td>
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12.00-12.30 12.30-1.00 1.00-1.30 1.30-2.00 2.00-2.30

Radio Doings

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.

THE BRISTOL COMPANY
WATERBURY, CONN.

Ask your Dealer or send for Bulletin 3011-X
Give your loud speaker a treat

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

2-4 P.M.
PACIFIC TIME

NAME OF STATION
L. A. Times
Elec. Lighting & Sup. Co.
Hale Bros
S. F. Examiner
Tribune
Portable Wireless
Kimball-Upson
Radio Lab'y
First Presby. Church
Guy Graswren
Post-Intelligence
Oregonian
General News
Resolute Radio
Honesty Advertiser
Star-Telegram
Palmer School
Daily News-Fair
Star
Free Press
Orchard News
Radio Corp. of America

CITY
Los Angeles
San Francisco
San Francisco
Oakland
Stockton
Sacramento
Hanford
Seattle
Portland
Salt Lake City
Denver
Honolulu
Fort Worth
Davenport
Chicago
Kansas City
Detroit
Chicago
New York

CALL
K H J
K N X
K P O
K U O
K L K
K W G
K F B K
K F D
K T W
K F E J
K F J C
K F D
K G W
K Z N
K L Z
K G U
W B A P
W O C
W M A Q
W D A L
W C X
W W J
W N D A P
W J Z

Radio Time Table

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<td>455</td>
<td>W J Z</td>
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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 & Couteller 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 & COUTELLER LABORATORIES
2843 West Ninth Street
Los Angeles, Cal.

1 Tube Reflex with Phones
2 Tube Reflex Loops and Phones
5 Tube, 2 Radio, 2 Audio and Detector

Crystall 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 3½×5½×2½ 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.
### Radio Doings

#### 4-6 P.M. PACIFIC TIME

**RADIO TIME TABLE**

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<thead>
<tr>
<th>NAME OF STATION</th>
<th>CITY</th>
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<td>268</td>
<td>KFAW</td>
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<td>Cincinnati</td>
<td>309</td>
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**SUN.**  | **MON.**  | **TUES.**  | **WED.**  | **THUR.**  | **FRI.**  | **SAT.**  |
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</tr>
</tbody>
</table>

**S-7 Mountain Time**  
**6-8 Central Time**  
**7-9 Eastern Time**

---

AJAX PRODUCTS are Guaranteed

PHILMORE Mfg. Co.

22 Warren St., New York

Presented by

CARL A. STONE CO.

538 San Fernando Bldg.

RHEOSTATS

6 Ohm  
30 Ohm

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.

---

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

$125 complete

$285 complete

Newbury Electric Corporation
Los Angeles, Calif.
New 872-914 Phone
### RADIO TIME TABLE

<table>
<thead>
<tr>
<th>NAME OF STATION</th>
<th>CITY</th>
<th>CALL</th>
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<td>Essaier Motor Cycle Co.</td>
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<td>KG</td>
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<td>Baille High School</td>
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<td>Bunkerhill &amp; Sullivan Co.</td>
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<td>WFA</td>
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<td>WMQ</td>
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<td>KDS</td>
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<td>Drake Hotel</td>
<td>Chicago</td>
<td>WDAP</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td>Crawley Mfg. Co.</td>
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<td>WLW</td>
<td>X</td>
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<td>X</td>
<td>X</td>
<td>X</td>
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<td>Detroit Free Press</td>
<td>Detroit</td>
<td>WDX</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Radio Corp. of America</td>
<td>New York</td>
<td>WJS</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td>John Wanamaker</td>
<td>Philadelphia</td>
<td>WOO</td>
<td>X</td>
<td>X</td>
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</table>

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
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" ORIGINA! RADIO "Service"

BUGS

1030 So. Figueroa St., Los Angeles Phone 820-253
### Radio Doings

#### 8-10 P.M.

**PACIFIC TIME**

#### RADIO TIME TABLE

<table>
<thead>
<tr>
<th>NAME OF STATION</th>
<th>CITY</th>
<th>CALL</th>
</tr>
</thead>
<tbody>
<tr>
<td>L. A. Union Stock Yards</td>
<td>Los Angeles</td>
<td>KFCX</td>
</tr>
<tr>
<td>L. A. Herald</td>
<td>&quot;</td>
<td>KBS</td>
</tr>
<tr>
<td>Bible Institute</td>
<td>&quot;</td>
<td>KJS</td>
</tr>
<tr>
<td>L. A. Times</td>
<td>&quot;</td>
<td>KJP</td>
</tr>
<tr>
<td>L. A. Examiner</td>
<td>&quot;</td>
<td>KEBH</td>
</tr>
<tr>
<td>E. C. Anthony</td>
<td>&quot;</td>
<td>KFI</td>
</tr>
<tr>
<td>K. K. Radio</td>
<td>&quot;</td>
<td>KPO</td>
</tr>
<tr>
<td>B. F. Examiner</td>
<td>&quot;</td>
<td>KUO</td>
</tr>
<tr>
<td>Warner Bros.</td>
<td>&quot;</td>
<td>KLS</td>
</tr>
<tr>
<td>Oakland Tribune</td>
<td>Oakland</td>
<td>KLY</td>
</tr>
<tr>
<td>Maxwell Electric</td>
<td>&quot;</td>
<td>KRE</td>
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<tr>
<td>Cal. Radio Lab’y</td>
<td>Hanford</td>
<td>KFFD</td>
</tr>
<tr>
<td>Modesto Herald</td>
<td>Modesto</td>
<td>KXDO</td>
</tr>
<tr>
<td>Portable Wireless</td>
<td>Stecklan</td>
<td>KFWG</td>
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<tr>
<td>San Joaquin L. &amp; P.</td>
<td>&quot;</td>
<td>KMJ</td>
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<tr>
<td>Harrol Lab’y</td>
<td>San Jose</td>
<td>KAW</td>
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<tr>
<td>Kumball-Upson</td>
<td>Sacramento</td>
<td>KFBK</td>
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<td>Abbott-Kinney Co.</td>
<td>Vanlala</td>
<td>KFAV</td>
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<td>Gould</td>
<td>Stockton</td>
<td>KJQJ</td>
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<td>Fulton &amp; Co.</td>
<td>Santa Barbara</td>
<td>KJL</td>
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<td>Dr. W. K. Adbill</td>
<td>&quot;</td>
<td>KFBV</td>
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<tr>
<td>Savoy Theatre</td>
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<td>KDYM</td>
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<tr>
<td>Southern Elect Co.</td>
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<td>KDPT</td>
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<td>Univ of Ariz</td>
<td>Tucson</td>
<td>KFDH</td>
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<td>Nelson Radio Sup Co.</td>
<td>Phoenix</td>
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<td>Past-Intelligence</td>
<td>Seattle</td>
<td>KFC</td>
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<td>Northwest Radio Service</td>
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<td>KJR</td>
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<tr>
<td>Execeleor Motor Co.</td>
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<td>KHQ</td>
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<tr>
<td>Rhodes Co.</td>
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<td>First Presbyterian Church</td>
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<td>KTM</td>
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<td>Dragonian</td>
<td>Portland</td>
<td>KGW</td>
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<tr>
<td>Hellock &amp; Watson</td>
<td>&quot;</td>
<td>KGG</td>
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<td>Stubbe Elect</td>
<td>&quot;</td>
<td>KNC</td>
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<tr>
<td>Meier &amp; Frank</td>
<td>&quot;</td>
<td>KFEC</td>
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<td>Apple City Radio Club</td>
<td>Hood River</td>
<td>KQP</td>
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<td>Plastic Radio Co.</td>
<td>Eugene, Ore</td>
<td>KFT</td>
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<td>Boise High School</td>
<td>Boise, Idaho</td>
<td>KFA</td>
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<td>Virgin Radio Service</td>
<td>Medford, Ore</td>
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<td>Bunkerhill &amp; Sullivan Co.</td>
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<td>KFEY</td>
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<td>Deseret News</td>
<td>Salt Lake City</td>
<td>KZN</td>
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<td>Reynolds Radio Co.</td>
<td>Denver</td>
<td>KLZ</td>
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<td>Star Telegram</td>
<td>Fort Worth</td>
<td>WFAX</td>
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<td>Orms News</td>
<td>Dallas, Tex.</td>
<td>WFAX</td>
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<tr>
<td>Palmer School</td>
<td>Davenport</td>
<td>WFAX</td>
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<tr>
<td>Post Dispatch</td>
<td>St. Louis</td>
<td>WFAX</td>
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<tr>
<td>Borden &amp; Company</td>
<td>Kansas City</td>
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<tr>
<td>Woodmen of World</td>
<td>Omaha</td>
<td>WOAW</td>
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<td>Westinghouse</td>
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<td>Winner Radio</td>
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<td>Orange Mfg. Co.</td>
<td>Finleyville</td>
<td>WIB</td>
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<tr>
<td>Radio Corp. of America</td>
<td>New York</td>
<td>WJZ</td>
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</table>

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.

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**MURDOCK “SOLID” NO. 56 HEAD PHONES**

**Best At Any Price**
# RADIO SUPPLIES

**MOST COMPLETE LINE ON THE COAST**

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Price</th>
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</thead>
<tbody>
<tr>
<td>Sterling Voltmeter</td>
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<tr>
<td>Filko-stat</td>
<td>$ 2.00</td>
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<tr>
<td>Marquette Rheostat, 25-ohm, $1.50; 33-ohm</td>
<td>1.75</td>
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<tr>
<td>Parts for Neutrodyne Circuit</td>
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<tr>
<td>Workrite Variometer and Varicoupler</td>
<td>3.50</td>
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<tr>
<td>Erla Reflex Transformers</td>
<td>5.00</td>
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<tr>
<td>WD-11, WD-12 Tubes, large stock</td>
<td>6.50</td>
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<tr>
<td>UV-199 and C-299, 201-A, 301-A Tubes</td>
<td>6.50</td>
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<tr>
<td>Diodide Detector Tube with Socket</td>
<td>2.50</td>
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<tr>
<td>All American Transformers</td>
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<tr>
<td>Bristol Loud Speaker</td>
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<td>Dictagrand Loud Speaker</td>
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<td>Electrad Variohm—Condensor and Gridleak combined</td>
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<td>Adapters and Sockets for UV-199 Tubes</td>
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<td><strong>Atlas Loud Speaker</strong></td>
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**Sleepers-Radio Hook-Ups**

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<tr>
<td>Wireless Telegraphy, by Bucher</td>
<td>$2.25</td>
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<tr>
<td>Experimenters' Manual, by Bucher</td>
<td>2.25</td>
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<tr>
<td>Wireless Stations, by Edelman</td>
<td>3.00</td>
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<td>Sleepers—Radio Hook-Ups</td>
<td>.75</td>
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<tr>
<td>Radio Phone Receiving</td>
<td>1.50</td>
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<td>Radio Instruments and Measurements</td>
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<td>Radio for Everybody</td>
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<tr>
<td>No. 65 Federal Transformer</td>
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**We have for Immediate Delivery**

<table>
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<tbody>
<tr>
<td>Erla Parts</td>
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<tr>
<td>Fada Neutrodyne Receiver, $120.00</td>
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<tr>
<td>Radiola II, Radiola IV, Radiola Grands</td>
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<td>Grebe CR-5, CR-8, CR-9</td>
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<tr>
<td>Gilfillan, Amrad and Remler Parts</td>
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<td>Acme Transformers</td>
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<td>Bradley Leak, $1.85</td>
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<td>Amatran Transformers</td>
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<tr>
<td>Full line Transmitting Parts</td>
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<tr>
<td>Citizens Call Books, 50c</td>
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<tr>
<td>Cabinets, built to order, $3.50 up</td>
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<tr>
<td>Full line Hazelhurst Condensers</td>
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<tr>
<td>Roffy Transformers, $8.50</td>
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**MOTOR CAR SUPPLY CO.**

*RADIO DEPARTMENT*

<table>
<thead>
<tr>
<th>Contact Details</th>
<th>Location</th>
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</thead>
<tbody>
<tr>
<td>Open Evenings Till 9 P. M.</td>
<td>Los Angeles, California</td>
</tr>
<tr>
<td>Telephone 826-063</td>
<td></td>
</tr>
<tr>
<td>920 South Broadway</td>
<td></td>
</tr>
<tr>
<td>Write for</td>
<td></td>
</tr>
<tr>
<td>OUR NEW AND COMPLETE PRICE LIST</td>
<td></td>
</tr>
</tbody>
</table>
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

EASTMAN KODAK COMPANY
Authorized Agents for

Radio Corporation of America Products

510 SOUTH BROADWAY
LOS ANGELES
Cutting and Washington—Model 11C

Completely self contained, popular Console model, with loud speaker 3 tube double circuit regenerative receiver, in dark walnut, early English period cabinet. Complete with batteries.

$295.00

For twenty years Dr. Fulton Cutting and Mr. Bowden Washington have been designing U. S. Naval Radio Equipment—receivers and transmitters for ships, planes and shore stations; apparatus for the Merchant Marine—the finest type of Commercial Apparatus.

And now they have turned their attention to RADIO FOR THE HOME. You can own a genuine C. & W. Receiver—the equal in sound, design and construction of the highest grade professional equipment in America.

Exclusive Dealer Territorial Rights still available in certain sections of Southern California and Arizona. Wire today for complete data on the C. & W. franchise.
Cutting and Washington

The Standard of Excellence

Western Radio presents to Southern California Radio Music Lovers the Cutting and Washington Supreme Concert Receivers.

Moderately priced—self-contained—scientifically designed, under the Armstrong patent, by Commercial Engineers of world importance—C. & W. Receivers exemplify RADIO FOR THE HOME.

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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 11:30 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 from the Electric Club from the Ballroom of Biltmore Hotel.
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 old, 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—
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 7:30 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—
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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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. Special 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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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—
5:00 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.

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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 VESPERS. 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.

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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.

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.

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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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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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. Jessie 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.
7:00 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, NOVEMBER 19—
10:30-11:00 A. M. Address, Epps G. Knight, old-time humor.

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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SUNDAY, NOVEMBER 16—
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 JohnTarleton 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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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.

MONDAY, NOVEMBER 19—

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. Roche, 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. Roche, baritone soloist.

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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 .................. $3.25 C 300 and UV 200 .......... 2.75
WD 11—WD 12 ............. 3.50 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. San Francisco, California

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

KDS 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 Lazza, 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

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

"PACOIMA"

Words and Music by
G. ALLISON PHELPS

This fascinating melody was first introduced over K.H.J.
Free copies limited

Suburban Estates Co.
Phones: 653-25; 871-498
744 West 7th Street Los Angeles
Radio Doings

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.
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.
7:00. Hotel La Salle Trio.
7:15. To be announced.

FRIDAY—
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.

Now! *CLEA-R-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. 14x1 inch bell. An ornament to the finest radio sets yet at a price within the reach of everyone. $8.50

Distributed by
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

"Dealers Write for Proposition"

MOTOR CAR SUPPLY CO.
RADIO DEPARTMENT
Open Evenings Till 9 P. M. Telephone 826-063
920 South Broadway Los Angeles, California
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 57, 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)
Kellogg Transformers

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 can 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

Mailed anywhere upon receipt of price

We have Kellogg Radio Hand Books for Free Distribution.

COMPLETE STOCK OF RADIO SETS AND ACCESSORIES

Our Radio Department is always pleased to help you in your Radio problems and give you the advantage of their experience. Personal Service and Home Demonstrations

Radio Doings Distributed Free

STONE ELECTRIC SUPPLY CO.
710 West Pico, Maristic Temple Building
(Pico and Figueroa) Los Angeles

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

287043 Telephone 281155
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 on 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.

LESTER RADIO SHOPPE
140 So. Spring St. Metropolitan 4832 Open Evenings

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
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. HANCECK, 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. Farquharson, 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!
"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 o'clock. 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 p.m. 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 MAGNAVOX CO.
Oakland, Cal.
New York Office: 370 Seventh Avenue
Canadian Distributors:
Perkins Electric Co., Ltd., Montreal
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 pro-
grams of our local stations.
We can't tell you what Original Argentites will do. Let us show you.
Each crystal guaranteed.

MINERAL PRODUCTS CO.
326 H. W. Hellman Building

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
- KFBF—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

KENNEDY

The Royalty of Radio

We are the exclusive wholesale distributors for Southern California

KIERULFF & RAVENSCROFT
Wholesale Distributors

757 SOUTH LOS ANGELES STREET
Phone 628-87 Los Angeles, Calif.
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
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."

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CONVENIENT CREDIT

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Jefferson Street

1177 W. Jefferson St. 506 W. Washington St.
Phone Beacon 3672 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, 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)
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
IN THIS CITY

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 millimeter 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 438 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

Light, Easy and Comfortable

$5


$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

AUTHORIZED JOBBERS

COOK-NICHOLS CO., 411 South San Pedro St. GLOBE ACCESSORIES CO., 309 West Jefferson

CARL A. STONE CO.

537-8 San Fernando Building Representing 315 Foxcroft Building
### Radio Doings

#### 6-8 A.M. Paciﬁc Time

<table>
<thead>
<tr>
<th>STATION</th>
<th>CITY</th>
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<td>Free Press</td>
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<td>Detroit News</td>
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#### Radio Time Table

**Paciﬁc Time**

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**8-10 A.M. Paciﬁc Time**

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<td>News and Journal</td>
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<td>Palmer School</td>
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<tr>
<td>Wanamaker</td>
<td>Philadelphia</td>
<td>W O O</td>
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"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

<table>
<thead>
<tr>
<th>Type</th>
<th>Capacity</th>
<th>Price New</th>
<th>Special Price Used</th>
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<td>A-8</td>
<td>300 A. H.</td>
<td>190.00</td>
<td>40.00</td>
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</table>

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. Vail

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

### 10-12 A.M. PACIFIC TIME

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<td>Good Fit</td>
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#### RADIO TIME TABLE

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</table>

#### MIGNON

- 23-Plate Vernier, .0005
  - $3.50
- 43-Plate Vernier, .001
  - $4.00

#### FIL-KO-STAT

- SENIOR $25.00
- LITTLE SENIOR $19.50

Manufacturers' Representatives

J. D. Colford & Co.

Phone 823-269  400 San Fernando Bldg., Los Angeles
### Radio Time Table

<table>
<thead>
<tr>
<th>NAME OF STATION</th>
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<tr>
<td>News</td>
<td>Detroit</td>
<td>WWJ</td>
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</table>

### Briskon Power Amplifier

**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.

**THE BRISTOL COMPANY**

WATERBURY, CONN.

Pacific Coast Branch Office: 332 Rialto Building, San Francisco, California
<table>
<thead>
<tr>
<th>NAME OF STATION</th>
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<td>Chicago</td>
<td>517</td>
<td>WRC</td>
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<td>411</td>
<td>WDA</td>
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<td>XX</td>
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<td>Detroit</td>
<td>517</td>
<td>WDC</td>
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<td>XX</td>
<td>XX</td>
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<td>Oracle Hotel</td>
<td>Chicago</td>
<td>495</td>
<td>WDP</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
</tr>
</tbody>
</table>

**Kennedy Sets**

$285 complete

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

**Newbery Electric Corporation**

New 872-914 Phone
Reliability Plus Low Cost

One of the Reasons Why the CROSLEY 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
“Make It An Electrical Christmas”

You cannot choose more acceptable 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.
825 West 8th St., Los Angeles

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
### RADIO TIME TABLE

#### 6-8 P.M. PACIFIC TIME

<table>
<thead>
<tr>
<th>NAME OF STATION</th>
<th>CITY</th>
<th>CALL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bible Institute</td>
<td>Los Angeles</td>
<td>KJS</td>
</tr>
<tr>
<td>L. A. Times</td>
<td></td>
<td>KHJ</td>
</tr>
<tr>
<td>E. C. Anthony</td>
<td></td>
<td>KFI</td>
</tr>
<tr>
<td>S. F. Examiner</td>
<td>San Francisco</td>
<td>KUO</td>
</tr>
<tr>
<td>Maxwell Electric</td>
<td>Berkeley</td>
<td>KRE</td>
</tr>
<tr>
<td>Tribune</td>
<td>Oakland</td>
<td>KLX</td>
</tr>
<tr>
<td>Western Radio</td>
<td>Oakland</td>
<td>KZL</td>
</tr>
<tr>
<td>Kimball &amp; Upson</td>
<td>Sacramento</td>
<td>KFBK</td>
</tr>
<tr>
<td>Modesto Herald</td>
<td>Modesto</td>
<td>KXD</td>
</tr>
<tr>
<td>Cal. Radio Lab's</td>
<td>Hanford</td>
<td>KFD</td>
</tr>
<tr>
<td>Fallon &amp; Co.</td>
<td>Santa Barbara</td>
<td>KFHJ</td>
</tr>
<tr>
<td>Radio Den</td>
<td>Santa Ana</td>
<td>KFAW</td>
</tr>
<tr>
<td>Dr. R. O. Shelton</td>
<td>San Diego</td>
<td>KEPT</td>
</tr>
<tr>
<td>Southern Elect.</td>
<td></td>
<td>KFB</td>
</tr>
<tr>
<td>Dr. W. K. Azbill</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smith-Hughes Co.</td>
<td>Phoenix</td>
<td>KDVY</td>
</tr>
<tr>
<td>McArthur Bros. Univ. of Ariz.</td>
<td>KFDH</td>
<td></td>
</tr>
<tr>
<td>Love Elect. Co.</td>
<td>Tacoma</td>
<td>KMO</td>
</tr>
<tr>
<td>Mullens Elect. Co.</td>
<td></td>
<td>KGB</td>
</tr>
<tr>
<td>Northwest Radio Service</td>
<td>Seattle</td>
<td>KJR</td>
</tr>
<tr>
<td>Excelsior Motor Cycle.</td>
<td></td>
<td>KTW</td>
</tr>
<tr>
<td>First Presby. Church.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>State Coll. of Wash.</td>
<td>Pullman</td>
<td>KFAE</td>
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<tr>
<td>Oregonian</td>
<td></td>
<td>KGW</td>
</tr>
<tr>
<td>Hall&amp; Watson</td>
<td></td>
<td>KGG</td>
</tr>
<tr>
<td>Meier &amp; Frank</td>
<td></td>
<td>KFEC</td>
</tr>
<tr>
<td>Apple City Radio Club</td>
<td>Hood River</td>
<td>KQP</td>
</tr>
<tr>
<td>Adler's Music Store</td>
<td>Baker, Ore.</td>
<td>KFD</td>
</tr>
<tr>
<td>Boise High School</td>
<td>Boise, Ida</td>
<td>KFAU</td>
</tr>
<tr>
<td>Bunkerhill &amp; Sullivan Co.</td>
<td>Wallace, Ida</td>
<td>KFEY</td>
</tr>
<tr>
<td>Telegram</td>
<td>Salt Lake</td>
<td>KDYL</td>
</tr>
<tr>
<td>Dexter News</td>
<td></td>
<td>KZNT</td>
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<tr>
<td>Raymond's Radio</td>
<td>Denver</td>
<td>KAF</td>
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<tr>
<td>Western Radio</td>
<td></td>
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<tr>
<td>Jim Kirk</td>
<td>Sparks, Nev.</td>
<td>KDFR</td>
</tr>
<tr>
<td>Star-Telegram</td>
<td>Fort Worth</td>
<td>WBAR</td>
</tr>
<tr>
<td>News and Journal</td>
<td>Dallas</td>
<td>WFAA</td>
</tr>
<tr>
<td>Palmer School</td>
<td>Davenport</td>
<td>WOC</td>
</tr>
<tr>
<td>Daily News-Fair</td>
<td>Chicago</td>
<td>WMAQ</td>
</tr>
<tr>
<td>Post Dispatch</td>
<td>St. Louis</td>
<td>KS</td>
</tr>
<tr>
<td>Westinghouse</td>
<td>Chicago</td>
<td>KYW</td>
</tr>
<tr>
<td>Sweeney School</td>
<td>Kansas City</td>
<td>WHB</td>
</tr>
<tr>
<td>Star</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tribune</td>
<td>Great Falls</td>
<td></td>
</tr>
<tr>
<td>Drake Hotel</td>
<td>Chicago</td>
<td>WDAF</td>
</tr>
<tr>
<td>Crevesy Mfg. Co.</td>
<td>Cincinnati</td>
<td></td>
</tr>
<tr>
<td>Detroit Free Press</td>
<td>Detroit</td>
<td>WGX</td>
</tr>
</tbody>
</table>

#### 7-9 Mountain Time

#### 8-10 Central Time

#### 9-11 Eastern Time

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. Defosset 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”

BUGS

1030 So. Figueroa St., Los Angeles Phone 820-253
### RADIO TIME TABLE

<table>
<thead>
<tr>
<th>NAME OF STATION</th>
<th>CITY</th>
<th>Met.</th>
<th>CALL</th>
</tr>
</thead>
<tbody>
<tr>
<td>L. A. Union Stock Yards</td>
<td>Los Angeles</td>
<td>360</td>
<td>KFC</td>
</tr>
<tr>
<td>L. A. Herald</td>
<td>&quot;</td>
<td>469</td>
<td>LAC</td>
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<tr>
<td>Bible Institute</td>
<td>&quot;</td>
<td>360</td>
<td>KJS</td>
</tr>
<tr>
<td>L. A. Times</td>
<td>&quot;</td>
<td>395</td>
<td>KHM</td>
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<tr>
<td>L. A. Examiner</td>
<td>&quot;</td>
<td>469</td>
<td>Examiner</td>
</tr>
<tr>
<td>E. C. Anthony</td>
<td>&quot;</td>
<td>469</td>
<td>KFI</td>
</tr>
<tr>
<td>Halle Bros</td>
<td>San Francisco</td>
<td>423</td>
<td>KPO</td>
</tr>
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<td>S. F. Examiner</td>
<td>&quot;</td>
<td>360</td>
<td>KUG</td>
</tr>
<tr>
<td>Warner Bros</td>
<td>&quot;</td>
<td>280</td>
<td>KLS</td>
</tr>
<tr>
<td>Oakland Tribune</td>
<td>Oakland</td>
<td>278</td>
<td>KRE</td>
</tr>
<tr>
<td>Cal. Radio Lab’y</td>
<td>Hanford</td>
<td>252</td>
<td>KFD</td>
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<tr>
<td>Modesto Herald</td>
<td>Modesto</td>
<td>252</td>
<td>KKD</td>
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<tr>
<td>Portable Wireless</td>
<td>Storkton</td>
<td>273</td>
<td>KMJ</td>
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<td>San Joaquin L. &amp; P.</td>
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<td>273</td>
<td>KAW</td>
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<td>KBF</td>
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<td>Kimmel-Union</td>
<td>&quot;</td>
<td>273</td>
<td>KLS</td>
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<td>Abbott-Kinney Co.</td>
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<td>273</td>
<td>KQJ</td>
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<td>Gould</td>
<td>&quot;</td>
<td>273</td>
<td>KFH</td>
</tr>
<tr>
<td>Faison &amp; Co</td>
<td>&quot;</td>
<td>273</td>
<td>KFB</td>
</tr>
<tr>
<td>Dr. W. K. Azbill</td>
<td>&quot;</td>
<td>273</td>
<td>KAP</td>
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<tr>
<td>Savoy Theatre</td>
<td>&quot;</td>
<td>273</td>
<td>KED</td>
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<tr>
<td>Southern Electric Co.</td>
<td>&quot;</td>
<td>273</td>
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<tr>
<td>Univ. of Arts</td>
<td>Tucson</td>
<td>238</td>
<td>KFDH</td>
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<tr>
<td>Nelson Radio Sup Co.</td>
<td>Phoenix</td>
<td>238</td>
<td>KFB</td>
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<tr>
<td>Post-Intelligencer</td>
<td>Seattle</td>
<td>270</td>
<td>KFC</td>
</tr>
<tr>
<td>Northwest Radio Service</td>
<td>&quot;</td>
<td>270</td>
<td>KIR</td>
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<tr>
<td>Excelsior Motor Co.</td>
<td>&quot;</td>
<td>270</td>
<td>KHQ</td>
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<tr>
<td>Rhodes Co</td>
<td>&quot;</td>
<td>455</td>
<td>KZ</td>
</tr>
<tr>
<td>First Presby Church</td>
<td>&quot;</td>
<td>455</td>
<td>KZ</td>
</tr>
<tr>
<td>Oregonian</td>
<td>&quot;</td>
<td>455</td>
<td>KZ</td>
</tr>
<tr>
<td>Hallock &amp; Watson</td>
<td>Portland</td>
<td>455</td>
<td>KZ</td>
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<tr>
<td>Stubbs Elect</td>
<td>&quot;</td>
<td>455</td>
<td>KZ</td>
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<td>Miller &amp; Frank</td>
<td>&quot;</td>
<td>455</td>
<td>KZ</td>
</tr>
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<td>Apple City Radio Club</td>
<td>Hood River</td>
<td>360</td>
<td>KOP</td>
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<td>Pacific Radio Co</td>
<td>Eugene, Oreg.</td>
<td>475</td>
<td>KAT</td>
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<td>Boise High School</td>
<td>Boise, Idaho</td>
<td>475</td>
<td>KAU</td>
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<td>Virgin Radio Service</td>
<td>Medford, Idaho</td>
<td>475</td>
<td>KAY</td>
</tr>
<tr>
<td>Bunker-Hill &amp; Sullivan Co.</td>
<td>&quot;</td>
<td>475</td>
<td>KFEY</td>
</tr>
<tr>
<td>Deseret News</td>
<td>Salt Lake City</td>
<td>475</td>
<td>KZ</td>
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<td>Reynolds Radio Co.</td>
<td>Denver</td>
<td>475</td>
<td>KIL</td>
</tr>
<tr>
<td>Star Telegram</td>
<td>Fort Worth</td>
<td>475</td>
<td>KAA</td>
</tr>
<tr>
<td>D-12 News</td>
<td>Dallas, Tex.</td>
<td>475</td>
<td>FAF</td>
</tr>
<tr>
<td>Palmer School</td>
<td>Davenport</td>
<td>475</td>
<td>FAF</td>
</tr>
<tr>
<td>Post Dispatch</td>
<td>St. Louis</td>
<td>546</td>
<td>KSD</td>
</tr>
<tr>
<td>Star</td>
<td>Kansas City</td>
<td>546</td>
<td>WDAF</td>
</tr>
<tr>
<td>Woodward of World</td>
<td>Omaha</td>
<td>546</td>
<td>WGW</td>
</tr>
<tr>
<td>Wastlinghouse</td>
<td>Chicago</td>
<td>546</td>
<td>KYW</td>
</tr>
<tr>
<td>Winner Radio</td>
<td>Denver</td>
<td>546</td>
<td>KEFL</td>
</tr>
<tr>
<td>Cleary Mfg. Co.</td>
<td>Cincinnati</td>
<td>546</td>
<td>WLM</td>
</tr>
</tbody>
</table>

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
Sleepers—Monotrol
Complete with Tubes, Batteries, Loud Speaker and Loop Aerial, $197.50

SPECIAL SALE OF RADIO BOOKS

<table>
<thead>
<tr>
<th>Title</th>
<th>Reg.</th>
<th>Sale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wireless Telegraphy, by Bucher</td>
<td>$2.25</td>
<td>$1.15</td>
</tr>
<tr>
<td>Experimenters' Manual, by Bucher</td>
<td>2.25</td>
<td>1.15</td>
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<tr>
<td>Wireless Stations, by Edelman</td>
<td>3.00</td>
<td>1.50</td>
</tr>
<tr>
<td>Sleepers—Radio Hook-Ups</td>
<td>.75</td>
<td>.50</td>
</tr>
<tr>
<td>Radio Phone Receiving</td>
<td>1.50</td>
<td>1.00</td>
</tr>
<tr>
<td>Radio Instruments and Measurements</td>
<td>2.25</td>
<td>1.00</td>
</tr>
<tr>
<td>Radio for Everybody</td>
<td>1.50</td>
<td>.90</td>
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<tr>
<td>No. 65 Federal Transformer</td>
<td></td>
<td>7.00</td>
</tr>
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</table>

We have for Immediate Delivery

<table>
<thead>
<tr>
<th>Items</th>
<th>Price</th>
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<td>Erla Parts</td>
<td>Fada Neutrodyne Receiver, $120.00</td>
</tr>
<tr>
<td>Radiola II</td>
<td>Radiola IV</td>
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<tr>
<td>Radiola IV</td>
<td>Radiola Grands</td>
</tr>
<tr>
<td>Grebe CR-5, CR-8, CR-9</td>
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</tr>
<tr>
<td>Gilfillan, Atwater-Kent, Amrad and Remler Parts</td>
<td></td>
</tr>
<tr>
<td>Acme Transformers</td>
<td>Amatran Transformers</td>
</tr>
<tr>
<td>Full line Transmitting Parts</td>
<td></td>
</tr>
<tr>
<td>Citizens Call Books, 50c</td>
<td></td>
</tr>
<tr>
<td>Cabinets, built to order, $3.50 up</td>
<td></td>
</tr>
<tr>
<td>Full line Hazelhurst Condensers</td>
<td></td>
</tr>
<tr>
<td>Roffy Transformers, $8.50</td>
<td></td>
</tr>
</tbody>
</table>

MOTOR CAR SUPPLY CO.

RADIO DEPARTMENT
Open Evenings Till 9 P. M.
920 South Broadway
Los Angeles, California

Write for
OUR NEW AND COMPLETE PRICE LIST
RADIO DOINGS

10-12 P. M. PACIFIC TIME

RADIO TIME TABLE

SUN. MON. TUES. WED. THUR. FRI. SAT.

<table>
<thead>
<tr>
<th>STATION</th>
<th>CITY</th>
<th>CALL</th>
</tr>
</thead>
<tbody>
<tr>
<td>L. A. Times</td>
<td>Los Angeles</td>
<td>K H J</td>
</tr>
<tr>
<td>Post-Intelligencer</td>
<td>Seattle</td>
<td>K L J C</td>
</tr>
<tr>
<td>Earle C. Anthony</td>
<td>Los Angeles</td>
<td>K F I</td>
</tr>
<tr>
<td>Northwest Radio</td>
<td>Portland</td>
<td>K G N</td>
</tr>
<tr>
<td>Oregonian</td>
<td>Portland</td>
<td>K G W</td>
</tr>
<tr>
<td>W. W. Grant,</td>
<td>Calgary</td>
<td>C F C N</td>
</tr>
<tr>
<td>*Hale Bros.</td>
<td>San Francisco</td>
<td>K P O</td>
</tr>
<tr>
<td>Herald</td>
<td>Calgary</td>
<td></td>
</tr>
</tbody>
</table>

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

The Ambassador Hotel

SUNDAY—5:00 to 9:00 p. m. LYMANN'S ORCHESTRA. Broadcast by Remote Control Over KFI LOS ANGELES, CALIFORNIA

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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 Emanuel 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—
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—
2:30 to 3:30 p.m. Matinee Musicafe.
6:45 to 7:30 p.m. Children’s Program, presenting “The Sandman,” Dorothy Bar-tosh, 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—
2:30 to 3:30 p.m. Matinee Musicafe.
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 Flouri, 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—
2:30 to 3:30 p.m. Matinee Musicafe.
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—
2:30 to 3:30 p.m. Matinee Musicafe.
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. Mattheva, 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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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)

(Special 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 Mus.c 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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MONDAY—  
9:00 to 10:00 p.m. The Peach Edition Club. Harry McCoy, famous actor; Norman McNeill, 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—  

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. Huimhard, 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, baritone. 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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Soloists: Charles Calkins, marimbophone; William Van Deeven, flute; Nicholas Ocki Alhi, 'cello.
Program:
(a) Slavische Rhapsodie (Friedemann).
(b) Serenade (Titl)—Duet for flute and 'cello—William Van Deeven and Nicholas Ocki Alhi.
(c) Raymond Overture (Thomas)—Marimbophone solo—Charles Calkins.
(d) Syncopated Impressions—Arranged by Mr. Elinior, featuring "Annabelle."

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MONDAY, NOVEMBER 12—
7:30 to 8:30—Psychological Bootlegging, Prof. C. I. Erickson; xylophone duets, Misses Celia 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. Robson. 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. Webb, News Editor. Orchard Thinning, Prof. O. M. Morris. Entertainment program by g'ls of the Theta Upsilon Sorority, including soprano solos by Alice Pike, Spokane; violin solos by Ruth Coates, Spokane; readings by Gladys Huehner, Yakima.

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Saturday, 1 to 2 p.m., Fairmont; 5:30 to 5:30 p.m., Palace Hotel, Tea Dansants.
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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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Program for Week of November 11 to November 17, 1923

SUNDAY—
6:00 p. m. Church Services.
6:45 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 Michael; 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.
7:00 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. Behrend, 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. McCravy Rubber Company, under the personal direction of Newton McCravy. (The Red 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 Sennaders, 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.)

Long Distance!

You’ve got to have a COAST COUPLER TO GET IT.

You can get any station — Havana, Detroit, Chicago, Calgary, Canada — Hear them all on a COAST COUPLER.

Special Hook-up Given Free with Each Coast Coupler

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 Sleeker Monotrol Set

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Manufacturers and Dealers

245 EAST SEVENTH ST. LONG BEACH, CALIF.

COAST COUPLER CO., I
245 East Seventh St., Long Beach, Calif.

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

Name ................................................................. 11-3
WOC—Palmer School of Chiropractic—484 Meters

Davenport, Iowa—Pacific Time

SUNDAY, NOVEMBER 11—
7:00 p. m. Organ Recital (1 1/2 hour); Erwin Swindell, organist.
8:30 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.


MONDAY, NOVEMBER 12—
5:00 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. Artistic Music 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. Roche, 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 .................................. $3.25 C 300 and UV 200 .. 2.75
WD 11—WD 12 .............................. 3.50 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. 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.

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**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!

**“PACOIMA”**

Words and Music by

G. ALLISON PHELPS

This fascinating melody was first introduced over K.H.J.

Free copies limited

**Suburban Estates Co.**

Phones: 653-25; 871-498

744 West 7th Street

Los Angeles
# WMAQ—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. Lindblom 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.

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# 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.

Distributed by

**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.

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

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

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

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

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

"Dealers Write for Proposition"

MOTOR CAR SUPPLY CO.

RADIO DEPARTMENT

Open Evenings Till 9 P. M.  Telephone 826-063

920 South Broadway  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 satisfactorily 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.

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
411 South San Pedro St., Los Angeles

12 & 4 Reasons Why
you should say
FIL-KO-STAT

1—Distinctly DESIGNED for vac-
uum 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—resis-
tance always constant.
11—Resistance element so finely di-
vided further division impossi-
ble.
12—No discs to break or chip.
13—Operation absolutely silent.
14—Connection posts with Fahne-
stock 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.

FOR THE BEST IN RADIO
SUPPLIES CALL

COOK-NICKOLS COMPANY
411 South San Pedro St., Los Angeles

WHOLESALE ONLY

Phone 871-350
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.
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.

---

ANNOUNCING THE OPENING

OF

Hollywood's Radio Studio

Highest Class Radio Receivers and Equipment

WM. W. WRIGHT, Proprietor

709 N. Western Avenue Hollywood, Cal.

Specializing in Artistic Cabinets designed to harmonize with any style furniture
“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 therabouts.

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.

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 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 pocketbook—
The upkeep on another set will cost you the price of Perfex

so—
you had better inquire now about Perfex and Perfex 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 W. 2nd St.
The Wireless Shop—
1853 S. Hope St.

Pacific Southwest's Largest Exclusive Radio Manufacturers
LOS ANGELES, CALIF.