

RADIO DOINGS

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

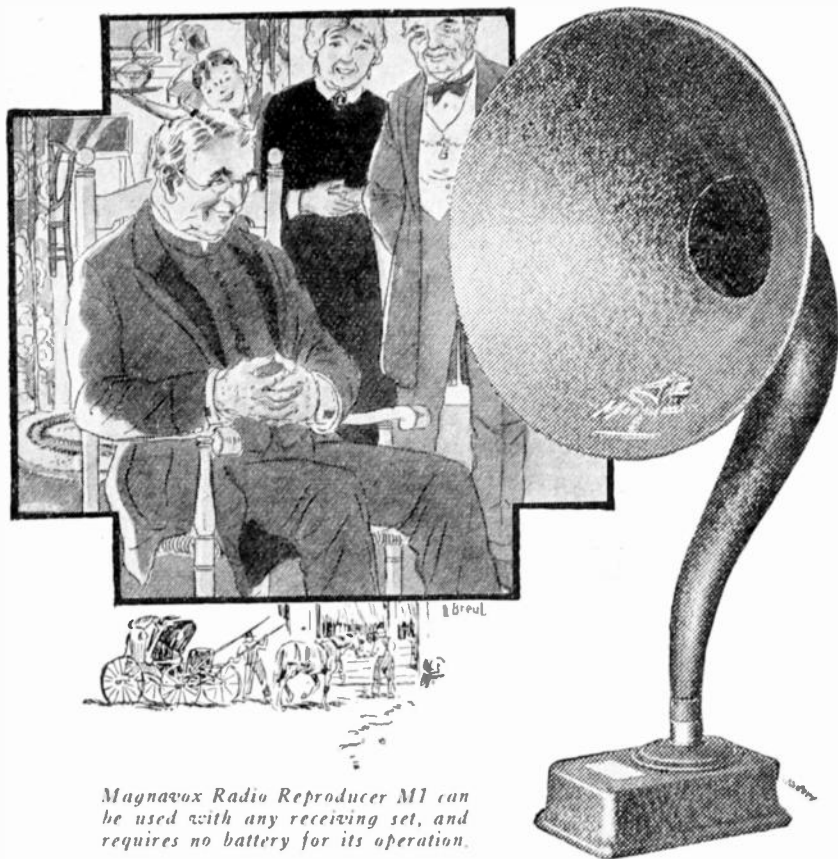


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Magnavox Radio Reproducer M1 can be used with any receiving set, and requires no battery for its operation.

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Radio Doings

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Five Cents a Copy

Two Dollars a Year

Vol. IV

Los Angeles, May 10, 1924

No. 19

To Our Readers

IT has been called to our attention that someone has been spreading the news that "Radio Doings" is going out of business.

This kind of propaganda is "old stuff" and is used by those who are jealous of our growth.

It is hardly necessary to deny this. The increase in the size and circulation is sufficient answer.

For the benefit of our advertisers, readers, and the "friend" who is spreading this untruth, we wish to tell you something of our growth.

Our circulation at this time is twenty-four thousand three hundred a week. Last year at this time we were printing eight thousand and thirty-two pages. For the last month we have been printing eighty pages, and this issue contains ninety-six. Our increase in circulation averages over five hundred weekly.

We have the hearty co-operation of the larger broadcasters, dealers and manufacturers and we are glad to refer any who have any doubts about our continuing in business to any of our advertisers.

Yes, we are NOT going out of business, but we are growing bigger and better with every issue.

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
703 Cunard Bldg., San Francisco.

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

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*The Long Arm of Radio Is Always at Your Service
When You Own A*
Freed-Eisemann NR-5 Neutrodyne



NR-5—\$150.00, Without Accessories

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*It is the modern
"Aladdin's Lamp"*

—a twist of a rheostat, the turn of a dial, and you are mentally miles away.

Dealers advertising the NR-5 in this magazine are recommended by us for demonstrations or service.

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405 Tenth Street
Oakland

The Heart of the Radio

By ERNEST WALKER SAWYER, Chief Engineer, Electrad, Inc.

Part 1.

The Grid Leak is far more important an item in a radio set than the safety valve of a steam engine. It should really be called "The Heart of the Radio," as it controls the flow of electrons in the circuit.

Electrons are the little fellows who carry the music from the antenna to your ears. Your antenna may be perfect and your tubes may be operating at remarkable efficiency; but if the electrons do not move along the path to your ear in a smooth and orderly manner, the music is distorted.

The Broadcasting Station may cost \$50,000. A further \$100,000 will be spent in operating it. Your receiver costs \$200, and if you realized the tremendous importance of these little fifty cent Grid Leaks have to the proper results from this outlay, you would certainly each have several sizes available.

Your volume depends very much on the grid current and directly on the plate current. An important factor which determines the grid current is the number of negative electrons which are attracted to the grid from the filament. The negative charges on the grid sometimes reach a point where they practically stop the flow of plate current. The grid current piles them up. Unless a Grid Leak is in use, the tube will become choked up and will not operate. If the Grid Leak is the incorrect size, the tube will only partially operate.

The Grid Leak condenser permits incoming signals to enter your tube without loss of energy in the Grid Leak; but the Grid Leak is the true controller of the system. If the negative charges on the grid are permitted to accumulate, they simply clog the circuit. The grid potential is lowered and the plate current is lowered. The Grid Leak permits the excess to leak off, thus restoring the plate current to its normal value.

If you have never changed your Grid Leak, you will be surprised at the different results you get for different sizes. Local stations may come in best using two megohm (2,000,000 Ohm) leak; stations 500 miles away may come in best using 1½ megohms, while distance stations may come best using ½ megohm. By best, I mean there may be from 100 to 500 percent difference in your volume.

Manufacturers of sets usually supply 2 Megohm Leaks with their sets. The only reason I can find for this is because two is an easy number to say and to remember. The public has been sold on 2 Megohm Leaks; but I have been pleased to demonstrate to several manufacturers that where their formulae and designs come out at 2,000,000 Ohms, the unknown losses in other parts of the design and in different material used, may run the proper figure up to four or five million Ohms.

That is only part of the story. Each type tube creates new conditions. The U. V. 199 provides a high emission at low filament temperatures. The U. V. 201-A averages five times the emission of the ordinary amplifying tubes. The emission or flow of electrons varies with the current and voltage being used. In other words, every time you alter your rheostat or your "B" or "A" Battery, you should vary your Grid Leak.

Your Radio Hospital

Any Set Repaired and Rebuilt to Order

We Demonstrate the TELEDYNE

Standard Super-Heterodynes and Neutrodyne

Everything in Radio

Sets Installed and Guaranteed

Reasonable Rates

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TUcker 3084

Here you are then, each type tube, each individual tube of same type, each variation in voltage, current or in strength of signal, requires a variation in grid resistance for maximum efficiency and that variation is covered by engineers of the Radio Corporation as follows:

- W. D. 11 and W. D. 12... 2 to 3 Megohms
- U. V. 200.....½ to 2 Megohms
- U. V. 201-A..... 2 to 9 Megohms
- U. V. 199..... 2 to 9 Megohms

The Radio Corporation of America says further: "A Grid Leak resistance between 2 and 5 Megohms is satisfactory for average work. A resistance between 5 and 9 Megohms is somewhat better for weak signals."

At first thought, you would naturally advise use of a Variable Grid Leak for every set, but the public as a whole do not want so many variables; so the next best thing is to adopt for each type set, that Fixed Leak which gives best average results on local stations.

From the foregoing, it is easy to see that when you have once found the correct Grid Leak for the particular set, tubes, antenna, ground and station, you should be assured that the resistance should remain intact. You see, therefore, that you must use utmost caution in purchasing only those Leaks that are properly made by responsible people. Insist that your Grid Leaks be certified, correct and guaranteed.

In a further article, I will describe the proper method of manufacture of certified Grid Leaks.

Senate Committee Approves Funds for Radio Administration

Appropriations for the administration of radio under the Department of Commerce, which were reduced by \$21,500 by the House of Representatives recently, have been re-established by the Senate Appropriations Committee at \$180,278 as originally approved by the Budget Bureau.

Following the reductions made by the House in the funds to be available for radio inspection, licensing and supervision for the coming fiscal year, Secretary Hoover appeared before the Senate Committee and voiced his opinion that the departmental radio section absolutely needed the full amount allowed by the budget. It is now believed that the amount O.K.'d by the Senate will finally be passed and that the Senate and House conferees will agree. The increase desired by the department is only enough to provide six additional field inspectors and a few clerks to insure the handling of the increased amount of work due to additional number of broadcasting and amateur stations, and more frequent inspection resulting from the growth of radio.

*Bigger Business and More of It
See Page 86*

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Service to Radio Equipment

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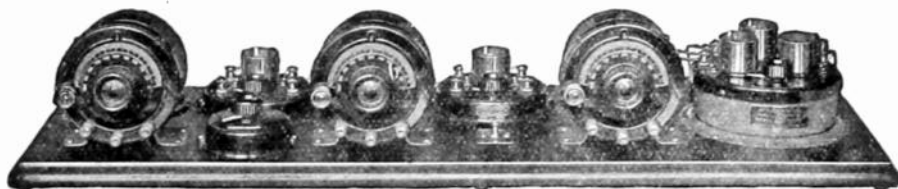
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ATWATER KENT

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The Atwater Kent Model 10 Receiving Set. Price \$110.00

A Truly Remarkable Receiving Set

THE Atwater Kent Model 10 Receiving Set has the range, volume, accuracy and simplicity of operation to meet the requirements of every user.

The clearness with which the Atwater Kent Loud Speaker re-creates will give a new conception of tonal fidelity.

Until you have heard these wonderful instruments, you will not know how easily radio broadcasts can be faithfully reproduced in your home.

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Los Angeles, Cal.



The Atwater Kent Loud Speaker can be adjusted to obtain best results on different degrees of signal strength. No batteries required.

Price \$40.00

The Phusiformer as a Wave Filter or Interference Eliminator.

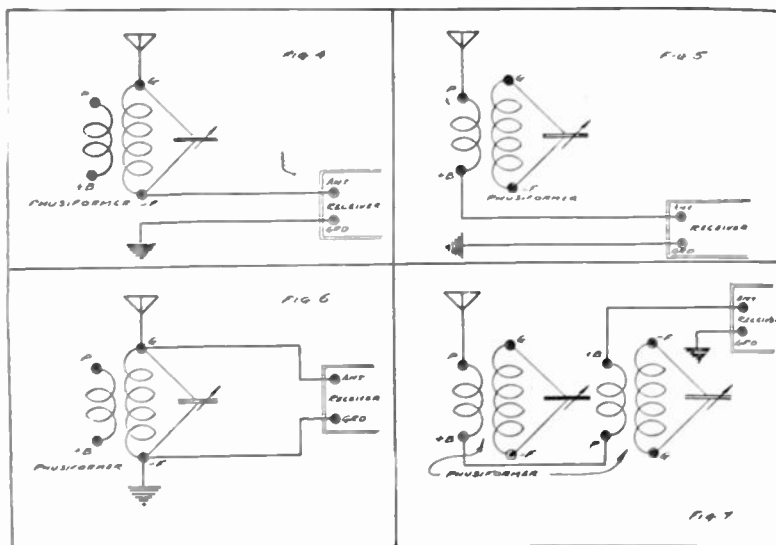
By J. M. SCHWARTZ

Interference is perhaps the most dreaded bugbear of the broadcast listener. While it is not within the scope of this pamphlet to discuss either the causes of this annoyance or the technical reasons why it can be avoided in the majority of cases, it is nevertheless worthy of mention that in nearly all instances of interference where the disturbance is caused by a C. W. or phone station operating on another wave-length (even though very nearly that of the desired station) the trouble can be overcome through the introduction of a Wave Filter commonly called a "wave-trap."

The effectiveness of any wave-trap depends largely upon its electrical efficiency. The Cosmopolitan Phusiformer is particularly well adapted for this purpose. In the first place it makes possible either a single or a two circuit trap which covers the entire field of filter utility, and secondly the electrical losses of the Cosmopolitan Phusiformer are at an absolute minimum—its high frequency resistance is extremely low and the condenser losses negligible.

The Cosmopolitan Phusiformer is equal in its performance as a wave filter to any of the especially designed pieces of apparatus on the market intended for this purpose only, and which consequently sell for a considerably higher price.

There are several methods of connecting wave filters or traps into receiver



THE T. N. T. OF RADIO TRANSTROM TRANSFORMERS \$4.00 for Super Heterodyne Circuits each

Two kinds, Interstage and Input for 3000 meter fixed frequency. Genuine Bakelite construction. One screw mounting. Workmanship and design guaranteed. Blue Print Free with each set of four.

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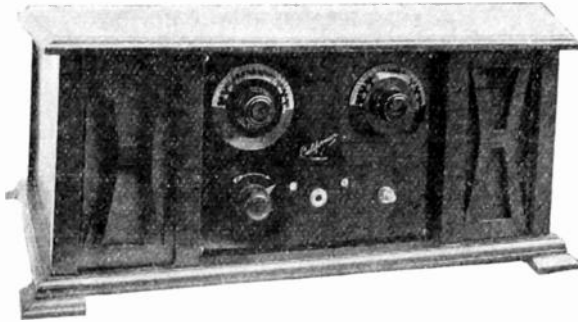
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"The Californian"



"Console" Type C-1

This 2-tube Super-Reflex Receiver is remarkable for its Pure Tone Quality, Extreme Selectivity and Simplicity of Operation.

Console Model, complete with Tubes, Batteries and Loud Speaker, self-contained in beautiful mahogany cabinet.....

Price \$100

This set can be purchased through your local dealer;—if he hasn't one in stock, write direct to us or our distributors and we will gladly arrange for a demonstration in your town.

Distributors

Myers Electric Supply Co., Inc.

1729 South Los Angeles St., Los Angeles, Cal.

The Californian Radio Co.

Phone Main 896

POMONA, CALIF.

701 N. Gordon St.

circuits and each presents some advantage for particular forms of interference. A great deal has been written on this subject and many exaggerated representations have been made.

However, excellent results can be secured with an efficient wave filter, but several things must be kept in mind. Any wave trap will cut down the "tuned-in" station slightly; a wave-trap will be more effective against phone or C. W. interference than it will on nearby spark signals; if two interfering stations have so nearly the same wave-length that they heterodyne each other, it is useless to try to separate them; and for wave lengths near to that to which the trap is set the tuning of the radio set itself will be disturbed. These are vagaries peculiar to the particular receiver, which will have to be mastered by the operator of the set and no fixed rules can be established to cover all existing receiving circuits.

The four principal methods of connecting wave filters are shown by figures 4, 5, 6 and 7. The terminals of the Phusiformer are correctly marked on each of these illustrations as well as the antenna and ground terminals of the receiver.

Figure 4 is the popular single circuit acceptor type of connection which has as its greatest objection the detuning effect it produces on the receiver tuning for any change of trap setting. This is a very efficient filter connection and is excellent where interference from one station only is encountered.

Illustration 5 is an improved arrangement of the circuit just referred to, in that it substantially eliminates the undesirable detuning effect on the radio set with each change of trap setting. This is particularly desirable circuit where interference is periodically encountered from several different sources or for any interference which necessitates a considerable use of the wave filter. This is, in other words, a particularly desirable method of connection for cutting out local interference where two or more non-simultaneously operating stations are the offenders. The introduction of this form of wave filter circuit into an antenna system acts to permanently raise the wave length range of the receiver slightly.

Illustration 6 is the familiar rejector circuit and is particularly useful for eliminating interference from two or more simultaneously operating stations. It is also good for facilitating reception through strong spark interference. This connection, however, broadens the tuning of the receiver itself.

Illustration 7 is an excellent arrangement for eliminating interference from two strong simultaneously operating stations.

The Phusiformer provides a filtering range of from 200 to approximately 600 meters.

SUMMARY

The Cosmopolitan Phusiformer is the electrical equivalent of a close-coupled two-circuit aperiodic tuning coil; while its peculiar construction makes for extreme efficiency. Its electrical characteristics permit its rendering exceptional results in any circuit where a coil of this type is required. For the beginner who desires to experiment with the various "hook-ups" or for one who desires to construct a set where the initial cost is an item, the Phusiformer method is the only practical one today. By this system the initial cost of an operative receiver can be kept at an absolute minimum, while from time to time a slight additional expenditure will provide an expansion into circuits, which ultimately will end in a radio receiver as fine as can be had by any one, regardless of cost.

Next week we will deal with the Phusiformer as used in reflex circuits.

This is RADIO

R F B

RALPH F. BOWERS

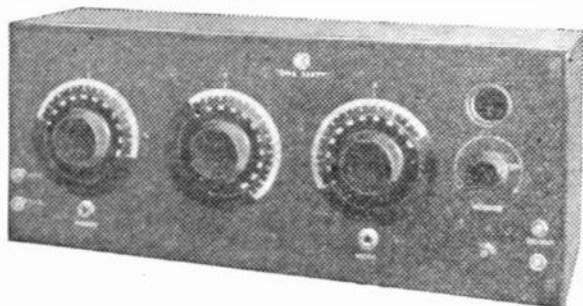
Broadcasting from 2343 W. Washington, Los Angeles

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THE R F B TWO TUBE REFLEX wired on mahoganite panel ready for cabinet
High-grade parts and good workmanship are used throughout.

The above machine complete and installed with \$17.50 Storage Battery and \$18.00 Loudspeaker—\$85.00

The Non-radiating Receiver



FADA "ONE SIXTY" Neutrodyne Radio Receiver

* * *

CLARITY

Clarity of tone is a feature that has made hosts of friends for the FADA "One Sixty" radio receiver. No matter where the station tuned in may be located—in the East, or in the West, the clarity of tone produced by the "One Sixty" is remarkably lifelike and pure. And so powerful is this wonderful receiver that the majority of broadcasting stations, both local and distant, can be heard clearly and plainly on a loud speaker.

In selectivity, volume, distance getting, clarity and fine appearance, the FADA "One Sixty" is unsurpassed. To hear it perform is to be convinced. It will be well worth your while to visit your dealer and see this receiver. Price \$120. This does not include tubes, batteries or phones.

F. A. D. ANDREA, INC.

1581 Jerome Avenue

New York City

Distributed by
Union Hardware & Metal Co.

Los Angeles

Electric Corporation
Los Angeles, Portland and Seattle

H. Earle Wright Co.
Los Angeles and San Francisco

Friends From KFI

We present Paul Reese, Program Director of KFI, Earl C. Anthony, Inc., Los Angeles, and Margerie Lyon, the charming "hostess" of this station.

You've heard of "talking through your hat"? Margerie Lyon was so delighted with "My Old Home Town," written by Paul Reese, the Program Director, that she is now "singing" through hers. National Music Week is the inspiration for the musical hat, designed by Margerie Lyon.

You might also caption this picture "Music by Paul Reese, Words by Margerie Lyon." Although Mr. Reese says to call it a "brain child" might be more to the point.

To be in style the week of May 4th choose your favorite radio tune and apply it to your Easter hat. This would be not only extremely decorative, but enlightening as to one's rating as a music lover. It could almost come to a place where one would be judged by what was on the outside of one's head, not the inside capacity.

Anyway, Music Week, like Christmas and your birthday, happens but once a year.



Three New Broadcasters

List of Three Class "A" Broadcasting Stations Licensed for the Week Ending April 26, 1924.

Call	Station	Frequency	Wave Length	Power Watts
		Kcys.	Meters	
KFPY	Symons Investment Co., Spokane, Wash.	1060	283	100
WDBA	Fred Ray, Columbus, Georgia	1270	236	20
WDBB	A. H. White & Co., Inc., Taunton, Mass.	1310	229	10

First Dealer: "Why the glad face this morning?"

Second Dealer: "My troubles are over!!!"

Ans.: C. R. S. C. See Page 86.

THE LOUDEST, CLEARST TWO-TUBE SET IN LOS ANGELES!

Let us build it for you, or show you how you can built it yourself.

Genuine Loud Speaker Volume Guaranteed!

Our prices will be a welcome surprise.

L. A. RADIO AND ELECTRIC SUPPLY

1065 South Main St.

Open Evenings and Sundays

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CONSISTENCE

—consistently good reception of local and Pacific Coast stations, with remarkable tone quality, volume and selectivity. A receiver will not sell on freak performance, but will on consistence.

Request your dealer to demonstrate

The Wholesale Radio Electric Company

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Annapolis Opens Course in Communications

By CARL H. BUTMAN

At Annapolis, the Government Naval Academy, a new course was added last week. It is a course in communication, a subject which of late years has come to compare with such essential subjects as navigation, engineering and seamanship. Among the essential divisions of the newly prescribed course for the midshipmen is radio in its practical application to naval and military, war and peace time routine.

Previously, the students of the Navy's school learned only the principles of telephone, telegraph and radio communication as a part of their electrical course. Now communication has come into its own, and a new text book entitled "Notes on Naval Communication" has been introduced as part of the curriculum.

In an address introducing the study of communications last Thursday, Commander D. C. Bingham, Assistant Director of Naval Communications, outlined the new course and cited some of the problems devolving upon communications in fleet efficiency. He also reviewed progress and mentioned some of the possibilities hoped for in a perfect communication system.

His main theme showed the relation of communications in fleet efficiency to enable the midshipmen to achieve the best results from the newly issued text book, compiled by Lieut. A. C. Kidd, U. S. N., with the co-operation of the communication and engineering experts of the Navy. Under radio, the book reviews both material and operation, touching on transmitting and receiving equipment for the several types of naval sea and aircraft, installation, codes, and procedure. Other chapters deal with shore and sea communications, including sound as well as radio, and the duties of a communication officer. One citation perhaps will suffice to show the purpose of the new course: "The entire fabric of our national prosperity is erected upon a foundation of efficient communication." In another instance the text reads: "However important communications may be to the nation in time of peace, in time of war they are vital."

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the opening of our New Radio Department
which is in charge of one of the best
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We are manufacturing "Radio Red" Sets
to fit any phonograph.

Guaranteed to be as clear and as loud
as any loudspeaker.

\$95.00 installed

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*You haven't heard Radio—Until you have listened
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TELEDYNE
and a
ROLA RE-CREATOR

Ask a Cutting and Washington Dealer

Western Radio Inc.
of California

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Commander Bingham pointed out the essential part of communication; with diagrams of the Navy's fleets before him, he showed how necessary it was to have co-ordination of movement, which in turn depends upon perfect communication. Some of the problems within the scope of naval communications mentioned were the operation and maintenance of the naval communication system afloat in a campaign in either or both oceans; the operation of radio facilities for mariners; the promotion of harmony between private and governmental radio systems; the guarding of the U. S. radio, cable and compass systems; and war-time as well as peace-time operation in the interests of Americans.

As a civilizing factor, the new agency of communications, radio telephony, through its use in broadcasting, in the opinion of Commander Bingham, will have an influence equaling, if not exceeding, the discovery and development of printing. Owing to the range of radio and its rapidity, there is a tendency, he points out, to neglect and undervalue other means of communication, but the new course has been developed with the idea of showing radio's place, where it will augment rather than replace other means of intercourse. Every means of communication must be studied and developed, he insists, but he would reserve the air as free as possible, for important and urgent dispatches.

While it is not yet held imperative that naval communication officers be operators, they must know the types and capabilities of apparatus. Today a modern battleship has a main transmitter, two secondary transmitters, one auxiliary transmitter and one sound-telegraph transmitter. It also has one receiver for high-power shore stations, three receivers for information and orders, three receivers for division maneuvers and fire control, one receiver for battle-line signals, one radio compass and one listening device and sonic range finder. With this equipment the battleship Colorado can, with proper personnel, receive seven radio messages from vessels or shore stations, receive one message from a distant shore station, and obtain radio bearings on frequencies not being used by the ship for transmission.

Freed-Eisemann NR-5 NEUTRODYNE

For Those Who Want Better Results



Unsurpassed for volume, natural reproduction and tone quality on local broadcast.

The supreme receiver for long distance—Eastern stations are being heard by NR-5 owners quite regularly when local stations are broadcasting.

Complete
Sets

“SMITHY”

Balanced
Parts to
Build

“The Neutrodyne Specialist”

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The
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NEUTRODYNE

For those who build their own

*A Complete
 Assembly
 to the last
 Screw*



*The Real
 Set for
 Long
 Distance*

KD-50—\$80.00

Properly balanced parts are absolutely necessary for those who build their own Neutrodyne sets.

The parts in the KD-50 are essentially the same as those used in the well known NR-5.

The new KD-50 has a $\frac{1}{4}$ -inch engraved panel, with genuine Freed-Eisemann dials, tube sockets, transformers, etc., making it far the best knock down Neutrodyne available.

GET ONE TODAY

The Braun Corporation

Exclusive Far Western Distributors

LOS ANGELES
 363 New High St.

WHOLESALE ONLY

405 10th St.
OAKLAND

Unofficially Vicar of Wakefield

In the little town of Wakefield, located in the Virginia Mountains, there dwells a young man named Haywood Williams who, though crippled and confined to his bed for years, has, through the aid of radio, become the unofficial "Vicar of Wakefield."

This bright and energetic mountain boy suffered a fall when very young, and now, twenty-three years old, is confined to his bed, paralyzed for life probably. But his popularity in the community, where there is neither church nor preacher, together with a recently acquired radio set, has made his humble home the Community Center, especially on Sunday. The radio receiving set was a gift from Mrs. Barnett, wife of Major General George Barnett of the Marine Corps.

Soon after the set was received, the neighbors in this township, near Front Royal, Va., but some eighteen miles from the railroad, began to come in chiefly out of curiosity, never having heard radio messages before. Having only one set of head phones, Haywood undertook to repeat for their benefit such of the broadcasts received as were possible of repetition—chiefly, of course, talks and sermons. Being interested in religion, he found the Sunday services broadcast by the Right Reverend Jas. E. Freeman, Bishop of Washington, of great interest, and as the visitors on Sunday were more numerous than on any other day, he began to repeat the words of the Bishop. Before very long it became a regular ceremony on Sundays for the neighbors from far and near to gather in Haywood's home and listen to his repetition of the Bishop's sermons, broadcast by WCAP from the Cathedral at Washington.

Now, through the activity of Mrs. Barnett, a fund for the purchase of a loud speaker, to which the Bishop himself has contributed, has been started, and within a short time Haywood will be able to reproduce every word of the Bishop's Sunday services, including the music, for his "parishioners." It is even possible that this young layman may become a missionary and function, unofficially perhaps, as a modern Vicar of Wakefield.

THE FAMOUS FREED-EISMANN NEUTRODYNE

For Long Distance Reception

For clarity of tone

For simplicity in operation.



Still Leads in Popularity

This set without accessories \$150

Five tubes, \$5 each 25

The additional cost of installation depends on your choice of batteries, loud speaker and head fones.

IMPORTANT.—See to it that your radio set is installed by those who really know how and who will give you service.

Martin Music Co.

TUcker 1335

734 South Hill St.

TUcker 2807

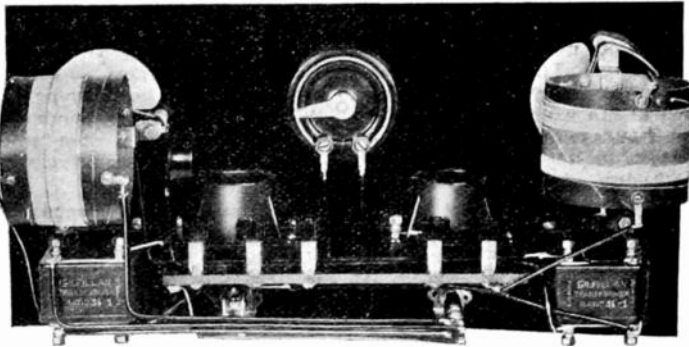
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with

Gilfillan Master Parts

in latest

Reflex Radio Frequency Kit



Rear View of Assembly—2-Tube with Crystal

Contains the Following Gilfillan Parts

RA-1 KIT	
2 R-1000	Reflex Transformers
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1 R-1125a	Transformer 6-1
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5 R-325	Binding Posts
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Price

\$25.50

Equal high quality has never heretofore been offered in a kit at such a low figure.

You'll find this Gilfillan Reflex Radio-Frequency Kit, and other popular Gilfillan made Radio Parts, at most good dealers. If your supply house cannot furnish you with genuine Gilfillan parts, accept no substitutes, but write to our nearest office.

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Licenses General Bakelite Co.

Improved Radio Telegraph Set for Infantry

The most difficult problem of the Army Signal Corps has always been to keep headquarters in close contact with the troops advancing in the field of battle, and during the World War this means of radio communication was found inadequate, according to officers of the Army. Recently signal experts have developed a satisfactory portable field radio set for Infantry Battalions, with the result that presently an improved set will be placed in operation.

The modified radio-telegraph transmitting set for Infantry field use, known as S.C. 77, has been modified and improved in several features, giving it an increased range and better stability. The set complete now weighs only 75 pounds and is a "two-man" set; that is, one man can carry the batteries and another the set itself. A new method of operation and improvements, so that any VT-1 tube will operate satisfactorily in the oscillator socket, have been achieved. The set box, known as BC-9 A, has been redesigned for carrying the apparatus in the field.

The sending key is arranged to short a large resistance in series with the plate circuit.

When the sending key is depressed, the set operates at full power with full plate voltage. When it is released, the large plate resistance, thereby inserted, causes a large reduction in the effective plate voltage so that the set oscillates weakly. When receiving, therefore, it causes but slight interference to a nearby set, receiving on the same tuner (wave length) setting. It is then possible for all the stations in a net to use a common tuner setting. The other tuner settings may be assigned to adjacent nets, which may then be operated at one time. Electrical constants of the oscillator tube circuit in the modified sets have been changed so that the operation is less critical.

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Signals Come in More Clearly

When Willard Rechargeable "B" Batteries Are Used

Not all noises are due to static, and when you hook on Willards you will find hissing and crackling noises, due to internal and external leakage, have disappeared.

Increased pleasure from your set is assured by use of Willard "B" Batteries.



RADIO "A" BATTERY

Heavy plates—Threaded rubber—
Unusual capacity.



4500 M. A. hour capacity

RADIO "B" BATTERY

Note the construction—Individual glass cells
that eliminate external and internal leakage.

WILLARD RADIO BATTERIES

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PASADENA—F. W. Birnie
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Hammond

GARDENA—Gardena Bat-
tery & Ignition

SAN PEDRO—Auto Elec-
tric Service

Or

At Your Nearest Radio Dealer

Behind the Scenes in a Broadcast Studio

NO. 11—VISITING THE STUDIOS

By DR. RALPH L. POWER, "The Sky Crier," Los Angeles Examiner Radio

So many people are anxious to know the why and wherefore of visiting a broadcasting studio that the eleventh article in this series of twelve will consider this subject.

Often you will hear loud applause over your receiving set at the end of some number. Visiting is greatly encouraged in many studios, and the artists' friends and interested visitors furnish the applause.

To a certain degree this visible audience greatly lessens the stage fright of beginners in radio performing. It is equally true that many listeners-in object to it on the strength that it takes up too much time and is unnecessary from their point of view. Studios with their own station can permit applause, but remote control stations, for various mechanical limitations, do well to place a ban on it.

The large studios, with space for an audience, place almost no limitation on visitors, although in many cases they provide glass rooms through which the audience may see the performance.

Between programs it used to be quite the thing for announcers or studio directors to hold a receiving line and meet countless admirers. Both the public and announcers are well fed up on this by now, however.

As a matter of fact, programs often appear to fall flat within the studio because of acoustical arrangement, yet they broadcast well. Most visitors would enjoy the program to better advantage if they were at their own receiving set rather than in the studio.

It has been many times demonstrated that the presence of an overly large number of persons impairs the quality of the transmission, and, because of this, by far the majority of the 591 broadcast studios in this country either discourage visiting during program hours, provide a reception room with loud speaker for visitors, a glass partition through which they can view the performers, or arrange in other ways to entertain the visiting element without interfering with the broadcasting of the program.

Next week, in the twelfth and last article of this series, I will tell you what the radio of tomorrow may accomplish and how you individually can help it.



An Ideal Combination—Saves One Dollar

You know what Radio Doings is—the best program magazine published. Radio Broadcast is one of the best monthly radio magazines, containing articles of value to everyone interested in radio. The publishers price for the two is five dollars but we are able to offer you both for one year for only four dollars if you send in your order now. HORWOOD PUBLISHING CO., 308 Van Nuys Bldg., Los Angeles.

I accept your offer of Radio Doings and Radio Broadcast at the special price of four dollars and inclose the amount herewith.

Name.....

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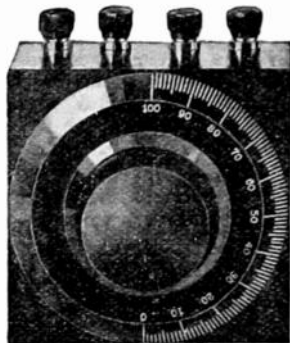
COSMOPOLITAN PHUSIFORMER

The Missing Link in Radio

Proof From Your Own City

May 5th, 1924.

Cosmopolitan Phusiformer Corp.,
15 West 18th Street,
New York, N. Y.



Gentlemen:

It is my pleasure to inform you that the results I am obtaining from my Cosmopolitan Phusiformer Set are satisfactory beyond all expectation.

As a musician I can truly say that the tone is really remarkable in its continuity, and, coupled with the fact that the receiver does not oscillate, and further that the stations as far east as Pittsburg (KDKA) have all come in on the loud speaker, I can conscientiously feel that I own the "Perfect Receiver."

Yours for better Radio,

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1432½ Constance St., Los Angeles.

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Manufactured by

**Cosmopolitan Phusiformer
Corp.**

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Sadler Mfg. Co.

86 4th St., San Francisco, Cal.

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Tubes

HALL BERRINGER

The importance of properly taking care of the vacuum tubes in a set is so great that it is surprising so little is said on the subject. Tubes cost much, and they burn out easily, for one reason or another. The tube is the weakest element of the set. The average incandescent lamp in a house lasts much longer than the average tube. Since they are burned to give a maximum life the vacuum tube should last as long as the incandescent lamp. Actually it does not. Why?

The operator of the set tries to take as good care of the tube as he possibly can, but the trouble is, he does not seem to be aware of what is actually happening to the tungsten wire of the filament. He knows that too much juice will decrease the life of his tube. Hence, he tries to keep his filament current as low as good operation of his set will allow. Not only that, but when he stops operating his set he throws in all of the resistance in his filament rheostats, so that when he starts his set working the next time he must gradually cut out his resistance, thus making the filament current go through low values gradually, before reaching the operating value. The reason he does this instead of leaving his rheostats in the operating position is this: He figures if he leaves his rheostat in its operating position there will be a rush of current into the filament due to the storage battery having recovered some of its lost voltage, thus endangering his tube.

The trouble with this point of view is that it is incomplete and inaccurate and based on an insufficient knowledge of the properties of tungsten filament wire. It is true that storage batteries recover some of the lost voltage, but this recovery is relatively very small and not enough to endanger the life of the tube. The only time this danger is likely to occur is just after charging the storage battery. At this time the above precautions should be carefully observed. Of course, occasional adjustments of the rheostat are always necessary, but apart from this there should be no fear of the battery recovering sufficiently to burn out the tube.

Otherwise it is most beneficial and advantageous to the life of the vacuum tube to keep the filament rheostat at its operating point all the time and to flash the bulb instantaneously at its operating temperature when throwing the set into commission. This principle has been verified by the latest researches on the subject and the basis for this will be clear from the following data:

Microscopic examination of tungsten wire generally used in lamps and vacuum tubes shows that it may appear in two forms:

1. The ductile form, in which the wire appears to be of a continuous mass of small grains firmly welded together.
2. The brittle form in which the wire appears to be made of fairly large blocks with definite boundary or cleavage lines.

The ductile form may be bent without harming it, but if the brittle form is bent the wire immediately and easily breaks at these boundary or cleavage lines. These cleavage lines where the separate blocks of the wire seem to be joined are the weak links of the filament and the brittle form is, therefore, apt to burn out or be damaged more easily at these points. (To be continued)



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SINCE 1892
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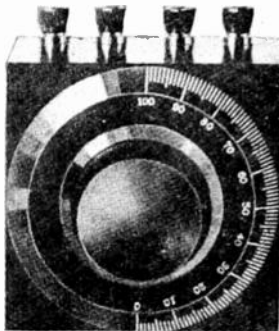
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Open Evenings

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*"The
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in Radio"*



*No Oscillation
No Radiation
No Interference*

\$9.50

The Cosmopolitan Phusiformer is a tuned Radio Frequency transformer with the following extraordinary features: No Oscillations, No Radiations, Extremely Sensitive and free from Body Capacity.

It is the goal which Radio Engineers have tried to reach for years—namely, not to cause self-oscillation when tuned to resonance with an incoming wave. The secondary is tuned, primary is aperiodic, the coupling is fixed.

No neutralizing condensers are used, thus using any and all tubes.

Cosmopolitan Phusiformers make possible the use of three stages of Tuned Radio Frequency amplification without oscillation heretofore thought impossible.

The use of Phusiformers does away with all coils and variable condensers and permits accurate calibration of the dials. No neutralizing condensers are necessary as neutralization is automatically effected by the patented windings in the Phusiformer.

Ask your dealer to show you how to convert your regenerative set into a five tube set which will be superior to a Neutrodyne.

As a WAVE TRAP the Phusiformer is superior to any now in use. The Wave Length range is 220 meters to 610 meters, which efficiently covers the entire list of Broadcasting stations.

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Radio Supersedes Medicine in Treatment of Tubercular Patients

SAN DIEGO, CALIF.—Radio was recently adopted here as a specific treatment for bed-ridden tubercular patients and convalescents, it was learned today.

Acting Army Surgeon D. O. N. Lunberg at Camp Kerny is authority for the following statement as to its healing powers:

"A regular schedule of hours was arranged according to what was available on the air, as well as according to hours that best fitted in with the regime of the patients. The schedule since its inauguration has not failed in a single instance of being carried out in accordance with the same as published. Radio in a hospital of this sort should prove to be a therapeutic agent under the class of occupational therapy or as a simple recreational measure."

"In tuberculosis, we have to diminish the fatigue point to the lowest possible minimum, while undergoing treatment. Under proper medical restrictions, our central station can be counted upon to be of great value to the patient from many angles. The medical staff of this hospital is glad to have radio at this hospital serve such a useful purpose.

This practical application of the therapeutic properties of radio was made possible through a unique installation by Fred L. Edwards of the Independent Electric Company of this city. The Community Service, an organization which looks after the recreational needs of the army men at Camp Kearney, financed the project with money raised by a benefit performance of "Iolanthe."

Over 9000 feet of wire were required to equip the various wards in the hospital. The connections are made so that any one or all of the patients may plug in a head set and listen to broadcasts as picked up and amplified by the master receiving station. This consists of a cage antenna to which is connected a Federal No. 58 DX receiver, the output of which is magnified by an additional two-stage amplifier, making audible to the 140 or more patients programs from major broadcasting stations in the west and sometimes the Chicago stations nearly 2000 miles away. Federal headsets are used throughout so that each patient has an individual listening accommodation.

Two army electricians, acting as operators, give freely of their "off duty" time in the interests of the maintenance of the radio schedule. Their operating room is near the medical conference room, and from there radiate the lines which supply the eager patients with programs of a restful and educational nature.

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and Finish*

Here is something in console type that is entirely new to the market. It will pay to stock this new style before the demand.

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Manufacturers

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KENNEDY design and quality are the foundation of the great demand for **KENNEDY EQUIPMENT**. This, in its turn, has resulted in production skill and facilities which give

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and We Sell to Legitimate
Dealers Only*

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a new impetus to leadership and
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A, B and C BATTERIES

BEST BY TEST

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Phones:

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Where we will carry a complete line of Radio Corporation of
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RADIOLA III—Two tubes and head set.....	\$ 35.00
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RADIOLA IX—The above set with special design for phonograph installation	215.00
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RADIOLA SUPER-HETERODYNE—The receiver you have been waiting for.....	250.00
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A. TUBES IN STOCK

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Our Service Begins Where Your Purchase Ends

OPEN EVERY EVENING

(TWO REAL GOOD SALESMEN WANTED)

Get Thin by Radio

No, this does not mean reducing to "bend right, one, two, three" by an ardent physical culturist broadcasting directions for the fat, fair and forty.

It is much easier than that.

There is, of course, no royal road to slimness, but a parallel path is the milk diet one. The old days when one spent four weeks in bed, drinking quarts and quarts of milk a day, resulting in a loss of many, many pounds, coming out thin and quite lost from what had been happening in the world, and bored to death besides from staying in bed. These days are gone forever. A retreat into the fastness of a sanitarium for the two-hundred-pounder nowadays is quite a different matter.

Yes, one stays in bed four weeks—drinks quarts and quarts of milk daily.

But oh, the difference in the mental thinness resulting from the up-to-dateness of the modern physician, specializing in corpuscle reducing-

Beside each bed the new equipment is a radio receiving set. There can be thinnin' and thinnin' while listening to news items, jazz music and song. One can drink milk to the strains of "Drink to Me Only with Thine Eyes."

A round-robin letter recently came to the Earle C. Anthony station, making a number of requests from a milk-fed sanitarium near Glendale.

Among the popular requests were: "When Do We Eat?" "Pretty Soon," "I Wasted Love on You," "From One Till Two," "After the Storm," "Cuddle Up a Little Closer," "In My Old Home Town," "The One I Love Belongs to Somebody Else."

Paul Reese, program director of KFI, is still wondering if the juxtaposition of titles was accidental or not.

They say:

OUR NEWEST STORE

426 W. Eighth Street, Near Olive
is a Beautiful Store

We Know:

that it is a "different" store, and that it sells the best of all
Radio Instruments—Radiolas.
Won't you please call and see it?

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Our Free After-service is more than
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10% DISCOUNT TO ALL CITY EMPLOYEES

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MAIL THIS COUPON
For Price List or Parts and Free Advice

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Address.....

Hoover Asked to Test New Universal Language

Secretary of Commerce Hoover has been asked by Howison E. Hoover of Washington, D. C., to appoint a jury of representative experts, scientists, philologists, engineers and other savants to hear his exposition of a new radio language.

The writer says he has discovered, or invented, this universal tongue, which he claims is as old as time and space. He pointed out that it needs no dictionary nor encyclopedia, the words being built up on a logical basis as they are needed. They are readily deciphered by the same process by the one who receives them visually, audibly or electrically, he explains. There are only three basic verbs, and yet it has none of the narrow limitations of any of the national languages. "It is not an artificial language as Volapuk, Idom, Neutral, Esperanto, Ido or other attempts to solve the question," he adds. The suggested scheme is based upon an underlying principle of nature, viz., "the sounds of nature are a perfect cosmometric hieroglyph," and as such are a perfect container of all phenomena, the writer asserts; explaining that the newly discovered speech can be written and spoken by those who have knowledge and know how to use that knowledge scientifically and in accordance with logical principles, but the ignorant or the half intelligent cannot do so.

Commissioner Carson of the Bureau of Navigation, which includes the radio administrative section, has replied that when the use of the radio telephone becomes more general and communications more reliable, it is possible that the matter of an international language or code will be recommended for adoption. He points out that even today owners of high powered broadcasting stations which have been heard internationally might be interested in the proposal.

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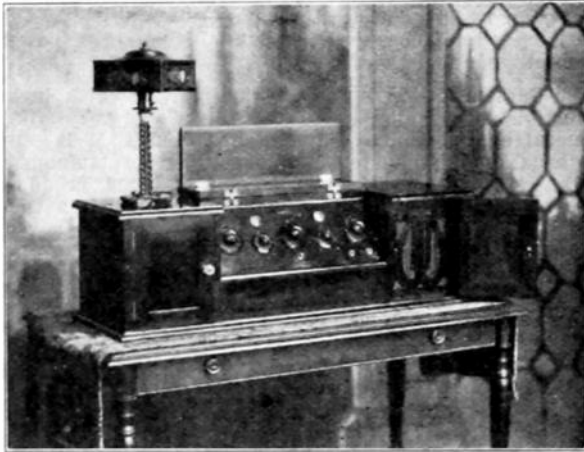
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are the Finest in the World

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De Luxe Model V—Price \$250.00 (Complete)

The Best Tone You Have
Ever Heard

But occasionally you want a thrill; therefore we built it so that
it simply leaps out and—

GETS DISTANCE

“It Fills a Gap”

Model “III” \$100.00 (Less equipment)

Come in and listen to the Neutroflex before you buy
WE HAVE PLENTY OF 301-A CUNNINGHAM TUBES

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C. D. TANNER CO.

528 W. Washington St.

Los Angeles
Calif.

The Battle for Free Music

The second phase of the battle of the air took place before the Senate Patent Committee on April 17th. Opponents to the Dill Bill, amending the copyright law so that broadcasters need not pay for music and compositions transmitted. Representatives of the Society of Authors, Composers and Publishers appeared.

Last week, during the opening skirmish, proponents of the bill, including representatives of the National Association of Broadcasters, testified in favor of Senator C. C. Dill's amendment to the United States Copyright Laws enacted in 1919, before the days of broadcasting. The amendment reads as follows:

"And provided further, That the copyright control shall not extend to public performances whether for profit or without profit, of musical compositions where such performance is made from printed or written sheets or by reproducing devices issued under the authority of the owner of the copyright, or by use of the radio or telephone or both."

Defending his bill, Senator Dill stated that many broadcasters, including newspapers, operating at great expense without financial return, had filed complaints against the heavy fees imposed upon the transmission of music to the public. Music publishers are actively prosecuting claims in connection with alleged copyright infringements, while in the only case passed upon, the issue was not clearly defined, he stated. He admitted that the amendment might have to differentiate between broadcasting solely for good will and for profit.

The hearing was one-sided, in that only proponents were heard on the first day. Those appearing, included E. F. McDonald, Jr., of Chicago, President of the National Association of Broadcasters; Paul B. Klugh, of New York, Chairman of the same association; Charles H. Tuttle, counsel of the Association; Frank Sheridan, of New York, an independent publisher; and Major J. W. Sherwood, U. S. A., of Walter Reed Hospital, Washington, D. C.

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K E N N E D Y

The Royalty  *of Radio*

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1140 Santa Monica Blvd.

WEST COAST RADIO CO.

Our Phone Is 42313

6-8 A. M.
PACIFIC TIME

RADIO TIME TABLE

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

STATION	WATTS	CITY	METERS	CALL	SUN.		MON.		TUES.		WED.		THUR.		FRI.		SAT.	
					6:00-6:30	6:30-7:00	7:00-7:30	7:30-8:00	6:00-6:30	6:30-7:00	7:00-7:30	7:30-8:00	6:00-6:30	6:30-7:00	7:00-7:30	7:30-8:00	6:00-6:30	6:30-7:00
Reynolds Radio	500	Denver	360	K L Z	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Free Press	500	Detroit	617	W C X	.	.	X	.	.	.	.	.	.	.	.	.	.	.
Detroit News	500	Detroit	617	W W J	.	.	.	X	.	.	.	.	.	.	.	.	.	.
Woodmen of W.	500	Omaha	528	WOAW	.	X	X	.	.	.	.	.	.	.	.	.	.	.

8-10 A. M. PACIFIC TIME

9-11 Mountain Time

10-12 Central Time

11-1 Eastern Time

STATION	WATTS	CITY	METERS	CALL	SUN.		MON.		TUES.		WED.		THUR.		FRI.		SAT.	
					8:00-8:30	8:30-9:00	9:00-9:30	9:30-10:00	8:00-8:30	8:30-9:00	9:00-9:30	9:30-10:00	8:00-8:30	8:30-9:00	9:00-9:30	9:30-10:00	8:00-8:30	8:30-9:00
Echophone Radio	100	Long Beach	234	K F O N	.	.	X	.	.	.	.	.	.	.	.	.	.	.
S. F. Examiner	150	San Francisco	360	K U O	.	X	.	.	.	X	X	.	.	X	X	.	.	X
Reynolds Radio	500	Denver	360	K L Z	.	.	.	X	X	.	X	.	.	X	X	.	.	X
Star-Telegram	500	Fort Worth	476	W B A P	.	X	X	.	.	X	X	.	.	X	X	.	.	X
News and Journal	500	Dallas	476	W F A A	.	.	.	X	X	.	X	.	.	X	X	.	.	X
Palmer School	500	Davenport	484	W O C	.	.	.	X	X	.	X	.	.	X	X	.	.	X
John Wansmaker	500	Philadelphia	609	W O O	.	.	.	X	.	X	.	.	.	X	.	.	.	X
Federal Tel.	500	Buffalo	319	W G R	X	.	X	.	.	X	.	.	.	X

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Make your set step out

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\$1.00

For Harkness and Reflex

SPECIALS

Rheostat 30 Ohm	\$.45	Phones	\$2.98
Detectors	.65	Horns	8.50
Sockets	.25	Coupler	.75
A. F. Transformers, 3-1	2.25	23 Plate Condensers	1.25
R-F Transformers	2.00	Two-Tube Portable Set	9.95

Plus 25c for Postage

Work Bench and Advice Free

D. C. PHIPPS

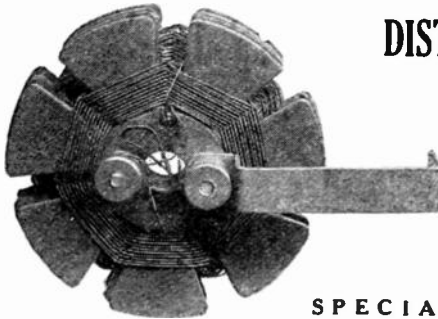
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WING RADIO PRODUCTS

Los Angeles, California

Phone TRinity 6434

726 S. Spring Street



10-12 A. M.
PACIFIC TIME

RADIO TIME TABLE

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

STATION	WATTS	CITY	METERS	CALL	SUN.		MON.		TUES.		WED.		THUR.		FRI.		SAT.	
					10 00-10 30	10 30-11 00	10 00-10 30	10 30-11 00	10 00-10 30	10 30-11 00	10 00-10 30	10 30-11 00	10 00-10 30	10 30-11 00	10 00-10 30	10 30-11 00	10 00-10 30	10 30-11 00
A. Times	500	Los Angeles	395	KH J	X	X	X	X										
Carl C. Anthony	500	Los Angeles	469	KFI	X	X	X	X										
Bible Institute	750	Los Angeles	360	KJS	X	X	X	X										
Angelus Temple	500	Los Angeles	278	KFSG	X	X	X	X										
Electric Co	50	San Diego	244	KDPT	X	X												
Tele Brothers	500	San Francisco	423	KPO		X	X											
Tribune	500	Oakland	509	KLX	X	X												
Waener Brothers	250	Oakland	360	KLS				X		X				X				X
World	5	Stockton	360	KJQ	X	X												
Wells & Co	100	Santa Barbara	360	KFHJ	X	X												
Jay Gresson	10	Tacoma	360	KFEJ			X	X		X	X					X	X	
Rhodes Co	100	Seattle	455	KDZE						X				X		X	X	
First Pres. Church	750	Seattle	360	KTW		X	X											X
Weller & Frank	50	Portland	360	KFEC														X
Reynolds Radio	500	Denver	360	KLZ						X				X				X
News and Journal	500	Dallas	476	WFAA			X	X		X				X			X	X
Palmer School	500	Davenport	484	WOC			X			X				X		X		X
Drogonian	500	Portland	492	KGW			X	X		X				X		X		X
Federal Tel. Co	500	Buffalo	319	WGR						X				X		X		X

Murdock Radio Head Phones "Standard Since 1914"

BRANSTON

Super-Heterodyne Kits

(New Type)

Including all frequency transformers, coupling units, with blue prints and drilling template.

With this kit you can build the last word in radio receivers.

Regular price, \$36.50

Special Price for a Few Days Only

GERMAIN'S RADIO HAS BEEN BUILT ON SERVICE

Whatever set you have we will gladly help you

Germain's Motto: TRUTH IN RADIO

GERMAIN'S

SIXTH AND MAIN + LOS ANGELES

12-2 P. M.
PACIFIC TIME

RADIO TIME TABLE

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

STATION	WATTS	CITY	METERS	CALL	SUN.		MON.		TUES.		WED.		THUR.		FRI.		SAT.		
					12 00-12 30	1 00-1 30	1 30-2 00	12 00-1 00	1 00-1 30	1 30-2 00	12 00-12 30	12 30-1 00	1 30-2 00	12 00-12 30	12 30-1 00	1 30-2 00	12 00-12 30	12 30-1 00	1 30-2 00
L. A. Times	500	Los Angeles	395	KH J	X	X				X	X								
Bible Institute	750	Los Angeles	360	KJ S	X	X				X	X								
Angelus Temple	500	Los Angeles	278	KF S G	X														
So. Electric Co.	50	San Diego	244	KDPT				X		X									X
Warner Bros	250	San Francisco	360	KLS	X	X		X	X	X			X	X					X
Hale Bros	500	San Francisco	423	KPO				X	X	X			X	X					X
General Elec	1000	Oakland	312	KGO				X	X	X			X	X					X
Herrold Lab'y	50	San Jose	360	KQ W				X	X				X	X					X
Guy Gresson	10	Tacoma	360	KFE J			X	X	X	X			X	X					X
Rhodes Co	100	Seattle	270	KDZE			X	X	X	X			X	X					X
Honolulu Star Bul	100	Honolulu	350	KDY X	X	X		X	X	X			X	X					X
Honolulu Adver	500	Honolulu	350	KGU				X	X				X	X					X
Reynolds Radio	500	Denver	360	KLZ				X		X			X	X					X
Pyles Nichols	10	Denver	360	KFZQ				X					X	X					X
News and Journal	500	Dallas	478	WFAA	X	X							X	X					X
Palmer School	500	Davenport	484	WOC				X	X				X	X					X
Star	500	Kansas City	411	WDAF				X	X	X			X	X					X
News	500	Detroit	517	W W J				X	X	X			X	X					X
Radio Corp. of Am	500	New York	465	W J Z			X	X	X	X			X	X					X
Herald	1000	Calgary	420	C F A C				X	X	X			X	X					X
Federal Tel. Co	500	Buffalo	319	WGR	X	X	X						X	X					X
Woodmen of W	500	Omaha	526	WOAW	X	X		X	X	X			X	X					X

When the Receiving Set is Finished



You will want your family and your friends to listen in with you. A good Loud Speaker is the only way possible.

The same engineers which built the other Audiophone models, including Senior and Junior, developed this Baby

TRADE MARK
AUDIOPHONE
REG. U. S. PAT. OFFICE

Model. It is different from the others, and costs less, but gives good results. The price, \$12.50, is not much more than many of the better grade headphones. This Baby Audiophone is ready to connect to your set—requires no auxiliary batteries to operate. It is substantial in construction and good looking in appearance. The base is finished in dull gold bronze with the fibre horn of same color to match. Write for Bulletin No. 3013-X.

THE BRISTOL COMPANY WATERBURY, CONNECTICUT

2-4 P. M.
PACIFIC TIME

RADIO TIME TABLE

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

STATION		WATTS	CITY	METERS	CALL	SUN.			MON.			TUES.			WED.			THUR.			FRI.			SAT.		
						2 00-2 30	2 30-3 00	3 00-3 30	2 00-2 30	2 30-3 00	3 00-3 30	2 00-2 30	2 30-3 00	3 00-3 30	2 00-2 30	2 30-3 00	3 00-3 30	2 00-2 30	2 30-3 00	3 00-3 30	2 00-2 30	2 30-3 00	3 00-3 30	2 00-2 30	2 30-3 00	3 00-3 30
L. A. Times	500	Los Angeles	395	KHJ	X	X																				
Angelus Temple	500	Los Angeles	278	KFSG	X	X	X																			
Electric Light Sup	100	Los Angeles	360	KNX																						
Echophone Radio	100	Long Beach	234	KFO N	X	X	X																			
So. Electrical	50	San Diego	241	KDPT				X																		
Hale Bros	500	San Francisco	423	KPO				X	X	X																
S. F. Examiner	150	San Francisco	360	KUD				X	X	X																
Tribune	500	Oakland	509	KLX					X																	
General Elec. Co	1000	"	312	KGO				X																		
R. H. Ho'n	50	San Luis Obispo	212	KFB E		X																				
Portable Wireless	100	Stockton	360	KWG	X	X																				
Kimball-Upson	100	Sacramento	283	KFB K				X	X													X	X			
First Pres. Church	750	Seattle	360	KTW		X	X																			
Post-Intelligencer	100	Seattle	270	KFJC				X		X	X											X	X	X	X	X
Rhodes Co	100	Seattle	270	DZE				X	X	X												X	X	X	X	X
Oregonian	500	Portland	492	KGW				X														X	X	X	X	X
Deseret News	500	Salt Lake City	360	KZN				X	X													X	X			
Reynolds Radio	500	Denver	360	KLZ				X	X													X	X			
Honolulu Adver.	500	Honolulu	360	KGU				X	X														X	X		
Star-Telegram	500	Fort Worth	476	WBAP		X	X																			
Palmer School	500	Oavenport	484	WOC				X														X				X
Daily News	500	Chicago	448	WMAQ				X			X															X
Star	500	Kansas City	411	WDAF				X			X											X	X			X
Free Press	500	Detroit	517	WCX	X	X		X	X													X	X	X	X	X
News	500	Detroit	517	WWJ	X	X		X	X													X	X	X	X	X
Drake Hotel	1000	Chicago	360	WDAP				X			X											X	X	X	X	X
Radio Cor. of Am.	500	New York	455	WJZ	X	X		X	X													X	X	X	X	X
Herald	1000	Calgary	420	CFA C				X	X													X	X	X	X	X
Federal Tel. Co.	500	Buffalo	119	WGR				X														X	X	X	X	X
Westinghouse	1000	Pittsburg	326	KDKA		X																X	X	X	X	X
Westinghouse	1000	Spartanfield	337	WR 7		X																X	X	X	X	X

Owing to "daylight saving" time now in force in the East, all stations in East should show one hour earlier.

Murdock Radio Head Phones "Standard Since 1914"

Bring your radio troubles to us

Our technical service bureau is at the disposal of the trade and public for constructing, testing and repairing any kind of receiving set at very reasonable prices. We are glad to give expert advice on any matters pertaining to Radio. Old sets reconstructed and modernized.

We specialize on the Neutrodyne and Harkness circuits.

Radio Installation for apartment houses, hospitals, clubs etc.—1 to 200 horns from one receiver.

B. KRUGER & COMPANY

RADIO ENGINEERS

Construction, Design, Installation

Phone TRinity 8180

318 Stimson Bldg.

Los Angeles, Third and Spring Streets

Build Your Own With a
Raven Super-Hetrodyne
UNASSEMBLED SET

This set comes complete, ready for wiring, with diagram of connections

List \$150.00

Don't forget that we also have in stock:

Crosley Sets

(Various types)

ACE Batteries

(All sizes)

Trimm Head Phones

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Branston Super-Heterodyne Kits

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WHOLESALE ONLY



THE WORLD'S
FAMOUS
LOUD SPEAKER

AMPLION

Mfd. by Alfred Graham Sons of London
Dist. in U. S. by Signal Electric Mfg. Co.

DEALERS—A limited quantity of this famous speaker arrived last week from England and are now ready for distribution. Get yours now from your jobber.

GLOBE COMMERCIAL CO.
LOS ANGELES AND SAN FRANCISCO

Radio!

22 Years
in the
Electrical
Business



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RADIO

Sets and Parts

A special sale on good standard equipment that we will offer to thrifty buyers:

\$25 Crystal Sets \$15
\$45 Tube Sets \$25

Several Kennedy Sets at

Half Price

Cardwell Condensers
.001, \$6; .0005, \$5
.00025, \$4.25

Full Line of Neutrodyne and
Super-Heterodyne Parts

Radiolas—Kennedy Sets
Neutrodynes

demonstrated and sold with a
guarantee of satisfaction

6-8 P. M.
PACIFIC TIME

RADIO TIME TABLE

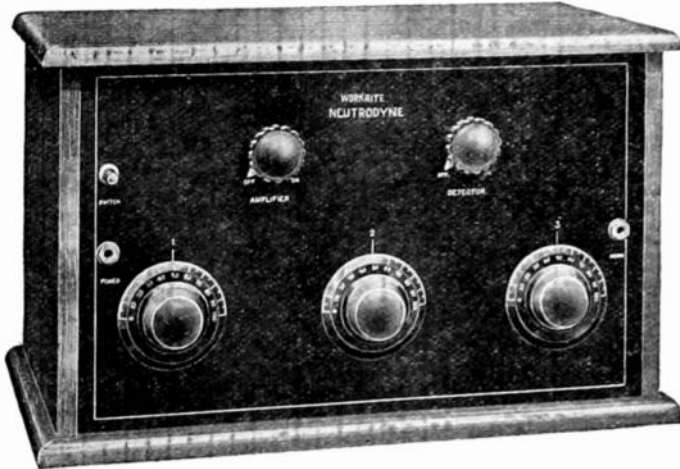
7- 9 Mountain Time
8-10 Central Time
9-11 Eastern Time

STATION	WATTS	CITY	METERS	CALL	SUN.		MON.		TUES.		WED.		THUR.		FRI.		SAT.		
					6 00-6 30	6 30-7 30	7 00-7 30	7 30-8 00	6 00-6 30	6 30-7 00	7 00-7 30	7 30-8 00	6 00-6 30	6 30-7 00	7 00-7 30	7 30-8 00	6 00-6 30	6 30-7 00	7 00-7 30	7 30-8 00	6 00-6 30	6 30-7 00	7 00-7 30	7 30-8 00
Bible Institute	750	Los Angeles	360	K J S	X	X													
L. A. Times	500	Los Angeles	395	K H J		X	X		X	X	X	X	X	X	X	X	X	X	
E. C. Anthony	500	Los Angeles	469	K F I		X	X				X	X	X	X	X	X	X	X	
Angelus Temple	500	Los Angeles	278	K F S G							X	X	X	X	X	X	X	X	
Electric Light Sup.	100	Los Angeles	360	K N X							X	X	X	X	X	X	X	X	
Echaphone Radio	100	Long Beach	234	K F O N			X	X	X	X	X	X	X	X	X	X	X	X	
Hale Brothers	500	San Francisco	423	K P O					X	X	X	X	X	X	X	X	X	X	
S. F. Examiner	150	San Francisco	360	K U O			X	X	X	X	X	X	X	X	X	X	X	X	
Maxwell Electric	50	Berkeley	278	K R E							X	X	X	X	X	X	X	X	
Tribune	500	Oakland	509	K L X			X	X	X	X	X	X	X	X	X	X	X	X	
General Electric	1000	Oakland	312	K G O					X	X	X	X	X	X	X	X	X	X	
Kimball & Upson	100	Sacramento	283	K F B K			X	X	X	X	X	X	X	X	X	X	X	X	
Fallan & Co	100	Santa Barbara	360	K F H J			X	X	X	X	X	X	X	X	X	X	X	X	
Radio Den	10	Santa Ana	258	K F A W			X	X	X	X	X	X	X	X	X	X	X	X	
Southern Elect	50	San Diego	244	K D P T			X	X	X	X	X	X	X	X	X	X	X	X	
Neilson Radio Sup.	10	Phoenix	238	K F C B		X		X	X	X	X	X	X	X	X	X	X	X	
McArthur Bros	100	Phoenix	360	K F A D			X	X	X	X	X	X	X	X	X	X	X	X	
Love Elect. Co	10	Tacoma	360	K M O			X	X	X	X	X	X	X	X	X	X	X	X	
Mullens Elect. Co	50	Tacoma	252	K G B				X	X	X	X	X	X	X	X	X	X	X	
N. W. Radio Ser	50	Seattle	233	K J R			X	X	X	X	X	X	X	X	X	X	X	X	
Excel. Motor Cy.	100	Seattle	360	K H Q				X	X	X	X	X	X	X	X	X	X	X	
First Pres. Church	750	Seattle	360	K T W		X	X	X	X	X	X	X	X	X	X	X	X	X	
Star Electric	50	Seattle	233	K F H h			X	X	X	X	X	X	X	X	X	X	X	X	
Oregonian	500	Portland	492	K G W	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Hallock & Watson	50	Portland	360	K G G		X	X	X	X	X	X	X	X	X	X	X	X	X	
Meier & Frank	50	Portland	248	K F E C			X	X	X	X	X	X	X	X	X	X	X	X	
Apple Cy. Rad. Clb	10	Hood River	360	K O P			X	X	X	X	X	X	X	X	X	X	X	X	
Adler's Music Store	5	Baker, Ore	360	K F D A	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Boise High School	150	Boise, Ida	270	K F A U			X	X	X	X	X	X	X	X	X	X	X	X	
Bunkerhill-Sul.Co	10	Kellogg, Ida	360	K F E Y		X		X	X	X	X	X	X	X	X	X	X	X	
Telegram	100	Salt Lake	360	K D Y L			X	X	X	X	X	X	X	X	X	X	X	X	
Reynold's Radio	500	Denver	360	K L Z			X	X	X	X	X	X	X	X	X	X	X	X	
Western Radio	50	Denver	390	K F A F			X	X	X	X	X	X	X	X	X	X	X	X	
Pyle & Nichols	10	Denver	360	K Z D Q		X	X												
Fitzsimmons Hospital		Denver	542	A A 3															
Sparks Hi School	10	Sparks, Nev.	226	K F F R															
Westinghouse El	1000	Hastings, Neb.	341	K F K X				X						X					
Star-Telegram	500	Fort Worth	476	W B A P			X	X	X	X	X	X	X	X	X	X	X	X	
News and Journal	500	Dallas	476	W F A A		X	X	X	X	X	X	X	X	X	X	X	X	X	
Palmer School	500	Davenport	484	W O C		X	X	X	X	X	X	X	X	X	X	X	X	X	
W. O. W.	500	Omaha	526	W O A W		X	X	X	X	X	X	X	X	X	X	X	X	X	
Daily News	500	Chicago	448	W M A Q		X	X	X	X	X	X	X	X	X	X	X	X	X	
Post Dispatch	500	St. Louis	546	K S D		X	X	X	X	X	X	X	X	X	X	X	X	X	
Westinghouse	1000	Chicago	536	K Y W		X	X	X	X	X	X	X	X	X	X	X	X	X	
Sweeney School	500	Kansas City	411	W H B			X	X	X	X	X	X	X	X	X	X	X	X	
Star	500	Kansas City	411	W D A F			X	X	X	X	X	X	X	X	X	X	X	X	
Drake Hotel	1000	Chicago	390	W D A P	X	X													
Crosley Mfg. Co.	500	Cincinnati	309	W L W			X	X	X	X	X	X	X	X	X	X	X	X	
Albertan Pub. Co.	250	Calgary, Can	410	C H B C										X					
Detroit Free Press	500	Detroit	517	W C X					X	X	X	X	X	X	X	X	X	X	
Radio Cor. of Am.	500	New York	453	W J Z	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
John Wanamaker	500	Philadelphia	509	W O O			X	X	X	X	X	X	X	X	X	X	X	X	
Federal Tel. Co.	500	Buffalo	318	W G R						X	X	X	X	X	X	X	X	X	
El Buen Tono	500	Mexico City	425	C Y B			X	X	X	X	X	X	X	X	X	X	X	X	
El Universal	500	Mexico City	500	C Y L					X						X				
Willard Battery	1000	Cleveland	390	W T A M						X	X	X	X	X	X	X	X	X	

Murdock Radio Head Phones "Standard Since 1914"

WORKRITE NEUTRODYNE

(Licensed under Hazeltine Patents No. 1450089)



WorkRite Neutrodyne Model 201A—\$175.00, Complete
And we mean Complete

Pittsburg on Loud Speaker

Through Local Broadcast

C. R. Neeley, at Covina, writes us he receives Pittsburg KDKA and Ft. Worth WBAP on loud speaker through local broadcast.

Phone Us for Demonstration

Patterson Electric Company

239 South Los Angeles Street

Telephones: VAndike 8139, MAin 5884 Los Angeles, Calif.

8-10 P. M.
PACIFIC TIME

RADIO TIME TABLE

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

STATION	WATTS	CITY	METERS	CALL	SUN.		MON.		TUES.		WED.		THUR.		FRI.		SAT.	
					8-10	10-12	8-10	10-12	8-10	10-12	8-10	10-12	8-10	10-12	8-10	10-12	8-10	10-12
L. A. Herald	500	Los Angeles	469	Herald			X	X			X	X			X	X		
Bible Institute	750	Los Angeles	360	K J S	X	X			X	X	X	X	X	X	X	X	X	X
L. A. Times	500	Los Angeles	395	K H J	X	X			X	X	X	X	X	X	X	X	X	X
L. A. Examiner	500	Los Angeles	469	Exam'n'r	X	X			X	X	X	X	X	X	X	X	X	X
E. C. Anthony	500	Los Angeles	469	K F I	X	X			X	X	X	X	X	X	X	X	X	X
Angelus Temple	500	Los Angeles	278	K F S G	X	X			X	X	X	X	X	X	X	X	X	X
Electric Light Sup	100	Los Angeles	260	K N X			X	X	X	X	X	X	X	X	X	X	X	X
Echophone Radio	100	Long Beach	234	K F O N			X	X	X	X	X	X	X	X	X	X	X	X
Hale Bros	500	San Francisco	423	K P O	X	X	X	X	X	X	X	X	X	X	X	X	X	X
S. F. Examiner	150	San Francisco	360	K U O						X	X							
Warner Bros	250	San Francisco	360	K L S						X	X							
Oakland Tribune	500	Oakland	609	K L X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Maxwell Electric	50	Oakland	275	K R E			X	X	X	X	X	X	X	X	X	X	X	X
General Elec. Co	1000	Oakland	312	K G O			X	X	X	X	X	X	X	X	X	X	X	X
T. Selfert	100	Bakersfield	360	K D Z B					X	X			X	X			X	X
Portable Wireless	100	Stockton	360	K W G			X	X							X	X		
Herrold Lab'y.	50	San Jose	360	K Q W						X	X							
Kimball-Upson	100	Sacramento	283	K F B K						X	X							
Gould	500	Stockton	360	K J Q			X	X					X	X				
Fallon & Co	100	Santa Barbara	360	K F H J							X	X						
Southern Elec. Co	50	San Diego	244	K D P T			X	X	X								X	X
R. H. Horn	50	San Luis Obispo	242	K F B E	X	X					X	X					X	X
Drake Radio	5	Santa Rosa	234	K F N V											X	X	X	X
Univ. of Ariz	150	Tucson	360	K F D H					X				X					
Nielson Rad. Sup	10	Phoenix	238	K F C B										X	X	X		
Post-Intelligencer	100	Seattle	270	K F J C			X	X	X	X	X	X	X	X	X	X	X	X
Excelsior Motor	100	Seattle	360	K H Q			X	X	X	X	X	X	X	X	X	X	X	X
Rhodes Co	500	Seattle	455	K F O A			X	X	X	X	X	X	X	X	X	X	X	X
First Pres. Church	750	Seattle	380	K T W	X	X												
Star Electric	50	Seattle	283	K F H R					X	X							X	X
Mullens Elec.	50	Tacoma	262	K G B			X	X	X	X	X	X	X	X	X	X	X	X
State Col. of Wash	500	Pullman	330	K P A E			X	X	X	X	X	X	X	X	X	X	X	X
Oregonian	500	Portland	432	K G W			X	X	X	X	X	X	X	X	X	X	X	X
Hallock & Watson	50	Portland	210	K G G						X	X	X	X	X	X	X	X	X
Stubbs Elect	100	Portland	310	K Q N										X	X			
Meier & Frank	50	Portland	248	K F E C										X	X			
Apple Cy Rad. Cl	10	Hood River	360	K Q P							X	X						
Boise High School	150	Boise, Ida	270	K F A U			X	X	X	X	X	X	X	X	X	X	X	X
Virgin Radio Ser	50	Medford, Ore	283	K F A Y					X	X	X	X	X	X	X	X	X	X
Bunkerhill-Sul. Co.	10	Kellogg, Ida.	360	K F E Y			X		X	X	X	X	X	X	X	X	X	X
Reynolds Radio	500	Denver	360	K L Z	X	X			X	X							X	X
Pyle & Nichols	10	Denver	360	K D Z O					X	X				X	X	X		
Westinghouse El.	1000	Hastings, Neb.	341	K F K X			X	X	X	X				X	X	X		
Star Telegram	500	Fort Worth	475	W B A P	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dallas News	500	Dallas, Tex.	478	W F A A	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Palmer School	500	Davenport	484	W O C			X	X									X	X
Post Dispatch	500	St Louis	548	K S D					X	X	X	X	X	X	X	X	X	X
Star	500	Kansas City	411	W D A F	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Woodmen of W	500	Omaha	628	W O A W			X		X	X	X	X	X	X	X	X	X	X
Westinghouse	1000	Chicago	538	K Y W					X	X	X	X	X	X	X	X	X	X
Drake Hotel	1000	Chicago	360	W D A P					X	X	X	X	X	X	X	X	X	X
Crosley Mfg. Co.	500	Cincinnati	309	W L W					X	X	X	X	X	X	X	X	X	X
Detroit News	500	Detroit	517	W W J					X	X	X	X	X	X	X	X	X	X
Radio Cor. of Am.	500	New York	465	W J Z			X		X				X				X	
Herald	1000	Calgary	420	C F A C	X	X			X	X			X	X				
Federal Tel. Co.	500	Buffalo	319	W G R					X	X								
El Universal	500	Mexico City	500	C Y L					X	X					X	X		
El Buen Tone	500	Mexico City	428	C Y B									X	X				
Sweeney School	500	Kansas City	411	W H B			X	X										
Edgewater Beach	1000	Chicago	370	W G N					X	X	X	X	X	X	X	X	X	X
Westinghouse	1000	Springfield	337	W B Z					X	X	X	X	X	X	X	X	X	X
Westinghouse	1000	Portland	378	K D K A					X	X	X	X	X	X	X	X	X	X

Owing to "daylight saving" time now in force in the East, all stations in East should show one hour earlier.

Radio Supplies

Most Complete Line on the Coast

Monodyne Tube Set, complete.....	\$27.50
Sterling Voltmeter.....	2.75
Filko-stat.....	2.00
Accuratune Dials.....	3.75
Erla Reflex Transformers.....	5.00
WD-11, WD-12 Tubes, large stock.....	5.00
UV-199 and C-299, 201-A, 301-A Tubes.....	5.00
Diodide Detector Tube with Socket.....	2.50
Apex Tubes.....	4.00
All American Transformers.....	\$4.50 and 4.75
Bristol Loud Speaker.....	12.50
Dictagrand Loud Speaker.....	24.50
Adapters and Sockets for UV-199 Tubes.....	60c up
Connecticut Sodian Tube.....	6.50
Homecharger Gold Seal.....	18.50
No. 4500 Cotocoil Transformer.....	2.50
Harkness Coil—Silk Wound.....	pair 3.00
Sodium Tubes, ¼ amps, Detector Tubes, 1 ½, 3, 4, 6.....	4.50
Sodium Tubes, ¼ amps. Amplifier Tube.....	4.50
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					L. A. Times	500	Los Angeles	395	K H J					X	X	X	X	X	X	X
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Echophone Radio	100	Long Beach	234	K F O N							X	X								
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Oregonian	500	Portland	492	K G W					X	X										
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Drake Hotel	1000	Chicago	360	W D A P					X	X	X	X	X	X	X	X	X	X		
Edgewater Beach	1000	Chicago	370	W G V					X	X	X	X	X	X	X	X	X	X		
Fallon & Co	100	Santa Barbara	350	K F H J							X	X	X				X	X		
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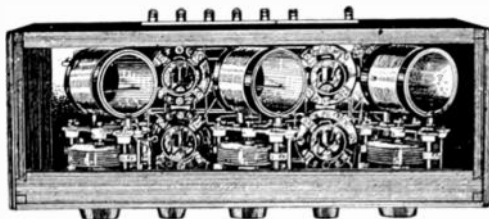
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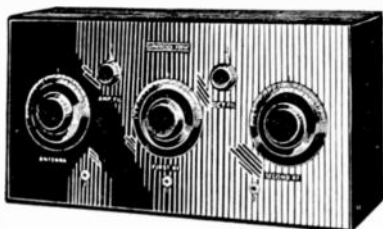
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WEEK COMMENCING MAY 11, 1924

SUNDAY, MAY 11—

10:00 a. m.
10:30 to 12:30 p. m.

Sermon from KHJ studio by Rev. William Isett, pastor of Amanda Chapel, Carthay Center.
Organ recital and entire religious service from the First Methodist Episcopal Church, Arthur Blakeley, organist, and Rev. Elmer E. Helms, pastor.
Organ recital from the First Methodist Episcopal Church, Program through the courtesy of the Wiley B. Allen Company.
Harry Kairow, baritone.

MONDAY, MAY 12—

12:30 to 1:15 p. m.
8:00 to 10:00 p. m.

Program presenting "Uncle Remus," E. M. Bonnell, courtesy of Barnes Music Co. "The Rendezvous" Orchestra from Ocean Park. Sol Cohen Manuscript Night.

TUESDAY, MAY 13—

12:30 to 1:15 p. m.
2:30 to 3:30 p. m.
7:00 to 7:30 p. m.

Program presenting White's Californians, Steve White, leader. Matinee musicale through the courtesy of Barker Brothers. Children's program presenting The Sandman and Queen Titania. Margaret Lawrence, singer, 10 years of age; Margaret Binford, pianist, 10 years of age, pupil of Grace Dixon; Pauline Bolt, reader, 11 years of age.; Bed-time story by "Uncle John."
Program arranged by Floryane Thompson, soprano.

WEDNESDAY, MAY 14—

12:30 to 1:15 p. m.
2:30 to 3:30 p. m.
7:00 to 7:30 p. m.

Program presenting "The Highlanders," Edmund D. Nixon, baritone; Fred C. McNabb, of Aggeler & Musser Seed Company. Matinee musicale through the courtesy of Barker Brothers. Children's program presenting Margaret and Eleanor Millinger, child harpists. Mary B. DeWitt, story teller. Dick Winslow, juvenile reporter. Catherine Craig, reader, 15 years of age. Elizabeth Carroll Swan, soprano.
Program arranged by Leslie Brigham, bass.
Program presenting the Studebaker Radio Orchestra, through the courtesy of Glenn Thomas Company of Long Beach. Dr. Mars Baumgardt, lecturer.

THURSDAY, MAY 15—

12:30 to 1:15 p. m.
2:30 to 3:30 p. m.
6:45 to 7:00 p. m.
7:00 to 7:30 p. m.

Program presenting Floryane Thompson, soprano, and Claire Forbes Crane, concert pianist.
Matinee musicale through the courtesy of Barker Brothers.
Prof. Walter Sylvester Hertzog will tell stories of American history. Children's program presenting Wood's School of Klever Kiddies of Glendale. Dickie Brandon, screen juvenile. Bed-time stories by "Uncle John."
Program through the courtesy of the Fitzgerald Music Company.

FRIDAY, MAY 16—

12:30 to 1:15 p. m.
2:30 to 3:30 p. m.
6:45 to 7:00 p. m.
7:00 to 7:30 p. m.
8:00 to 10:00 p. m.

Program of music. News items. Weather report.
Matinee program.
Prof. Walter Sylvester Hertzog will tell stories of American history. Children's program presenting Richard Headrick, screen juvenile. Norwegian program through the courtesy of Mr. Belland.

SATURDAY, MAY 17—

12:30 to 1:15 p. m.
2:30 to 3:00 p. m.
6:45 to 7:00 p. m.
7:00 to 7:30 p. m.

Program presenting Neal Wood, slide whistle, and Charles Bradshaw, banjo.
Matinee musicale.
Prof. Walter Sylvester Hertzog will tell stories of American history. Children program presenting Audrey Wood, 8 years of age, and Helen Kalionzes, 12 years of age, pianists, pupils of Dorothy Caselman. A. T. Babienco, whistler. Onolee Jones, 11 years of age, 'cellist. Homer Aschmann, 3 years of age, reader.
Program through the courtesy of "Bonnie" Helen Mackintosh, Scottish prima donna.

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	8:00 to 9:00 p. m. Monday, Wednesday, Friday
Los Angeles Examiner	5:15 to 5:45 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

SUNDAY, MAY 11—

10:00 to 10:45 a. m.	L. A. Church Federation Service.
4:00 to 5:00 p. m.	Vesper service. Concert by Sol Cohen.
6:45 to 7:30 p. m.	String quartet and vocal quartet.
8:00 to 9:00 p. m.	Ambassador Hotel concert.
9:00 to 10:00 p. m.	Examiner Concert.
10:00 to 11:00 p. m.	Packard Six Orchestra.

MONDAY, MAY 12—

5:15 to 5:45 p. m.	Examiner News Bulletins.
9:00 to 10:00 p. m.	Examiner concert.
10:00 to 11:00 p. m.	Ambassador-Max Fisher's Coconut Grove Orchestra.

TUESDAY, MAY 13—

5:15 to 5:45 p. m.	Examiner News Bulletins.
6:45 to 7:30 p. m.	Vocal concert.
8:00 to 9:00 p. m.	Ambassador-Max Fisher's Coconut Grove Orchestra.
9:00 to 10:00 p. m.	Examiner concert.
10:00 to 11:00 p. m.	Don Meany night.

WEDNESDAY, MAY 14—

5:15 to 5:45 p. m.	Examiner News Bulletins.
6:45 to 7:30 p. m.	Nick Harris Detective Stories and concert.
9:00 to 10:00 p. m.	Examiner concert.
10:00 to 11:00 p. m.	Hollywoodland Community Orchestra.
11:00 to 12:00 p. m.	Ambassador-Max Fisher's Coconut Grove Orchestra.

THURSDAY, MAY 15—

5:15 to 5:45 p. m.	Examiner News Bulletins.
6:45 to 7:30 p. m.	Y. M. C. A. concert.
8:00 to 9:00 p. m.	Ambassador Hotel concert.
9:00 to 10:00 p. m.	Examiner concert.
10:00 to 11:00 p. m.	Concert arranged by Harry Porter, baritone.

FRIDAY, MAY 16—

5:15 to 5:45 p. m.	Examiner News Bulletins.
6:45 to 7:30 p. m.	Glenda Boston and her Seal Beach Orchestra.
9:00 to 10:00 p. m.	Examiner concert.
10:00 to 11:00 p. m.	Maud Reeves Barnard and pupils.
11:00 to 12:00 p. m.	Ambassador-Max Fisher's Coconut Grove Orchestra.

SATURDAY, MAY 17—

5:15 to 5:45 p. m.	Examiner News Bulletins.
6:45 to 7:30 p. m.	Vocal concert.
8:00 to 9:00 p. m.	Celeste Rhyas, arranging program.
9:00 to 10:00 p. m.	Examiner concert.
10:00 to 11:00 p. m.	Popular concert.
11:00 to 12:00 p. m.	Ambassador-Max Fisher's Coconut Grove Orchestra.

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- MONDAY, MAY 12—**
8:00 to 9:00 p. m. Evening Herald Radiolians popular dance music. Henri Jouanneau, baritone.
- WEDNESDAY, MAY 14—**
8:00 to 9:00 p. m. Hazel Hoffmann, soprano. Patsy Gordon, female baritone. Daisy Ribble, pianist. John T. Brown, wizard of the harmonica. A. E. Schiferman, Radio talk.
- FRIDAY, MAY 16—**
8:00 to 9:00 p. m. Program courtesy Marion Warde and Company.

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- SUNDAY, MAY 11—**
10:45 to 12:30 noon Regular services of the Church of the Open Door, including sermon by Rev. John A. Hubbard. Mr. C. M. Books, baritone; Mr. Paul S. McConnell, organist.
6:00 to 6:30 p. m. Radio Vesper Service with sermon by Rev. R. P. "Bob" Shuler, pastor of Trinity Methodist Church, Los Angeles. Miss Paulene Plummer, organist. Vocal selections.
8:00 p. m. Sermon by Miss Christabel Pankhurst. Mrs. Irvin S. Fallis, soprano; Mr. Paul S. McConnell, organist.
- TUESDAY, MAY 13—**
8:00 to 9:00 p. m. Program arranged by courtesy of Dr. G. G. Bunnell, assisted by Madeline Royole, pianist; Victoria Percival, flutist; Virginia Kendrick, readings; Eddie Abdo, tenor; Della Mae Bunnell and Madeline Royole, accompanists.
- THURSDAY, MAY 15—**
8:00 to 9:00 p. m. Mrs. C. E. Anderburg, organist. Selections by Girls' Glee Club, California Bible College, Herbert C. Richert, director and bass soloist.

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SUNDAY, MAY 11—

- 10:30 to 12:30 p. m. Great organ and chimes, Esther Fricke Green; Inez Lesley, soprano. "Cast Out the Bondswoman," Aimee Semple McPherson.
 2:30 to 4:30 p. m. Choir; Temple Silver Band; Mr. and Mrs. Harry Hull, vocal duet; Frank E. Brown, tenor; "Doubters vs. Shouters," message by Aimee Semple McPherson.
 7:00 to 7:30 p. m. James R. Hood, baritone; Annie Lacey, child soprano; Temple Silver Band; Choir; Ada Lantz, soprano; Male Quartet.
 8:00 to 9:00 p. m. Address by "City Mother," Mrs. Alethia Gilbert; Evangelistic Message "Drilling for a 'Gusher'" (illustrated).

TUESDAY, MAY 13—

- 3:30 to 4:00 p. m. Organ recital, Esther Fricke Green.
 4:00 to 5:30 p. m. Abraska Orlikoff, concert violinist; Dorothy Sauter, cellist; John Walker, tenor; Mrs. Eva Jennison, evangelistic singer; Roy Reid Brignall, accompanist.
 6:30 to 7:30 p. m. "Kozy Hour," Mr. Frank E. Brown, tenor; Mr. and Mrs. A. T. Heard, trombone and cornet duets; "Pilgrims Progress," Daphne Goss; Inez Lesley, soprano; Miss Doris Jones, piano teacher, will present her juvenile pupils in a recital. "Mothers Fireside Story." Roy Reid Brignall, accompanist.
 8:00 to 9:00 p. m. Auditorium service and message.
 9:00 to 10:00 p. m. Swanee Jubilee Singers in "Plantation Melodies"; Margaret Knox McCraw, contralto.
 10:00 to 10:30 p. m. Organ recital, Roy Reid Brignall.

WEDNESDAY, MAY 14—

- 2:30 to 4:30 p. m. Auditorium service, message by Aimee Semple McPherson.
 6:30 to 7:30 p. m. "Kozy Hour." Mr. W. G. Axworthy, cellist; Mr. A. J. W. Galbraith, basso; Francis Floto, bird whistler; Annie Lacey, child soprano. "Mothers Good Night Story." Ruth Thomas, accompanist.

THURSDAY, MAY 15—

- 3:30 to 4:30 p. m. Organ recital and program, courtesy B. Earnest Ballard, assisted by Margaret Kennedy, soprano.
 4:30 to 5:30 p. m. Sarah Karcher, violinist; Mrs. R. W. Klages, soprano; Ada Lantz, Swedish soprano; Mrs. W. C. Corning, soprano. Roy Reid Brignall, accompanist.
 6:30 to 7:30 p. m. "Kozy Hour." Ruth Clayton, "The Children's Friend," in story and song; S. T. Lashbrook, tenor; Blanche Clay, soprano; Dwight Sankey Tock, baritone; "Boys and Girls of Long Ago," a bedtime story by "Mother."
 8:00 to 9:00 p. m. "Splashing Waters," baptismal service.
 9:00 to 10:00 p. m. Gray Studio program furnished by Edison Rice, tenor; Charles Sutton, baritone, and Merrell La Fontaine, pianist; Temple Male Quartet; Choir. "Evening Meditation."

FRIDAY, MAY 16—

- 3:30 to 4:00 p. m. Organ recital, Roy Reid Brignall.
 4:00 to 5:30 p. m. Madeleine Gilliland, "The Happy Song Girl"; Ruth Russell in Spanish Songs; Jennie M. Durkee, ukulele and guitar solos; Mildred Wetkavska, violinist; Bessie Lincoln, piano solos.
 6:30 to 7:30 p. m. "Kozy Hour." Program by courtesy of Harry James Beardsley (Cousin Jim) and associates; Eugene Lamb, pianist, and Edward Jacobson, violinist. "Pilgrims Progress," Daphne Goss. "Mothers Story."
 8:00 to 9:00 p. m. Crusaders Chorus; series of addresses by Judge Carlos S. Hardy, Justice Superior Court; Madeleine Gilliland, "Happy Seng Girl." Evangelistic address, Aimee Semple McPherson.
 9:00 to 10:00 p. m. Gray Studio program, courtesy Maude Reeves Barnard; Temple Silver Band. "Taps."

SATURDAY, MAY 17—

- 3:30 to 5:00 p. m. Grace Waldron, soprano; Ruth Clayton, reading; Maude Gile, child pianist, age 13; Gertrude Wilding, child soprano; Dorothy Bell, Hawaiian guitar; Paul De Ronde, age 14, xylophone soloist; Roy Reid Brignall accompanist.
 5:00 to 5:30 p. m. Organ recital, Roy Reid Brignall.
 6:30 to 7:30 p. m. "Kozy Hour." Program furnished by members of Children's Church. James R. Hood, baritone; Ada Lantz, soprano; International Sunday School Lesson preview by "Mother."

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WEDNESDAY, May 14—7:00 p. m.

THURSDAY, May 15—2:50 to 3:30 p. m.

FRIDAY, May 16—9:10 p. m.

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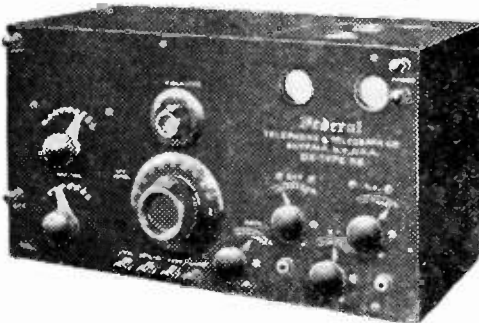
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3:00 to 5:00 Daily (except Sunday and Monday) Baseball scores, all leagues.

PROGRAM FOR WEEK BEGINNING SUNDAY, MAY 11

7:00 to 7:30 P. M. Daily, Except Sunday—News Items, U. S. Weather Reports, Market and Financial News.

SUNDAY, MAY 11—

8:30 to 9:30 p. m. California Conferenue Epworth League Anniversary Day Program. Greetings by W. W. Sandholt, president California Conference Epworth League. Violin solo by Armine Martin, selected. Talk by Jas. McGiffin, field secretary, California Conference Epworth League, "Youth in Action." Soprano solos by Miss Hildegard Waasa, (a) My Own United States; (b) So May You. Prayer by Jess Berger, past president, California Conference Epworth League. Scripture reading by Miss Bess London. Tenor solos by Marshall Batchelder, (a) Mother o' Mine; (b) Selected. Talk by Dr. Tully C. Knoles. Talk by Rev. John Snape, pastor of the First Baptist Church of Oakland; sacred songs.

9:30 to 10:00 p. m.

MONDAY, MAY 12—

8:00 to 9:00 p. m. Educational program broadcast from Stephen's Union Hall, University of California at Berkeley, over private leased wires through KLX.

9:00 to 10:00 p. m. Studio program by the Rogers Orchestra.

WEDNESDAY, MAY 14—

8:00 to 10:00 p. m. Studio program: Vocal solos by Lillian Klein, dramatic soprano, (a) Down (Curran); (b) Hayfields and Butterflies (Del Reigo). Piano solos by Nadine Shepherd, group one. Vocal solos by Lillian Klein, (a) Mio Bibbino Caro (Schicchi); (b) Good Morning, Brother Sunshine (Lehmann); (c) Because I Love (Eleanor Davis). Piano solos by Nadine Shepherd, group two. Vocal duet by Dorothy Burke and Adele Leahy, "Topsy and Eva," with solos. Numbers by the McKenzie Glee Club, (a) March by the Men of Harlech; (b) Minstrel Boy; Bernadette Frechette, solisit. Duet by Anne Healy and Ethel Loker, Nightingale's Song (Zeller). Overture by the American Theater Orchestra, Owen Sweeten director.

10:00 to 10:30 p. m.

Organ recital by Clement Barket, playing on the American Theater organ, broadcast through KLX over private leased wires.

FRIDAY, MAY 16—

8:00 to 10:00 p. m. Studio program presented by the Oakland Real Estate Board: The Oakland Real Estate Board Glee Club, (a) Hail, California! (b) The West, a Nest and You. The KLX Concert Trio, group one. Vocal solos by Mme. Dorothy Raegen Talbot, selected. Talk by Willard White, president of the Oakland Real Estate Board, "What is a Realtor." The Oakland Real Estate Board Glee Club, group of boost songs: (a) In This Good Old Town of Mine; (b) We're Going Back to Washington; (c) If I Had a Rooster. Vocal solos by Mme. Dorothy Raegen Talbot, Claire Darrimon, accompanying, group two. The KLX Concert Trio, group two. Talk by Bert R. Schroder, president of the Oakland Real Estate Glee Club, "Functions of the Glee Club." Numbers by quartet from the Glee Club, composed of Guy L. Brown, Edward F. Jones, Ralph E. Wastell and Bert R. Schrader, (a) Little Gray Home in the West; (b) Golden Gate; solo by Ralph E. Wastell, with club chorus. Vocal solos by Mme. Talbot, Claire Darrimon at the piano, group three.

(At 8:45 p. m., during the program by the Oakland Real Estate Board Glee Club, KLX will broadcast the overture by the American Theater Orchestra, Owen Sweeten, director, and at 10:10 p. m. numbers on the American Theater organ by Clement Barker, organist, over private leased wires.)

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GENERAL ELECTRIC COMPANY (312 Meters), OAKLAND, CALIFORNIA
(Pacific Time)

WEEK OF MAY 11, 1924

<p>SUNDAY, MAY 11— 3:30 p. m.</p> <p>MONDAY, MAY 12— 1:30 p. m. 3:00 p. m. 4:00 to 5:30 p. m. 6:45 p. m. 8:00 p. m.</p> <p>TUESDAY, MAY 13— 1:30 p. m. 4:00 to 5:30 p. m. 6:45 p. m. 8:00 p. m. 10:00 p. m. to 1:00 a. m.</p> <p>WEDNESDAY, MAY 14— 1:30 p. m. 3:00 p. m. 4:00 to 5:30 p. m. 6:45 p. m.</p> <p>THURSDAY, MAY 15— 1:30 p. m. 4:00 to 5:30 p. m. 6:45 p. m. 8:00 p. m.</p> <p>FRIDAY, MAY 16— 1:30 p. m. 3:00 p. m. 4:00 to 5:30 p. m. 6:45 p. m.</p> <p>SATURDAY, MAY 17— 12:30 noon 4:00 to 5:30 p. m. 8:00 p. m. 10:00 to 1:00 a. m.</p>	<p>Concert by KGO Little Symphony Orchestra and soloists.</p> <p>New York Stock Exchange and U. S. Weather Bureau reports. Short musical program. Address on subject relative to Parent-Teacher Association activities. Speaker to be announced later.</p> <p>St. Francis Hotel Dance Orchestra, San Francisco, Henry Halsted, leader.</p> <p>Final reading, stock exchange and weather reports, and news items.</p> <p>Educational program, with musical numbers. Courses in Agriculture, Spanish, Music, Economics, and Literature.</p> <p>New York Stock Exchange and U. S. Weather Bureau reports. Concert Orchestra of the St. Francis Hotel, San Francisco, Fermin Cordona conducting.</p> <p>Final reading, stock exchange and weather reports, and news items.</p> <p>Booth Tarkinton's play, "Seventeen." Music by the Arion Trio.</p> <p>St. Francis Hotel Dance Orchestra, San Francisco, Henry Halsted, leader.</p> <p>New York Stock Exchange and U. S. Weather Bureau reports. Short musical program. Address by speaker from the Cora L. Williams Institute for Creative Education.</p> <p>Concert Orchestra of the St. Francis Hotel, San Francisco, Fermin Cordona conducting.</p> <p>Final reading, stock exchange and weather reports, and news items.</p> <p>New York Stock Exchange and U. S. Weather Bureau reports. Concert Orchestra of the St. Francis Hotel, San Francisco, Fermin Cordona conducting.</p> <p>Final reading, stock exchange and weather reports, and news items.</p> <p>Address, "Enlarging Life's Territory," by Rev. George W. Phillips. Musical program.</p> <p>New York Stock Exchange and U. S. Weather Bureau reports. Short musical program. Book reviews by Wilda Wilson Church.</p> <p>Concert Orchestra of the St. Francis Hotel, San Francisco, Fermin Cordona conducting.</p> <p>Final reading, stock exchange and weather reports, and news items.</p> <p>New York Stock Exchange and U. S. Weather Bureau reports. Concert Orchestra of the St. Francis Hotel, San Francisco, Fermin Cordona conducting.</p> <p>KGO Little Symphony Orchestra, Carl Rhodehamel conducting.</p> <p>Mu Zeta Rho Musical Sorority, College of the Pacific, San Jose, California.</p> <p>St. Francis Hotel Dance Orchestra, San Francisco, Henry Halsted, leader.</p>
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TUESDAY, MAY 13, 8:00 P. M.

"SEVENTEEN"

A Play of Youth and Love and Summertime, in Four Acts
By Hugh Stanislaus Stange and Stannard Mears

CAST

William Sylvanus Baxter	Richard Ehlers	Wallie Banks	Hobart Young
Mr. Baxter	Charles McAlister	Jane Baxter	Roberta Hoyt
Joe Bullitt	Conrad Kahn	Lola Pratt	Rose Brown
Genesis	Howard Irwin	May Parcher	Vera Frances Morse
Johnnie Watson	Gerald Malsby	Ethel Bake	Evelyn Avery
George Crooper	Page Nourse	Mary Brooks	Mary Miller
Mr. Parcher	David Barnwell	Mrs. Baxter	Mary Harper
Instrumental Selection—Walzer Marchen No. 3 (Schutt)			Arion Trio

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Act I—The living-hall of the Baxter home. Noon, on a June day.

'Cello Solo—Lamento (Gabriel-Marie).....Margaret Avery

Act II—Same as Act I, evening. About two weeks later

Instrumental Selections—(a) Serenade (Drigo); (b) Raindrop Prelude (Chopin)....Arion Trio

Act III—The hall in the Baxter house. An evening in August

Piano Solo—Witches' Dance (MacDowell).....Joyce Holloway Barthelson

Act VI—The Parcher home. The party is in full swing.

Instrumental Selection—Selections from Faust (Gounod).....Arion Trio

THURSDAY, MAY 15, 8:00 P. M.

Instrumental Selections—(a) Waltz Song, from "A Waltz Dream" (Oscar Strauss);

(b) The Swan (Saint-Saens).....Bohemian Trio

Soprano Solo—Moonlight Starlight (Gilberte).....Verna Smith

Piano Solo—The Island Spell (Ireland).....Mertianna Towler

Male Quartet Selection—I'se Gwine Back to Dixie (White).....The Sunset Four

J. W. Matthews, first tenor; C. W. Davis, second tenor; F. Griffith, baritone;

Willard Zimmerman, bass; Flora Wilson Zimmerman, accompanist

Flute Solos—(a) Ilzento (Albini); (b) Nocturne (Briccaldi).....Rex M. Hamlin

Doris Osborne, accompanist

Piano Solos—(a) Tenth Rhapsody (Liszt); (b) Liebestraume (Liszt).....Frank Svenson

Tenor Solos—(a) Elegie (Massenet); (b) The Lost Chord (Sullivan).....Homer Henly

Instrumental Selections—(a) Nocturne (Chopin); (b) Serenade (Tosti).....Bohemian Trio

Address—"Enlarging Life's Territory".....Rev. George W. Phillips

Pastor Tenth Avenue Baptist Church, Oakland, Calif.

Mezzo-Soprano Solos—(a) Expectancy (Stickles); (b) A Gift (Huerter).....Mrs. Ray Eitel Annear

Violin Solos—(a) The Clock (Blaauw); (b) Serenade (Toselli).....Henry Buttner

Richard Buttner, accompanist

Piano Solo—(a) Hymn to the Sun (Rimsky-Korsakoff); (b) Humoresque (Sjogren).....

Mertianna Towler

Male Quartet Selection—The Winter Song (Bullard).....The Sunset Four

Instrumental Selections—(a) Daffodils (Papini); (b) Little Buttercup, from "Pinafore"

(Sullivan).....Bohemian Trio

Soprano Solo—Mad Scene from Lucia (Donizetti).....Mrs. Homer Henly

Contralto Solo—Mon coeur s'ouvre a ta voix, from "Samson and Delilah" (Saint-

Saens).....Doris Osborne

Instrumental Selections (a) Melody (Woszkowski); (b) Villa, from "Merry Widow"

(Lehar).....Bohemian Trio

SATURDAY, MAY 17, 8:00 P. M.

PART I

Special program by the KGO Little Symphony Orchestra, Carl Rhodehamel conducting,

assisted by Esther Hjelte, pianist, and Andrew T. Byrne, baritone

March—Tannhauser.....Wagner

Overture—Raymond.....Thomas

In a Persian Market (descriptive).....Ketelbey

Piano Solos—(a) Nocturne in C Minor (Chopin); (b) Valse (Chopin).....Esther Hjelte

Baritone Solos—(a) The Island of Dreams (Adams); (b) Preguntale a las Estrellas

(Kalenyi).....Andrew T. Byrne

Lyric Pieces (Brooklet and March Grotesque).....Grieg

Valse from "Coppelia".....Delibes

March of Triumph.....Fucik

PART II

Given by members of the Mu Zeta Rho Musical Sorority of the

College of the Pacific, San Jose, California

Piano Solo—The Maiden's Wish (Chopin-Liszt).....Beatrice Walton

Soprano Solos—(a) At Dawning (Cadman); (b) Still as the Night (Bohm).....Margaret Michael

Readings—(a) Vendetta (Westerman); (b) A Dream Ago (Anon).....Marjorie Morris

Piano Solo—Reflections in the Water (Debussy).....Gladys Ryan

Violin Solo—Souvenir (Drdla).....Ruth Madden

Contralto Solo—When Song Is Sweet (Sans-Souci).....Bessie Kroff

Piano Solo—Dr. Gradus ad Parnassum, from "Children's Corner" (Debussy).....Jeannette Grattan

Readings—(a) The Scarlet Spider (Westerman); (b) Afterglow (Westerman).....Marjorie Morris

Piano Solo—Caprice Espagnole (Moszkowski).....Eoline Copple

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 2 p. m., Fairmont. Sunday Church Services by Church Federation of San Fran-
 cisco, 11 a. m. to noon.

EVENING PROGRAMS

SUNDAY—

11:00 to 12:00 a. m. Radio Church Services.
 8:30 to 10:00 p. m. Rudy Selger's Orchestra, from Fairmont Hotel.

MONDAY—

8:00 to 8:30 p. m. Organ Concert.
 10:00 to 11:00 p. m. Palace Hotel Dance Orchestra.

TUESDAY—

8:00 to 10:00 p. m. Studio Program.
 10:00 to 11:00 p. m. Palace Hotel Orchestra.

WEDNESDAY—

8:00 to 11:00 p. m. Palace Hotel Orchestra.

THURSDAY—

8:00 to 9:00 p. m. Organ Recital.
 9:00 to 10:00 p. m. Studio Program.
 10:00 to 11:00 p. m. Palace Hotel Dance Orchestra.

FRIDAY—

Silent for evening.
 10:00 to 11:00 p. m. Palace Hotel Orchestra.

SATURDAY—

8:00 to 12:00 p. m. Art Weidmer's Fairmont Hotel Dance Orchestra.

W W J—The Detroit News

(Pacific Time) DETROIT, MICH.) 580 Kilocycles)

MONDAY, MAY 12—

4:00 p. m. The Detroit News Orchestra; Herbert E. Blythe, baritone; Mme. Fedora
 Kurban, soprano.

TUESDAY, MAY 13—

2:00 p. m. Baseball scores.
 4:00 p. m. The Detroit News Orchestra; James Dugan, baritone.

WEDNESDAY, MAY 14—

2:00 p. m. Baseball scores.
 4:00 p. m. The Detroit News Orchestra; Joseph Mounsey, baritone.

THURSDAY, MAY 15—

2:00 p. m. Baseball scores.
 4:00 p. m. The Detroit News Orchestra; Cyril Wezemael, baritone; Leo Robitaille, tenor.

FRIDAY, MAY 16—

2:00 p. m. Baseball scores.
 4:00 p. m. The Detroit News Orchestra; Anne Campbell, Detroit News poet; Grace M.
 Moss and Freda Sprachman, pianists; Mrs. Chrissie Johnson, contralto; Mrs.
 George McDonald, soprano.

SATURDAY, MAY 17—

2:00 p. m. Baseball scores.
 4:00 p. m. The Detroit News Orchestra.

SUNDAY, MAY 18—

7:30 p. m. Services at St. Paul's Episcopal Cathedral, broadcast from the cathedral.
 5:00 p. m. The Detroit News Orchestra.

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MONDAY, MAY 12—

8:30 to 9:30 p. m. "A Bad Case," one-act play, pupils of Mrs. Della Miller.
 Contralto solos, Mrs. LaVerne Kimbrough.
 "This Month in the Garden," M. D. Armstrong.
 Instrumental solos.

WEDNESDAY, MAY 14—

8:30 to 9:30 p. m. "Practical Talk on Copper and Lead," Hugh M. Henton.
 Readings, Bernice Witt, Spokane.
 Concert by Mu Phi Epsilon Women's Musical Honor Society.
 "Diet for the Rural Home," Miss Leila Hunt.
 "Home Conveniences and Sanitation," A. B. Crane.

FRIDAY, MAY 16—

8:30 to 9:30 p. m. Readings, Mrs. H. H. Langdon, Pullman.
 "Bee Frolic Time," B. A. Slocum.
 Campus Orchestra program.
 Vocal selections.
 "The New Books," Miss Alice Webb.
 Instrumental selections.

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MONDAY, MAY 12—

8:30 p. m. Rhodes Department Store Night, presenting a varied program of vocal and instrumental music under the auspices of the employees.

WEDNESDAY, MAY 14—

8:30 p. m. The Seattle Madrigal Society, presenting a program of octet, quartet and duet numbers, assisted by Byron Nichols, who will render several selected violin solos. The personnel of the Society is: Mr. Grunstadt, tenor; Mr. McFee, tenor; Thirza Cawsey, soprano; Marion McDonald, soprano; Mrs. Rralph Mozette, contralto; Mrs. Ralph Nichols, contralto; Mr. Jermain, bass; Mr. Robert Nichols, bass; Mr. Waller Whittlesey, accompanist.

FRIDAY, MAY 16—

8:30 p. m. The Metropolitan Building Company of Seattle, presenting a feature classical program of instrumental and vocal music featuring the Russian Quintet Orchestra under the direction of Madam A. Kozalegsky. Mr. N. Gromokovsky, concert baritone singer, will render several selections from the opera "Lakme."

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PORTLAND, OREGON

(PACIFIC TIME)

PROGRAM FOR WEEK MAY 11 TO MAY 17, 1924

11:30 a. m. Daily except Sunday: Government weather forecast.
 7:30 p. m. Daily except Sunday: Government weather forecast. Market reports.

SUNDAY, MAY 11—

6:00 p. m. Church services under auspices of Portland Council of Churches.
 7:00 p. m. George Olsen's Concert Orchestra in dinner program, and baseball scores.

MONDAY, MAY 12—

3:30 p. m. Literary program by Portland Library Association.
 8:00 p. m. Concert by MacManus String Quartet of Corvallis.
 9:30 p. m. Program of old songs by Beaux Arts Society.

TUESDAY, MAY 13—

11:15 a. m. Market Basket.
 12:30 p. m. Concert by Civic Music Club of Portland.
 3:30 p. m. Talk by Jeanette P. Cramer home economics editor of The Oregonian.
 7:45 p. m. Talk for farmers, Oregon Agricultural College extension service.

WEDNESDAY, MAY 14—

11:15 a. m. Window Shopping.
 12:30 p. m. Concert by Darby's Orchestra of Cotillion Hall.
 3:30 p. m. Children's program.
 8:00 p. m. Concert by Orpheus Male Chorus.
 9:00 p. m. Alexander Hamilton Institute Business talk by James Albert.
 10:00 p. m. Dance music by George Olsen's Metropolitan Orchestra of the Hotel Portland. Intermission selections by Sorosis Quartet.

THURSDAY, MAY 15—

11:15 a. m. Window Shopping.
 12:30 p. m. Concert provided by Seiberling Lucas Music House.
 3:30 p. m. Woman's story program. Installment of "The Midlander," by Booth Tarrington.
 8:15 p. m. Studio program of dance music by George Olsen's Metropolitan Orchestra of Hotel Portland, Herman Kenin, director.
 10:00 p. m. Dance music by George Olsen's Metropolitan Orchestra of the Hotel Portland. Intermission solos by Lillian J. Swanson, soprano.

FRIDAY, MAY 16—

11:15 a. m. Market Basket.
 12:30 p. m. Program by Peck Holton's Orchestra of The Wintergarden.
 3:30 p. m. Talk for women, auspices Home Economics Department, Oregon Agricultural College.
 8:00 p. m. Oregon High School Debating League in final debate for championship.
 8:30 p. m. to 10:30 p. m. Silent.
 10:30 p. m. Hoot Owls.

SATURDAY, MAY 17—

3:00 p. m. Children's program. Special music and story by Aunt Nell.
 10:00 p. m. Baseball scores, weather forecast and dance music by George Olsen's Metropolitan Orchestra of Hotel Portland. (2 hours.)

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DAILY—FEATURES—

SUNDAY,

- 9:00 to 10:15 a. m. Complete services of the First Methodist Church, Rev. J. W. Bergin, pastor.
- 2:00 to 3:00 p. m. Organ concert from the Rialto Theater, Miss Margaret Agnew White, organist. (E. L. O. announcing.)
- 3:00 to 4:00 p. m. Concert sponsored by Mrs. Will S. Horn, violinist; J. F. Garnon, violinist, and Joecil Garrison, pianist. (E. L. O. announcing.)
- 9:00 to 12:00 Midnight concert.

MONDAY,

- 5:30 to 6:30 p. m. Concert by G. W. Mallory's quartet of Roswell, Texas. (E. L. O. announcing.)
- 7:30 to 8:45 p. m. Concert by the 50-piece Mosiah Temple Sbrine Band. (G. C. A. announcing.)

TUESDAY,

- 5:30 to 6:30 p. m. Concert offered by the Reagan Literary Society of Denton, Texas. (E. L. O. announcing.)
- 7:30 to 8:45 p. m. Concert offered by Miss Virginia Jackson. (G. C. A. announcing.)

WEDNESDAY,

- 5:30 to 6:30 p. m. Monthly program by Mrs. Pearl Calboun Davis, presenting pupil artists. (E. L. O. announcing.)
- 7:30 to 8:45 p. m. Concert by Dick Gaines' orchestra. (The Hired Hand announcing.)

THURSDAY,

- 5:30 to 6:30 p. m. Concert presented by Frank Agar, vocalist, and assisting artists. (E. L. O. announcing.)
- 7:30 to 8:45 p. m. Concert by the Fort Worth Euterpean Club, in its monthly recital. (G. C. A. announcing.)

FRIDAY,

- 5:30 to 6:30 p. m. Concert by Clare Drey's Choral Club of Brownwood, Texas. (E. L. O. announcing.)
- 7:30 to 8:45 p. m. Monthly program by artists of the College of Industrial Arts, Denton. (G. C. A. announcing.)

SATURDAY

- 5:00 to 5:40 p. m. Review of the interdenominational Sunday school lesson and radio Bible class, conducted by Mrs. W. F. Barnum. A membership certificate will be sent fans writing in.

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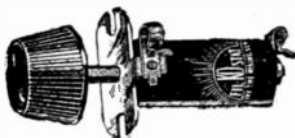
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W F A A—Dallas News-Journal—476 Meters(PACIFIC TIME) DALLAS, TEXAS
SPECIAL DAILY FEATURES

- MONDAY, MAY 12—**
10:30 to 11:00 a. m. Dr. A. D. Laugenour, president Dallas Astronomical Society, on "The Moon and Things Mundane."
6:30 to 7:30 p. m. Sanger Bros.' Choral Club, Roy Holt, leader.
- TUESDAY, MAY 13—**
10:30 to 11:00 a. m. Address, DeWitt McMurray, editor The Semi-Weekly Farm News, Waxahachie Choral Club, Miss Daisy Polk, director.
6:30 to 7:30 p. m. G. Haydn Jones, director, with members of the First Presbyterian Church Choir.
9:00 to 10:00 p. m. Operating program by leading Dallas musicians.
- WEDNESDAY, MAY 14—**
10:30 to 11:00 a. m. Musical program presenting the Red-Head Girl of The Dallas Journal.
- THURSDAY, MAY 15—**
10:30 to 11:00 a. m. Address, Epps G. Knight, pioneer and business man, on "Matured Minds in the Young Man's Era."
6:30 to 7:30 p. m. Varied program by talent from Glen Rose, Texas; Judge William E. Muse, in five-minute talk; fiddlers and singers, pianist and reader.
9:00 to 10:00 p. m. Miss Jessie McKee's Orchestra, in favorite music program.
- FRIDAY, MAY 16—**
10:30 to 11:00 a. m. Address, Dr. Robert Stewart Hyer, president emeritus of Southern Methodist University, head of the department of physics, on the Sunday school lesson.
6:30 to 7:30 p. m. Musical recital presenting Mrs. Juanita Blair Price, singing, and Miss Martha Morna Whitaker, pianist.
- SATURDAY, MAY 17—**
10:00 to 11:00 a. m. Address, William M. Reilly, editor the Craftsman, labor journal, on "Labor and Patriotism."
6:30 to 7:30 p. m. Dr. Richard Mandell, Denton, Texas, with assisting entertainers.
9:00 to 10:00 p. m. Adolphus Hotel Orchestra, Lawrence Morrell, director.
- SUNDAY, MAY 18—**
4:00 to 5:00 p. m. Radio Bible Class, enrollment more than 10,000; Dr. William M. Anderson, pastor First Presbyterian Church, teacher; Bible study and Gospel song.
7:00 to 7:30 p. m. Miss Ruth Fabian in song recital.
7:30 to 9:00 p. m. Jack Gardner's Orchestra in popular music recital.

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WOC—Palmer School of Chiropractic—484 Meters

Davenport, Iowa—Pacific Time

SUNDAY, MAY 11—

- 5:00 p. m. Organ recital from the B. J. Palmer residence.
 6:00 p. m. Church Service—Rev. Walter Ingram, pastor First Baptist Church, Moline, Ill. Subject of sermon, "A Mothers' Day Message." Musical numbers by Church Chorus.
 7:30 p. m. Musical program (1½ hours). The Palmer School Radio Orchestra. Ernest Swindell, conductor; assisted by Chas. R. Hall, tenor, and Emil Hass, reader.

MONDAY, MAY 12—

- 6:00 p. m. Musical program—semi-monthly Muscatine (Ia.) program. Vesta Burnside, soprano: "Oh, Was It He?"; "I Hear You Calling Me"; Grace Schmaltz, reader: "Tomorrow We Diet," "She Does Not Hear," "A Jungle"; Raymond Pilgrim, baritone: "O, Mother Mine!"; "Land of My Dreams." Edna Critz, accompanist; Dorothy Peterson, violin.
 8:00 p. m. Musical program. Program furnished through courtesy of the Chicago, Milwaukee and St. Paul R. R. by the Murray Family Orchestra of Cedar Rapids, Iowa, Ida M. Murray, director. Personnel of orchestra: Ida M. Murray, violin; Virginia L. Murray, cello; Estella M. Murray, whistler and cornet; Grace Murray, trombone; Roy W. Murray, mellophone; Wm. K. (Billy) Murray, drums; Irma L. Hromek, piano; Adella R. Kriz, violin. Assisted by LuRene May Teed, pianiste; Pauline Pulley, pianiste; Mrs. J. J. Flannigan, contralto.

TUESDAY, MAY 13—

- 4:00 p. m. Sport news and weather forecast. (No broadcasting after 4 p. m. Tuesday. Silent night for WOC.)

WEDNESDAY, MAY 14—

- 5:00 p. m. Educational talk—"Building An Automobile for the Public," by H. C. Snow, Chief Engineer of the Vellie Motors Corporation, Moline, Ill.
 8:00 p. m. Organ recital from the B. J. Palmer residence. Male Quartet: Arthur Radford, first bass; Hugh Ralston, second bass; M. E. Eddy, first tenor; Gurth Hubbard, second tenor; J. W. Johnston, accompanist. Trombone, William Billesbach; clarinet, Archie Anderson; pianist, Joseph Meyser.

THURSDAY, MAY 15—

- 7:00 p. m. Orchestra program (1 hour)—The Palmer School Radio Orchestra, Erwin Swindell, conductor. Featuring: "Jealous," "Jimminy Gee," "Pretty Soon," "When Dixie Stars Are Playing Peek-a-Boo," "From One Till Two," "Ha! Ha! Don't Make Me Laugh," "After the Storm," "Please." (Popular selections released through the National Association of Broadcasters, of which WOC is a member.) V. B. Rochte, baritone soloist.

FRIDAY, MAY 16—

- 6:00 p. m. Musical program (1 hour)—Program of Old Fiddlers' music.
 7:00 p. m. Weekly Tourists' Road Bulletin, as compiled by Touring Bureau, Davenport Chamber of Commerce.

SATURDAY, MAY 17—

- 7:00 p. m. Orchestra program (1 hour)—The Palmer School Radio Orchestra, Erwin Swindell, conductor. Featuring: "Rose," "Just Leave Me Alone," "Zoe," "Bank Roll Blues," "Broken Chains," "Winnie Winkle." (Popular selections released through the National Association of Broadcasters, of which WOC is a member.) V. B. Rochte, baritone soloist.

NOTICE**Neutrodyne and Super-Heterodyne Owners**

If your set doesn't perform the way it should, or if it isn't selective, or you can't get distance, drop in and let us look it over (for which there will be no charge). We will be able to tell you what is wrong and what it will cost to make your set do its stuff. **IF WE CAN'T MAKE YOUR SET PERFORM, THERE WILL BE NO CHARGES.** A satisfied customer is our recommendation.

If you are interested in good sets, drop in and let us demonstrate them to you.

Elite **RADIO SHOPPE**

132 So. Western Ave.

Open Evenings

Los Angeles

KYW—560 Kilocycles (536 Meters)—Westinghouse, Chicago

DAYLIGHT SAVING TIME

FOR WEEK OF MAY 11 TO MAY 18, 1924

KYW, "The World Crier," will broadcast the latest news of the world every half hour—on the hour and half hour—during the twenty four. This service is broadcast under the auspices of the Chicago Evening American, International News Service, Cosmopolitan News Service, from 5 a. m. to 5 p. m. KYW bulletins are provided from 5 p. m. to 5 a. m. by the Universal News Service in co-operation with the Chicago Herald and Examiner.

DAILY EXCEPT SUNDAY AND MONDAY—

- 4:00 to 4:30 p. m. Dinner concert from the Congress Hotel, Chicago; Joska DeBabary's Orchestra; Paul Whiteman's celebrated Collegians under the personal direction of A. Vincent Gauthier.
- SUNDAY, MAY 11—**
 8:00 a. m. Central Church service broadcast from Orchestra Hall, Chicago. Dr. F. F. Shannon, pastor. Musical program under the direction of Daniel Protheroe.
 11:30 a. m. Studio Chapel service broadcast from KYW's studio in the Edison Building, under the auspices of the Chicago Church Federation. The speaker will be announced by radio.
 4:00 p. m. Preliminary service, Chicago Sunday Evening Club.
 5:00 p. m. Regular service, Chicago Sunday Evening Club, Orchestra Hall. The speaker of the evening will be announced by radiophone. Musical program under the direction of Edgar Nelson.
- TUESDAY, MAY 13—**
 5:00 to 6:30 p. m. Musical program, courtesy of the Chicago Musical College, radiocast from the Edison Building studio. Talks furnished by the American Farm Bureau Federation. Speakers will be announced by radio. Continuation of the Chicago Musical College program, under the direction of D. Paul Bretweiser. Program will be announced by radio.
- WEDNESDAY, MAY 14—**
 5:00 to 6:15 p. m. Musical program: Ethel McCullough, soprano; George F. Gordon, baritone; Helen Monroe, pianist; Mildred Mayer, reader. Detailed program will be announced by radiophone. This program will be radiocast from KYW's studio in the Commonwealth Edison Building. "Good Roads" report furnished by Chicago Motor Club. Talk, under the auspices of the Union Trust Co.
 7:00 to 11:30 p. m. Midnight Revue. This is a Chicago Evening American Westinghouse feature broadcast from KYW's studio in the Hearst Building.
- THURSDAY, MAY 15—**
 5:00 to 6:20 p. m. "Twenty Minutes of Good Reading," by Rev. C. J. Pernin, S. J., Head of Dept. of English, Loyola University. Musical program: Merrie Boyd Mitchell, soprano; James W. Mitchell, baritone; K. M. Chworowsky, accompanist; James Darby, Irish story teller. See the Pale Moon (Campana), Merrie and James Mitchell
 Talk on "Income Tax" by H. Archibald Harris.
- 9:10 p. m.
FRIDAY, MAY 16—
 7:00 to 11:30 p. m. Midnight Revue. This is a Chicago Evening American Westinghouse feature, radiocast from the Hearst Building studio. Artists and program will be announced by radiophone.
- SATURDAY, MAY 17—**
 5:00 to 6:15 p. m. Musical program: Lottie Czapp, soprano; Viola Grohman, accompanist; Irving Gielow, baritone; Paul E. Woods, baritone; Harris and Blim, concertina duets. Detailed program will be announced by radiophone from our studio in the Edison Building.
 7:15 to 10:30 p. m. Late Show. This is a feature radiocast from KYW's studio in the Congress Hotel, Chicago.

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Hollywood



The set for Quality, Tone and Distance

C and B means: See and Believe for yourself

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

Pacific Standard Time

MONDAY

6:30 p. m. Music program broadcast direct from the Grand Central Theater.

TUESDAY,

6:00 p. m. Program by Western Military Academy Band, Capt. C. S. Porter, conductor; Capt. A. L. Williams, pianist. Address by G. L. Olienses on "Asphalt."

WEDNESDAY,

4:30 p. m. Program of Abergh's Concert Ensemble, broadcast direct from Hotel Statler.
7:00 p. m. Concert by St. Paul's Church Band of Waterloo, Ill. E. B. Boris, conductor.
9:00 p. m. Broadcasting direct from Hotel Statler dance music played by Rodemich's Orchestra.

THURSDAY,

6:00 p. m. Concert by Chorus, Glee Club and Quartet of Eden Evangelical Seminary at the Odeon and broadcast direct from that theater.

FRIDAY,

6:00 p. m. Artist recital by Helen Stevens-Phillips, coloratura-soprano; G. Mario Lanza, tenor; Arthur Koch, concert pianist and conductor.
8:00 p. m. Special artist recital by William A. LeMaster, grand opera baritone; Joseph Littau, pianist-conductor.

SATURDAY,

6:00 p. m. Missouri Theater Orchestra concert specialties broadcast direct from the theater.



"I could hardly believe that it was my own set"

"Put three UNIVERNIERS on my Neutrodyne last night and got 20 stations I never heard before!" An enthusiastic fan told us that the other day. He had tried 3", then 4" dials. But even the added inch didn't help much. Finally he tried UNIVERNIERS. Their 12-to-1 ratio, giving the equivalent of a 2 foot dial, enabled him to tune-in and log accurately DX stations $\frac{1}{2}$ " apart. No wonder he heard 20 new stations!

Costs no more than a good dial— which it simply replaces without otherwise altering set. The UNIVERNIER'S single knob gives either direct or continuous 12-to-1 control at will—Micro-selective control of the whole Condenser, Variometer, Potentiometer, etc., throughout the entire range of the set. Rigidly attached pointer always indicates true position and assures accurate logging.

At your dealer or postpaid upon receipt of purchase price.

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UNIVERNIER

Micro-selective tuning control



Diam. dial, $3\frac{1}{4}$ " ; knob, $2\frac{1}{4}$ "
 Made in 2 sizes:
 No. 188 for $3/16$ " shafts.
 No. 251 for $1/4$ " shafts.

UNIVERNIER with black knob and silver dial..... \$1.25

UNIVERNIER with mahogany knob and gold-plated dial..... \$1.50

KDKA—Westinghouse Electric—326 Meters

EAST PITTSBURGH, PA.

Pacific Standard Time

- 8:55 a. m. Daily except Sunday—Arlington Time Signals.
 9:00 a. m. Daily except Sunday—Weather Forecast.
 9:15 a. m. Daily except Sunday—Concert.
 6:55 p. m. Daily except Sunday—Arlington Time Signals.
- SUNDAY, MAY 11—**
 2:30 p. m. Services of the Point Breeze Presbyterian Church, Pittsburgh, Pa., Rev. Percival H. Barker, minister, preaching his sermon, "America's Uncrowned Queen."
- MONDAY, MAY 12—**
 4:15 p. m. "Political Parties: The Convention Session," 'D'r. Elmer D. Graper, Professor of Political Science, from the University of Pittsburgh studio.
 5:00 p. m. Program of the Convention Concert of the American Guild of Banjoists, Mandolinists and Guitarists from the Carnegie Music Hall, Pittsburgh, Pa.
- TUESDAY, MAY 13—**
 5:00 p. m. Concert by the Westinghouse Community Chorus, Double Quartet, Alfred Bartletti director, assisted by Miss Edith Jenkins, violinist; Mr. George Thomas, tenor; Mr. Phil Thompas, baritone. Program: Quartet selections, "Boat Song" (Cowens), "Stars of the Summer Night" (H. B. Gaul); "A Spring Song" (Pinsuti), "Come Where the Lillies Bloom" (Thompson), "Lullaby" (Barnaby). Soprano solos, "When Song Is Sweet" (Souci), "My Love, the Rose, and You" (Tompkins). Duets, "Down the Vale" (Lohr). Tenor solo, "On Away, Beloved" (Coleridge Taylor). Baritone solos, "Soldier's Song" (Mascheroni), "Daddy" (Brehend). Piano solos, selected. Violin solos, selected.
 7:30 p. m. Concert by the Queen City Orchestra and talent from the "Grand" Stores.
- WEDNESDAY, MAY 14—**
 4:15 p. m. Program arranged by the League of American Pen Women.
 5:00 p. m. Concert arranged by Blanche Sanders Walker.
- THURSDAY, MAY 15—**
 5:00 p. m. Concert by the KDKA Little Symphony Orchestra, Victor Saudek conductor, assisted by Mrs. Elma Sulzner, contralto; Mr. James Croft, bass; Mr. Elmer Stephan, tenor; Mr. Wilbur Casey, violin.
 7:30 p. m. Special late evening concert.
- FRIDAY, MAY 16—**
 5:00 p. m. A popular concert by the KDKA Serenaders and the KDKA Male Quartet.
- SATURDAY, MAY 17—**
 4:15 p. m. Play, Dramatic League of Pittsburgh.
 5:00 p. m. Concert by Westinghouse Band, T. J. Vastine conductor, and assisting soloists. Selections by the band: Overture, "Don Quixote" (Gruenwald), serenade, "By Moonlight" (Rollinson); fantasia, "My Old Kentucky Home" (Dalby); intermezzo, "Heart's String" (Casto); three Spanish dances (Moszkowski); caprice, "The Brookside" (Lasey); "I would That My Love" (Mendelssohn); grand medley, "Superha" (Dalby); "D'Amore" (Falvo).

Freed-Eisemann Neutrodyne Sets



How is it that YOU get long distance over a Freed-Eisemann Neutrodyne set and your neighbor gets NOTHING? It is because your set is properly BALANCED and installed CORRECTLY. This is what we do when we install a Neutrodyne set at no extra cost to you.

Every day we have calls to balance Freed-Eisemann Neutrodyne sets, and this can only mean that they were not properly BALANCED when INSTALLED. Why not have your Neutrodyne set balanced correctly WHEN IT IS INSTALLED, and thus save this annoyance and additional expense.

We guarantee our work! Come and see us!!

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Hollywood

Open Evenings Till 9:30 P. M.

Letters to the Editor

"Radio Doings," 308 Van Nuys Bldg., Los Angeles, Calif.

Dear Sir: I noted Mr. Pond, Jr.'s, letter of the issue of April 13-19, wherein he states the numerous stations he has gotten on a 11-tube set. Simply as a comparison, if you will note the Munzig circuit on page 11, of which I have a three-tube set, and have had Minneapolis, Chicago, Wallace, Ida., Calgary, Fort Worth, Denver, Phoenix, Memphis, Tenn., Waco Tex., New Mexico State College, Seattle and dozens of others this side of the Mississippi on a loud speaker. Had Newark, N. J., on the head phones.

If all circuits were cut in on the same principle, we would not go to church on Sunday and then come home every night and swear the other six nights of the week because someone was endeavoring to catch Borneo by making his set howl like a fire department.

I can place my set in the same room with a similar one and make her howl, but it does not affect the other set a particle.

In five years from now, I hate to think of the disposition and temper you night-hawking, listening, grabbing radio fiends will have if this howling nuisance continues to become even greater than at present. Especially when tuning for long distance, I get them as if they were a pack of wolves with a 96-volt B battery hooked to them.

I've sure got the bug, and, like my other friends, my wife sometimes howls like a distant tuner to come to bed or catch H—, and "Radio Doings" is my only balm when jerked away from my set too early. It is the best little magazine of the press. Very truly yours,

CHAS. A. ST. PETERS, Redlands, Calif.

Dear Sir: In answer to the question asked by Alexander Burrell in Radio Doings of April 20th, the station he heard was WMC, the Commercial-Appael at Memphis, Tenn. This station is on 500 meters and a power of 500 watts. A blast on a horn is always given before and after every selection. I enjoy Radio Doings very much.

Yours truly,

GEORGE A. DAMON, JR.,
1470 Charlexouv St., Pasadena, Calif.

April 25, 1924.

Editor, Radio Doings,
308 Van Nuys Building,
Los Angeles, Calif.

Dear Sir: The station that Mr. William Shoemaker got was probably KOB, the New Mexico College of Agriculture and Mechanical Arts, State College, New Mexico. The wave length of this station is 360 metes, power 500 watts.

Yours very truly,

JOHN F. J. FAY,
1742 Crenshaw Blvd., Los Angeles, Calif.

FREED-EISEMANN NR-5 NEUTRODYNE

Phone us for demon-
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derful set.



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LOS ANGELES

Letters to the Editor

Inglewood, Calif., April 15, 1924.

Dear Sir:

I am a constant reader of Radio Doings and appreciate the magazine very much. If you or some of the readers can answer this question I will appreciate it very much, as I am a DX hound.

Tuesday afternoon, April 15, at about a quarter after four I picked up a station, giving a latitude, longitude and barometer report on a wave length of about 475 meters. He shut down many times for a few seconds. He came back on and said, "We are still anchored about 70 miles (from some city; I couldn't get the name), and will be on quarter after seven tomorrow."

Thanking you for your courtesies, I am,

Yours respectfully,

VICTOR PETERSON.

P. S.—Can you tell me who NIJM or N is? I think that is his call letters.

Dear Br. Charles:

Hamlin, Kansas, April 28.

I will answer some questions in April 27 Radio Doings, just received:

K. W. Rogers:—You heard 9XN, same as WJAZ, which now is WGN, the Tribune, calling WNP, "Wireless, North Pole." On at midnight, C. T., Wednesdays. Wm. Shoemaker; probably CTX, Mexico City. About 385 meters. Can someone tell me its exact wave, also ownership? Also, what is Govt. Stn. WVT? To date, five have answered a former question in R. D. Good work—W. H. McClay; try microphone in ground lead, with at least 100 V. on P. Has been done. Good with key, too. Drop me a line, Irishman. J. A. BROCKLOFF.

Dear Sir: While trying to bring in Pittsburg KDKA on Tuesday night, April 29th, about 8 o'clock, I heard faintly the name Galli-Curci by the announcer and a wonderful song by the artist but could not bring in the station while she was singing on account of static. Can some one of your readers and fans let me know through your paper if this was Galli-Curci, as I know she was singing at the Philharmonis Auditorium, but I knew of no announcement of her being given over radio. Yours very truly,

WALTER G. PINKETT, Danby, California, April 29, 1924.

Editor, Radio Doings,

April 22, 1924

Dear Sir—Here I am again. I thought I would lay off for awhile as it looked like I was getting a monopoly on your column, but after a week's silence I am back again.

The other day I discovered a Radio Doings for the week of August 21-27, 1922. It contained programs for such stations as KFAC, the Glendale Press, KLB, the Chamber of Commerce Radiophone in Pasadena, and KGO which was a station in Altadena at that time. This Radio Doings measures one-sixteenth of an inch thick and contains thirty pages, and it was then given away free, while now, it is now two-sixteenths of an inch thick and it contains 80 pages. Of course a good many radio bugs may have this same issue, but a good many do not know how it has been steadily growing, and how it started as a small, free publication.

As to Mr. D. L. Brown, who wants to know who was broadcasting from Chicago, Ill., on April 7, I would say that it was WMAQ, the Chicago Daily News on 448 meters.

JOHN FRANCIS JOSEPH FAY, 1742 Crenshaw Blvd., Los Angeles, Calif.

**Just Received Large Shipment Cunningham 301-A and Radiotron 201-A
Tubes**

Mail Orders Solicited

Manufacturers of finest 2-tube Reflex and Neutrodyne Receivers on Coast.
Agents Radiola, Radyne and Melco Supreme Receivers

E. HARRISON MISSMAN, Radiotritian

Tel. 315-318 Open Evenings

2510 E. 10th, Long Beach, Calif.

Letters to the Editor

Dear Sir—In the issue of the 26th I noticed the letter of Mr. Wm. Shoemaker, stating that he was in doubt as to the station heard giving a selection by a famous violinist, probably located in New Mexico or Mexico.

It was KFMZ, the Roswell Broadcasting club, Roswell, N. M., broadcasting on 250 meters. If I am not mistaken, they were giving this piece about 7:40 p. m., Saturday, April 12. Hoping this reaches him, I remain,

GEORGE WATSON, 352 Pacific Ave., Long Beach, Calif., April 29, 1924.

Radio Doings,

Pomona, Calif., April 25, 1924,

Editor, Radio Doings:

I would like to inform you of the faults I find in radioland, but first, do not consider me a member of that large tribe called "radio crabs," but I write from the actions of receiving operators, also their remarks and those of their parties.

When I sit down to visit with a fan, I expect to hear a delightful program, and the beginning is very good, but the first thing you know, the fool operator, after his party is becoming interested in a program, he starts to turn the dial forward and back, gumming up the air for his neighbor, and never finds anything that really appeals to him. This dissatisfies his audience and they soon leave in disgust, giving him wonderful compliments, but are thinking a—of a lot.

Many operators, when listening to a station, become tired of the announcement of the long-drawn-out station, who persists in telling after every number just where it is located and so forth, in a voice that has a very tired expression, and is long-drawn-out. I hear many compliments for the short announcements of KGO, KPO and KHJ. The latter seems to have the most on account of its shortness. On that account it is impossible for the operator to find time to turn his dial and seek something else.

Why don't the stations that broadcast dance music from the respective hotels announce the name of the number they play as KPO does? Many

Still Reigns Supreme!

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Another Branch of Station J. O. Y. has been opened at
6019 Hollywood Blvd. for your convenience.

Call either Studio and arrange for home demonstration

GUARANTY RADIO EQUIPMENT CO.

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Holly 0364

Letters to the Editor

remarks are made: "Oh, I wish I knew the name of that number. Why don't they announce it?" I, myself, have made this remark on many occasions, and would purchase many numbers of music if I but knew the name of the number that I hear.

My opinion of the Composers and Publishers' Trust is that I believe that they are becoming selfish and are becoming tired of prosperity and welfare to the public. Only a few years ago trusts were broken up by the Government, and I believe that within a short time the latter will have to repeat itself.

Every piece of music that I have has cost me the price that was charged, and every time it is played it is being advertised, and I know of no better advertising for music publishers and cheaper advertising than by radio broadcasting. If musicians would boycott these publishers that are doing this, they would soon come off of their high horse.

I sincerely hope that every radio fan that has these faults will take note of them and try and better conditions for their audience, and the broadcasters can make some effort in having the names of the numbers announced slowly, so that radioland can copy them down.

If we were to ask for letters from individuals who have these faults, I am sure that the mailman would have more than he could carry.

I am a radio booster and strong for Radio Doings.

BUD ORMSBY, Prescott, Arizona.

Dear Sir: Could you please tell me which station was broadcasting a military band at about five minutes to eight tonight? They were on about 370 meters and when KJS came on I could not hear the announcer give the call letters.

Thanking you in advance.

MAX CONVERSE.

7269 Hollywood Blvd.

Cannon Ball Phones, \$3.50

It Weighs But Ten Ounces Complete with Headband and Cord

If an optician supplied you with a pair of glasses that were so heavy that they left a ridge across the nose and prevented the circulation of the blood, you would refuse to accept them—then why a head-set which is so heavy that it is perfectly evident the moment you pick it up that it will be a burden upon you.

The Cannon Ball head-set is not alone built for comfort. Its reception in both quality of tone and sensitiveness is unsurpassed.

A Cannon Ball phone is low in price, but it is not cheap in construction. Ask your dealer to allow you to examine the interior of a Cannon Ball phone and note how perfectly the cores are ground. How smooth the top of the case, upon which the diaphragm rests is finished, and also the clean-cut class of workmanship. We do not believe that you can buy a better head-set at any price.

Cannon & Miller manufacture head-sets and loud speaking units ONLY. Our force is trained to make this class of apparatus ONLY, and the result is perfection in manufacture, possible ONLY under such conditions.

They bear the usual money back guarantee.

Southern California Distributor

W. J. PLATT

420 East Cypress Street

Glendale, California

Carried by First Class Dealers and Jobbers

CANNON AND MILLER CO., Inc., Factory at Springwater, N. Y.

Letters to the Editor

Gentlemen:

April 29, 1924.

I would appreciate it if somebody could tell me what station was on the air Monday, April 28, at 7:30 p. m., on about 300 meters. They were playing dance music and after one piece somebody said, "That's a good one; let's play it again"; and after another piece, said, "I am so out of breath I can hardly talk." This was not KGO, as I had them just above and a great deal louder. Thanking you for your trouble,
D. L. BROWN, 1624½ N. Kenmore Ave., Los Angeles.

Vista, Calif., May 2, 1924.

Editor Radio Doings,
308 Van Noy's Bldg., Los Angeles, Calif.

Dear Sir: I see a question in your issue May 4-10 by Orval L. McAdams asking about a station in Oceanside and La Jolla. There are three stations in this group, the main one being on a government boat, the call letters of which are NIJN.

The government selected this situation as a place to test some new apparatus designed for use on ships to prevent their colliding with one another and with reefs in fogs and the like.

I am not acquainted with the station at La Jolla, but the one at Oceanside is a 50-watt one. As far as I can learn, these stations have no set wave length, as they change it at will.

Hoping that this will settle the doubts of several "hams,"

Sincerely yours,

CURTIS HANSON.

P. S.—Got Radio Doings as a Christmas present. Don't know how I ever got along without it now. Best book on Radio for its size I've seen.

Letters to Editor Dept.

Dear Editor—Could one of your many readers tell me what stations signs off with two blasts on a bugle? They signed off at about 4:15 p. m., Sunday, April 25. This information would be greatly appreciated. Thanking you in advance,
LEWIS ANDROUS, 340 E. 3rd St., Pomona, Calif.

Gentlemen:—Request information as to station broadcasting from 7:30 to 8 p. m. on Thursday, April 10. Music was from a certain hotel ballroom and station started and finished concert with a single blast of a trumpet or horn.

Station I also believe gave certain stock quotations on the same program. I thank you. ALEXANDER BURRELL, 523 Richard St., Los Angeles.



"Death Valley" Permactect Price \$1.00

The "Death Valley" PERMATECT is constructed expressly for Reflex Circuits. Recommended by Radio Engineers. Will stand up under any High Plate Voltage. This Product is also an ideal detector for a crystal set.

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The "Death Valley" Crystal is a natural mineral with every point sensitive. The Volume and Clarity has not been equalled. Will stand up under any conditions, as it cannot be damaged. Sold only in sealed packages.

Unless You have a "DEATH VALLEY" PRODUCT You Have Not Developed the Maximum Efficiency of Your Set.

At Your Dealer's or Mailed Upon Receipt of M. O.

Pacific Coast Distributor, V. P. LANCE, San Fernando, Calif.

????

Technical Editor of "Radio Doings."

How does a five-tube Neutrodyne compare with a five-tube set consisting of two stages of radio frequency, detector, and two stages of audio frequency amplification, in respect to ease of construction, ease of operation, upkeep, volume, distance and ability to hold up? By this I mean its continuing to operate the same at all times, allowing for batteries, etc. I had a reflex set, but there was always something wrong with it. If it wasn't the tubes it was the crystal, etc. Is the Neutrodyne subject to this trouble?

Thanking you in advance for your kindness, sincerely yours,

OGLE McCLELLAN,
1927 E. Second Street. Los Angeles.

Ans.—We cannot take any stand either for or against the receivers you mention.

Gentlemen:

I have an Erla three-tube duo-reflex which had anything beat for howling that was ever invented. I took it to a local expert, who promptly took out the fixed detector and replaced it with an adjustable one. It works very nicely now, but I find some crystals work better than others. I am using B metal now. Would some other reader of your columns tell me what kind of crystal he likes best? It would be rather expensive to buy them all just to find the best kind.

Yours respectfully,

COLLIS JOHNSON, R. F. 35, Fresno, Calif.

Ans.—Give Argentite a trial.

Editor, "Radio Doings."

Los Angeles, Calif.

Dear Sir:

Question.—I have a De Forest D-7-A machine and wish to have the crystal taken out and a detector tube put in its place. I am sick of cat whiskers and crystals, and wanted your advice. Will I not have a better machine after the change? If so, please give me the name and address of some mechanic that is capable of making this change, and oblige.

C. O. FINCH, 108 Pearl Street, Apt. A, Redondo, Calif.

Answer.—We refer you to "Radio Doings" advertisers.

This type of circuit should be used with crystal. A vacuum tube detector can be used but certain facts make it advisable to use crystal.

Gentlemen:

Question.—I would like to know if this circuit that I am inclosing will work? It is composed of radio frequency and regeneration and A. F. reflexed.

Your reader,

ALBERT ODEN, 3223 Royal Street, Los Angeles, Calif.

Answer.—We do not recommend this circuit.

Our one, two and three tube Harkness Sets are built with the best of parts and the most careful workmanship, and give perfect results, in clarity of tone, volume, selectivity and distance.

C. & G. RADIO, 608 So. Olive St.

Open Evenings

Los Angeles

Santa Maria, Calif., April 19, 1924.

Radio Doings,
Los Angeles, Calif.

I am a regular reader of your wonderful magazine. Please answer me the following questions:

A.—Have Benjamin set, 3 tubes operating on dry cells. Can I use 6-volt tubes without having to change hrostats?

B.—My condenser is 23-plate venier, how long should my aerial be?

C.—What is the external detector jack in this set for, and how used?

D.—What is the best wire aerial? Stranded copper or bare telephone wire? Which gives more volume?

E.—How much "B" battery should be used on this set if 6-volt tubes were to be used?

F.—What are the ohms resistance on rheostats using UV-199 tubes—and on rheostats using C-301-A 6-volt tubes?

B. E. CROSS, Santa Maria, Calif.

A.—Yes.

B.—Must have more data to give you this data.

C.—Stranded wire will give best all around results.

D.—22½ to 45 volts on detector, 90 on amplifier.

E.—Six-volt tubest, 6 Ohm rheostat.

F.—Thirty to sixty Ohms for UV-199 tubes.

Pasadena, Calif., April 15, 1924.

Editor, Radio Doings,
Los Angeles, Calif.

Dear Sir:

Question.—Will you please inform me Im WD, 11- or 12-tube can be used in place of WV-199 tubes? I am going to make my old set over and the new one calls for WV-199 tubes, and was wondering if the WD 11 or 12 would work somewhere as well, so if you will please let me know in your next issue. Thanking you in advance for the information, I remain,

Respectfully,

BEN F. JOHNSON, 2341 Glen Ave., Pasadena, Calif.

Answer.—Yes. WD-1200 with 11 tubes will work very well in place of C-299 tubes.

Los Angeles, Calif., April 23, 1924.

Radio Doings Department.

Question.—My antenna consists of 4 strands, 50 feet long, 18 inches apart on 40 feet masts. My leads are attached to middle of first and third strand, the other two being used by another party. The direction is between north and northwest—south and southeast. I get north east stations fine, but have poor success on east stations. Would the two sets of wire being parallel have any effect on this in regard to being directional?

Sincerely yours,

J. M. SNAVELY, 166 W Forty-third Place, Los Angeles, Calif.

Answer.—Suggest trying your antenna east and west. No. not any extent.

Prest and Dean Radio Electric Co.

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????

Dear Sir:

Question.—We have a nuisance in this neighborhood. Some one is sending code on 390 meters. He runs only when KHJ is broadcasting. It sure is a nuisance. It must be some kid playing radio. Can we do anything for this? Does the government allow this, or has he a right to spoil all of Uncle John's good programs?

Yours sincerely,

F. P. LANDIER, 4375 Pacific Ave., San Pedro, Calif.

P. S.—Have a good set, so I could tune him out if he was very far off that wave.

Answer.—The interference you experience no doubt is caused by U. S. naval vessels anchored at San Pedro.

Dear Sir:

I have been receiving R. D. regularly and find it very interesting, especially the editorials on Current Radio Topics.

Question.—Kindly inform me through R. D. Columns what apparatus I must use with a Ford coil for supplying plate voltage for a one-tube transmitter. I find that the coil has about 9000 volts on the secondary when using six volts on the primary.

Sincerely yours,

ELVYN J. BEALL, Newman, California.

Answer.—A Ford coil is not desirable for this purpose. High voltage transformer, 500-750 volts; filament transformer, 8 volts; inductance key, radio frequency meter 0-3 amps. two .002 fixed condensers, grid leak, socket, five-watt tube.

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?? ??

Dear Sir:

Question.—Can you recommend a circuit suitable for use in Wisconsin at a point 500 miles from Chicago?

Atmospheric conditions are very poor there, as it is very warm and usually damp. The immediate region is thickly wooded.

A friend of mine had a three-tube set of a well-known make which he used there, but he could not get Chicago with any clarity. I would not prefer more than three tubes. Would you recommend a reflex set?

Would appreciate any information through your wonderful little "Radio Doings."

Sincerely yours,

CHAS. SHERMANN, JR., 250 S. Orange Grove Ave., Pasadena, Calif.

Answer.—It is impossible to recommend any certain type of receiving set for this locality. Take note of Radio Doings' advertisers.

Dear Sir:

Question.—I have only been a subscriber to Radio Doings a short time, am very interested in it now. There are some questions I would like to ask and would appreciate it if you will give me some information: First, How much aerial would you recommend for a Radiola IV? I have about 115 feet, but get a lot of interference, and I can't hardly separate KHJ and KFI. Second, Is there any difference in which way the aerial runs in getting eastern stations? I have had in a few stations, but none of any long distance. About my aerial, if I shorten it it cuts my meters down below 500 meters.

I remain, a Radio Fan,

H. B. RHODES, El Monte, California.

Answer.—Length of antenna depends on your location. See your local R. C. A. dealer. Your antenna is too long. Cut your antenna until your set becomes selective.

Dear Sir:

I am inclosing a diagram and would appreciate it very much if you will answer the following questions in regard to it through the columns of "Radio Doings":

Question A.—Does this circuit give two stages of radio and two of audio frequency amplification?

B.—Will it give as good results as 5 tubes in an ordinary hook-up?

C.—Is the variable condenser the only means of tuning it?

D.—Can the potentiometer be omitted without sacrificing efficiency?

Thanking you in advance, I am,

Sincerely yours,

LLOYD PHELPS, 1223 Lincoln Street, E. Bakersfield, Calif.

Answer A.—Yes.

B.—Can't answer.

C.—No.

D.—No.

A MESSAGE FROM M. A. R. S.

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Long Distance Radio Reception

By F. W. CHRISTIAN

Long Distance Radio Reception! This is probably the most talked-about subject among men today. It seems to be the popular indoor sport.

The question arises, just what does long distance reception amount to? Stations 500 to 1000 miles away come in fine—practically as good as the local. The writer has in mind KGO at Oakland, KGW at Portland and KFKX at Hastings, Nebraska. It is really a pleasure to listen to these stations through a loud speaker. But what about stations such as KYW at Chicago, WGY at Schenectady, N. Y., and other stations two or three thousand miles distant? Aside from the novelty of receiving these far distant points, is there any real pleasure in listening to them through a loud speaker, with the static, telegraph interference, etc., that always accompanies the long distance stations? One has to strain his ears sometimes to hear the announcer talk, even when the music comes through good. It is generally our luck to have some persistent code station, such as KOK, NPX or KSE, start up just at the time we are waiting for our DX stations to sign off. Conditions are going to be continually worse for long distance reception, due to static being much more noticeable during summer months.

It is a common thing now to receive KYW at Chicago, WGY at Schenectady and possibly WJZ at New York City, and to hear the announcer say that he is "go-and-so" at New York City, but as far as entertainment goes, these long distance stations are absolutely useless to us. As soon as a few more stations, such as KFKX and KGO, are erected throughout the country, long distance reception will be much more satisfactory.

One of the greatest "goat-getters" in the radio field today is the person who tells you how many long distance stations he got today and how wonderfully they came in. Chances are that he strained his ears for a couple of hours to get announcements from a single station, and probably in most cases used his imagination. As an instance of this: The writer is operating a small broadcasting station, KNX. For some time this station was inactive and out of operation. During this period, however, the writer received about 12 or 15 letters a day from the East, telling of the wonderful reception they received from KNX, and how wonderful the orchestra sounded, etc.!

Recently a test was made with a Federal 61 long distance receiver with KYW in Chicago. Mr. Clare Ewing of J. W. Robinson Company gave a very interesting talk over this station, addressed to his brother, Mr. Clyde Ewing of Lasky's Corporation, and the writer. This talk was on the subject of long distance radio reception on the Mojave Desert. Every night for a week preceding the test communication was effected through the Federal set with some Chicago station. Plans were made to receive the test on the Lasky Ranch back of the Hollywood Hills. Reception is always clear up there and there is little or no static interference. KYW, on Wednesday night preceding the test, came in on the loud speaker with wonderful clarity. Unfortunately, quarantine restrictions were made more severe and no one was allowed on Friday to go up to the Lasky Ranch, so it was necessary to make the test in town. Static was terrible on this night and NPX was going incessantly. It was impossible to get KYW until about 11:50 p. m., and then very poorly. The writer phoned several friends who he knew were getting KYW regularly, and found they were having the same trouble. As 12:20 Pacific time Mr. Ewing made his talk, and while it was quite possible to recognize his voice, it was impossible to hear everything he said. This demonstrates the point that long distance radio reception is not entirely dependable.

Mr. Ewing is now in New York City and is using a Federal 61 set at the Waldorf Hotel. He hears KHJ in Los Angeles quite regularly, and arrangements may possibly be made with this station to broadcast a talk addressed to New York City. DX reception back there is entirely different from here, due to the fact that they listen in after the local stations are off the air because of the difference in time. The ideal time for distance reception is around midnight, and of course midnight of their time is nine o'clock here, so that our programs are just at their best.

New Device Prevents Radiation From Radio Receivers

Many an evening's entertainment via radio is spoiled by some thoughtless neighbor starting to tune in on the same wave length. Perhaps you yourself have been guilty—especially if you operate a single circuit receiver because you like its simplicity. Be sure that if you hear it whistling and squealing, others with radio sets located within half a mile of yours are also hearing it. For your receiver has become a transmitter, sending out squeal waves to annoy those who are trying to hear a good program.

Radiation has become one of the most serious menaces to radio. It has been rumored several times that legislation would be attempted to make it unlawful for anyone to operate a set that acted as a transmitter and spoiled broadcasting. The government is keeping a most watchful eye on the whole radio situation, and if further Federal regulations are proposed, it is more than likely that an attempt will be made to curb the radiation nuisance.

Radio owners with a decent sense of social responsibility are trying to be considerate of other listeners. To some extent, radiation can be restricted by using care in tuning—not advancing the rheostats to afar, and by not "fishing" for distant stations during the evening hours. But that limits the fun of radio.

Others have bought expensive sets, which are not supposed to radiate. It has been shown in tests, however, that some of the most costly radios are as bad transmitters of howls as the cheaper sets. In fact, because of the many tubes they use, the radiation is worse. Certain sets, bought for their non-radiating qualities, have proved to be as bad as any.

Just at a timely moment, when the radiation evil was proving discouraging to manufacturers and listeners alike, C. C. Lauritsen and B. F. McNamee, research engineers of the Colin B. Kennedy Corporation, have created a simple radiation preventor which can be attached in a few seconds to any set without changing the circuit or cutting a wire.

In the interests of the whole radio industry, this device will soon be offered to the public at a low price. It is a finely made fixed device, manufactured to very exact measurements, so small that it may be attached inside or to the back of the cabinet, inter-connected between the aerial and ground binding posts. In this position it acts as a valve or trap, allowing the incoming electrical impulses to pass through freely, but preventing any oscillation from the tubes flowing back to the aerial.

One of the features claimed for this radiation preventor is that it makes the setting of the tuning dial more or less independent of the aerial, so far as wave length is concerned. That is to say, whether the aerial is long or short, indoors or outdoors, stations will always be found at the same point on the dials. Naturally, this also proves helpful in increasing the selectivity of the set, for tuning becomes more exact and less haphazard.

So, while the radiation preventor appeals particularly to those considerate people who care whether they are annoying others or not, it also promises to be directly beneficial to the owner of the set to which it is attached.

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Measuring Time and Distance By Radio

Some well informed radio engineers and many blase radio fans were electrified and even astounded to observe the radio time and speed experiments of Captain R. H. Ranger, of the Radio Corporation, conducted at the Cosmos Club in Washington a few days ago before a section of the Association of Electrical Engineers. He not only transmitted a radio message 4250 miles to Warsaw, Poland, and got a reply in approximately three minutes, but he measured the time required for a single radio impulse to make the round trip as .046 seconds. The latter experiment was to show that contrary to a popular conception, radio is not instantaneous.

"The fact that a radio impulse travelling over a given distance, negotiates this space in a definite and fixed time, may set a new standard against which time and distance may be measured, giving a degree of accuracy and reliability surpassing even the accepted methods of astronomical observations," Captain Ranger declared.

"What does he mean?" some of the uninitiated immediately inquired. He meant that since it takes appreciable and measurable time for a radio signal, a dot in this instance, to travel a given distance, we have a new standard measuring instrument which will remain the same for centuries, and, with continued use, our ability to measure even small lapses of time will increase. Practical applications include aids to the mariner, until recently dependent upon dead reckoning when the sun was invisible and no radio beacons were available. "Radio," Captain Ranger said, "will be the answer to civilization's demand for greater accuracy." Already this system makes it possible to check the accuracy of automatic relays, and in the future we may expect more useful applications—for example, to check time differences between two distant points. With a globe-encircling chain of powerful stations, the world time could be carefully calibrated. The radio "dot" can eventually be made to act as a very accurate check on longitude determinations.

By way of exposition, Captain Ranger said: "Suppose clocks at Warsaw and New York are geared accurately to the sun's time at each locality. Then transmit Warsaw's sun time to New York. The difference in the two clocks, in New York, gives the portion of the day or revolution of the world between the two, which is the difference in the longitudes. With the present advances in radio, the least accurate part of such measurements comes in the solar observations, but in spite of this, he said, accuracies below fifteen feet in the 4250 miles covered are in order. When the round-the-world radio "robin" has checked the speed of radio waves to the final degree, radio alone will give the actual distances between any two points, according to this engineer.

The actual experiments at the Cosmos Club were conducted by coupling the transmitting key in Washington to the Radio Corporation's New Brunswick transmission station by a land line, thence by radio to Warsaw, a distance of 4250 miles. The return circuit was my land wire from the Polish receiving station thirty-five miles to the transmitter and back via radio to the river head, L. I. receiving station, from there to Washington through the New York Central by a land line. A 14-tube receiving set in the club was tuned in on the New Brunswick transmitter, but the signals picked up were shown visibly through the pulsations of a small electric light instead of on a soulder. By this means, code experts could read the transmissions emanating from New Brunswick as controlled by the senders' key in the club, and observe the messages sent Poland, en route as it were. Once the circuit was set up, mes-

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sages and replies were exchanged from Washington to Poland within three minutes, and later the single dot signals were calculated, with certain corrections, to have made a round trip of 8500 miles in 0.046 of a second. This indicated the actual speed of radio as roughly 185,000 miles a second, due to some errors not possible to correct in the make-shift apparatus used.

Another experiment established the possibility of using a radio system to determine the location of ships at sea, serving the purpose of a radio log. If a ship sails in a straight line between two ports, it will be possible and practical with proper recording apparatus to know just how far a ship had sailed in radio waves. With refinements, this would actually be by a "radio speedometer," it was explained. We may come to speak of a ship traveling at "twelve wavelengths an hour" instead of twelve knots. A radio instrument in the pilot house will give the navigator his speed at a glance, as well as his distance from port.

Captain Ranger also covered the uses of radio in polar flights and in establishing the position of air and sea craft both aboard the vessels and at the land compass stations taking the observations, thus preventing any "faking" of positions in the future. Scientific expeditions, he said, could be furnished with accurate time, essential in navigation, by radio, or be actually guided by radio from base stations.

Concerning the possibility of communicating with Mars, the Captain was skeptical, due to the fact that the earth's envelope acts as an impervious electric mirror and reflects radio waves to the earth. This "heavyside" layer, he explained, would also tend to deflect any signals emanating from Mars.

Radio Messages to Aid in Forest Fire Campaign

The most extensive use ever made of radio to broadcast forest fire prevention messages is being planned by the Forest Service, United States Department of Agriculture, during Forest Protection Week, which President Coolidge proclaimed for April 21-27, inclusive.

Messages by Secretary of Agriculture Wallace and Governor Pinchot of Pennsylvania were broadcast from about thirty stations. Secretary Wallace will personally broadcast from Washington, D. C., and Governor Pinchot from Harrisburg, Pa.

The increased use of forested areas as recreational grounds for town and city dwellers has made the subject of forest fire prevention of universal interest. During 1923 nearly 11,000,000 people visited the 146 National Forests. This vast number of recreation seekers, recruited from every State in the Union, is likely to increase the forest fire hazard unless proper precautions are taken to guard against carelessness with matches, cigars, cigarettes and camp fires.

About 80 per cent of all forest fires, forestry officials assert, are caused by human carelessness. The primary object of Forest Protection Week, of which this is the fourth annual observance, is to call the public's attention to the vast, unnecessary wastage of the country's forests by fire, and to devise means whereby the appalling fire losses will be curtailed if not eliminated.

*"How Firm a Foundation" or "A Charge to Keep I Have"—Which?
See Page 86*

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This booklet is now being packed with all Na-ald products. If your dealer's stock does not have it, send the cover of any Na-ald carton or 15c for it.

Ask for the No. 400 De Luxe 75c Socket for Neutrodyne and Superheterodyne Sets. "It's the contact that counts."

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Springfield, Mass.**

Going the Hoof and Mouth One Better

We've heard a lot about the "bug" that's tackling mouth and feet;
We're scared stiff of the things we drink and most of the things we eat;
We're daily told about the rules regarding cats and dogs,
And we agree; we do not want to kill off cows and hogs.

But what about the other "bug" that's causing wives such grief?
The horrid little microbe of the naughty little thief
Who's stealing all our husband's time, while we're left high and flat?
I haven't noticed any rules exterminating that.

The "bug" that causes numbness and a dumbness in the brain,
That drives its victim bughouse and his family insane.
I mean the "bug"—that modern germ—that knocks 'em for a row,
That most insidious little cuss—the bug of radio.

The patient's first infected in a very subtle way;
He gets it from some friend who says, "Say, old man, by the way,
I got Chicago, just last night; the music it was fine;
'Come over to my house some night and see my Neurodyne."

The incubation period lasts just about a week,
Then the disease breaks forth in full, and he begins to seek
An instrument with which to get old London or Oshkosh.
I'm telling you the truth, my dears, this isn't any bosh.

The prognosis is fatal, nine rases out of ten;
The female species are immune—it just attacks the men.
The brain is first affected, the symptoms hard to miss;
The patient is at times distraught, his actions are like this:

He stands beside a silly box with 'phones clamped to his dome,
And, after hours of waiting, hears some band play "Home, Sweet Home."
If anyone within the house dares speak a single word
While he is "tuning in" with it—loud cusses are then heard.

He silences the family and chloroforms the cats,
He'd give to anyone who talked a dose of "Rough on Rats."
He does his "daily dozen" to the tune of "Ain't Life Grand."
He eats and drinks and sleeps and reads beside the radio stand.

If wifey timidly suggests she'd like a new spring hat,
Her husband says, "I've not a bean, old thing, and that is that.
Just bought a new long distance set, I hope you'll like it, dear."
And if she still has any pep—she biffs him on the ear.

Oh! where's the learned scientist who'll lend his mighty brain
Toward wiping out this dreadful plague, and give us peace again?
I'll tell the world that I predict the courts will soon be full
Of "Radio Divorces"—and that's not peddling "bull."

JEAN SHILLINGFORD.



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708 Farmers and Merchants Bank Bldg.,

Long Beach, Calif.

A Hero?

By Clyde J. Applegate

The violent opening of the wireless cabin's door aroused Jimmie, the operator. "The ship's afire!" came the gruff voice of the captain.

Jimmie quickly threw the large switch in front of him as he said, "All right, Captain, I will have some boat alongside in a short time."

"S. O. S. S. O. S. AB. AB. S. O. S. AB." Jimmie threw the switch and pressed the head phones to his ears. He knew the captain was still standing in the cabin. For thirty seconds he waited for an answer to his distress call. All was silent.

Again he reached for the switch; again the call was repeated; then followed another space of listening.

"Anything yet?" questioned the captain, anxiously.

Jimmie turned and the red glare of the flames as they burst into the air caught his eye through the open door.

"Not yet, sir, but I will raise them soon." Jimmie felt that his face was pale, but as he listened, he worked the key up and down with a steady hand.

"You are a brave boy, Jimmie," said the captain, as he went out on the deck. Jimmie's heart swelled with pride. He continued to repeat the call at intervals. Still there was no answer.

Brighter and brighter grew the red glow. There were hoarse shouts of command; the hurrying of feet on the deck. Jimmie sat still at his instrument. His pencil worked circles and squares on the clean blotter in front of him, and his eyes stared into space. After many minutes of waiting, the call was again sent out, longer this time; then he listened. The circles and squares on the blotter increased in number. There was no wavering of their lines.

Suddenly he started. He heard a faint hissing! Quickly running his slides on his tuner, the sounds became more distinct. "AB. AB. AB. AB. SJ. AB. AB. SJ. SJ."

"That's the Indiana," muttered Jimmie, as he crashed out the answer, "SJ. SJ. AB. Alabama ten miles off Racine afire. Quick. SJ. SJ. AB."

Pressing the phones close to his ears, he heard the operator on the Indiana give "O. K. Kn." Jimmie breathed a sigh of relief and sat back quietly, with his phones still on.

Presently the captain returned and asked gruffly, "Raise anyone?"

"Yes, sir—the Indiana. I will report as soon as my answer comes," replied Jimmie, turning in time to catch the look of admiration in the captain's eyes.

"Fine work, my man, fine work," the captain said as he disappeared.

The answer was soon received. "The Indiana will reach us in two hours," Jimmie reported to the captain.

"Good, stick to your post, my man," was the captain's orders.

"Yes, sir. You and I will be the last to leave," he replied.

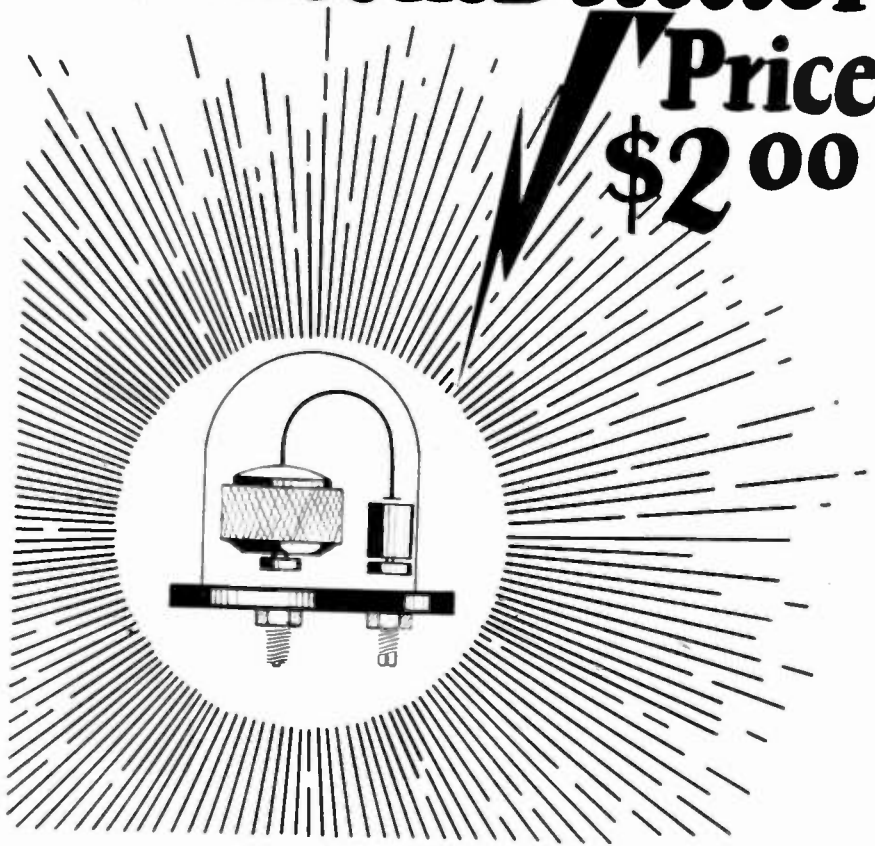
The fire was becoming very hot. It almost blistered his tender skin when he went out on deck to report. Men were standing by the lifeboats. Jimmie did not seem to mind. Deep down in his heart he was afraid, but he determined to be brave and save the passengers, just as other wireless operators had done before him. He felt his face flush as he imagined the headlines the newspapers would

*Opportunity Knocks, But She Won't Break In—
See Page 86*

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print with his name in big letters and his picture on the front sheet. How proud his parents would be and how the other young wireless operators would envy him!

The Indiana sighted the burning vessel and ran up close; the transfer of the passengers was quickly made. The last boat on the forward deck, known as the captain's, was now ready to be lowered. Jimmie took his captain's hand. They stepped into the boat together and were lowered and rowed to the Indiana. As Jimmie mounted the rope ladder hanging over the side of the large vessel, he heard a cheer. Passengers who had boarded the steamer ahead of the last boat had told of his bravery, and as his head appeared above the ship's rail, he was grabbed and carried about the deck. Oh, but he was proud!

"Why, Jimmie! What on earth? All the bedclothes are on the floor." It was his mother's voice. Jimmie roused himself, sat up on the edge of the bed and looked over at his amateur wireless outfit in the corner, saying, "Say, but that was a fine dream!"

His parents had purchased wireless instruments for Jimmie. He had worked night and day to install them. After three months of hard study, Jimmie learned to send a little. Elated at his achievement, he felt he must send fast to let all the amateurs know he was an expert operator.

When it came to receiving, he could not get a letter. He soon tired of it, for though he practiced diligently, he could not learn to receive, so he gave it up.

If Jimmie's father could have purchased telegrapher's brains, as he did the transformer and other instruments, possibly Jimmie would have been able to fulfill his dream.

The writer ventures to say that five thousand dollars' worth of wireless apparatus rests in attics or basements in Chicago alone, all the result of just such experience as this of Jimmie's.

Amateurs, get a buzzer outfit! Practice the code. Use your sending side, but keep your aerial switch open. Listen, and put down every letter you are sure of. Guess at nothing. Do not expect to be able to do good work for at least a year. But keep at it in your spare moments. Do not stick to it long enough at a time to weary you. Go out of the room, return later and try again. One day you will receive several words. The next, possibly not a letter can be made out. Don't let this bother you. Keep on trying. It takes a year or two for a man to develop enough ability in the telegraph profession to consider he is even a half first-class man, and it is several years later before his experience and judgment entitles him to sign his name to a voucher with figures thereon signifying that he is a first-class operator.

So do not get faint-hearted after a few months' try at it. Practice makes perfect, but until you understand what is going on about you, do not use your sending apparatus with the aerial switch closed. You will knock out other amateurs who have mastered the art. Feel kindly toward those who have beaten you, use your buzzer unceasingly and listen tirelessly. You'll win!

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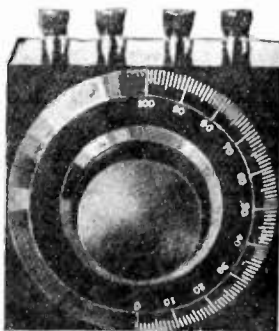
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 "BEST YET"..... Chicago Tribune
 "SUPERIOR TO NEUTRODYNE"..... Literary Digest
 "NEW RADIO ACHIEVEMENT".... St. Louis Post-Dispatch
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Boogies of the Ether

Copyright, 1924.

Radio supervisors and inspectors hear many queer tales as to strange messages, sounds and calls emanating from somewhere within the boundless realms of radio land. Some complaints are weird, a few pathetic, and still others almost convince one that there are Ethereal Boogies. Radio is of itself more or less of a marvel and a mystery, with the rapid advancement of its range, manipulation and scope, and it is small wonder that certain susceptible fans, and even operators long in the game, hear or imagine they hear curious and unaccountable messages verging on the supernatural.

There is the story of one old-timer who declared that he no longer needed headphones, his ears having become so tuned to the notes of code station that he could pick up messages from almost anywhere.

Some of these complainants, perhaps improperly classified as "bugs and nuts" of the ether, insist that they are haunted by "Hertzian spooks," which in certain cases seem to approach from the spiritual angle and assume "radio control" of their victims. They not only exercise an undue influence, but create actual fear in the hearts and minds of those persecuted. Certain students of the problem refuse to believe that it is all imagination, attributing the influence to something supernatural, or at least a power not yet understood.

Of many cases reported to the Department of Commerce, there is none so striking as the "Strange Case of Operator Blank," on which there is a thick file of papers.

Nearly four years ago a sea-going radio operator of twenty years' experience reported to the Supervisor of a coastal district that he was the object of radio persecutions in the form of radio telephonic messages which were transmitted to him continually by virtue of wired-wireless when he was ashore. Three unprincipled young operators, he asserted, kept a surveillance over his every move, reading his thoughts, and at times "neutralizing" his brain action. These three persecutors relieved each other, but kept up their vocal messages day and night, no matter where he was. Their sinister influence, he felt sure, was affecting his young daughter when she was near him, and practically broke up his home. He appealed to scientists, doctors, radio experts, the Government and police without benefit, as the source of the radio emanations could not be traced. They seemed to come from a coastal point. Even while on an automobile trip across the Continent and into Canada, the "phantom" radiophone or photophone messages pursued him. The messages were transmitted on various frequencies and were impossible to ignore. Operator Blank believed the young men had invented an ultra-modern transmitting set of which no one knew the circuit. He said the boys told him it was a "wired wireless psychometer," effecting the transmission of speech by a "therapeutic oscillator," and received by "triple phantomizing attunement." He couldn't get away from the messages, and he was certain that the boys kept a log on his thoughts.

Later on, when he was again at sea, the messages pursued him, evidently

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through the medium of radio. In the Atlantic or Pacific the effect was the same, and the operator came to believe that the "primary phonetic" effect kept his head aching continually; sometimes he was driven from his radio shack. He was certain his death could be caused by these boys if they desired. He again took up the matter of locating the station with authorities in New York, San Francisco and Washington, but no one was able to aid him nor locate the unknown station. Unofficial and unsigned messages continued to follow him, causing interference with his regular traffic, his sleep and his mental stability. Investigations showed him to be in good physical and mental state, but, although pronounced sound in his mind and body, and only about 42 years old, he was literally driven from the sea and his profession.

Following up some of his suggestions, radio officials report that spiritualists have been affected in a similar way, and from New York came information that complaints of this character were increasing—in fact, becoming quite common. Department of Commerce radio officials say that during the full of the moon complaints of weird and unnatural radio messages in the ether come in with a strange regularity. Even to date the Department and its field staff have not been able to solve the mystery of Operator Blank's persecution, nor the source of his phone messages. He reported.

Other curious cases reported to the Department include the Western farmer who, whenever plowing in a field near an insane asylum, declared that he was influenced and persecuted by voices which seemed to come from a queer box on the sill of a window in the institution. He came to Washington in an effort to rid himself of this "radio control." When he returned the box was no longer visible, and it is understood he was bothered no further, though it was never fully explained. From Philadelphia came a story of a woman who was constantly hearing radio voices, especially when riding on a train, although it was long before trains were equipped with receiving sets. Another woman out West recently wrote that waves from a certain radio station pass through her house and her person, causing a most unpleasant effect; she said she could never sleep until the station closed for the night.

During the World War complaints of this type, and others attributed to German spies, codes, etc., came to the Department's supervisors in great numbers, some of them obviously from people with unsound minds, who sought to become radio sleuths and desired special transmitting licenses and stations. Such desires, however, were almost always in the interest of defending the Government, and differed from the case of Radio Operator Blank, and a few others whose radio troubles have never been solved.

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"Out of the Air"

By LISTENER-IN

Station WHO, owned by the Bankers Life Co., of Des Moines, Iowa, is on the air. This new acquisition to radio land broadcasts on 526 meters Monday, Wednesday and Friday, 7:30 to 9 p. m., and Sunday 10:45 a. m. to 1:30 p. m.

Frederic L. Tomlinson Co. have been appointed Pacific Coast representatives for the Electrical Products Mfg. Co. of Providence, R. I. The Tomlinson Company have moved to the new Radio Building at 1113 Wall St., Los Angeles.

Holding that the present copyright statute does not cover the broadcasting by radio of copyrighted music, Judge Smith Hickenlooper, in the United States District Court, dismissed a suit filed by Jerome H. Remick and Company, Inc., New York City, publishers, against The Crosley Radio Corporation in which the plaintiffs attempted to compel the Crosley Corporation to pay a special tax for permission to play copyrighted music.

Judge: "You are sentenced to hang by the neck until dead."
Prisoner: "Judge, I believe you are stringing me."

Crystal detectors operate as long as the crystal is in good condition.

Use good insulators and solder all connections, for the lower the resistance the stronger the signal.

"Professor," said a graduate, trying to be pathetic at parting. "I am indebted to you for all I know."

"Pray, do not mention such a trifle," was the reply.

In last week's program from KHJ, The Times, Los Angeles, our good friend "Uncle Remus" was shown as appearing through the courtesy of Barker Brothers. This should have read "through courtesy of Barnes Music Company." Please accept our apologies, "Uncle Remus."

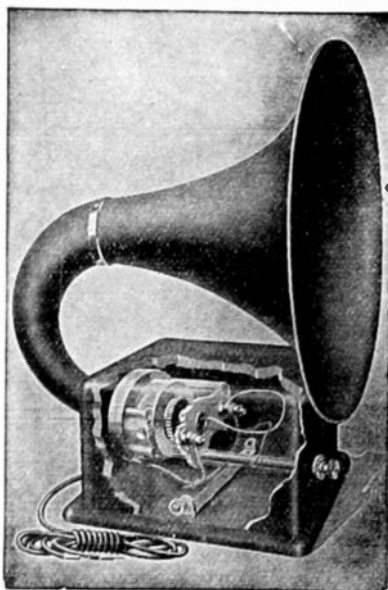
Radio fans seem to have won their battle against the proposed 10 per cent federal tax on radio sets. Late reports show that the report of the committee which recommended this tax was defeated in the Senate.

A teddy bear sat on the ice.
As cold as cold could be;
But soon he up and walked away,
"My tale is told," said he.

The Western Radio Institute has opened a radio school in Los Angeles, giving courses in all branches of the radio business, under the direction of E. S. Farnsworth. This school will fill a long felt want. The demand for experienced radio operators is growing daily and the salesman who knows his business is in constant demand. Mr. Farnsworth is well qualified, having been in charge of the Y. M. C. A. school and being an experienced radio operator. Full particulars can be obtained by addressing 625 South Hope Street, Los Angeles.

B. Kruger & Co., 318 Stimson Bldg., Los Angeles, have opened a laboratory fully equipped with devices for testing all kinds of radio equipment.

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See Page 86



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