

New Call Book and Log; AC-7-Tube Set

Radio Digest

PROGRAMS Illustrated

DECEMBER, 1927

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TWENTY-FIVE CENTS

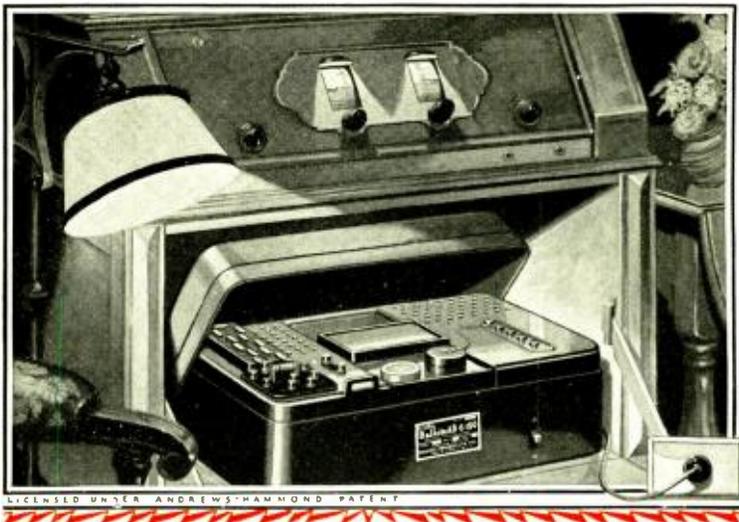


Official
**Call Book
and Log**
Complete This Issue

Milton J. Cross and Grand Opera; Radio Log of Glory; M-G-M on the Air; Sam Pickard's Rise; New Circuit; How of Broadcasting; International Conference; Phantom Orchestra

Balkite AB

A complete unit, replacing both "A" and "B" batteries and supplying radio current directly from the light socket. Contains no battery in any form. Operates only during reception. Makes any radio set an "electric receiver." Two models, 135 volts, \$64.50. 180 volts, \$74.50.



For the radio set owner's Christmas—

Balkite

good as new and will probably be so for years to come.

If it's the owner of a radio set to whom you want to make a gift, that simplifies the problem of what to give. For there's one thing the radio set owner is sure to need—up-to-date power equipment. Give him Balkite.

When you give Balkite you give equipment that has stood the test of time. The Balkite principle of electrolytic rectification today is standard on the signal systems of most American as well as European and Oriental railroads. Over 2,000,000 Balkite Power Units now in use in radio and in a score of industries are based upon it. Increasing recognition of its worth is seen in the fact that Balkite now has three licensees in the radio field alone—Gould, Vesta and USL.

When you give Balkite you give the best radio has to offer. Noiseless battery charging, successful light socket "B" power, trickle charging, and now—most important of all—Balkite AB, a complete unit containing no battery in any form, and supplying radio power from the light socket. The great advances in radio power have been made by Balkite.

When you give Balkite you give permanent equipment. The first Balkite "B," after five years of service, is now a little battered in appearance, but in performance is as

**Chicago Civic Opera
Balkite Hour
Every Thursday Evening**

Now Balkite brings you an entire season of one of the world's greatest opera companies. Balkite Hour, Thursday Evenings, ten o'clock Eastern Standard time. Over stations WJZ, WBZA, WBZ, KDKA, KYW, WGN, WMAQ, WEBH, WBAL, WHAM, WJR, WLW, KSD, WOC, WOW, WCCO, WHO, WDAF.

Whatever the type of set, whatever type of power equipment is wanted (with batteries or without), Balkite has it. Let your dealer advise you. He will tell you what Balkite equipment any set owner should have.

FANSTEEL PRODUCTS COMPANY, INC., NORTH CHICAGO, ILLINOIS

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Messrs. Radio Accessories Ltd., 9-13 Hythe Rd.
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Balkite Radio Power Units



Licensed under Andrews-Hammond patent

Balkite "A"—Exactly like Balkite AB but for the "A" circuit only. Enables owners of Balkite "B" to make a complete light socket installation at very low cost. Price \$35.00.



Balkite "B"—the accepted, tried and proved light socket "B" power supply. The first Balkite "B," after 5 years, is still rendering satisfactory service. Three models: \$22.50, \$35.00, \$42.50.



The standard charger [whether trickle or high-rate] for radio "A" batteries is Balkite. Noiseless. Can be used during reception. Three models: \$7.50, \$9.50, \$17.50.

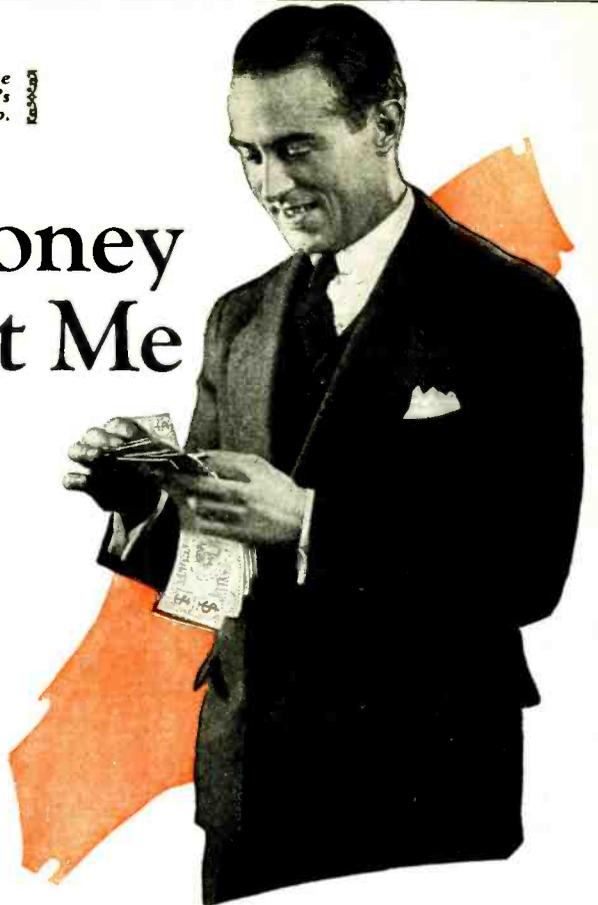
There are special models for 25-40 cycle current at slightly higher prices. Prices are higher West of the Rockies and in Canada.

When I first started making real important money, I used to go down to the bank, draw out a roll—and just thumb it over in my office and grin! That's how good it felt to get success and big money, after years at a low-paid job.

Success and Big Money Were for Others, Not Me

Believe It or Not, That Was What I Thought of Myself—Just Twelve Short Months Ago

I'M telling you, just one year ago I'd never seen a hundred dollar bill in my life outside of a bank. You'd think I'm kidding you if you saw the fine radio business I own now. But it's gospel truth. Just twelve months ago I was only a poorly paid clerk, and I thought success had passed me by.



All my crowd in those days—the fellows I met in the pool hall and at the bowling-alleys—said a fellow had to *have* money to make money. They claimed there was no chance for a fellow whose family didn't have money or some business to start him out in. And I'd decided they must be right.

I guess at that time I had just about given up hope. I thought there must be some kind of a mystery about making a lot of money. I figured I just didn't have an even chance to grab off success and big money. But I was due for a big awakening. Did I get it? Oh, boy! Read my story and judge for yourself.

It all started one day last summer, when Helen, the girl I wanted to marry, was leaving for the seashore. Of course I went to the station to see her off.

As I stepped onto the station platform Bob Oakes and Wilmer Pratt had just rolled up in their cars. They climbed out with their arms full of bundles—books, expensive candy, flowers, all sorts of things. Well sir, I wished I could have swallowed in one gulp the little box of drugstore candy I had bought for Helen—it certainly looked pitiful beside all that stuff.

We three stood there talking to Helen until train-time, while Helen's mother looked me up and down. Like any young girl's mother would, she had my financial standing already sized up within thirty-five cents. Cheap suit, cheap hat, she took it all in.

And you could see on her face all the time what a lot of nerve she thought I had to give Bob and Wilmer a run for Helen.

Well, to make a long story short, Helen was nice, but her mother stood there looking scornful whenever she glanced my way, and she hardly spoke to me at all. I felt about as welcome as the measles, and as uncomfortable as the itch.

And Bob and Wilmer were exchanging sly grins behind my back—I caught them once or twice. They didn't take any trouble to spare my feelings—I guess it just suited them to see me sweat. I began to wish that I and my cheap suit and cheap hat could sink through the floor, but I stayed there and stuck it out.

When Helen's train finally left, I slunk home, ashamed and humiliated. I walked down quiet side streets so nobody would see me. I went upstairs to my room and sat there with a lump in my throat, getting hotter and hotter and more ashamed of myself. Then I began to see red and redder.

Finally I jumped up and banged the table. "I'll show 'em," I growled through clenched teeth. "There *must* be some way for a man to make *real* money!" An idea suddenly flashed through my head.

Hastily I began thumbing the pages of a magazine on the table, searching for an advertisement that I'd seen many times, but passed up without thinking, an advertisement telling of big opportunities for trained men to succeed in the great new Radio field. With the advertisement was a coupon offering a big free book full of information. I sent the coupon in, and in a few days received a handsome 64-page book, printed in two colors, telling all about the opportunities in the Radio field and how a man can prepare quickly and easily at home to take advantage of these opportunities. I read the book carefully and when I finished it I made my decision.

What's happened in the twelve months since that day, as I've already told you, seems almost like a

dream to me now. For ten of those twelve months, I've had a Radio business of my own! At first, of course, I started it as a little proposition on the side, under the guidance of the National Radio Institute, the outfit that gave me my Radio training. It wasn't long before I was getting so much to do in the Radio line that I quit my measly little clerical job, and devoted my full time to my Radio business.

Since that time I've gone right on up, always under the watchful guidance of my friends at the National Radio Institute. They would have given me just as much help, too, if I had wanted to follow some other line of Radio besides building my own retail business—such as broadcasting, manufacturing, experimenting, sea operating, or any of the score of lines they prepare you for. And to think that until that day I sent for their eye-opening book, I'd been wailing "I never had a chance!"

Now I'm making real money, own a good car, stand high in my town, can borrow money at the bank any time I might want it. I'm getting some real *fun* and *enjoyment* out of life, not just existing from pay-day to pay-day.

And—just listen to this! Bob was in my place only the other day, and asked me for a job! Wilmer is still getting along pretty well on his father's money, but he'd trade places with me any day.

And Helen? Well—the honeymoon will be spent in Honolulu, starting two months from tomorrow!

Here's a real tip. Think it over—are you satisfied? Are you making enough money, at work that you like?

This new Radio game is a live-wire field of golden rewards. The work in any of the 20 different lines of Radio, is fascinating, absorbing, well paid. The National Radio Institute—oldest and largest Radio home-study school in the world—will train you inexpensively in your own home to know Radio from A to Z and to increase your earnings in the Radio field.

Take another tip—No matter what your plans are, no matter how much or how little you know about Radio—clip the coupon below and look their free book over. It is filled with interesting facts, figures, and photos, and the information it will give you is worth a few minutes of anybody's time. You will place yourself under no obligation—the book is free, and is gladly sent to anyone who wants to know about Radio.

Just Address

J. E. SMITH, President

National Radio Institute

Dept. P-96, Washington, D. C.

J. E. SMITH, President,
National Radio Institute,
Dept. P-96, Washington, D. C.

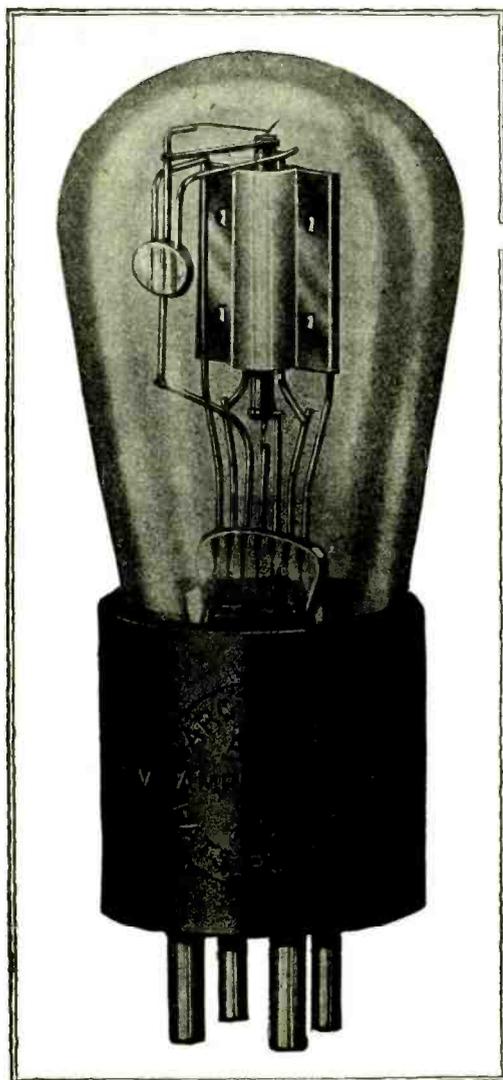
Dear Mr. Smith:

Please send me your 64-page free book, printed in two colors, giving all information about the opportunities in Radio and how I can learn quickly and easily at home to take advantage of them. I understand this request places me under no obligation, and that no salesman will call on me.

Name.....
Address.....
Town.....
State.....

For These Four Reasons

Arcturize Your Present Radio Set
Enjoy all the Benefits of A-C Power
from Your Light Socket with--



Arcturus A-C Tubes

DETECTOR :: AMPLIFIER :: POWER

Arcturus A-C Tubes Have 4 Outstanding Features:

1. Exceptional tone quality, 3. Perfect operation under all volume and sensitivity. normal line voltage variations.
2. Readily adaptable to all 4. Free from hum. circuits using standard sockets.

If you have been awaiting the perfection of A-C Tubes before modernizing your present set, send at once for detailed information on the operating characteristics of Arcturus A-C Tubes.

Ask Your Dealer

It doesn't take long or cost much to install Arcturus A-C Tubes in your present set. Your dealer's service man can get engineering instructions for the few simple changes in wiring that are necessary. Always remember that in changing over your set for A-C operation, Arcturus A-C Tubes require the least changes in wiring.

For the Technical Man--

The unique advantages which we claim for Arcturus A-C Tubes are directly traceable to unique features of construction and exceptional operating characteristics.

The exceptional long life of Arcturus Tubes is due to the enormous electron supply resulting from the heater operating at a low temperature.

The highly efficient cathode is responsible for the unusual sensitivity of Arcturus A-C Tubes, and for the exceptional volume and tone quality which their use insures. This cathode produces: 1. A high amplification factor

(10.5). 2. A low plate impedance (9,000 ohms). 3. A high mutual conductance (1160 micromhos).

Since the base of the Arcturus A-C Tube is of the standard four prong type, no additional terminals are required, making Arcturus Tubes adaptable to existing circuits with all the simplicity of D-C tubes. No center taps or balancing are required. A common toy transformer may be used. Filament voltage is the same (15 volts) for all types—detector, amplifier and power.

The freedom from hum which is one of the most important features of Arc-

urus A-C Tubes is due to the use of low A-C current, only 0.35 ampere. (Disturbing electro-magnetic fields are proportional to alternating current—not voltage.) Arcturus Tubes in all stages are four element tubes with indirectly heated cathodes.

Normal variations in line voltage do not affect the operation of Arcturus A-C Tubes. The amplification factor is practically constant over a wide range of filament voltages—13.0 to 18.0 volts.

The use of a heavy carbon filament enables Arcturus A-C Tubes to withstand even an unusual overload.

ARCTURUS RADIO COMPANY, INC.

259 Sherman Avenue, Newark, N. J.

M. J. Cross—Star Announcer of the Opera

DEAR MRS. "A. A." OF MONTREAL: This is Mr. Cross, and I do hope that you are not disappointed. I can imagine your surprise at this fulsome answer to your rather bashful note to me of a few days ago. I love the naive way in which you say, "Judging from his unusual manner of announcing, one would imagine him to be a man of more refinement, culture and education than the majority of announcers."

You have said it better than I dare, for I should risk my soul for all time to come to make comparisons that other announcers might consider odious. But here he is—full page of him—and, bless your dear heart, he needs it for to tell the truth he has ceased to make a bowing acquaintance with the scales at 200, quite some time ago, I am told.

Of course you hear him every Thursday night. I do, and I'll admit I'd as soon hear Milton J. Cross as Tito Schipa. Isn't that a terrible confession for a professed lover of the opera? But Mr. Cross is such a gentleman! His language is so well chosen, his voice so perfectly modulated, and he seems so sympathetic with the characters he describes. Don't you simply adore him!

You know, Mrs. A., it is perfectly wonderful the way he commutes between Chicago and New York. Imagine having to travel almost 2,000 miles every week just to announce one program over the Radio! It is simply tremendous.

Mr. Stone of the National Broadcasting company, sent me several pictures of Mr. Cross and this, he said, he liked the least of all. No, dear, I'm so sorry to disappoint you but really I never have met Mr. Cross in person. We all cherish such splendid illusions about our beloved announcers, and I dare say, it is almost risky to actually meet them. I have had one or two experiences, and prefer to admire them from a distance.

Mr. Stone doesn't like this picture. I think it is marvelous, don't you? And that's just the way he sits at the opera when you hear him telling the story of what has transpired, and what we are to expect. Look at this picture next Thursday night and fancy him sitting there just like that while you hear him talk.

Doesn't he look mischievous? Yes, he has blue eyes and brown hair. Oh, and a darling of a wife and baby girl! He is a graduate of the Damrosch Institute of Musical Art and has quite a reputation as a singer, as you may know. He was born in New York, and I believe he is of the Presbyterian faith.

Faithfully yours,
MARCELLA



NUMBER 2

COUPON BALLOT

World's Most Popular Orchestra Contest

POPULAR ORCHESTRA Editor, Radio Digest, 510 North Dearborn Street, Chicago, Ill.

Please credit this ballot to:

..... of Station..... (Orchestra's Name) (Call Letters) Signed Address City..... State.....

SHEPHERDS HEAR "ANGELIC VOICES"

Buddies on Wyoming Sheep Ranch Write KOA Joy of Hearing Music From the Sky

"WE GET fed up with scenery herding sheep in the Wyoming hills," said a letter from a shepherd to the director of Station KOA, Denver, recently. "We generally means the herder, his dog and his pony. But I've got a buddy out here and we get along fine now that we can hear you by Itadio. "Shepherds have always been going alone tending sheep just about the same since Adam and Eve got kicked out of Eden. And nobody ever did anything to make it any different until Radio was discovered. All we used to hear was lambs bleating, dams answering, wolves and coyotes and sometimes a dog barking or a pony whinneying.

"No wonder shepherds always were kind of plagued when they came into a village and couldn't seem to make friends with folks. We ain't queer but being alone with yourself makes it hard to act like other folks when you meet up with them at the stores and post office. "Radio must have been invented for shepherds. We look up at the stars when the sheep have settled down for the night, and we hear voices, we hear music, the sky speaks to us. Angels sing as they did on the first Christmas in the Good Book. We are not bugs. It is true, thanks to the Itadio. Oh, you would smile if you could see how interested we are in hearing the lady who tells how to make fancy things to eat. We give a lot of swell names to the sow belly, flap jacks and sour dough... and you would be surprised what a difference it makes."

SHORT WAVES

By Marcella

KFRC Paging Cupid; Lucke Brothers only Interested; Two New Broadcasters Defy Commission; Leanna Forced to Disappoint Bachelor.

CAN YOU imagine a whole staff of any Radio station all unmarried? I bet you anything that since KFRC sent that letter challenging any other thousand watt station to vie with it for single-blessedness honors, little cupid has been more than busy and by the time this is in print the entire staff of six husky Western bachelors and one alluring bachelor girl, named Peggy O'Neil, will have had double and triple weddings. You can't fool Marcella. It's just impossible to keep attractive announcers single.

Charles, I think you have a rival for Celeste Ward's affections. Listen to the enthusiastic way Carl Menzer writes about her: "Celeste has been with us at Station WSUI since June, 1927, appearing about three times each week. Due to her experience along these lines her programs are made up of numbers which especially appeal to the average Radio listener and she has proven to be the most popular artist we have the good fortune to broadcast from the Old Gold studio. Miss Ward is about five feet four inches high, slender, big brown eyes, dark brown hair, and a darn sweet disposition. Just look at her picture. Don't you think she is pretty? We do." Carl adds as a postscript to his letter that WSUI is moving into a new studio and everything. Isn't that wonderful. He also promises to drop in and see Marcella some day. When he does then I'll let you know just exactly what he looks like.



Peg, here's Marvin Lucke's answer to my letter asking for information about Harry and him: "First of all, Harry, my younger brother is a studio soloist for KTNT and has been for the past two years—but does not announce programs. He, being my brother, I do not have the nerve to tell how good-looking he is, but let you judge. Here goes for his description: Blue eyes, dark hair,



twenty years old, and lots of Iowa pep. As to myself—well that's the hardest to write about. However, here goes: Blue eyes, light hair and about five feet ten inches in height, age twenty-three years. I have been musical director for KTNT for the past two years and regular staff cellophonist and staff pianist. Are we single—yep—but interested? Now please don't "bawl" us out too severely in that next issue." Can you guess, Peg, which is which? Well just to make it easier for you, the top one is Harry and the lower, Marvin.



Freeman Talbot, KOA's terribly nice announcer, was in here this week. My but he's attractive and such a great big man. And when he smiles it just makes your heart beat extra fast. He says he expects an awful lot of trouble with the Radio Commission. They have a new broadcaster out there in Denver who simply will not abide by the rules. The young lady's name is Katherine Louise Talbot and she is only a little over a month old. She goes on the air in season and out, on any wave, without authority of the commission.

You may be interested to know that WDBO also has a new announcer in the person of Harold Potter Danforth, Junior, who arrived only about a month ago. At present, however, he is confining his broadcasts to the remote control studio at his Daddy's home—but nigosh, how can he expect to build up a large audience when he starts announcing at 2 a. m. and concludes his programs about two hours later.

Dear me! Mr. Bachelor of Hamilton, Missouri, you are doomed to bitter disappointment. Leanna Field Driftmier, the sister of Henry Field of KFNE, is already somebody's wonderful wife. She tells me that she is tall, dark haired, and brown eyed and is forty-one and married and not only that, she has seven children. How do you suppose she managed to do so much? She says she has a stenographer right at home with her who takes her letters and writes down recipes and things. And she has some correspondence because only last Christmas she received two thousand Christmas presents from her listeners.



Californian Logs 616 Radio Calls

William MacDonald Believed to Hold World's Dx Record—Uses Own Ten Tube Receiver

WHEN one has logged 300 broadcasting stations, one may safely assume to be a successful candidate for the degree of D. X. After that, further accumulations of reception certificates may be considered in the post-graduate class.

A dispatch by Dan Thomas to the Chicago Evening Post Radio weekly avows that William MacDonald of Chula Vista, Calif., has evidence to back up his claims that he has logged 616 stations from 37 nations scattered over the world. Mr. Thomas believes this to be a world record, and so far as Radio Digest has been able to determine it is a world record.

MacDonald has a ten-tube set which he developed himself. He has been at the job of getting distance practically every night for three years and says:

Solved All Secrets

"There are several secrets to long distance reception. I believe I have solved all of them with my set, for I have tuned in stations from the most distant points on earth. Where the average filament tests 50 all of mine test 100.

"The batteries also are an important factor. I use rubber insulated batteries of high capacity and a series of wet B batteries having a total capacity of 200 volts. It is important to have wet B batteries.

"Right now I am trying out an outside non-directional cage aerial, but I have had my best success with the Gilcrest type box aerial which has no insulators. Insulators are bound to offer resistance, although they are not supposed to.

"I also have found that three ground wires will increase the receiving radius a considerable extent. I am using three of them, running into the ground about a foot apart. They set up an electrical field in the ground that greatly enhances reception."

Gets Bombay Amateur

Almost half way around the world lies Bombay, India. With an up and going super power station kicking off five or ten kw that certainly would be a DX wave worth roping on any set anywhere. But this Bombay amateur station shoots a 320 meter wave with only 52 watts, and MacDonald has that as one of his 616 stations.

His sacred log is a veritable Radio atlas of the world. England, Ireland, France, Italy, Germany, Sweden and Switzerland are heard regularly in his home.

"All of my distant receptions have come in over the loud speaker," says MacDonald. "I have never used receivers, which many people say are better for such receiving. I believe that a horn type speaker of low resistance, such as the one I am using, is just as efficient as head sets. The cone type speaker is best for quality, but it falls down on distance."

DAINTY MISS MYRA ADORNS OUR COVER

AS developments take place and each broadcasting station becomes a more important factor, directors and owners take a more serious interest in their studio personnel. There are more contracts and less changes on the staff. So WHEN, New York, makes it a matter of note that Miss Myra Lee, the vivacious personality on the Radio Digest December cover, is exclusively WHEN, always has been. She came a wide-eyed curious visitor with an artist associate, tried out with the microphone, and found she had an exceptionally clear and full Radio voice. Just now she

NOMINATION BLANK

World's Most Popular Orchestra Contest

POPULAR ORCHESTRA Editor, Radio Digest, 510 N. Dearborn St., Chicago, Ill.

I Nominate..... (Orchestra's Name) of Station..... (Call Letters) in the World's Most Popular Orchestra Contest. Signed Address City..... State.....

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Radio Digest, Illustrated, Volume XXII, Number 5, published Chicago, Illinois, December 1, 1927. Published monthly on the first of each month by Radio Digest Publishing Co. (Incorporated), 510 N. Dearborn Street, Chicago, Illinois. Subscription rates yearly, Three Dollars; Foreign Postage, One Dollar additional; single copies, Twenty-Five Cents. Entered as second-class matter Sept. 6, 1927, at the post office at Chicago, Illinois, under the Act of March 3, 1879. Title Reg. U. S. Patent Office and Dominion of Canada. Copyright 1927, by Radio Digest Publishing Co. All right reserved.

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Looking Ahead

Taking Technical Kinks out of Knotty Explanations is one of the nicest things Marvin W. Thompson does when it comes to Radio. The second installment of Simple Explanation of Broadcasting takes you right into the why and wherefore of the science so that even a kindergarten child could understand. It's in the next issue of Radio Digest.

Opening the Midwest Network Studios in Chicago will be described, and details given as to what the expansion means to the fan who listens in. January Radio Digest.

Seven Years of Broadcasting, is the interesting subject of a history of the art leading up to the developments of today. It will afford a review on which you may write your club paper.

Special articles about broadcasting stations and artists, with photographs, are desired. No manuscripts accepted unless typewritten and prepaid, or returned without return postage being inclosed. All manuscripts are sent at owner's risk.

Newsstands Don't Always Have One Left

Every Month New Wave Changes in the Official

Radio Digest

Call Book and Log

BE SURE OF YOUR REGULAR COPY

SEND IN THE BLANK TODAY

Publisher Radio Digest, 510 N. Dearborn St., Chicago, Illinois.

Please find enclosed check M. O. for Three Dollars (Four Dollars for One Year's Subscription to Radio Digest, Illustrated.

Name

Address

City..... State.....



SHERMAN'S WLS ORCHESTRA LEADS

COMMISSION MIGHT TURN HARD BOILED

SAM PICKARD HINTS FORCE FOR DISTURBERS

Tells R. M. A. Wishes of Majority Will Prevail—Law Must Be Obeyed by All

Following is the official record of the highlights of Sam Pickard's first declaration as a new member of the federal Radio commission.

By Sam Pickard
Member of Federal Radio Commission

THIS month broadcasting faces the cold weather test. The summer allocations have worked well. Listeners have been satisfied with local reception. We have all realized, of course, that with cool weather heterodyning from powerful stations on the same channel would prevail.

However, the commission's barometer, which is the daily mail, indicates comparatively few complaints from inter-

WORLD'S MOST POPULAR RADIO ORCHESTRAS

Leading America

Midwest

Maurie Sherman's Dance Orchestra, WLS, Chicago1,129

By Districts

No. 1 East, Vincent Lopez, WEAF.....	973
No. 3 Midwest, Fred Hamm's Orchestra.	874
No. 4 West, Seven Aces, WBAP, Fort Worth	719
No. 5 Far West, Max Dohn, NBC.....	312
No. 6 Canada, Eveready Symphony, CKNC, Toronto	147
No. 2 South, Chas. Dornberger, KTHS, Hot Springs, Ark.....	97

MUSICIANS WIN AVALANCHE OF VOTES FOR GOLD AWARD

Nominations Received for 110 Organizations During First Two Weeks of Contest—Listeners Eager to Show Appreciation

NOMINATE THESE TWO FOR TROPHY

ALL set for the big contest. Both of these organizations are heard over the stations associated with the National Broadcasting company. There should be a full quota of twenty-three in the First National outfit shown at the top. Somewhere along the way it appears the photographer lost four members. Perhaps they are detained by anxious friends

offering them ballots and good wishes. Below we have that justly distinguished group, the Crosley Moscow Art orchestra, with Arna Arriga, the conductor, in the center. There are members missing here, too. Perhaps they are similarly detained. We shall see. At any rate do not forget to clip every ballot and make each one count.

WE DO love our Radio orchestras. And we say it with ballots. Radio Digest was all but swamped as a result of the first two weeks of voting in the new popularity contest by which beautiful and costly plaques are to be awarded to orchestras receiving the greatest number of votes in six districts divided among the United States and Canada. Announcement was made in the November issue which appeared in some places on October 31. About November and the first votes began to come in. Then came special bagfuls from the post office. In two weeks it was a veritable whirl-



ference in comparison to the large number of listeners.

If hard-boiled, stiff-armed tactics are necessary to reduce this interference and listeners indicate the desire to sacrifice many of the local stations to this end, the commission stands ready to apply fully the interest, convenience or necessity clause of the Radio Act. In the minds of the Radio commissioners it is a question of whether or not the majority of listeners actually want any local service stations to sacrifice power, time privileges or favorable wave lengths in the interest of better reception.

DX Fans Appear

During the last few days good reception weather has brought out the DX fans, just as a few warm spring days produces its group of fishermen. They report that many of the channels bring in only a whistle, the penalty of two or more stations trying to do their stuff on the same wave length. Along with interference complaints there usually comes a solution. Dozens of those have been hopefully examined by the commission but fame and fortune still await the inspired answer to the problem of placing 685 stations on 89 channels, in the face of established fact that a 1,000-watt transmitter per channel is the regulation load.

It is within the populated business and town centers where most broadcasting stations are to be found, and here listeners are well serviced with Radio. Outside of the larger cities, however, where more or less distant stations must be relied on for service, particularly the

(Continued on page 23)

Silent Night Abandoned by Chicago Broadcasters to Prevent Time Loss

Commission Assigns WHT Wave to WHAZ for Monday Night—Awakes Other Stations to Act Against Further Encroachment

ABOLITION of Chicago's silent night has been foreshadowed by the gradual elimination of silent nights throughout the United States. WBAL, Baltimore; WHAS, Louisville; WHO, Des Moines; WLW, Cincinnati; and WOW, Omaha, are only a few of the stations which have expanded their service to include a seven day broadcasting week. Among the Chicago broadcasters KYW has stood alone for three years in urging Chicago Broadcasters to do away with the silent night. They have always pointed out that the Radio Department in Washington would assign Chicago wave lengths to other stations on Monday nights. Chicago stations were startled into action when they learned that the Radio Commission had assigned the WIBO-WHT-WORD wave to WHAZ on Monday nights and was planning to release other Chicago wave lengths for that night. The broadcasters association immediately agreed to discontinue Chicago's silent night. The more important points of the Chi-

cago Broadcasters' statement follows: "Chicago's 'silent night' is a survival of an era when Radio broadcasting was in an experimental stage and Radio receivers were deficient in selectivity. "Chicago broadcasters have reached the conclusion that the tacit agreement heretofore observed by Chicago broadcasters should be terminated. They are forced to this conclusion by many reasons: "The federal Radio commission has actually begun to assign Chicago wave lengths to other stations for use on Monday night. "According to information received from the federal Radio commission, great pressure is being brought to bear by outside stations for such assignments and the rights of Chicago stations to continued use of their wave lengths are thus being placed in jeopardy. "Chicago's important as a Radio center is being diminished by virtue of the fact

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wind of votes. As we go to press they are coming in with unabated volume.

Midwest Shows First

In the little box above may be seen the standings of the orchestra at the end of the first two weeks' count. Midwest states naturally began to make the greatest showing first, because of the comparatively short distance for mailing. But California and Maine sent ballots by special delivery and airmail.

The winners of the plaques will achieve not only national fame but will become identified as leaders in nations across the Atlantic, as many other American orchestras have done.

The fact that Maurie Sherman could beat out Vincent Lopez in the Midwest perhaps is an idiosyncrasy of the mail. When the East begins to shower down its ballots Lopez or some other of the Eastern organizations will march forward and take a dominating position as a national leader. The same may be true of the South, West, Far-West or Canada.

Tributes of Friends

One gold and five silver plaques are to be awarded to orchestras honored by the greatest number of votes from their friends. It is a small tribute on the part of any listener to cut out and mail a ballot to bring special honor to the members of an orchestra that furnishes so freely the best to be had in the way of music.

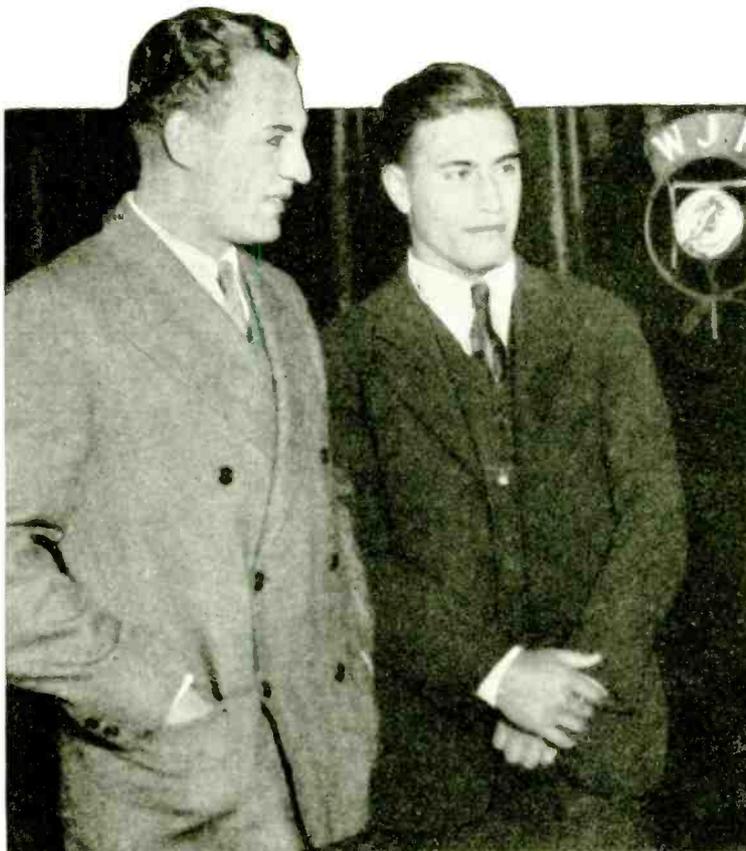
Even if the orchestra of your choice may seem, in your mind, incapable of sufficient support to take a gold or silver prize a high voting figure is something to show in the way of merit. Vote for your favorite orchestra whether you think it

(Continued on page 14)

PICTURING BROADCAST ACTIVITIES



"COME on you castanets," Captain Wm. J. Stannard, director of the U. S. A. band, seems to say, as the government musicians play Spanish airs for our Southern neighbors.



BREAKING through a stone wall of opposition to professional football Red Grange (left) took the WJR mike for a 440.9 meter run for a touchdown. Benny Friedman (right) ex-captain of the Wolverines, scored again playing with the Cleveland Bulldogs.



WHEN LYNN PEAL, WDAD, Nash-ville, sings "Cow Bells" the Holsteins and Jerseys give the farmers an extra quart if they are permitted to listen in.



"WILDFLOWER," in Cadman's opera, "Sunset Trail," but her real name is Miss Lucile Fowler. She blooms in the KOA studio, Denver; yes, contralto, of course.



"HAIL! Hail! The gang's all here!" There they are! Those irrepressible twins, the Rayovax (for short)! Now they're hitting it up with Sir William Demarest (center), the new funny fellow of the Warner brothers films at KFWB, Hollywood.



THERE'S vaudeville on the air in Hartford, Conn., and Jim Clancy put it there through WTIC. He's a good showman and broadcasts the Thursday performance from his theater.



BALTIMORE to Bergen, Norway, by Air! That's the hope of Miss Helene Broemer who expects her cello notes will reach that destination over the WBAL international program.



"THEY'RE off! Straight down the water course they cleave the blue, like hissing arrows and throw high a shower of frothing silver!" Probably something like that is being said by John P. Daniel, broadcasting the President's Cup regatta on the Potomac.



THIS is the way Wheeler Bonner of the KGA Harmony Girls looks while singing into the microphone at Spokane. Tune, Look and listen! Can't you almost see her lips move?

RADIO PERSONALITIES AND EVENTS



GIUSEPPI DI BENEDETTO, lyric tenor of NBC grand opera, and one of the organizers of this famous Radio troupe.



THESE dainty mountain warblers were discovered in a Tennessee wilderness, and brought to New York by a famous artist. They are Miss Mary Huntzinger (left) and Miss Marjorie Carpenter. They have been heard from several leading Radio studios.



MISS JOHANNA GROSSE, WLW organist, feels perfectly at home in this Hungarian costume because she was born in Hungary. Her name then was Naja Janka.



WENDELL P. LOVELESS, director of WMBI, Moody Bible Institute station, is broadcasting cheer to foreign shut-ins in their own languages.



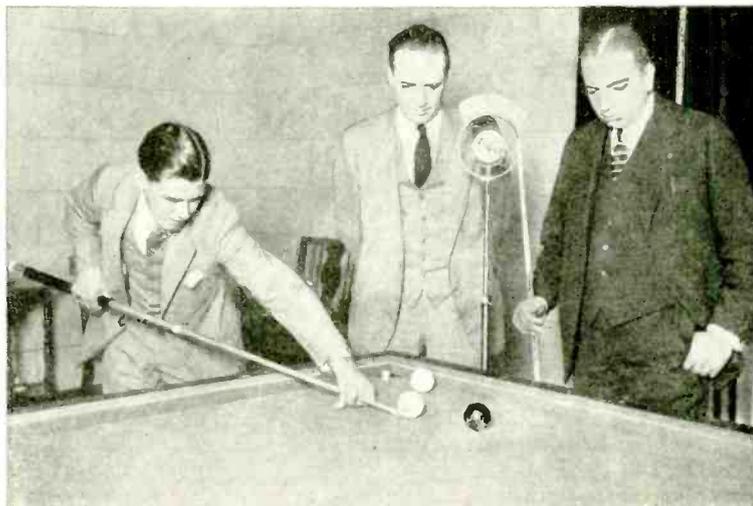
"FIRST you take a little milk," said A. D. Burke, professor in dairying at A. & M. college, Stillwater, Okla., "and beat up a few eggs," added E. E. Scholl ("KVOO," announced D. T. Martin) "and that makes ice cream," concluded J. C. Kositzky.



MARY ALICE CHENEY composes and sings her own songs for the Children's hour at WSAI, Cincinnati. Children thank her with love letters.



BILLIE ALLEN HOFF is so short she has to put the dictionary on the piano bench when she sits down to play and sing at WJJD, Chicago. Words never fall her.



NOW they are broadcasting billiard championship games for sports fans. Walter Cochran, 18-2 balkline world champion, in a game with Eric Hagenlecher, Ben Garrettsen announcing progress over WCFL, Chicago.



SECRETARY HOOVER found he couldn't get away for a recent speaking engagement so employed a microphone to take his voice for him.

Belated Ballots in Mail Robbery

However, They Were for Barnes and Pat Won Trophy Anyway—Ward Takes Canadian Cup

PAT BARNES has an additional set of ballots to his credit for the 1927 Gold Cup. They arrived in a soiled and rain soaked envelope, postmarked August 30, from Atchison, Kans. The name of the sender was Mrs. F. B. Pierce, 927 Division st. A letter explaining the delay, signed by the postmaster, reads as follows:

Pat Barnes, WHT, with his Gold Cup popularity prize, fourth annual award for most popular announcer.



"The accompanying first class matter was turned into this office by postoffice inspectors with a report that it was found by a section foreman along the railroad between Kewanee and Neponset, Ill., evidently a depredation."

Mail robbers tried to steal Pat Barnes' votes, but he won anyway!

The Final Tally

The total number of votes received by the leaders in the 1927 contest were as follows:

- Pat Barnes, WHT.....376,055
- Uncle Joe Faassen, KSO.....341,922
- Henry Field, KFNF.....319,428
- Dean Cole, WHO.....283,589
- Bill Hay, WGN.....275,802

Billy Ward, announcer at CJRM, Moosejaw, Sask., captured the silver cup for most popular Canadian announcer. His vote was 11,365.

Presentation ceremonies were conducted at the broadcasting booth in the Chicago Radio show, Oct. 14, and were broadcast by WHT. E. C. Rayner, publisher of Radio Digest, presented the gold cup to Pat Barnes and the silver cup to Uncle Joe Faassen. A moving picture of the event was made by International Newsreel, and shown throughout the country.

ORIGINALITY, PLAN OF WGES DIRECTOR



BENSON K. PRATT, new director of WGES, Chicago, who proposes to broadcast new Radio ideas.

RADIO WAVES BORE MOUNTAIN DEPTHS

SOLID rock to a depth of a mere 500 feet is no obstacle to a forward rushing Radio wave, according to Dr. A. S. Eve, of McGill university of Montreal who is conducting experiments in the Colorado Rockies. Working through the bureau of mines a test was made at that depth at Caribou, Colo. "A musical contest at Denver came through somewhat mushy," said Dr. Eve, "But not because of the density of the rock." Tests are being made to locate ore bodies by the Radio waves.



"Uncle Joe" Faassen, KSO, and his Silver Cup.

Teaches Radio Art



IN the interests of Radio transmission, Prof. John E. Fetzer, Director of the Engineering Department of WEMC, Berrien Springs, Michigan, is conducting a class in the technic of Radio transmission. In this class are students from various states as well as from the British colonies in South Africa and China.

Mr. Ralph Watts from Cape Town, South Africa, is studying Radio with the idea of carrying back to his country the latest advancements in the art. Mr. Wilton Wood of Shanghai, China, is hoping to return to that country and further the interest of Radio in that unsettled republic.

BEN PRATT DIRECTS WGES MIKE, CHICAGO

Newspaper Man Promises to Add Many Novel Ideas

"SOMETHING new and something different," as Roxy says, has been nailed to the masthead of one of the most popular Chicago stations, WGES, as the slogan of the newly appointed director, Benson K. Pratt.

"Tune in one and you tune in all," is something more than an interference jest," said Mr. Pratt, "because most of the stations are now producing practically the same kind of a program, same kind of music, same kind of features. There is a woeful lack of originality. It will be my aim to steer the Louis Guyon station along a new course, through new vistas for Radio listeners."

Mr. Pratt is a veteran newspaper man, having entered the Radio field from a rewrite and feature desk at the Chicago Herald and Examiner. His first regular enlistment was in charge of publicity for the former Stewart-Warner station, WBBM. The new things that he has in preparation for the Guyon's Paradise Ballroom station are largely in preparation. "Hits Before They're Hits," is one enterprise already introduced.

Lumberjack Vums Road to Fortune

Learns Ukulele in Canadian Forest—Plays in London—Millionaire Makes Him Rich Offer

ROMANTIC case of good fortune resulting from broadcasting has just come to light in London. Some time ago a young Scots Canadian, Sydney Nesbitt, arrived in London from the Canadian backwoods with a toothbrush and a ukulele. Nesbitt was born in Edinburgh, but he left for Canada as a boy and had been lumbering for several years.

Coming back to London his proficiency with the ukulele landed him an engagement at the Café de Paris, celebrated for its cabaret and Teddy Brown dance orchestra. Teddy Brown is an expert xylophonist and is patterned after Paul Whiteman's build, turning the scales at well over 300 pounds. His band's broadcasts are a popular feature of London Radio programs, and it was while engaged with him that Nesbitt was heard over the Radio by a Canadian millionaire. As a result he was engaged to return to Canada as a private entertainer, and to broadcast throughout Canada and the United States. If he desires, he may also become a partner in the millionaire's business.

"I reckon I'm the luckiest man in England today," said Mr. Nesbitt in an interview. "It will mean big money for me, and I owe it all to the Radio, and especially to one song, 'Souvenirs,' which I broadcast for the first time the night the millionaire heard it. The very next morning I had a letter from him, saying he liked my ukulele playing and asking me to go home with him as his private 'uke' player.

"I never dreamt that when I learned the 'uke' in the Canadian lumber camps round the camp fires that it would bring me such marvelous luck as this.

The millionaire has requested that his name not be disclosed, as he only wants one musician!

Recent reports from the patent records at Washington show that 3,600 patents have been awarded for Radio devices.

QUEEN OF IVORIES FAVORITE AT WJAX



MISS ANNA CANOVA descends so regally upon the majestic grand in the WJAX studio in Jacksonville, Fla., she has been christened "Queen of the Ivories." The piano behaves as a faithful and obedient subject of her royal fingers, for it always responds to her moods and whims with an expression that brings delight to the thousands of listeners who tune in this far reaching station of the Southland. Long live Queen Anna!

LADIES WRITE WINDJAMMER, WAMD



NOW that Sarge the Windjammer is back at his old stand in front of the WAMD mike in Minneapolis the fair listeners of the Northwest are using their Radio receivers again. Every male entertainer in Minneapolis admits Sarge gets the lion's share of the tinted and scented mail. But wait until the girls see the Windjammer shown in the lower right hand corner, here! Sarge calls this his "broken face." He is heard twice weekly and the fans still call for more.

Simple Explanation of Broadcasting

Part 1—When the Genie Electricity Takes Hold the Word "Audience" Comes to Mean 50,000,000 People



By Marvin W. Thompson

DEEP in the heart of a teeming city, a great orchestra sweeps majestically through the score of a world famous operatic selection, its rendition complete with the mighty roll of the kettle drums, the soft plucking of harps, heavy background of holtonphones and the high singing of violins in the hands of master virtuosos. Perhaps two thousand well-dressed men and women have been fortunate enough to secure admittance to the seemingly huge auditorium and the artists before them command their rapt, spell-bound attention.

Out from the city in all directions go a dozen pairs of wires like the web of a gigantic spider, to end hundreds and even thousands of miles away, distances that not so long ago were regarded with awe, as representing a journey of many wearying days and nights. Now, in an instant almost too short to be measureable, each beautiful note wings its way over the wires to be caught up by a glistening, compact piece of machinery and hurled through space yet more miles to an audience of a size never yet gathered together in one place. An audience many times greater than all the millions of men in all the armies engaged in the great war, a multitude impossible to conceive as within sight of the eye, and greater by far than many a country in Europe regarded as exceedingly powerful in that continent's ever-varying, mysterious affairs.

Almost Beyond Comprehension

Consider the enormity of the feat being accomplished, the vastness of the territory man now covers with his music. Music which millions would never hear, and never learn to appreciate, were it not for this newest creation of scientific and commercial enterprise—Radio.

ing of the principals is reproduced in millions of homes.

Such an accomplishment was beyond the conception of even the mightiest rulers, Caesar and Napoleon. Yet today this instantaneous transmission of music and the human voice is accepted as commonplace and many wonder why science cannot hurry the perfection of compact little boxes that will reproduce, for the eye, these important events, while they are transpiring; broadcast from portable "ra-

ret lathe works—without a machine to demonstrate on? Or, if you happen to be a seasoned manipulator in Wall or LaSalle streets, would you care to explain such things as margins, selling short, class A and class B, call money and the technicalities of a corner to a professor of chemistry or zoology? Nowadays, nearly everyone is a specialist in some phase of life and we do not have much time to grasp even the rudiments of other phases.

In this series of articles it is hoped that

of its own, no matter how created. If our singer changes to a different note, he either causes the same chord or another one to vibrate at a different number of times per second. Just as if you hold a rubber band taut across the thumb and forefinger of one hand and pluck it with the other hand and get one note; then let it loosen ever so slightly to get a lower note when plucked again.

Now keep this thought in mind. When you pluck the rubber band, you must put energy into it, even though very little. This energy goes into the rubber when you draw it back and is spent in vibrating. The singer puts energy into pushing his breath past the vocal chords with sufficient force to cause them to vibrate violently and it is absorbed by that vocal chord used for a given note.

Keep the thought in mind of the energy being in the vocal chord and we will digress a moment on the subject of Energy. In and on this earth we have a definite amount of energy. We can store it in coal or storage batteries, use it as electricity, steam, light, heat, gasoline, etc., but we can never add to the total amount or lose any of it. The same amount of energy that was here when Cleopatra ruled the Nile is still here, no more and no less, and always will be.

Following a Vibration

Getting back to the vocal chord, the energy which we have put into it cannot stay there, so the point is "Where does it go?" When it vibrates it forces the air immediately surrounding it to move also. The air particles are crowded together and some are shoved away slightly. These pass the shove along to others and then return to their original position. Those shoved, pass it on and they also return to where they were before. What is termed a Movement of Energy in the form of a sound wave, has been started. The air itself does not move away but the shove, or ripple, or wave, does. The movement is passed on and on, and the waves occur and follow each other at the same number per second that the vocal chord vibrates.

Here is another illustration of this travelling of a wave motion such as occurs when one sings, and a parallel which nearly everyone has done when a youngster. In Figure 1 is an illustration of a boy holding the free end of a rope about 20 feet long, the other end of which is tied to a post. The rope is slack and the boy has found that by raising his arm and then snapping it down smartly, he can start a wave in the rope which trav-

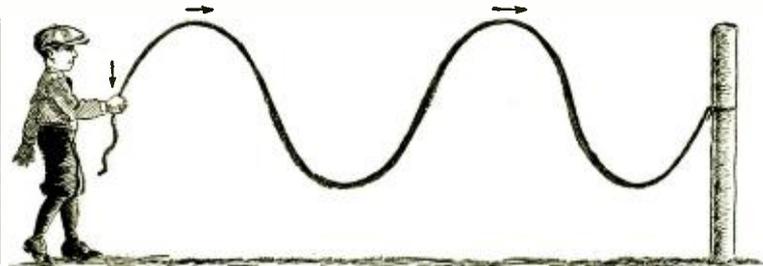


Figure 1

dio cameras" at the scene, and through powerful distributors.

Many times you must have wondered how all this was done. How the human voice could be changed to travel silently and at the speed of light over fine threads, could lose even the tangible path of the threads and leap out into space, silently to spread out over cities and towns, over forests and impassable mountains to again be a human voice to which any and all may listen at the touch of a finger. Surely,

a means has been found to cover every intricate angle of broadcasting in such a way that "the doctor, the baker and the candle stick maker," also the machine tool manufacturer and the financial wizard, can get the whole magnificent picture clearly and with full appreciation of what is happening in the vast reaches of the sky over their heads every night.

The start of all broadcasting, whether it be through a single station or a great chain, is in the creation of sound. Some forms of sound are highly complex in their make-up, involving many notes to form a chord or the many little characteristics of speech by which we recognize voices and it would seem best to take as an example a vocal solo as given by an accomplished tenor or baritone. This for the reason that but a single, almost perfectly pure note is created at a time.

"What Is Sound?"

Our singer is in the studio of a broadcasting station and presenting a selection for his radio audience that he cannot see and whose appreciation he can only learn through cards received days later. This brings us to the point of "What is Sound?" As the singer pushes air through his vocal chords he causes them to vibrate, and, for the sake of simplicity, we will

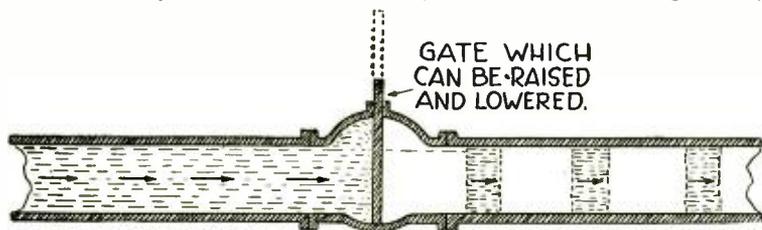


Figure 2

Again, two modern gladiators, trained to a pitch never dreamed of in the days of the Caesars, and conquerors of many other famous fighters, are to meet to decide which is champion of the whole wide world in the art of boxing. That world, from Australia to Siberia, is tensely, eagerly awaiting news of the outcome. Men have traveled over oceans and continents to witness the meeting, and 150,000 eager, expectant spectators have paid a king's ransom to be able to see it.

From the ringside, half a hundred pairs of copper threads radiate over a continent 4,000 miles wide carrying the dramatic descriptions of every blow and side step as given by carefully chosen announcers of long experience. From half a hundred great broadcasting stations each word leaps out at the almost incredible speed of 187,000 miles a second to be re-created into the spoken word for over 50,000,000 pairs of ears to hear. All the drama of the spectacle, the roar of the mob, the clang of the gong, even the heavy breath-

it must sometimes give you a tingle along the spine to be able to control one of the most complex mechanisms yet devised by science, a mechanism that sifts out the complete music of an orchestra from the scurrying Radio wave and gives it to you with every delicate touch of the original rendition.

And, to repeat, you must have wondered how it all was done. If only you understood electricity. Radio waves and sound! They seem so difficult to grasp, and when the engineer endeavors to explain he seems to get into a language as foreign as Russian or Siamese. The task of the translator is not easy; each of the dozens of operations, and the many forms into which energy is changed, must be presented with a parallel feature of everyday life with which the average hustling American is familiar.

Define by Comparison

If you are a manufacturer of machine tools, have you ever tried to explain to your doctor just how your automatic tur-

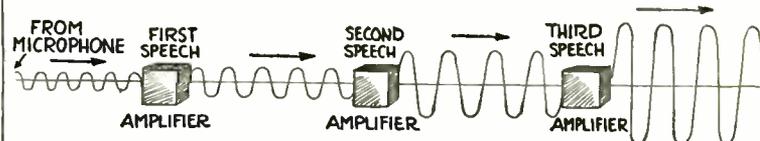


Figure 3

presume that but one vibrates for each single musical note.

Now the note being created is the result of the vocal chord being caused to vibrate at a definite number of times per second. That is how notes are distinguishable; each has a definite rate of vibration

els its length ending when it hits the post. At intervals of about a second apart, he can repeat this and cause a steady stream of waves to travel the rope, each the same size and all the same distance apart.

(Continued on page 18)

"OH THOSE TO-TO-O-TEO-TOTEM POLE BLUES," SINGS MISS BETTY, KOMO



WHEN those Totem broadcasters at KOMO want to get a real enthusiastic response from folks around Seattle they announce the Harding sisters for a "bluet." Betty and Louretta have perfectly matched voices for the blues. This photo of the smiling lady with the floppy hat is Miss Betty, a newcomer at KOMO. She recently

took her degree in music from the University of Washington and has been teaching music at Sumner, in the shadow of snow-capped Rainier. Her sister, Louretta, has been staff pianist at KOMO since it first went on the air and coaxed Betty to Seattle. Together the two sisters have captured a mighty Radio audience.

Visual Interpretations of Classics Attract Attention to WSM Pianist

Elsie Miller Wood Develops Descriptive Method of Technique in Presenting Works of Old Masters—Wins Praise of Fellow Artists and New Radio Friends.

WALTER DAMROSCH started something when he introduced vivid word interpretations with his broadcast of the classics. By visualizing the thought and mood of the composer he aroused a new interest in the hearts and minds of millions who had hitherto regarded the rigid cadenzas of the old master as a bore, or at least beyond their ken. This method of revealing the works of the sublime by Radio has been followed by others with marked success.

Elsie Wood Miller, whose portrait is shown here, has found this spirit of expression for a large Radio audience in the South. She has been heard recently in a number of recitals from WSM at Nashville where she presented a series that included Chopin, Beethoven, Grieg, Mendelssohn, Rubinstein, Liszt and Moskowski. In the course of a concert tour through the eastern states she took time to study and prepare for Radio pres-



entation. She particularly admired the technique of the great Damrosch while in New York, attending several of his concerts.

Thus she developed her own style, organ, so that upon her return to Nashville she was prepared to introduce something more than the ordinary to her listeners. Her recitals attracted the attention of many artists who had previously withheld full approval of what could be accomplished by Radio. Director George D. Hay believes that these recitals have brought a new prestige to WSM.

"I believe that the season of 1928 will advance a long step forward in the appreciation of good music," declared Mr. Hay. "We are beginning to understand better the technique of presenting our more refined music. There has to be something to take the place of the gesture and sway of the conductor for those who hear only, and do not see. Mrs. Wood has the right idea."

NBC Crooning Lady Works Hard and Long to Achieve Radio Fame

Interviewer Thinks Vaughn de Leath Busiest Woman Along "Big Street"—Sings for Records—Collects and Makes Ear-rings for Her Pet Hobby.

By Donald Morgan

FROM the abysmal depths of a heavily upholstered chair, we sipped our tea and silently regarded our hostess—the always popular Radio and recording artist—Vaughn De Leath.

A very striking and attractive woman, this crooning lady of the "air." One immediately becomes impressed by the quiet dignity of her. The sparkling personality that lurks behind an ever-present "watch-your-step" expression in two, big luminous brown eyes seems to be trying to hold itself in check. She looks temperamental; but she is ambitious, practical, hard-working. One would expect her to be slow of speech, with languorous voice and subtle words. On the contrary, she is matter-of-fact and direct. Miss De Leath has a keen, sensible brain behind those brown, fathomless eyes; a brain that has guided her swiftly and surely to glory and success; success without that quality that usually accompanies this achievement—ostentation. She has a distinct distaste for the word and all that it implies.

Vaughn De Leath is probably the busiest young woman, professionally, along the "big street." So busy, indeed, that we have often wondered when, and how, she ever found time to sleep. Always on the go, rushing hither and thither, either recording for one of several phonograph companies, keeping appointments with music publishers concerning her musical compositions, or fulfilling engagements in the broadcasting studios stretches her work-day far into the night.

While music and literature are favorite recreations for Vaughn, we believe the collection of rare, old, and new ear-rings—yes, we are quite serious—is her real hobby. She has them all sizes and colors,

from the Orient and the Congo, from Europe and South America, and from Mexico and our own United States. Being very proud of them, she delights in telling you, minutely, their history, who wore them and how she came in possession of them. She even creates, and models designs herself. They are really very cleverly done, too. Right here, allow us to impart a "tip." Should you ever be lucky enough to see this array of glistening jewels, and if you would like to make a friend of this charming young woman for life, select the darkest, largest and most highly polished set of the lot as being the best. These are her favorites, and she gets a big "kick" when they are singled out for admiration, for she made them herself.



Vaughn de Leath

Sometimes this busy song-bird disappears for a short time. A search will find that she has flitted away to a quaint log cabin, set exquisitely in a Connecticut garden which she herself designed, planned and completed, inside and out.

"Little Paradise," as Miss De Leath calls it, means to her all that its name implies. For it is here she finds relief after strenuous days in the city. And here, too, all alone with her thought, amid these enchanting surroundings, she creates her musical works; reads her favorite literature; takes care of her gardens; plans for the future, and last, but by no means least, it is here that she feels so perfectly at peace with the world.

As we struggle to our feet, accept our hat and press a warm, feminine hand, we reiterate: A very striking, attractive and successful personality, this lady of the "air." We shall eagerly watch for her name on future programs, and partake of added pleasure in hearing her voice.

WHEN BUDDY AGITATES ANTENNA ON HIS OLD BANJO AIR WAVES SKIP



Buddy Baker is one of the old time stand-bys of KYW, pioneer station of Chicago. When he unlimbers his reverse, double-action, rotary shift banjo, sits down in hard bottom chair, crosses his legs and starts pickin' the antenna some-

thin' is sure to oscillate. Buddy Baker has established a very definite and very devoted following from this Westinghouse station. He not only manipulates the banjo but he sings the blues in a way that is strictly his own.

Television Adapted to Phonograph by Baird

THE prospect of the production of phonograph records which will give visual reproductions of the performers as well as audible reproductions of their performances is held out by J. L. Baird, inventor of instantaneous television.

Mr. Baird has invented an instrument which he says marks only the first stage in the process, a phonograph adapted to reproduce the "image sounds" of faces, figures, and objects, and he prophesied that some day phonograph records would bear two spirals instead of the one that appears on them today—one representing the "image sounds" of the performers and

the other the ordinary sounds. When everybody who has a loudspeaker has also a television attachment, Mr. Baird claims it will be possible to reproduce pictures of the performers from the extra spiral of the phonograph record on that attachment. He believes it will also offer an alternative to the present phonofilm in cinematography.

WHAZ Gets New Talent

A BUMPER crop of musical talent surprised the faculty of Rensselaer Polytechnic Institute at Troy, N. Y., when a call went forth for replacements from the incoming class to fill out musical organizations depleted by the late graduating class. WHAZ now has a record staff.

BARBARA COX, IA., WINS \$1,000 CHECK

HAWKEYE WOMAN SUBMITS MOST ORIGINAL SET

Replica of Station WOC With Artists in Lighted Studio Takes Last Big Prize of Contest

Out of the great array of many ingenious and intricately contrived designs submitted in the Radio Digest Great Whozit contest the most original and skillfully prepared set of pictures were submitted by Mrs. Barbara M. Cox, Washington, Iowa. The final decision was made by Miss Edith Fox of Moody Bible Institute, who has made a very conscientious study of every exhibit in her capacity as a Whozit judge.

Mrs. Cox will receive a check for \$1,000 in time to do her Christmas shopping.

In describing the \$1,000 prize winning set Miss Fox gives the following description:

Designed as Theatre

"The most original set was selected from the entire entries for Station WOC. It is a most unique design of a theatre, beautifully decorated in gold bronze with the Whozits arranged on a miniature stage. The stage is brought to view by opening two doors, which are elaborately decorated in green and gold bronze. Heavy green velvet curtains, tied with golden cord, are pulled to each side of the stage, bringing into view the decorated cards, each containing two hand-painted Whozits. On the top of the theatre is a small replica of the studio, towers and wires of Station WOC. The towers are made of wire, painted with gold bronze, each tower having 160 soldered joints. The studio, which contains 172 small windows, is also lighted with electricity, which throws into relief the dull gold woodwork of the most original Whozit entry."

Many Sets Submitted

There were a great many sets submitted designed as receivers, but none involved the detail and fine workmanship as the design worked out by Mrs. Cox. This is the second and final \$1,000 cash prize in this contest that interested Radio

THREE SPARKLING MEMBERS OF NBC CHAIN OPERETTAS



THIS RADIO ROSTER CORRECTED TO DATE

Do you realize that many changes in frequency and power take place in the Radio roster of stations during the month? You would be surprised! While the commission is busy with hearings, shuffling and making re-adjustments, the log of last month has gone out of date. The Official Call Book included in your Radio Digest is ALWAYS the latest authentic directory of station information available ANYWHERE. Be sure to keep the latest Radio Digest near your receiver.

listeners throughout the United States and Canada.

Prizes in cash and merchandise amounting to \$26,000 have been awarded to listeners throughout the continent. Twenty-four broadcasting stations participated.

"JUST A COUPLE OF SINGING KIDS"



SOME of these days you will be saying, "Why, I remember when Jeanie and Arthur Lang were just a couple of kids doing juvenile features over the Blue network from New York. Now look at 'em!" By that you will mean, "see how famous they are as leading entertainers of the day." Their voices have been heard far over the country. Isn't Jeanie the imp in this picture?

Pickard Flew Up to Radio Success

War Experience Taught Perseverance and Helped Him to Forge Way to Commission

By L. M. Lamm

"SAMIVEL" is a great fellow. Charles Dickens when he referred to "Samivel" was writing of Sam Weller but this is about Sam Pickard, the new member of the federal Radio commission who takes the place of Commissioner H. A. Bellows, recently resigned. Pickard was formerly secretary of the commission.

Sam says he feels he has always been in the air. His career in this direction seems to have started on a western ranch, for as a youngster he was prone to ride, or rather attempt to ride, young calves and colts of the broncho variety.

His early ambition to fly manifested itself in a jump from the barn roof with a pair of turkey wings tied securely to his arms. His career since shaking the farm dust from his feet and going to the University of Kansas, where he studied journalism under no less an authority than Merle Thorpe, editor of "Nation's Business," has been varied and checkered, but everlastingly interesting.

Trains for Aviation

Pickard's newspaper career which began as editor of a Missouri daily paper, was ended abruptly by the declaration of war. Within sixty days Pickard, with a group of 100 cadets, began his training as an aviator at Toronto, Canada, with the Royal Flying Corps. In a few months he had to his credit enough experiences to fill a book. On his first solo flight, which took place late of a summer evening, he became hopelessly lost, and because of his inexperience as an airman, his failure to return to camp convinced his comrades he had come to a sad end. However, two days later Pickard strolled into headquarters after working his way out of a dense forest, where he had landed in the blackness of night. A few weeks later, while playing Hun over the City of Toronto, his motor failed and he found it necessary to land in one of the main streets of the city. One of the next big thrills came while flying service machines across the English Channel to France. A broken crank shaft and a forced landing in the middle of the icy channel with Pickard hanging on the top wing while a fishing schooner came to his aid, is still a memory.

In Arlington National Cemetery at Washington there lies another aviator, Pickard's faithful observer on various combat expeditions across the enemy's line, whom he brought back mortally wounded during the last days of the war. Pickard himself spent a year convalescing from his last aerial encounter of battle.

THEY come to you in chains—that is a chain, which may be something else again. This bright looking threesome consists of three stars in the National Broadcast chain. At the left is Miss Astrid Fjelde, a modern nightingale of the air and a conspicuous soprano of the National opera troupe. On the right we have Miss Devore Madworney, contralto member of the troupe. Miss Jessica Dragonette is the soloist who seems to have sung herself into the hearts of the nation during the past year. Miss Dragonette first scored as the only voice in the spectacle play, "The Miracle." She scored again in Radio production of "Robin Hood."

Following the war Pickard did exhibition flying for a short time, but finally came back to his newspaper work, which he supplemented with a degree in the science of agriculture. With this combination he became agricultural editor of the Kansas State College.

It was five years ago that Pickard crashed the Radio gate, or rather he paid \$150 for a ticket. The big show was just starting, and like many would-be broadcasters of today, the new commissioner had the urge to go on the air, but no station. He advanced to college heads the idea of selling the doctrine of heter farming practice by Radio. Wasn't there a good station just twenty miles from Kansas ready to lend its facilities, he asked? For \$150 a telephone company had agreed to construct the necessary land wires. The whole business was set, even unto a catalogue describing a ten weeks short course in this new college of the air.

Looking for \$150

Next comes a meeting of the college heads. What is this new thing, Radio? they asked. Did the farmers actually have sets? Why not let some other college try the experiment first? Besides, where was the \$150 coming from? Every cent of the limited appropriation was already budgeted.

It was William M. Jardine, now Secretary of Agriculture, then president of the college, who ended the controversy by striking his desk with a good sized fist and saying, "This looks like one of the finest and most promising ideas that has come before me as president. We will give it a trial."

Unfortunately, the small financial angle of the situation was overlooked at the time and it was Pickard who trotted down to his banker and angled \$150, which he bet on Radio.

At the next session of the State legislature, without even making a request, the college heads provided funds for their own broadcasting station. Within the next few years Pickard was before the microphone several hours each day. His voice is still remembered by many Middle Western listeners.

Pickard was born on a Wyoming ranch and educated in Iowa and Kansas. It was his success at the Kansas State Agricultural College which won him the post of director of Radio for the department of agriculture which position he held when he was appointed secretary of the federal Radio commission. His broad familiarity with the broadcasting field and his understanding of agricultural needs has made his services indispensable to the commission. He is being besieged with letters and telegrams of congratulations from his many friends on the farms to whom he has for so many years told the story of the day.

BED TIME STORY ABOUT NAUGHTY PAPA AND AN INQUIRING MAMMA

No wonder!
Why, Oh why does everybody stay up half the night trying to get KFI?

THE Papa sits humped over at his Super-Songotron. Under the tightly clamped head phones a happy smile flits over his features. The clock strikes One. A door creaks in the dark upper-regions. Voice of the Mamma descends the stairs.

"Papa?"
No answer.
"Papa!"

Still no answer. The clock ticks hoisterously.
"Papa Darius Xavier Hown—will you answer me!"

Frown chases happy smile from the Papa's face. Startling mumbling sounds emanate indistinctly from between his teeth. Forced expression of patience.



"Yes, Mamma, what is it? Can't you see I'm trying to listen for distance?"
"You listen this way once, and come straight up to bed or you'll never get down to work in the morning . . . it's morning NOW!"

"Shut up—I mean hush—just a minute—I got KFI—she's coming fine!"

"Erute! 'She's coming fine,' is she? So that's why I'm to 'shut up'—and WHO is 'she' that you are so much more interested in than your wife?"

More audible mutterings—"Oh, Hel—" "WHAT!"

"Oh, Helen, you know it's just the fact I'm listening for 2,000 miles. That's silly to be talking about a woman—"

"Well, it must be a woman. Some little jazz queen, I suppose. No man would sit up all night just to hear another MAN rave over the Radio. Let me hear, too. Put 'HER' on the loud speaker."

The Papa's face is full of static as he hears the Mamma padding down stairs.

"But I can't do that, Helen dear, remember this is Los Angeles, Calif., coming all the way across the deserts and mountains. I'd lose it sure. Now, please, please, listen—"

"Exactly, just what I intend doing. Give me that, that ear bracket, PLEASE!"

"But can't you wait a minute—"
"NO! I want to listen right now. Give me those—those ear bracelets, or whatever you call 'em. There's something funny about this. You're stalling—"

He hands her the head phones, the cable scrapes over the dial. The Mamma listens, her eyes roll around and brows raise with puzzled expression.

"So you were listening to KFI, were you? Well, I just heard the announcer say it was WRC. I thought there was something funny—deceiving me—why?"

"Well, they're on the same wave. And you gotta tune to a hair line. The dial must have got knocked—"

"It must have. Accidentally. Huh!"
Lights out. Voices fade away into the upper darkness. Tick-tock, tick-tock.

Anyhow, Mamma, he can't fool you. No, sir! And when they get television you had better go to the basement and get the furnace shaker before you march in on him, because just look at the picture here, what he would be seeing! Bathing beauties! And, Oh, Christmas, why are you so cold?"

But think of Leslie Adams, the KFI announcer, looking down so sternly from above. Just think of his terrible responsibilities . . . one, two, three—eight of 'em.

URGES ONE TO NINETY-SIX FOR RADIO CALLS

Engineers Consider Numbers in Lieu of Waves and Frequencies

HIGHER mathematics used to designate wave lengths and frequencies may be reduced to plain United States and simple digits as one of the radical improvements for listeners in 1928.

The idea, advanced by R. H. Langley of Cincinnati, means that all of the ninety-six channels available for broadcasting shall be numbered from one to ninety-six. That's all, there aren't any more. All of the stations in the United States are now and will be broadcasting within the range of those ninety-six assignments.

When WHAT takes the air it will announce that it is broadcasting on Channel 44 instead of wave length 444.4, or 1,277 kilocycles.

Mr. Langley commented as follows: "The numbered channels will permit the use of a scale on the receiver with reasonably small numbers, which will have a definite significance and will correspond to the station announcement. Radio users would very quickly learn the channel numbers of their favorite stations. By numbering the channels from the low frequency end, the series could be continued into the shorter waves when and if the broadcast frequency band is extended.

Would Simplify Sets

"Personally I feel that the plan has many obvious advantages. We are anxious to take the matter up with a large number of broadcasting stations, and in the various sections of our own association. The proposition has been referred to a committee of the Electric Manufacturers' Association for recommendations to be made to the Radio commission."

Gladys Johnson, and Gladys Johnson, KGW

Two Charming Misses of Same Name, Sing at Same Station

THERE certainly are more Johnsons than Gladyses, but it is rarely that one meets two Gladys Johnsons in a lifetime. Portland, Ore., is honored with two young and especially charming young women, both named Gladys Johnson.



McNamee Meets "Miss St. Louis"

Glad Hand Welcome in Missouri Town for New York Announcer Who Dares Deadly Flashlight

MR. GRAHAM McNAMEE, the well known Radio announcer of New York, was a guest at the St. Louis Radio show, where he met the folks and had a great time.



"I certainly like to get away from the Big Town and meet my many friends in the other metropolises," smiled Mr. McNamee, shaking hands here and there as he came through the door.

"Come right in," said Mayor Victor Miller, heartily. "We sure admire for you to come to St. Louis. You'll always find a welcome hand when you come to this town. Meet Miss St. Louis!"

"Miss St. Louis in person. I'm charmed." It was the tender, flexible voice so well known to those who listen ardently to the Radio. "I know now that I'm going to adore St. Louis—er, may I, Miss St. Louis."

Miss St. Louis blushed slightly and gave him her hand. Soon they were chatting gaily and strolled down the aisle. Suddenly a figure darted out from Mr. Kolster's booth and halted them.

"May I take your picture?" he begged. "Oh, I'm so afraid of flashlights," shuddered Miss St. Louis.

"I'll protect you," laughed Mr. McNamee.

He did. "Every time I hear 'St. Louis Blues' I'll be thinking of you and your wonderful city," said the urbane New Yorker to Miss St. Louis before he left. There was a merry twinkle in his eye. "And I want you to come and see me when you come to New York."

Miss Gladys Johnson, cellist, left, and Miss Gladys Johnson, violinist, below. Both staff artists at KGW, but are not related.



MURIEL McCORMICK ANNOUNCES AT WJBT

LIFE for Miss Muriel McCormick always has meant a struggle to be just herself. People are forever referring to her as the daughter of the McCormick and Rockefeller millions. But her friends say she lives within a very modest income, tries to do worthwhile things, and indulges in no false and arrogant notions that sometimes turns the heads of others who have less cause to be pretentious.

So here we have a picture of Miss McCormick at the WJBT microphone. There was no blare of trumpets or great ado about the matter. She simply acted in her capacity as publicity director for the Red Cross Annual Roll Call on Armistice day. There was a special program under her supervision over WJBT, Chicago. She not only arranged the program, but she announced the speakers, among whom were James B. Forgan, Jr., chairman of the Chicago chapter of the American Red Cross, William Wrigley, Jr., and other well known figures.

Miss McCormick has rendered valuable service to the Red Cross, and as a member of the Chicago Junior League has taken a leading part in activities for poor and crippled children.



Miss Muriel McCormick takes charge of WJBT for special Red Cross program on Armistice day. Bankers and other big business men assisted her.

More than that, they are musicians and are heard regularly over station KGW.

They are not related, although both are blondes and their features bear a slight resemblance. But there the affinity stops, for when it comes to music the Miss Gladys Johnson in the black hat is famed as a cellist, while the Miss Gladys Johnson with the wavy hair and white fox fur is distinguished as a violinist.

These girls are good chums and never tire of the predicaments that sometimes occur when strangers become confused as to which is which.

Captain Gray Writes His Log of Glory

Radio Rendezvous with KMOX above the Clouds Recorded in Book of "Do or Die" by Sky Explorer

By Harold P. Brown



A few minutes before the balloon lifted Captain Gray appeared, as above, while phoning a direct message to the KMOX listeners.

"Paths of glory lead but to the grave—"
A GREAT war film today blazons that red line of reproach across the screens of the nation, and into the minds of a public already grown apathetic to the bitter realities of a world disaster not yet one decade gone!

Tragic and terrible the truth of it remains. Let the surly waters of the Atlantic and Pacific bear me witness.

So I bring to you here, on this page, the Log of Glory—the most remarkable Radio log ever written. It is here because it is a Radio log, because you are a reader of Radio Digest, and because you are therefore doubtless interested in that phase of the valor of the late Hawthorne C. Gray, captain of the United States army, stationed at Scott Field, Belleville, Ill., holder of the world's altitude record, regardless of official recognition of the fact.

Ready to Go

It is Friday afternoon, November 4, 1927, with a buzz of excitement about the hangars and the big balloon drome on the army flying field at Belleville. The huge S-80-241, filled with 80,000 cubic feet of pure hydrogen, strains like a mad mastiff at its leash. It is the greatest spherical balloon in the world. It yearns for the heavens and tugs impatiently as a hundred strong armed soldiers hold the rope ends and guide it skillfully toward the opening at the north of its house. A 25-mile gale whips a challenge to the big bag as it screeches past the opening at sharp right angles.

"Hold her low and watch your step," warns Lieutenant Karl S. Axtater, speaking to the men as he calls a halt. "Mind that door as you pass through that you don't rip the casing, for the wind is across you. Hold her down and go with a rush until you are clear of all obstructions. Stand by for the captain's orders."

Captain Gray, tall, stocky, a bit of silver showing at the temples beneath the edge of his leather helmet, smiles down into the face of his brave young wife. Twice before she has been through this moment—the three little ones about his knees and glory beckoning in the skies—glory with raven wings and a shroud, perhaps.

"Now, don't worry," chats the captain confidently, "It's just a little eight mile ride, and the chances are I'll be back in time for supper. What are you going to have?"

"Of course, dear, but I can't help thinking how you had to take to a parachute, and you passed out at 29,000 feet, and you—"

Profits from Experience

"Sure, that's the experience that makes it safe for me now. No cold metal in the helmet this time, no heavy sand bags to lift overboard—just turn a valve and down goes the sand! Nothing to do but sit and listen to the Radio. It'll be a joy ride. Well, everything's ready. So bye-bye until supper—"

The top of her head scarcely comes up to his broad shoulders, but she stands on her toes, and he puts his arms around her. Then kisses for the tots, a wave of the hand, and he lumbers across the field in his cumbersome suit, an outfit formerly worn by Captain MacReady,

who made the world's altitude record in an airplane last year.

Eager for the great adventure the balloon bobs joyously out of the door and is trundled into the open. The wind sneers a challenge through the rigging. Captain Gray slides over the edge of the basket and is given a final boost by the sergeant. Everything is ship-shape—one look across the arena to the little lady in the big hat, a wafted kiss, wave of the hand, a sharp command, a swish of ropes and the S-80-241 heaves skyward with a sudden bound.

Gracefully she sails aloft, skimming over the tree tops—off on the path of glory.

"Good Bye, Daddy"

Dix, four years old, stands mouth open, gazing at the shrinking cloud that is carrying his father away—forever, William, who is 9, is crying. He heard the wind snap the under slack of the bag as it came onto the field like a pistol shot. It scared him. Mrs. Gray is holding little two-year-old Gordon tightly in her arms, and facing everybody with a smile that does not conceal the misgivings in her heart.

"Where is daddy, now?" asks Dix, as the balloon becomes a speck and disappears in the mist.

Let us, you and I, detach ourselves somewhat from our physical bodies, comfortably bestowed here on terra firma, and fly in astral form after the valiant captain as he makes his immortal Radio log. I do not know whether you have been up before, but the three or four times that I have been ballooning I have found to be quite free from bumps and the noise that one gets in an airplane. In fact, you scarcely know you are moving unless you are looking over the landscape.

Captain Gray is looking over the side, still trying to see the dimming blur of gray and brown of Scott Field, fast fading from view. The basket is packed with a great deal of paraphernalia—tanks, box-like cases with clock dials, a canvas roll and a seven-tube Atwater Kent Radio receiver with head phones, batteries and a miscellany of articles.

There come the escort planes—three, and one is just catching up in the distance, four in all. They make a great roar as they come racing along beneath us. The captain has already dropped considerable of the ton of sand. He turns a valve and the sand goes—no heaving over of bags like the last time when he collapsed from the exertion.

Well, here goes the first entry on the log:

Scott Field at 2:33 at 52 degrees temperature.

2:35 p. m.—10,500 feet, 24 degrees.

What's on the air? This Radio log, compared with broadcast studio schedules, will prove a further check on the accuracy of the flight record. He adjusts the phones and turns the dial. Already something has climbed up the antenna and registered a signal in the captain's ears. He listens, writes and at the same time lets out another bag of sand. We

read the entry—neat, small characters: **KMOX on the air.**

Good, he has the dial settings OK on that St. Louis station, and no precious time to be lost raking the air to find a station. Better dump some more sand. Where are those planes?

KMOX 27-37—"Sympathy," two bags of sand. AC, 300 to 500, KSD. Symptoms of rickets. 91 over Okaw, E. Mascoutah. Bar number 11 turns at 12,000 feet. Drop extra hand rope at 2:40 p. m. KMOX. Marked 248. Bar No. 14 stopped at 15,000. Left glass foggy.

2:50 p. m. Near school house and east gauge part clear. 16,500.

3:05—19,500 feet. Temperature zero. KMOX—With compressed oxygen, 23,000.

You lips are blue, Captain. No doubt about the atmosphere getting thin and it's a little hard to continue thinking clearly and coherently. But you've got 17,000 feet still to go to reach your goal, and the oxygen is only good for two and one-half hours. Ease out some more sand and, and, listen in and put it down, keep listening and write down the log—

3:10—Snow, gloves, 8 degrees below zero.

KMOX, "Thinking of You."

Take another turn at the dial, Captain, with the gloves on your hands will not be so cold. The phones are getting cold against your head, but—a little turn and, there you are:

WHO, Des Moines—"Sunset," by Ole Olson's orchestra.

3:13—24,000 feet. Snow.

3:17—44 telling about dying. (Radio dial reading?) 29,000 feet. Minus 29 degrees. WLS, Chicago, Chonocide.

3:21—"Fled Piper," 30,000 feet. Ice. Sun clock frozen. Minus 35 degrees.

Not quite clear there, Captain. "Chonocide" is unknown at WLS, but it is possible you heard the announcement for "Chum-time" to come later in the evening. But Okeh for the Pied Piper. Anthony Wons, as the Pied Piper, at that moment was relating his adventures with Lucky Sambo at chasing bandits in Texas. Your oxygen is going fast. Cut that empty tank loose and—

32,000 feet, WPIW at Hopkinsville, march. 33 degrees below.

You were lucky to get that announcement, Captain, because you are getting very restless and it seems hard to hold the dial very long on one station. No

wonder you didn't wait to hear the call letters where they were talking about dying. They did not know that Death was near and reaching for you—steady with your hand, man, somebody is going to read that line—

34,000 feet. Coil of antenna. No more music for me. Minus 40 degrees. Too much agr.

Quite right, Captain Gray, the Big Program is over—no man ever before recorded a Radio voice at 34,000 feet above sea level. As a Radio log it is a Log of Glory. Drop your antenna and make a little more altitude. The oxygen is getting low and you've got 6,000 feet to go. Your eyes are bulging and—you are very tired. But pull yourself together now—

36,000—32 degrees below. Getting warmer. Vacuum in mouth.

39,000 feet. Minus 28 degrees. Sky ordinarily blue. Sun is bright. All good.

40,000—Last sand bags.

You've made it! You've made it, Captain Gray. You've made it again. They'll not deny you this time. But your oxygen is entirely gone.

KMOX Broadcasts Last Message From Gray Before Balloon Ascends

Kroners Sing and Junkin Tells Captain "We Are Thinking of You"—Parting Words Put in Report as He Reaches Top of Earth's Atmosphere

By George Junkin, Director KMOX

STATION KMOX broadcast a continuous program for Captain Gray, November 4, starting at the moment he took off. Just previous to his ascension Captain Gray phoned us this message:

"My last flight for the purpose of an altitude record was made on May 4, 1927, and I attained the altitude of 42,476 feet, establishing the world's altitude record with a half mile margin to spare.

"However, this honor was not allowed to me, as, according to international rules, one must come down with the craft. It happened that I was obliged to leave my craft and come down in a parachute. It is my pleasure to say that I received KMOX as high as 35,000 feet, but at that altitude I was compelled to throw Radio batteries over as ballast. After the flight I received reports from ground receiving sets that there was a great deal of interference by static, but I received no static at any time during the flight. I landed 110 miles east of Scott Field.

"The purpose of my flight today is for the development of oxygen apparatus, and to test Radio reception at higher altitudes, and incidentally to try for an altitude record. I expect to leave the ground at 1 p. m. and to be in the air around two hours. I also wish to make the statement at this time that I will be dropping certain articles of equipment such as receiving sets, batteries, oxygen cylinders with a message attached to each one, and would appreciate those finding them to

forward them immediately to Scott Field."

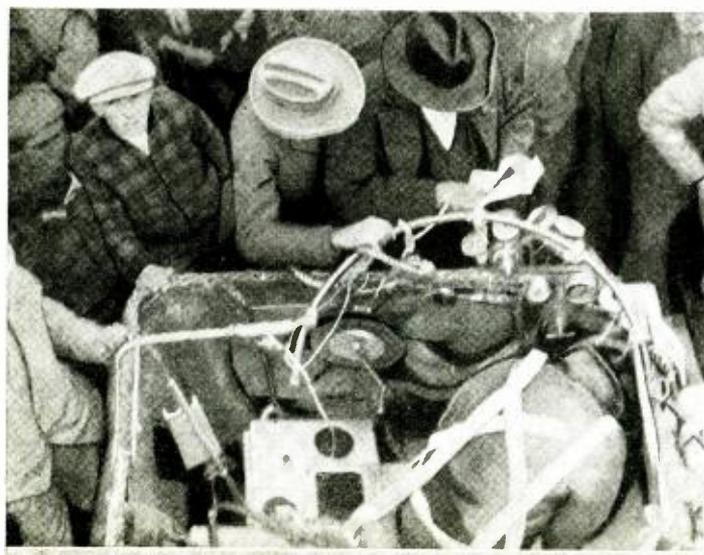
To afford all possible assistance to Captain Gray KMOX broadcast the special program beginning the moment he left the ground. A picture of conditions at Scott Field, including the latest weather reports, was put on the air. Among the many numbers dedicated to Captain Gray were "Sympathy," by Ethel and Janice, the Tuneful Two, and "Thinking of You," sung by the Kampus Kroners.

The following announcements were then broadcast to Captain Gray:

"Captain Gray is now reported to be out of sight beyond the clouds, trying for an altitude record and KMOX is keeping in touch with him continually. We assure, you, Captain, we are thinking of you."

Colonel Pagelow phoned us from Scott Field the morning of November 5, and we broadcast several announcements requesting KMOX listeners in Southern Indiana and Northern Kentucky to wire Scott Field if they had seen anything of Captain Gray's balloon. At 11 o'clock our announcer from the Merchant's Exchange broadcast the Associated Press dispatch that the body of Captain Gray had been found in the basket of his balloon.

N. S. Brown, who is very much interested in aviation, furnished Captain Gray with an Atwater Kent set, speaker, tubes and batteries on each of his trial trips. This equipment was broken up into small weatherproof parcels and each parcel attached to a parachute to be thrown overboard in case of emergency.



At 40,000 feet the captain found his oxygen gas exhausted, the thin air would not support life, and the path of glory came to an end.

BULLARD SUGGESTS RADIO RUN TRAINS

"WOULD GET IN ON GAME IF BIG ROAD HEAD"

Believes Wireless Control for Lines Now Feasible—Advises Active Development of Uses

USE of Radio in the operation of trains is a perfectly feasible proposition and should be developed, Admiral W. H. G. Bullard, chairman of the federal Radio commission, told the last annual convention of the Telegraph & Telephone Section of the American Railway Association. Admiral Bullard said in part as follows:

"The question of train operation is not a new one by any manner of means. I can readily understand the desirability of control and communication between moving trains and different parts of the same train, for instance—between the locomotive and the caboose of a long freight train. There ought to be some more reliable means of communication between the front and the rear end of these trains.

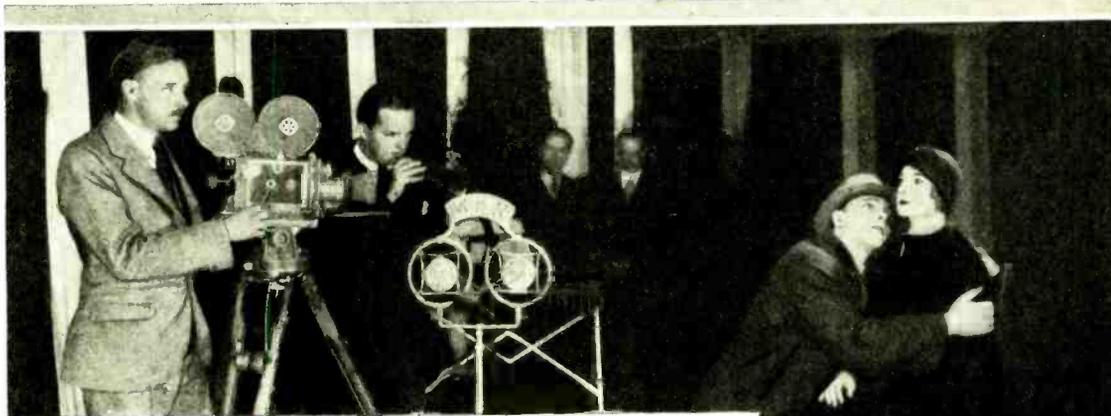
"Twelve years ago I was approached by one of the big Western railroads and asked to develop a scheme by which they could use Radio for controlling their trains. They had the idea of controlling their dispatching, and communication between their long freight trains, by means of Radio.

Advised Against Radio

"After a long study of the subject, I gave a report at that time that it was an impractical proposition and recommended strongly against it. Eighteen months later a gentleman representing that organization told me that my thoughts and recommendations at that time had saved them thousands of dollars. Now, however, the state of the art renders it a perfectly feasible proposition to install and operate these new devices. You must remember, however, that every time one of these little waves goes out it fills up and clutters the air. Now, if we had all the railroads of the United States operating what we call mobile stations the whole atmosphere would be jammed full of these wave lengths, and it would be an extremely difficult proposition.

(Continued on page 18)

M-G-M SCREEN ARTISTS BECOME WHN AIR ARTISTS



Eleanor Boardman (above) and James Murray, miked and filmed together. George K. Arthur interviews Radio Poll.



KENNETH'S BIG BUG TICKLES FUNNY BONE

They Make Northwest Listeners Laugh Over WDAY, Fargo

KENNETH and the Bug are the diaphragm lifters of WDAY, Fargo, N. D. They are shown below red handed in the act of disturbing the risibles of Northwest listeners. Kenneth is Kenneth M. Hance, general manager of the Radio Equipment company, and Bug is a perpetual mystery, being one kind of a bug one night and another the next. They say he's a live wire advertising man otherwise, but mention no names. Kenneth also is the announcer for the station which is owned by his company. There is a peppy, exhilarating staff always to keep this North Dakota station on the Radio map of America.

FISHIN' HOLES NOT SAME AS USTER BE!

This is fishing time for those DX sockers!

Don't expect to find the same old fish in the same old hole every time you sit down by the old set to pull 'em in. The Radio commission has been makin' 'em flop around considerable. Here in October, over there in November and some place else again in December. Only DX fisherman's guide you can depend on is the Official Call Book complete in each Radio Digest, and revised to date.

HERE they are, ladies and gentlemen of the Radio audience. The movies are on the air. As you listen to their voices the scene is before you. This is the Metro-Goldwyn-Mayer "Ars Gratia Artis"—or motion picture corporation doing their combination stunt of making a feature film and a feature broadcast at the same time.

At this writing M-G-M has not launched its chain, but it is understood that about forty communities including the following are under contract: Boston, Tilton, N. H.; Providence, New Haven, Buffalo, Rochester, Utica, Syracuse, Newark, Paterson, Trenton, Philadelphia, Baltimore, Washington, Charlotte, Atlanta, Cincinnati, Wheeling, Pittsburgh, Scranton, Harrisburg, Altoona, Johnstown, Cleveland, Columbus, Dayton, Hamilton, Indianapolis, Memphis, Birmingham, New Orleans, Chicago, Milwaukee, Minneapolis, Fargo, St. Louis, Kansas City, Omaha and Los Angeles.

Mike and Camera

But the camera and the "mike" are arm in arm, exactly as shown above, through WHN, New York. This station has been mentioned as the key for the proposed chain. WHN is a part of Loew's State theater, Broadway at 45th street.

In the top scene we have a flash of the forthcoming production, "The Mob." James Murray pleads vainly with Eleanor Boardman, who keeps one hand on her suitcase and doubtless will remain firm in her determination of "going away." With visible scenic conditions it seems logical to expect that screen artists will have an advantage in getting their business over the air with convincing realism. Dave Howard, at the megaphone, should be able to maneuver his directions in a way to relieve the regular announcer of the necessity of breaking in to detract from the illusion created by the performers. Bud Sharpe is planted close to the microphones, so that the soft purr of the camera may be heard by the listener.

Below we have George K. Arthur giving Poll Parrot a few good numbers from the telephone book. "He's a wise cracker," said Poll, with a wink at Mike.

POPULAR ORCHESTRAS

(Continued from page 5)

has a chance to win or not. If the orchestra has not already been nominated the nomination blank is published again this month on page 4 just below the second of the series of six ballots to decide the great question of the world's most popular orchestra.

Be sure your orchestra is nominated, then be sure to utilize every ballot. Get your friends to help you make your favorite win. Here are the orchestras already named and the ballots received for each.

DISTRICT NO. 1—EAST

Comprising: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland and District of Columbia.

Vincent Lopez orchestra, WEA...	973
Roxy's symphony, WJZ	833
A. and P. Gypsies, WEA	651
Palais D'Or orchestra, WEA	313
KDKA little symphony, KDKA	212
Club Worthy Hills orchestra, WTIC	193
Pollies Bergere dance orchestra, WPG	145
Goodrich Zipper orchestra, WEA	111
La France orchestra, WEA	69
Cliquot Club Eskimos, WEA	65
Statler's Pennsylvanians, WEA	63
Corsley Moscow Art orchestra, WEA	53
Jonasen's Hofbrau orchestra, WCAE	41
Hotel Ten Eyck orchestra, WGY	37
Ed. Carpenter's Hotel Statler orchestra, WGR	27
Piccadilly orchestra, WCAU	19
Chet Frost's Bostonians, WBZ	17
Royal Peacock orchestra, WHAS	17
Ben Bernie's orchestra, WEA	16
Parody Club orchestra, WOR	15
Kentner's El Patio dance orch., WIP	13
WTAG little symphony	12
Markel's orchestra, WJZ	7
Ernie Andrew's troubadours, WBZ	5
New York symphony orchestra, WJZ	5
Hotel Bond orchestra, WTIC	4
Dick Newcomb's orchestra, WBZ	3
Meyer Davis' Swanee syncopators, WRC	3
Savoy Plaza concert orchestra, WJZ	3
Whittall Anglo-Perseans, WEA	3
Mediterraneans, WJZ	2
Hotel Van Curler orchestra, WGY	1
Sylvania Foresters, WJZ	1
Virginia Vetter's entertainers, WHAS	1
Jack Albins, WEA	1

DISTRICT NO. 2—SOUTH

Comprising: Virginia, West Virginia, North and South Carolina, Georgia, Florida, Louisiana, Mississippi, Alabama, Tennessee, Arkansas and Kentucky.

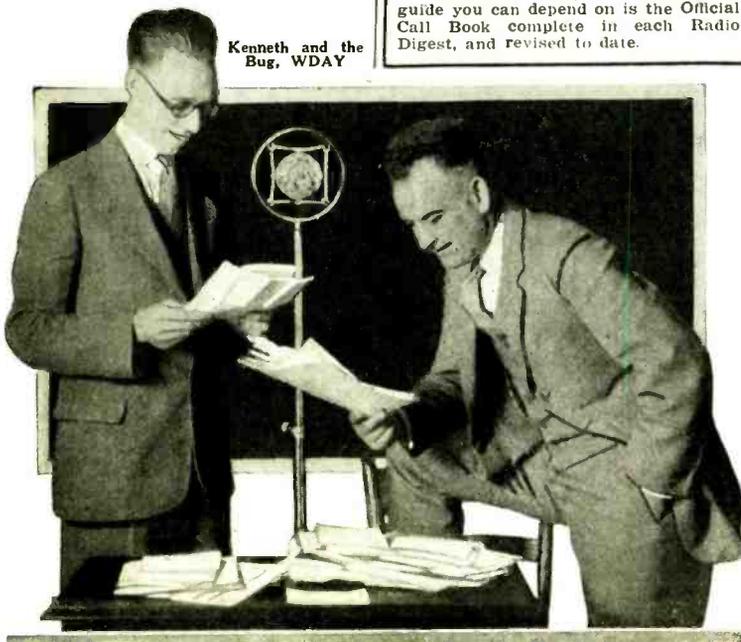
Chas. Dornberger's orchestra, KTHS	675
Andrew Jackson Hotel orch., WSM	97
Hotel Richmond orchestra, WRVA	93
Joe Clutz' Cavalier Hotel orch., WSEA	17
Municipal Pier Casino orch., WFLA	2
Florida Footwarmers' orch., WCOA	2
Texaco Salon orchestra, WODD	2

DISTRICT NO. 3—MIDDLE WEST

Comprising: Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa and Missouri.

Maurie Sherman's orchestra, WLS	1129
Fred Hamm's Victor orch., WLIB	874
Paul Christensen's orchestra, WHO	812
WENR Studio orchestra, WENR	625
Sweeney syncopators, WHB	217
Bobby Meeker's Drake Hotel orch., WLIB	197
Dan Russo's orchestra, WWJ	115
Kentucky serenaders, KYW	98
McKinney's Cotton Pickers, WJR	63
Paul Ash's Merry Mad Musical Gang, WGN	62

(Continued on page 40)



Kenneth and the Bug, WDAY

LOBSTER OR TOAST AFFECT ANNOUNCER

CARLIN DESCRIBES SENSATIONS OVER RADIO

Feels Same Speaking to One or Forty Provided Digestion Is Oke and Critics Don't Annoy

By Phillips Carlin
Director of WFAF

HOW does one feel when addressing a national network? That's a really momentous question! One might also ask do you feel different on a pond than you do on an ocean. Of course, the answer depends entirely on the weather in the latter case and in broadcasting almost wholly upon your state of health.



Phillips Carlin

In other words, if just before facing the "mike" on a single station hook-up, one eats lobster and a hot fudge sundae and the lobster happens to be rather tired or nervous then one addresses the unseen audience of the one station without any rejoicing and with inward quaking. On the other hand—a dish of milk toast and eighteen hours of sleep before even one hundred and forty-four stations are involved there is but one little microphone. Those who really know and appreciate the difference are the long lines operators who must arrange the station connections.

When Boss Ears In

However, there is a greater sense of responsibility even for an announcer on a national hook-up because he knows that all of the directors, official heads and his superiors, are harking with most critical ear to his efforts. Why are they listening? Because much money is involved in the hook-ups and because a great many critics are waiting hungrily for something to happen.

Localisms must be avoided as much as possible when one faces a nation. A New Yorker like myself when nationally in view, tries to eliminate the "thoids" and "foists" and even become Bostonian in perfection of speech at least for the first five minutes. After that, the action gets the best of one and it is a case of "sink or swim" on one's natural output. Americans are fairly similar so after all why worry about states or localities. Lindbergh, Dempsey, Babe Ruth and the Prince of Wales "go over" the same in Alaska as they do in Florida.

Hook 87 Stations

I can recall the day when we had a record hook-up of ten stations. Recently eighty-seven stations heard the Radio Industries Banquet, sixty-nine the Dempsey-Tunney fight, forty-three the World Series and the Edison Night program on Friday, October 21, when Thomas A. Edison was interviewed, had no less than forty-four. This means that an average of twenty stations are the usual thing. Ever since the practice of calling off the stations in one breath was discontinued, we "ambassadors of the air" do not know how many stations are involved and are not interested except from a technical standpoint. On the other hand, put us on a single station far removed from our usual habitations and we feel fairly free to express ourselves without any particular conservatism. So you see there is a difference if you can discover what it is from this little story of mine.

ST. JOSEPH TRIO



MANY Mid-West fans frequently let their dials rest on KFEQ, St. Joseph, Mo., in order to hear "Jerome," Clyde Mackay and Clarence Koch, shown above. This station has introduced many Radio novelties in the past year.

"Talking Horn" Angers Turkish Story Tellers

OLD retainers in Turkish households are calling down the curse of Allah on the "tin horn that speaks like a man," which has deprived them of an ancient and inherited custom. In the old days these attaches were revered as story tellers and occupied a seat of honor in the family circle gathered about the evening brazier. The new broadcasting station at Stamboul now presents the story teller's hour and the family story teller becomes a disgruntled listener.

CALL DEATH VALLEY DX FIEND'S PARADISE

DEATH VALLEY, far below the sea level and one of the hottest places on earth, is described as a "Radio bowl" by experimenters who have recently made tests at its lowest depths. Stations for hundreds of miles "boomed" in with astonishing clarity—Denver, Omaha, Chicago and finally PWX, Havana, Cuba. Californians who have maintained that their state is the DX fiend's Paradise point to the experiment as further proof of their claims.

RUSSIAN PEASANTS HEED VOICES OF RED LORDS HEARD FROM KREMLIN



OUT of the troubled interior of Soviet Russia comes this Old World picture with a Radio background. Perhaps the great Millet and his eloquent brush would find inspiration for a new kind of Angelus could he visit such a scene, typical of many to be found along the Volga or in other reaches of this far-flung nation.

No doffed hats, no bent knee, no reverent gesture; but strict attention to the stern voices of the masters ringing out from the Kremlin at Moscow through the loud speaker to these humble peasants. It behooves them to listen well, for is this not evidence in itself that even in the invisible atmosphere, the eyes, the ears, the voices and the authority of the Red Lords of Russia are everywhere; and that resistance to that authority is death or sentence to life imprisonment?

Only the four men and the women are

really serious. They have seen other days and other masters. They know the meaning of pain and hunger and killing toil. The children are obediently silent; one smiles stupidly, two are curious about the camera. For them the Radio voices are only an amusing trick. They are conscious of no ominous portent in what is being said, or anything that can possibly bear on their weal or woe. They are too poor to have Radio receivers in their own homes. Besides, why should they have receivers when the Kremlin furnishes a community receiver and the harangue that goes with it? And now comes the news that twenty new stations are to be installed to spread the propaganda farther and more thoroughly. They will be joined in a broadcast chain.

This unusual photograph was brought to America and Radio Digest by Herbert Bros., Inc.

Radio Trick Explains "Ghost Music" That Mystifies Restaurant Patrons

War Veteran at Winnipeg Makes Radio Hook-Up With Concealed Phonograph—Connects Three Cafes by "Remote Control"—Achieves "Full Orchestra" Effect

PHANTOM music in three Winnipeg restaurants has caused a great deal of speculation on the part of the dining public in that city. There is no visible source of the music, not even a phonograph or Radio receiver.

An explanation of the mystery has just been made by C. E. Moore, manager of the two coffee shops and the Mikado Tea room where the phantom music is heard during the busy hours of the day and evening.

Trained as an electrical engineer, and with practical experience gained in the World War, Mr. Moore has succeeded in putting his theoretical knowledge of Radio to practical use by an ingenious contrivance, which has gone far to popularize his restaurants.

Trick Explained

Of course the "phantom" is a concert quality gramophone which furnishes the same music simultaneously to the three restaurants through a hook-up based on Radio principles. It is economical and serviceable. That it developed into a mystery to pique the curiosity of diners was almost more than Moore had expected.

Patrons saunter in and sit down to order their food. Out of the wall panel or from behind a small bank of palms come the life-like and full volume strains of a seventy-piece orchestra, or perhaps the voice of an opera star. They gaze about in amazement. It is the phantom music—ghost orchestra, ghost singers!

They do not see the hidden cone of a very efficient loud speaker, and even if they did there are no broadcast announcements and it is too realistic. Nor do they see the hidden wire that leads from the Panatrope in the coffee shop on Smith street. But, anyway the wire is there. One goes to the Mikado Tea room, two doors away, and the other is a special leased wire from the Manitoba government telephone lines to the Kennedy street coffee shop, five blocks away.

Mr. Moore explained his system to the correspondent of Radio Digest as follows:

Friction Causes Current

The signal is created by the friction of the needle over the record, and it is transformed into electric current in the windings of the electrical pick-up. It is amplified through a transformer, and passed through a detector tube, the output of which is split into three circuits, to the Mikado, The Coffee Shop on Kennedy street, and to the amplification of the Panatrope which is playing in The Coffee Shop on Smith street. After transmission the signals are amplified through a power amplifier and reproduced on a power cone, attaining the full volume of the machine, nothing being lost in the transmission.

Another advantage of this arrangement is that when Mr. Moore is on Kennedy street, or in The Mikado, he can always tell whether his girls are on the job. If the gramophone is going, everything is alright, the "phantom" is watching.

Infuse New Life in Radio Bureau

Carl Butman Becomes Secretary on Sam Pickard's Promotion to Commission Chair

RADIO is the voice of youth. Old men are giving way to younger men. New faces are appearing above the horizon with new viewpoints, new momentum, new blood, new life for the industry.

This truth has been manifested and felt throughout the world. Sam Pickard steps up from the office of secretary of the Radio commission to a Presidential appointment as an active member of that commission. Another young man steps into his place as secretary. And that young man is the individual whose face appears at the right of this column. His name is Carl H. Butman.



Carl H. Butman

Butman is one of the keen young blades of the newspaper clan at the nation's capital. He was born into the Washington atmosphere, graduated from the Washington public schools and later finished a course at Dartmouth University. He proved an able correspondent and then established his own news service. He has kept his finger on the pulse of Radio progress.

Trained for Commission

When Henry A. Bellows resigned as a member of the Radio commission Sam Pickard had already been trained to fill the vacancy. It was a logical promotion. Butman now fills the same position. He is a trained observer, knows the political moves, the various complexities of service as they are manifest in different parts of the country. Soon he will have personal contact with all of the broadcasters and learn the particular problems that bear on their relations with the commission.

Later, should further appointments to the commission be in order, he will be able to step in as a man trained for the job. This will be a benefit to Radio broadcasting in general and the American listener in particular, it is believed by those responsible for the appointment.

Buenos Aires—Good Radio

ARGENTINA enjoys one of the best areas of good Radio reception in the world, according to a report by one of the large Midwest manufacturers. It has become the largest importer of American made Radio apparatus. There are twenty broadcasting stations supervised by the government. The crystal set performs so well that it still remains the most popular. A survey shows 150,000 receivers in Argentina, the most of them in Buenos Aires. "Buenos Aires" might have a modern interpretation of "Good atmospheric conditions for Radio transmission," said the manufacturer.

UNCLE JAY OF WJAY WRITES OWN MUSIC



BESIDES being a song writer with a number of popular songs to his credit, Johnny Mack (above) has the very special honor of being the first Radio Santa Claus in Pittsburgh—the mother city of American Radio. He is now known as "Uncle Jay" of WJAY, Pittsburgh.

Broadcasting of Interest to Home Makers

Betty Lamborn Conducts Woman's Hour at WGHP

"HARD work, hard study and devotion to the job at hand is my motto always," said Betty Lamborn, the pretty and capable director of women's programs at WGHP, when interviewed the other day.

And it is this devotion to her work that has made it possible for Miss Lamborn to fulfill her dream of becoming a member of the staff of a big radio station. With the persistence that made it possible for her to earn her way through college, she made her first appearances with the station singing an occasional soprano solo. Her ability to sing and play brought her the full time position of hostess and studio assistant.

Her tact and her attractive Radio personality made her the logical person to direct the women's programs when this position became vacant. This is now, perhaps, the part of Miss Lamborn's work she likes best, because she enjoys her contacts with her women listeners.



Betty Lamborn of WGHP.

Christmas Cookies Packed Daintily Make Welcome Christmas Presents

By Winifred Carter—WLW Cooking Expert

FOR a Christmas gift to the friend who lives away from home and must depend on a boarding house table or a restaurant for food, nothing is daintier than a box of Christmas cookies. Candies may be purchased anywhere at any time, but cookies and little cakes that are really good are hard to find. For that reason, and because you must put your own efforts into making them, a box of cookies would make an attractive gift to a friend who would appreciate your work more than any expenditure of money.

Tin boxes in all sorts of shapes and sizes can be bought quite inexpensively and can be decorated and wrapped into exquisite packages. In packing a box of Christmas cookies, wrap some of the cookies in oiled paper and seal them with Christmas seals or tie them with gay ribbons to make the box look more festive when the cover is lifted.

Christmas Cookies

- 2 egg yolks (hard cooked).
- 1/4 cup chopped blanched almonds.
- 1/2 teaspoon baking powder.
- 6 tablespoons Crisco.
- 1/2 cup sugar.
- 1 orange rind (grated).
- 1 2/3 cups flour.
- 1/4 teaspoon salt.
- 1/4 teaspoon mace.

For Top

- 1 egg white.
- 1 tablespoon sugar.

Cream Crisco and sugar. Force egg yolks through a sieve and add with orange rind to mixture. Sift dry ingredients and cut into first mixture. Add chopped almonds and mix well. Shape into little balls the size of hickory nuts; brush over with slightly beaten egg white and dredge with sugar. Bake in moderate oven (350 degrees F.) for 20 minutes. (These cookies improve on keeping in a covered container.)

Decorate the tops of the cookies with a candied fruit. For a change from the more conventional candied cherries, try this recipe for candied cranberries.

Candied Cranberries

- 1 cup firm brilliant red cranberries.
 - 1 cup sugar.
 - 1 cup water.
- Wash and dry the cranberries and prick each in several places with a needle. Boil sugar and water until a little lifted on a spoon spins a thread; or cook to 230 degrees F. Put in the cranberries and cook gently until the syrup will jelly when dropped from the tip of the spoon. Remove berries and place on wax paper to cool and dry. Roll in granulated sugar and use in place of candied cherries. The cooking must be done slowly to avoid breaking the berries.

Fudge Squares

- 1/4 cup Crisco.
- 1 cup sugar.
- 2 eggs (beaten).
- 2 squares unsweetened chocolate.
- 1/4 teaspoon salt.
- 1 3/4 cup pastry flour.
- 1 teaspoon vanilla.
- 1 cup chopped nut meats.

Cream Crisco and sugar together thoroughly. Then add the chocolate which has been melted. Stir in rest of ingredients. Mix well. Line a square pan, about 7 inches, with paper—grease and spread mixture about 1/2 inch deep in pan. Bake at 375 degrees F. for 30 minutes. Cut into squares immediately after removing from the oven.

To fill in the spaces between your cookies you may want to use Glace Nuts which you can make with this recipe.

Glace Nuts

- 1 cup sugar.
- 1/2 cup water.
- Pinch of cream of tartar.

Cook to hard crack state (300 degrees F.). Drop nut meats into the syrup one at a time (or several together for clusters). Remove with fork, draining off excess syrup. Place on oiled paper to cool. If the pan is removed from fire and set in another pan of hot water while dipping is done there will be no danger of the syrup hardening too quickly.

Pioneer Chicago Station Owes Success to Woman



Judith C. Waller, WMAQ-WQJ.

SOPRANOS may have created a bad name for women in the broadcasting world, but Judith C. Waller has more than redeemed that name by her intelligent supervision of the twin stations WMAQ-WQJ, Chicago. She was made director of WMAQ five years ago when broadcasting was in the experimental stage. While other stations concentrated on popular programs and surfeted the listening public with continuous jazz, Miss Waller interpolated her programs with classical music and interesting lectures by well known men and women. Today other stations are following her example.

Miss Waller, besides directing her stations, is the National Radio Chairman of the General Federation of Women's clubs. As Secretary-Treasurer of the Chicago Broadcasters Association, she has also taken an active part in the Radio affairs of this city.

WOMAN'S PROGRAM INDEX (Daily Unless Indicated)

Household Economics, Women's Hour, Etc.

Eastern	Central	Mountain	Pacific
9:30 a. m.	8:30	7:30	6:30
WWJ (352.7m-850kc), Tonight's dinner.			
WBAR (1270.1m-1110kc), Modern Housekeeping hour, less work in the American home.			
WFSH (483.6m-620kc), ex Sat.			
WHP (416.4m-720kc), Home hour.			
WLP (508.2m-590kc), Tues., Thurs. Sat. menu.			
WLV (428.3m-700kc), Woman's hour.			
10:15	9:15	8:15	7:15
WLWV (428.3m-700kc), Cooking chats.			
10:30	9:30	8:30	7:30
WFI (405.2m-740kc), Homekeeper's hour.			
WVAC (461.3m-650kc), Woman's club.			
WRC (468.5m-640kc), Mon.			
WTAG (516.9m-580kc), Wed. Fri.			
10:45	9:45	8:45	7:45
WIZ (333.1m-900kc), Radio Chef.			
WIR (535.3m-560kc)			
WLS (344.6m-870kc)			
WT C (535.4m-560kc), Wed. Fri.			
11	10	9	8
WAAM (348.6m-850kc), Cooking, Tues. Fri.			
WEAF (491.5m-610kc), Wed. Fri, Betty Crocker.			
WGN (306m-980kc)			
WGH (265.3m-1130kc), Tues. Thurs. homemakers' hour.			
WSH (475.9m-630kc)			
11:15	10:15	9:15	8:15
KPKA (315.6m-950kc), Housekeeper's period.			
11:30	10:30	9:30	8:30
11:45	10:45	9:45	8:45
12	11	10	9
WREB (254.1m-1180kc)			
12	11	10	9
WEPI (365.6m-820kc), Prudence Penny.			
WQJ (447.5m-670kc), Calumet hour.			
WTAM (293.9m-1020kc), Household hints.			
12:30 p. m.	11:30	10:30	9:30
KVA (309.1m-970kc), Shopping service, Mon. Fri.			
WEPI (365.6m-820kc), Prudence Penny.			
WMAK (545.1m-550kc), Tues. Sat.			
WMAQ (447.5m-670kc), Calumet hour.			
12:45	11:45	10:45	9:45
WLAQ (325.4m-800kc)			
WSM (340.7m-880kc)			
1	12	11	10
KEX (239.9m-1250kc)			
KIUV (491.5m-610kc), Household helps.			
KPO (422.9m-710kc)			
1:30	12:30	11:30	10:30
KXN (336.9m-890kc), ex Fri. Sat, Kate Brew.			
KYMO (305.9m-980kc), Totem cooking school.			
WGY (379.5m-790kc), Economics talk.			
2	1	12	11
KFRC (454m-660kc), Mon. Wed. Fri.			
KOIN (319m-940kc), Housewives' hour.			
WGHP (319m-940kc), Home hour.			
2:05	1:05	12:05	11:05
WJZ (454.2m-660kc), Daily menus.			
2:15	1:15	12:15	11:15
KOIL (277.6m-1080kc), Shoppers' aid.			
2:30	1:30	12:30	11:30
WGY (379.5m-790kc), Tues.			
3:30	2:30	1:30	12:30
WLS (344.7m-870kc), Homemakers' hour.			

Eastern

Central	Mountain	Pacific
WCC (352.7m-850kc), Aunt Jane.		
4:30	3:30	2:30
KFOA (447.5m-670kc), Daily ex Sun. Mon.		
10:30	9:30	8:30
KOA (325.9m-920kc), Question box, culinary hints, Tues. Fri.		
8:20	7:20	6:20
KUDA (296.9m-1010kc)		
8:45	7:45	6:45
WHA (333.1m-900kc), Home economics.		
10:45	9:45	8:45
KOAC (270.1m-1110kc), Tues. Thurs.		

"Aunt Sammy"

Eastern	Central	Mountain	Pacific
10 a. m.	9	8	7
WJR (440.7m-680kc), Mon. Wed. Fri.			
10:30	9:30	8:30	7:30
WCSH (483.6m-620kc), WHO (535.4m-560kc).			
10:45	9:45	8:45	7:45
WJHO (288.3m-1040kc)			
11	10	9	8
WEAO (282.8m-1060kc)			
WEW (352.7m-850kc)			
WKHI (220.4m-1360kc)			
WOS (422.3m-710kc)			
WSB (475.9m-630kc)			
11:10	10:10	9:10	8:10
KUGA (296.9m-1010kc)			
11:30	10:30	9:30	8:30
WOS (422.3m-710kc), Mon. Tues. Wed. Thurs.			
12	11	10	9
KFSB (440.9m-680kc)			
KOV (452.7m-850kc), Mon. Wed. Fri.			
12:15 p. m.	11:15	10:15	9:15
WAMI (243.8m-1230kc)			
12	11	10	9
KTHS (384.4m-780kc)			
1:30	12:30	11:30	10:30
KFWB (361.2m-830kc)			
WAFI (325.9m-920kc) Fri.			
1:45	12:45	11:45	10:45
WDAF (370.2m-810kc)			
WDAG (263m-1140kc)			
12	11	10	9
KIHL (277.6m-1080kc)			
KUOM (461.3m-650kc)			
WASH (256.3m-1170kc)			
1:30	12:30	11:30	10:30
WHR (426.3m-1130kc)			
2	1	1	1
WU (352.7m-850kc)			
4:10	3:10	2:10	1:10
WFBG (280.2m-1070kc)			
4:15	3:15	2:15	1:15
WDAV (361.2m-830kc)			
4:30	3:30	2:30	1:30
KOIL (277.6m-1080kc)			
WOS (422.3m-710kc), Thurs.			
6:30	5:30	4:30	3:30
KMA (394.5m-760kc)			
9	8	7	6
KQW (296.9m-1010kc)			

Fashions and Sewing

Eastern	Central	Mountain	Pacific
11:30 a. m.	10:30	9:30	8:30
WVAE (516.9m-580kc), Styles, Tues. Fri.			
1:30 p. m.	12:30	11:30	10:30
KFWI (267.7m-1120kc), Fashion hints, Mon. Thurs.			
1:35	12:35	11:35	10:35
KIOP (422.3m-710kc), Fashion critic, Fri.			
6:45	5:45	4:45	3:45
WOS (422.3m-710kc), Wed.			
5	4	3	2
KOA (325.9m-920kc), Fashion review, Tues.			

Health and Beauty

Eastern	Central	Mountain	Pacific
10 a. m.	9	8	7
WGBS (349m-860kc), Lessons in loveliness.			
10:15	9:15	8:15	7:15
WCAE (516.9m-580kc), Health talk.			
10:30	9:30	8:30	7:30
KJKA (315.6m-950kc), Tues. Beauty hints.			
10:45	9:45	8:45	7:45
WLW (428m-700kc), Beauty talks, Tues. Fri.			
11	10	9	8
WFEI (365.6m-820kc), Mon. Thurs.			
WIR (422.3m-710kc), Lessons on Loveliness, Mon.			
11 p. m.	12	11	10
KMTR (526m-570kc), Beauty talks, Tues.			
1:30	12:30	11:30	10:30
KPON (251.8m-1240kc), Physiology of beauty.			
9:20	8:20	7:20	6:20
KJR (348.6m-860kc), Health talk.			
3:40	2:40	1:40	12:40
KGA (260.7m-1150kc), Dietetic talk, Wed.			
8:20	7:20	6:20	5:20
KFRG (454.3m-660kc), Thurs. Madame Marie.			
10:45	9:45	8:45	7:45
KNX (336.9m-890kc), Dr. Robert T. Williams, Tues.			

Interior Decoration

Eastern	Central	Mountain	Pacific
9:30	8:30	7:30	6:30
WWJ (352.7m-850kc), Sat.			
10:30	9:30	8:30	7:30
WLW (428m-700kc), Furniture talks.			
12	11	10	9
KYV (526m-570kc), Tues. Talk. W. Crafts Watson.			

Gardening

Eastern	Central	Mountain	Pacific
11:55 a. m.	10:55	9:55	8:55
WCAE (516.9m-580kc), Garden bulletin.			
1:20 p. m.	12:20	11:20	10:20
KPI (468.5m-640kc), "How and What to Plant."			

Eastern

Central	Mountain	Pacific
WGBF (236m-1270kc)		
4:15	3:15	2:15
WIP (508.2m-590kc), Home Gardening, Mon.		
11:55	10:55	9:55
KHJ (416.4m-740kc), Garden talk.		

News

Eastern	Central	Mountain	Pacific
10 a. m.	9	8	7
WGN (305.9m-960kc)			
10:30	9:30	8:30	7:30
WCU (405.2m-740kc)			
11:30	10:30	9:30	8:30
WIAS (461.3m-650kc)			
11:55	10:55	9:55	8:55
WTC (453.4m-560kc)			
12	11	10	9
WMAK (545.1m-550kc)			
12:45	11:45	10:45	9:45
WTAG (516.9m-580kc)			
11:30	10:30	9:30	8:30
WIAS (461.3m-650kc)			
11:55	10:55	9:55	8:55
WTC (453.4m-560kc)			
12	11	10	9
WMAK (545.1m-550kc)			
12:45	11:45	10:45	9:45
WTAG (516.9m-580kc)			
11:30	10:30	9:30	8:30
WIAS (461.3m-650kc)			
11:55	10:55	9:55	

Shake Hands with WEA F Eskimo Chief

Girl Reporter Meets Harry Reser at Broadway Igloo and Marvels at His Busy Fingers, Energy, Pep

By Dorothy Brister Stafford

At first it seemed that the honor should go to the intrepid individual, who at the moment was engaged in doing something to the top-knot on the Paramount theatre building,—that behemoth of structures which has lately come to squat its huge bulk in Times Square, and which amazes by its size while one wonders at its ugliness,—where, suspended perilously thirty-five stories above the street, he was giving an ambidexterous exhibition of juggling stones and mortar that should have put the proverbial crippled paper-

hospitable Kathleen. "You'll like Harry Reser."

We had an impression of the large room, very much crowded with musical instruments, a couple of dozen smiling young men, and a nervous, wiry little chap, rushing about with a stack of music in one

end of musicians.

And then Harry Reser jingled the sleigh-bells and the Eskimos swung into the march that causes dog ears to prick up all over the length and breadth of the

When the last strains of the march died away, what had been a perfectly good collar was a wilted wreck, and the grinning Eskimos mopped dripping brows, while their energetic leader distributed the music for the next selection, and Arnold Morgan told the folks at the other end what was coming.

A Singing Drummer

Scarcely a breathing space and they were off again,—the drummer popping up like a jack-in-the-box to stand before the microphone and warble a chorus,—Harry

Big Chief Harry in Costume. Note Position of Thumb and Forefinger, Set for Action

Eskimos in Their White Bear Skin Suits, Ready for Radio Program at WEA F



Harry Reser, "Busiest Man on Broadway."

hanger to shame. But on a certain Thursday night down at WEA F we happened upon another somebody, whose diversified activities made the uptown contender seem a drone in the hive of Manhattan industry.

We were wandering about the studio listening to some close harmony by a new quartette, and talking to various interesting people,—you know the National Broadcasting Company is a sort of a cross-roads of the world, where if you hang around long enough you are likely to meet almost anyone who has done anything of moment, or has anything worth while to do,—when vivacious Kathleen Stewart paused in her busy round of seeing that everyone was being taken care of, and said:

"Oh, wouldn't you like to meet a nice Hawaiian?"

Meeting the "Hawaiian"

Nice people have an appeal, regardless of breed, and we said we'd be delighted, and then the "nice Hawaiian" turned out to be none other than the very American Norman Clark, otherwise the "South Sea Island Tenor," whose voice more than any other has tempered our antagonistic attitude toward those of the masculine sex who sing in the upper register before the microphone.

He had his nose flattened firmly against the leaded-glass door of the larger studio, where Harry Reser and the Cliquot Eskimos were removing their coats and rolling up their sleeves preparatory to their hour's broadcast, and he didn't seem at all interested in talking about Norman Clark. We wanted to ask him how he sang so easily when others made such painful work of it, but he chummily beckoned us to a peep-hole beside him.

"Come over here where you can watch Harry's fingers," he said. "They move faster than anything you ever saw."

And then we remembered that the salient reason for braving the deserted canyons of lower Broadway on this particular night was to see and hear the newly augmented Eskimo orchestra in action.

"Come inside and meet him," urged the

hand and a string of sleigh-bells in the other, which he dropped to shake hands courteously with a winning grin, and a whisper, "Won't you wait until the hour's over? We're just going on the air."

Ditching the Mike

They invited us to stay inside, but since a live microphone has always had the same effect upon us that golden-rod had for Mrs. Rinehart's famous "Aggie," and we were already stifling a desire to sneeze, we slipped outside and secured a desirable place alongside our South Sea Island friend, and several other going and coming entertainers loaded down with violin cases and music rolls. The old theory that a vaudeville act is supposed to be unusually good when the other performers do it the honor to wait in the wings to "catch it" was recalled by the gathering of professionals, and we surmised that the Eskimo's reputation is not all in the air while observing the interested audi-

land when the drummer does his stuff. And for the first time,—and we've heard many orchestras, both "sacred and profane," as someone classified them after hearing "My Heart at Thy Sweet Voice" murdered in syncopated arrangement,—we watched a group of men who seemed to play with every ounce of energy they had in them.

One supposes that a director is the happiest when conducting an opus of his own composition, and you know the "Cliquot March" is Harry Reser's and evidently his pet, but we have never seen anyone work as earnestly to get all possible out of his organization as this leader does with the opening of his Radio hour. Baton right, sleigh-bells left, he is all over the place, dropping both to come in with a few bars on the famous banjo, which reposes on a rack before the microphone, his wiry little frame a veritable dynamo of bouncing musical energy.

Reser here, there and everywhere, playing, directing, laughing, and everyone apparently having such a good time that it was difficult to realize that this was a highly paid organization of very efficient musicians engaged in a strenuous hour's work. And one wonders if the dominating, cheerful personality of the hard-working leader, which makes for harmony in his capable group, isn't the secret of the success of this,—one of the most popular of the commercial features on the air.

For though they are very diplomatic at the National Broadcasting Company, and avoid hurting anyone's feelings, it's an open secret that the Eskimos—they are now in their third season of broadcasting,—have drawn more fan mail than any other similar outfit. In the past year the orchestra has doubled in size, two pianos standing where there was but one before, tenor and alto saxophones, marimbas, accordions,—the whole galaxy of instruments that make up the complicated harmony of the modern dance orchestra. For that is all they pretend to be.

They play popular feet-tapping music, stirring marches and popular arrangements of classics for that great portion of the Radio public that likes their kind of music. Harry Reser does not call himself a "master," nor his arrangements "Symphonic syncopations." They are out to entertain and the fact that their sponsors have tied them up with a longtime contract is sufficient proof that they are firmly established as one of the most successful features of the N. B. C. chains.

Busy Harry Reser

And when with a last jingle of sleigh-bells the hour was over, and youngsters all over the land who are allowed to stay up until the Eskimos finish were trailing reluctantly to bed, Harry Reser emerged, tired, but still with the infectious smile he has for everyone,—not to go home, but to dash back up town where from eleven to two the orchestra was appearing in person at a Broadway cafe. He apologized for the lack of a shave,—"I was up till three this morning arranging, and out at Brunswick all day recording,—but come

(Continued on page 18)

and have dinner with me Monday night and we'll talk."

So uptown Monday night we beheld the Eskimos rightfully clothed in their white Teddy Bear suits, as the children love to visualize them, and conducting themselves more along the lines of a conventional dance orchestra. There is still lots of verve and pep in their performance and several microphones sprout around the room, but it is as though they knew they weren't playing for an audience of several millions as on the hook-up.

And over the coffee a little later we were able to extract a few facts from the busy Eskimo chief. In addition to the weekly hour on the air that has made his name a household word, the conducting of the aforementioned cafe orchestra, and several other units that play for private entertainments, Harry Reser is making phonograph records under twelve different names—the Eskimos being an exclusive Columbia feature,—conducting an extensive music publishing business that issues his own compositions, occasionally composing a new march, and in order not to have any time hanging upon his hands, has just launched a mail-order course in banjo playing!

It's a Full Day

Arranging orchestrations and preparing the weekly Radio hour, which as all listeners know is extremely varied, consumes a great deal of time, and with the necessary rehearsals, the listener to his various activities is struck with the idea that the banjoist has apparently discovered a thirty-hour day. Indeed at this period when there was a rush of phonograph work, he confessed to having worked one hundred and twenty hours continuously. If there is anyone on Broadway or Main street who is busier than this high-strung little musician we've never run across him.

Of Harry Reser's thirty years the past six have been hectic New York ones, where the life of a successful orchestra leader is just one thing after another. Born in Dayton, Ohio, he started on his musical career at the mature age of four, when he learned to play the guitar, and began to study the violin when seven. Followed the customary small town concerts of the youthful prodigy, the leadership of the High School orchestra, and ten years ago he took up the instrument that has made him famous.

He modestly attributes his success with the banjo to the fact that he applied his violin technique of fingering to this instrument. Be that as it may, Harry Reser came into his own about the time we first began to hear of the fabulous salaries paid good banjoists and saxophone tooters. Paul Whiteman, who as some one has said has the best musicians because he pays them more than anyone else can afford to, hired him to go with him on his first trip to London, which Harry refers to as a "vacation." Then came a series of smart supper-club orchestras and his great Radio success, which as in the case of every other broadcaster with whom we have talked, is the most gratifying part of his work.

He lives with Mrs. Reser and their two youngsters at Forest Hills, explaining earnestly that New York is no place for children. We were about to ask him when he got time to go home, when we noticed that his mentholated cigarette had gone out, and his eyes were straying past the dancers to the platform where his woolly troop was playing "The Big Tin Pan Parade."

"Do you hear what I do?" he asked, as he rose. "That tuba's flat. I've got to get back."

And in the time it took him to cross the dance floor the tempo of the music had changed, the very atmosphere became more vital, and the Eskimos were themselves again. And we recalled what Paul Whiteman once said:

"Did you ever hear even a great orchestra without a leader? They're awful."

WLS Broadcasts Show

FARM listeners throughout the country have indicated special interest in the WLS broadcast of the International Livestock Exposition at Chicago during the week from November 26 to December 3. This is the fourth year that the WLS station has broadcast this international event, each year adding more detail and more time to the occasion. The work is being conducted under the direction of Fred L. Petty, farm director of the station and Aunt Minnie Stearns, also of the WLS staff.

Prof. W. C. Coffey, dean of the College of Agriculture at the University of Minnesota; "Uncle" Davie Fyfe, noted livestock authority of Ohio State University; Robert J. Evans, secretary of the American Duroc-Jersey Breeders association; Ellis McFarland, secretary of the American Percheron society, and C. L. Noble, secretary of the National Committee of Boys and Girls Club Work, are a few of the noted livestock experts who have been obtained to give listeners an interesting, complete and valuable report on every detail of their respective interests.

SIMPLE EXPLANATION

(Continued from page 13)

It is obvious that no part of the rope travels forward yet it is equally plain that Energy in the form of a wave motion does. This energy is dissipated into the post and changes to the form of heat. Our youngster is creating a wave motion with a frequency of one per second.

Observe Rope Wave

Now presume that, in addition to the post and rope in front of him, there is a post and rope to the left and another to the right. He holds all three in one hand and starts wave motions. They go out in three directions simultaneously. Let us add to these so that the posts are close together in a circle, with a rope from each, and that our boy is strong enough to swing them all. A wave goes out in all directions at once when he drops his arm, and a stream of these can be created, at a frequency of one each second.

There you have a perfect example of Energy as it travels in a wave motion through the air when our singer vibrates his vocal chord. Very well, he is filling the audio with sound waves. Sound waves are those which occur between about 16 each second and 20,000 each second. If they are created at less than 16, the ear says they are separate thumps and not a musical sound. If higher than 20,000 the ear does not respond. A very few people can catch a musical note which has a frequency of wave motion higher than 20,000 but most of us cannot.

If a person could direct his or her voice in but one direction only, our singer would have to use only about 1% of the energy which he must employ; 99% of that which he sends out in sound waves is not only absolutely wasted but means must be taken that it will not interfere with the desired 1%. For the singer is aiming only for the comparatively small disc, suspended on a pedestal, which is called a microphone. Through it, the 1% which strikes it, goes out to the great army of listeners. The 99% strikes the walls, ceiling and floor of the studio.

This brings us to a really interesting quality of sound waves; they can be reflected just as light reflects from a mirror. That is, sound waves striking a bare, hard wall will bounce off and try to come back, with the result that they mix with those created a moment later. In the early days of broadcasting that is exactly what happened and most of the reproduction in receivers was rather blurred. This phenomena is called reverberation and it occasionally still is found when broadcasting must be done from a large, bare room or hall.

To Avoid Reverberation

To prevent this, engineers have found that they can either line the walls with a softer material that will absorb the sound waves or hang drapes and place heavily upholstered furniture so that the waves are broken up and absorbed. The ceiling, too, can be taken care of with deadening material, while thick rugs will fix the floor. Yet this deadening can be carried too far, and the determining of just how much to do in this respect requires an expert of long experience; hence the better quality of the music of larger stations and the chains. If the sound absorption is carried too far, the music is abnormally "flat" and most singers cannot perform, while the transmitted music has a "lifeless" quality that is not enjoyable.

Very well, we have 1% of the wave, all that is desirable, going into the microphone, and going in as a series of "shoves" or "crowdings" among the air particles, each "shove" containing a minute quantity of Energy. Earlier in the article, we found that Energy can be changed in form such as from coal to heat, from heat to steam, from steam to the whirling of a turbine, from whirling to electricity (via a dynamo), from electricity to the light and heat of an electric light bulb. But it is the same Energy all the way through.

The wave movement in the air particles going into the microphone is now going to be changed in form and into impulses of electrical current. There is no need of going into the construction of the inner mechanism of the "mike." Sufficient to say that three wires go into it, and that by means of batteries we feed it a steady unvarying current of electricity. It is the microphone's duty to break up this steady current and cause it to flow as a series of impulses occurring at just the number per second of the sound waves the singer originates.

Water Pipe Illustration

This will be clearer to those who do not understand electrical currents by a discussion of Figure 2. In this picture, we have a pipe with water flowing in at the left at a steady stream under pressure. At the center of the picture is a gate which can be rapidly raised and lowered at a certain number of times (frequency) per second. As this is done, the water is cut off momentarily, but because of the pressure a chunk of water will shoot on into the pipe at the right, each time the valve, or gate, is raised. Thus we have chunks and gaps at regular intervals.

Now it must not be assumed from this that anything within the wires leading

from the microphone actually moves. Not a single particle or atom of copper in the copper wires moves out of its place. No. Here again we have the wave movement idea but this time confined to the limits of the wire and traveling in but one direction only, instead of traveling out in all directions as did the sound waves. Here again we find a wave movement or "showing" taking place between the smallest parts into which copper can be divided. A small speck of copper contains many "atoms" while an "atom" is made up of many, many "ions" and "electrons," and some think that these too may be divided still further.

Be that as it may, when each electrical impulse passes through, not an atom is moved out of place. More probable it is that its ions and electrons are just slightly jostled and they give the components of the next atom a dig in the ribs, and then settle down as they were until the next impulse comes along. These impulses follow each other along the wire at the frequency of a sound wave and we speak of them now as current at audible frequency. Because, if they are transposed in form back to sound waves, they would be audible to the human ear.

Only One Device

These electrical impulses are very weak; the amount of Energy entering the microphone was very, very minute so a great deal cannot be expected to be contained in this new form. In this extremely weak state, these impulses are not very useful, so the first step in the handling of them is to add to them. Now to add energy to anything which comes along several hundred or many thousands of times a second without affecting the regularity of its frequency is a very delicate operation, and so far only one device science can produce is able to do it.

The marvelous little mechanism that can handle the rapidly occurring electrical impulses and control them at our wish, is the vacuum tube such as everyone now has in his or her Radio receiver. The complete unit into which we put our impulses is called a speech amplifier. The word amplify means "to add to" and we can amplify a statement made by making more, or we can amplify Energy as electrical currents by adding more Energy. The complete speech amplifier contains several pieces of apparatus but the vacuum tube is the heart of it; the other units are there merely to assure current entering the tube properly and being collected from it in the right way.

At this stage of our investigation we will not go into the make-up of what someone has appropriately called "Aladdin's Lamp." We need only know that a radio vacuum tube can be applied to accomplish many changes in the characteristics of electrical current. It can change a steady, unvarying current of electricity into Radio waves, or, it will bring Radio waves back to the original steady flow in one direction. It will strengthen electrical currents before they are transmitted into the air or amplify them after they are received in your set. And it will do much more.

How Tube Functions

The speech amplifier is so arranged that the tube functions as a strengthener or amplifier, and gets the Energy which it is going to add from either a generator or batteries in which that Energy has been stored. Interesting to note that current from the dynamo can be stored in batteries by causing chemicals to rearrange themselves, and then, when we wish it, that the chemicals will release the Energy as electricity and go back to their previous state. And that we can then take this electricity and use it for the unique use to which it is put in a speech amplifier.

It is usually the case that but one speech amplifier is not enough. A vacuum tube is able to increase the strength of the impulses only so much, anywhere from three to nine times and, due to engineering reasons, we might wish to build it up much more. The natural answer is to add more speech amplifiers, and that is what is done (See Figure 3). Two or three are usually sufficient for we will have then added so much new Energy that the impulses are from nine to eighty-one times their original strength. Greater amplification has been claimed for some speech amplifier groups containing three units but this is very hard to obtain without affecting the frequency of the impulses or adding new impulses that are not wanted. We are now ready to apply our greatly built up impulses, at audible frequencies, to the transmitter itself.

Editor's Note—In the January issue Mr. Thompson will go into the very interesting stage of broadcasting in which Radio waves are created and the human voice and music are placed on these waves to be carried over areas of millions of square miles. The translation of Radio terms and operations in the second chapter has been just as clearly carried out in everyday phrases and happenings as it was in this just article.

NOTES ON ELECTRIC SIX OF LAST ISSUE

IT IS important that the 199 tubes I switched around in their sockets until two are found for the detector and first audio stage that are non-microphonic, not only to jar from outside the set, but those microphonics produced by condensers at certain relative settings of volume control and variable condensers.

The set works excellently with the four resistances shown across the filaments of the first four tubes, which had specified values of 600, 500, 400 and 350 ohms, respectively. It will work slightly better, however, when all other adjustments are correctly made, with values of 500, 400, 300 and 300. If you contemplate building this receiver of unsurpassed reproduction, use this second list of values.

The Q. R. S. tube specified as the rectifier in the power supply section of this receiver was of 85 mils capacity. This should have been the larger tube of 100 mils, 600 volt capacity, listing at \$7.50. Change this on your list of parts before ordering.

Every last detail on this article is now known to be correct.

—The Technical Editor.

RADIO TO RUN TRAINS

(Continued from page 14)

tion for the Radio commission, which has control over licensing those things, to keep them all separated.

"So I would give a little word of warning here that possibly you might use some other means, having in mind exactly what you want in the way of controlling the trains, the dispatching, and all that sort of thing.

Why Not Wired Wireless?

"Sixteen prominent railroads in the United States, have for their own exclusive use and do use 158,964 miles of telegraph wire. Similarly these same railroads use over 335,000 miles of telephone wire. Here is a chance along your own line of developing a Radio system of your own that could not be approached in any other way through the application of what is known as the wired wireless. You can use these telephone lines with one transmitter, and with the wired wireless feed that into every station along the line or any other place you wanted to put it.

"Now here comes a new industry that I think will be coming—whether you think so or not, I think you will do it—somebody will make this experiment of trying to control and operate their trains by Radio; and in these days it is a perfectly simple and practical proposition, with very little capital expenditure involved.

"The question of communication between the two ends of long freight trains going over mountains and around curves in thick, misty weather, whereby the men in the locomotive and the man in the caboose could be in constant communication with one another, is quite an independent one from the one I spoke of a few minutes ago, the application of wired wireless over present existing lines. Such a scheme, if put into effect for a train, would be a brand new proposition, and I should like to see it done. I am not throwing any bricks on it, either. I am only cautioning you that if everybody does it, you would probably not be as friendly as you are now, because you will all want different wave lengths, and we will be up against it just the same; but we will try to treat you all alike.

Try Short Low Power

"In case this train dispatching proposition grew to any proportions, stations and railroads would have to divide time. That is, if a railroad system in the east were given a certain definite allocation of wave lengths to conduct its experiments at the beginning, and afterwards there should be demonstrations, possibly another railroad system in the central part of the state or at the extreme western end, in order to conserve these wave lengths, would have to divide time with them; and with the use of short, low power, it is not conceivable that they would interfere with one another.

"In Public Interest"

"The Radio commission is concerned in granting licenses to people, under the wording of the law 'in the public interest, necessity and convenience.' It would seem to me that the dispatching and operation of trains is in the public interest, especially moving trains. My thought is that Radio has a part in the world in the control and communication with moving objects where it is impossible, of course, to have direct physical, metallic contact. I can see very great good in this matter of Radio-controlled trains; and if I were the president of a big railroad, I would get the people hustling to beat the band to get in on this game, at least for a trial."

Light Socket Power Now Practical

A-B-C Current Available at Snap of Switch

By James McDonald

EVER since Radio broadcasting swept the country in 1922, the dream of radio engineers has been the day when Radio sets would receive their energy for operation from the house lighting supply lines. There must have been hundreds of engineers working on this problem for three or four years, yet it was not until the season of 1925-26 that the first serious attempts to achieve this aim made their appearance.

It was but natural that assemblies for the supplying of "B" current should be developed before those for "A" supply, as the current or amperage in "B" circuits is considerably smaller and more easily handled. These first "B" units took the form of rather bulky cabinets with several jars of electrolyte and rods of different metals dipping into the electrolyte, and filters that were rather crude and not scientifically worked out. This semi-success at "B" supply units, seemingly stung the "A" people into activity, as soon a series of "A" eliminators appeared.

Early "A" Powers

These early "A" units comprised a storage battery and a charger that would supply a continuous trickle of electricity. This trickle charger was supposed to replenish in 20 hours what the set drew off in four hours of use at heavy current draw. This was a good beginning but had the disadvantage that when applied to some sets there was a bad hum present. Then came the advent of the automatic relay which worked from the switch on the receiver to throw the battery onto the set when reception was wanted and throw the charger off, and then reverse this to put the charger on the battery when the receiver was turned off. So far as trouble with charging, with its connecting and disconnecting of wires, was concerned, this really was light socket operation.

is used to light a filament, or heat a heater in the AC tube, it is called "A" current. If its purpose is to keep the plates of the tubes in the set at a "positive" relationship with the filaments, and thus supply the energy used to build up weak signals to loud speaker volume, it is termed "B" current. In order that "B" current may be best assimilated by the tubes, their grids must be kept at a definite voltage in relation to the filaments, and power used for this purpose is "C" current. (See figure 1).

Now one thing these three current supplies must have and that is they must

be pumped in surges, evenly and rhythmically. Now let's place a 6-inch gate in this pipe projecting down from the top. As a surge hits this gate, the lower 6 inches goes through, while the upper half is stopped. If, just ahead of the 6-inch gate, we put in a 6-inch pipe, pointing upward, with a tank at its top, the piled up water is going up into the tank.

The moment the pressure drops between surges, however, this water is coming down into the main pipe and through the gate as a 6-inch stream. Then comes another surge and the action is repeated—over and over—the result being a steady

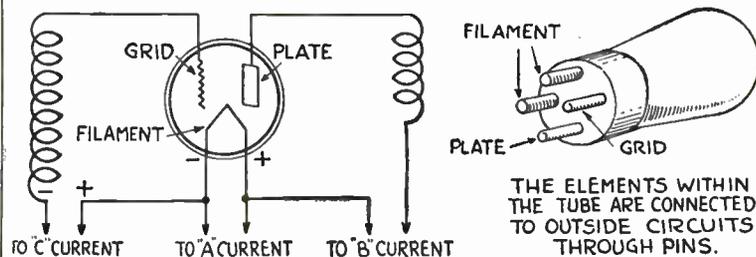


Figure 1

all be what is called direct current. As electricity flows in the lighting circuits of most localities, it is "alternating current" which travels first in one direction, then the other, and does this either 40 or 60 times a second (usually 60). A radio set cannot use such current. Batteries supply direct current which flows in one direction only and all the time in a steady unvarying stream. That is why batteries have been used up until now as the almost exclusive source of power for Radio.

stream. To get this effect in our power supply units, we supply in our filters a large coil of wire wound on an iron core which is known as a "choke" and is the equivalent of the 6-inch gate in the water pipe.

We then provide two large areas of metal or foil placed closely parallel but insulated from each other, these being termed a condenser, and forming the tank at the top of the short pipe of Figure 3. It has "capacity" for storing electricity, not chemically as a battery does, but keeping the electricity in the same form in which it flows through the wire. Thus when an over-average pulsation of rectified current hits the choke, part of it is crowded back and the condenser is provided at the right spot to take care of the excess for a moment and release between surges.

What to Buy

If you have a good reliable storage battery, trickle charger and relay combination and do not mind occasionally putting in a new "C" battery, you purchase a "B" Power Supply. This will give you the usual "B" voltages of 45, 90 and either 135 or 180; in some types there is a 22 volt tap. If you do not wish to worry about whether the "C" battery is running down you get a "B-C Power Supply." This will give you the above-mentioned voltages plus a couple more for "C" biasing. There usually is one at 4½ for the first audio stage and another at either 9 or 40 depending upon whether you use a 112 or a 171 in the last stage of your set. Or, these taps may both be variable as in the Webster B-C where they can be regulated between 0-45 on both.

Perhaps you have a "B" unit or a "B-C" unit and a good old storage battery is wearing out, which makes it desirable to get an "A" unit. You can get either a combination of battery, trickle and power relay in one cabinet or a unit that feeds the set right out of the filter with no battery in between. Each has a set of points in its favor. Possibly you've been using batteries all around and want complete light socket power. Very well, there are combinations of A-B-C such as the Crosby Power Converter, the Balkite 6-180,

There are two variable controls, so arranged that the detector can be given 45 volts regardless of current drain by other tubes, and the first audio stage and the Radio frequency stages can get 90 volts. The third plus voltage binding post will give a voltage varying from 135 to 200 but, since the average set with a power output tube draws a total of about 28 milliamperes of current, this Power voltage will approximate 180 volts, just right for a 171 tube.

This Modern unit has the advantage of being dry, with nothing to spill and nothing to evaporate requiring refilling. Once a Raytheon tube, either type B or BH, is in place it is fully enclosed and protected and should give 100% service for a year to 18 months. When its efficiency finally begins to die, it is not expensive to replace. Modern "B" Compact is made by Modern Elec. Mfg. Co. at Toledo.

Warren Raytheon "B"

Another good type of Raytheon tube "B" supply is the Warren type T manufactured by the Warren Electric Company of Peoria, Ill. This too, is fully enclosed and uses the Raytheon type BII tube now available in either 85 or 125 milliampere capacities. The makers decided that it was better perhaps to not only have controls on the 45 and 90 volt taps but on the Power delivery as well. Hence we find three knobs on the Warren.

Each of these knobs controls a variable resistance which reduces the voltage delivered by the filter, and which must be about 225 volts, to any desired within the limits of the resistor. Thus, on that post intended to supply an approximate 45 to a detector, one can vary the output between 0 and 100 with the proper knob. The "plus 90" post can give anywhere between 25 and 225 volts depending upon how you set the second knob. This same holds true for the third or Power binding post and knob. Like all "B" units, this should be adjusted with a high resistance



Modern "B" Compact Is Small But Powerful

voltmeter across the supply and then left alone. Almost every Radio dealer has such an instrument nowadays for just this purpose.

Webster "B" and "C" Unit

The Little Giant B-C made by The Webster Company of 648 Blackhawk Street, Chicago, is an example of the combining of a "B" and a "C" power supply in one unit. It uses a Raytheon BII tube in a most compact case, in which there are also the necessary transformer, chokes and condensers. All the "B" and "C" connections are made at one end while adjustments are made at the other, through five knobs.

First of all, one adjusts the detector voltage to 45 volts as indicated on the before-mentioned voltmeter. Then the 90 volt supply is regulated by one knob and the "C" bias for the first audio stage by

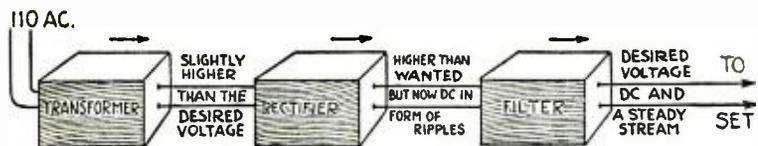


Figure 2

About this time, the "B" side of power supply took another jump forward and tube rectifiers came out. The UX-213 was one of the first, and with it came the UX-216-B tube. The Raytheon people up at Cambridge turned loose the first of their remarkable series of rectifying tubes with Model B, and later type BII. The makers of piano rolls, Q. R. S., put their resources behind some engineers that understood the antics of the ions in a tube and put out tubes similar to Raytheon. The "B" end took a great drive forward and is still going.

The Essentials

The problem involved in applying house lighting current to Radio divides itself into three parts; first, changing the pressure or voltage to approximately that required, second, changing the character of the electricity's flow from alternating to direct current and, third, smoothing out the result until it is an even, perfectly steady stream. This is shown graphically in Figure 2. The first result is achieved with a transformer, the second with a rectifier and the third with a filter. Now to make those terms clear.

A transformer is simply a large central core made up of fine strips of iron, on which are two coils of wire. If we want to reduce 110 volts to 10 volts, we simply put 11 times as many turns on the primary or input side as we do on the secondary or output coil, and the result is 10 volts. Such a device can be used only on alternating current, however, and that is why the raising or reducing of voltages must be done first in our series of operations.

Power units vary chiefly in their rectifiers. Alternating house current when changed to direct current undergoes what the Radio engineer terms "rectification." The rectifier must either block off the current going one way or must cause it to travel in the same direction with that going the other.

A rectifier which blocks is called a "half wave rectifier"; that which causes both halves of the current to travel in the same direction is a "full wave rectifier." Remember those terms, as you'll see them in advertisements, folders and articles, and have to use them in Radio conversation. The first utilizes half the current; the second makes use of it all. The output from either type can be successfully filtered to make it suitable for our use.

Filtering

Having gotten the current into a series of pulsations or surges, either 60 per second or 120 per second, depending on the rectifier, it must be "smoothed out." The smoothing out process consists of holding back part of each surge and releasing this part between the surge from which it was taken and that which follows. The more evenly a filter does this, the more successful it is considered to be.

A readily understood parallel to this action is shown in Figure 3. Suppose we have a 12-inch pipe through which water

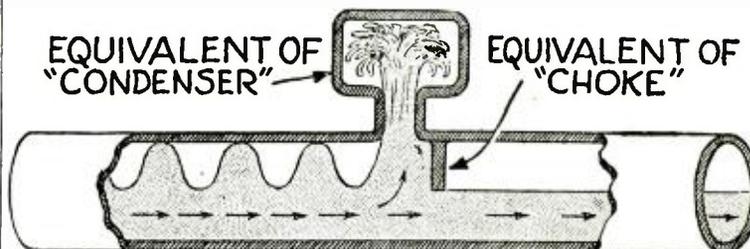


Figure 3

the Freshman A-B-C, the Webster "Bone-Dri" and the White AB-102 to please you.

Modern "B" Compact

A neat example of the way in which manufacturers of "B" supply units have put the Raytheon tube to work is the Modern "B" compact. As its name implies it is certainly compact and fits into places where its equivalent in "B" batteries could not hope to get. It is finished in olive green crystal lacquer and, if it must be in sight, is rather attractive.

another. The Power voltage can be regulated up to 200 volts while the "C" for the last tube is adjustable up to 45. If one has 112 tube in his last stage, the Power voltage is brought down to 157 and the grid bias up to 10½, while if a 171 is used as output for the set, the Power voltage is allowed to go up to 180 and the bias to 40.5 volts. Convenient? Oh my yes!

White "L" Socket Power Unit

The unit made by Julian M. White of (Continued on page 20)



The Warren "B" Power Using Raytheon Tube

Analysis of Power Units

Before we go into the developments of the last few months and the equipment now available to the millions of set owners who have been employing batteries, let us study this matter of power units a little and see what is in them. One does not have to go into it very technically to understand the principle of the thing and the basic requirements, and having studied it even this much is in a much better position to choose wisely that unit best suited for his set.

Electricity must be supplied to a receiver under three different names. The electricity is all the same, but it is the use to which it is put that differentiates the three supplies. When the current

POWER SUPPLIES

(Continued from page 19)

Sioux City, Iowa to supply "A" power is new, interesting and unique. Its makers have combined the rectifying properties of the well-known Tungar (or Rectigon) tube with the A-Box type of filter condenser to make a strong, substantial unit which will supply 2½ amperes free from hum. Of course there are some other items in it, such as transformer, choke and adjustment to regulate this unit to the number of tubes put on it.



White "A" Uses Tungar Bulb

It is thus, truly an "A" eliminator, as there is no battery and it stores no electricity. It is never "discharged" and never "charged"; it can have only one condition—always ready for use. No details seem to have been overlooked for users' satisfaction as not only is there the adjustment mentioned but an "On-Off" switch as well. It's a nice unit, using a tube which is well distributed and available for replacement (eventually, but not soon) almost anywhere.

Webster A-C Tube Power Unit

The new A.C. tubes, types 226 and 227 have suddenly created the need for new types of XXX "A" supply unit and the Webster Company of Chicago have already met this demand. Their unit is designed to supply both A, B and C current. On the "A" side, one can get voltages of 1.5 for the 226 filaments, 2.5 for the 227 filaments and 5.0 for 171 type tube filaments. There are two windings at 1.5 volts so that the audio tubes can be biased differently from the radio frequency amplifiers. The resistance that will create 40.5 volts "C" bias for the 171 is provided at the 5.0 volt center tap.



Webster Unit for AC Tubes

On the "B" side, one uses a 125 mil. type BH Raytheon and the transformer is so made that sufficient voltage is provided that when the 40.5 volts is deducted for "C" bias, there is still a full 180 volts for the 171 plate. The other "B" voltages are 23 for the 227 detector and 90 for the 226 amplifiers. This compact assembly will probably also appear as the power supply in some of the manufactured "AC" receivers soon.

Crosley Power Unit

The Crosley AC Power Converter, which is designed to operate with the AC Bandbox, is a marvel of engineering ingenuity and efficiency. It adequately smooths out the interfering hum in the alternating current, supplying the required A, B, C voltages. Only 9 inches high and weighing less than 13 pounds, it is about half the size of even a small storage "A" battery. This AC Power Converter is built for 60 and 25 cycles. No elaborate connections to make. One plug to light socket—two others to the set. Snap switch on the set, stops flow of current at socket. Unit absolutely dead, when not in use.



Power for Crosley Bandbox

A novel feature of the Power Converter is the Mershon condenser used in it. This condenser is what is known as the "electrolytic" type.

A current flowing through the condenser builds up a thin insulating film on the plates by electrolytic action. The film is so thin that a Mershon condenser of very high capacity occupies but a small space in comparison with ordinary condensers. In addition, the Mershon condenser is self-healing—that is, if a sudden discharge, such as lightning, breaks it down, it will automatically repair itself in a few minutes, through the electrolytic action.

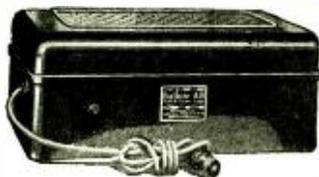
Freshman ABC Unit

The power supply presented to the radio public by Charles Freshman Co., Inc., of New York and Chicago is one of the most compact assemblies to supply all three sources which this writer has seen. The "A" part consists of a high grade storage battery, relay and a trickle charger of which the rectifier is a 1-ampere Tungar tube.

In the B-C half we find the UX-213 tube as the rectifier. This is a full wave rectifier using both halves of the cycle. "C" biases obtainable are 4½ and 9 volts which leaves 135 volts for use on a UX-112 tube, and there are taps for 22½, 67½ and 90 volts. This unit comes complete with cord and tubes at a very reasonable price.

The Balkite AB

In one handsome metal cabinet, the Pansteel Products Co., Inc., of North Chicago have combined their proven dependable "A" and "B" supplies as the "Balkite Electric AB." The fact that it contains no battery is featured. On examination we find a large model of the Balkite charger feeding through a filter of which the condenser is of the Abox type, and the 6-volt "A" output is clean and free from hum.



Supplies "A" and "B"

The "B" section of the unit is, of course, the Balkite "B" unit of which thousands are in use, and supplying the usual voltages. The size of this complete and substantial power plant is such that it will go in practically any console.

Westinghouse Autopower

The new "A" Autopower, made by Westinghouse Union Battery company, is a perfected revision of the first model. It is entirely automatic and you have merely to click the receiver switch "On" to put set in operation, and click it to "Off" and charger begins restoring power to the battery. This battery is equipped with acid tight cover and heavy duty separators.

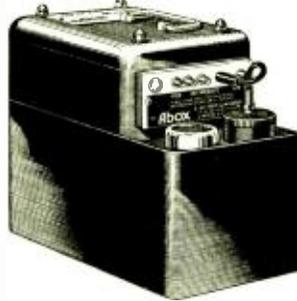
Autopower is noiseless and beautifully finished. Its charger is absolutely automatic and contains no moving parts or tubes so nothing needs replacing. There are several charging speeds from which to choose.

Abox "A" Supply

The Abox Company of Chicago, manufacturers of the Abox Filter, has designed and perfected the Abox "A" Battery Eliminator, a small, completely self-contained unit which when connected to the light socket supplies radio "A" power of sufficient quantity to operate a set using eight tubes or less, and of a characteristic superior in many respects to power derived from a storage battery.

It is in the values of the constants that they vary greatly, making "A" elimination more difficult than "B" elimination. Both consist of a transformer, rectifier and filter circuit. The transformer changes the alternating line voltage to the desired "A" or "B" voltage. This is then passed through the rectifier which changes it from alternating to pulsating direct current, which is then passed through a filter circuit that smooths the pulsations and maintains even, unvarying power at the output terminals.

The transformer of a "B" eliminator steps up the voltage; that of an "A" eliminator steps it down. This is very simple in each case. The rectifier of both must

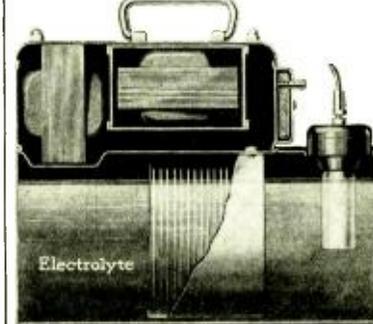


Exterior of Abox

be capable of handling the required amperage and voltage. The electrolytic type is satisfactory for use in either, particularly so for the Abox, as it can operate with the same solution as if used in the filter condensers.

It is in the filter circuit that difficulty is encountered. The function of a filter is to accumulate a certain potential across the output terminals, supply any lack of power, absorb any excess and smooth and stabilize the pulsating direct current so that all vestiges of the alternating current characteristic are eliminated or reduced to the point of inaudibility.

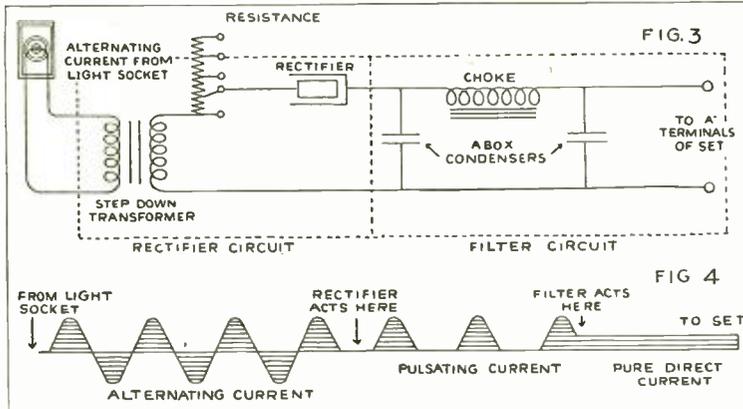
The ability of a filter circuit to accumulate the required potential depends on sev-



Cross Section of Abox

eral things: the voltage handled, the amperage required, and the capacity of the filter condensers. These last will vary in capacity in proportion to the difference in amperage and voltage to be filtered.

Taking a "B" eliminator filter circuit as a basis of comparison, we find it uses approximately a 4 microfarad condenser. This would never do in an "A" eliminator, because the power to be handled is so much greater—more than one hundred times in most cases. Therefore, due to this, the capacity of the filter condenser must also be increased one hundred times.



We will endeavor here to explain briefly the theory and operation of the Abox "A" battery eliminator, which is particularly interesting by virtue of the unusual design of condensers used in the filter circuit which have an almost unbelievable capacity. It is this tremendous capacity which enables the filter circuit of the Abox to effectively and completely eliminate line voltage noises and reduce the alternating component of the pulsating direct current output of the rectifier to inaudibility.

The theoretical circuit of a "B" eliminator and an "A" eliminator is the same.

is generally about seven. Therefore, the capacity must again be increased another seven times.

As a result we find that the condensers for an "A" eliminator filter must be one hundred times twenty-five times seven, or 17,500 times greater than that of a "B" eliminator. With 4 microfarads as a conservative average for "B" filtration, it is found that an effective "A" filter condenser must have the tremendous capacity of 50,000 microfarads.

To obtain this the Abox Company perfected an electrolytic condenser that not only had the exceedingly large capacity required, but much greater. It has been generally estimated at more than 275,000 microfarads, or over one-quarter farad, which is the greatest capacity ever obtained in a condenser anywhere nearly small enough for use in an "A" battery eliminator.

The Abox Condenser consists of a group of nickel and steel plates immersed in a caustic potassium solution. Thin films of oxygen and hydrogen form on the surface of the plates. This film is the dielectric of the condensers. The plates form one side of the condensers and the solution itself, the other side.

The use of a gas film for dielectric has several outstanding advantages. First, as a condenser increases in capacity as the thickness of the dielectric decreases, this infinitesimally thin film is responsible to a large degree for the great capacity obtained.

Then, the resistance of this film can be so controlled that it will break down at certain voltages. This prevents an excess voltage being applied to the filaments of the tubes. An Abox condenser cannot be burnt out. A dry condenser once broken down must be replaced. Should the dielectric of the Abox or the gas film be broken down, it immediately re-forms and the condenser is as good as new the moment the voltage returns to normal. This in no way affects the plates, the life of which is almost perpetual, since they are always surrounded with caustic solution which acts as a perfect preservative.

In the next column is an external view of the Abox and also an internal view. The transformer, rectifier, choke and condenser plates are clearly shown. These can be identified with the schematic drawing in identified with the schematic drawing below which shows the theoretical circuit.

Here we show the effect of the Abox on an alternating current impulse. Note the rectifier changes the alternating current to pulsating direct current by passing only one phase of the wave. The filter then smooths the pulsating current into pure direct current, and the result is perfect power for the "A" circuit of your radio set.

SILENT NIGHT ENDS

(Continued from page 5)

that the local stations are not on the air one night in the week when Chicago drops from the broadcasting spectrum of the nation.

"The congested condition of broadcasting channels, due to the many stations on the air, has resulted in unsatisfactory reception on Monday nights on most of the wave lengths for radio fans having sets capable of getting distance. The few clear wave lengths are, as a rule, devoted to the broadcasting of chain programs, which could be better enjoyed if brought in by local stations.

"The silence renders valueless for fifty-two nights each year an investment of more than \$25,000,000 which the Chicago public has expended in receiving sets. At the rate of 6 per cent the public is suffering a loss of more than \$170,000 a year, not including the loss on investment of the broadcasters.

"One of the chief arguments advanced for the continuation of 'Silent night' was that it gave the employees of the stations a night off. Except in isolated instances, however, each employee of local broadcasting stations will in the future have his regular one day of rest in seven through the adoption of a system of shifts."

SHORT WAVES

By Marcella

(Continued from page 4)

You are certainly clever, Mrs. F. W. T., to know a tenor even when his name has not been announced and he has changed from one station to another. You are right, Frank Munn, formerly leading man with the Light Opera hour at KDKA is now the tenor who sings during the Philco hour of the National Broadcasting company. Erva Giles, once the leading lady of this KDKA feature, sings over the Blue network. Both of these artists make singing their chief aim in life and not only do they broadcast but they are known as recording artists. Mr. Munn is undoubtedly, one of the biggest men now appearing on the air, since he weighs close to 300 pounds and stands close to six feet in height. Mr. Martin, press representative for WJZ, says, "Both unnatural, effortless singers whose tones and easy delivery make their talents ideal for broadcasting."

Build AC-7 Receiver for New AC Tubes

Uses Types '26 and '27 and Push-Pull Output

By William P. Lear

IT IS, of course, impossible to create any one radio receiver that will appeal to everyone who contemplates building a set, since we all have our own individual ideas of what our "ideal" outfit should contain. On the other hand, it is feasible to find out from a study of Radio correspondence, and discussing Radio with those in Radio stores, what a great many prospective set builders want at any one time.

The AC-7 receiver is the result of such a survey of the likes and dislikes of fandom in November, 1927, and in it we have embodied practically all of the features seemingly wanted. First of all, there is simplicity of control, although not carried to the extreme of single dial tuning. There are many who do not believe the first tuned r. f. transformer should be "ganged" with the other stages on a multiple condenser, because the tuning of this first secondary is affected to some extent by its being coupled to the antenna circuit. Therefore, the double drum tuning control has two dials, one for a single condenser at its left for first stage tuning and the other for varying three tuned circuits at its right.

Four Tuned Circuits

Second, we have incorporated three stages of tuned Radio frequency amplification, which, with the tuning necessary for the detector, gives four tuned circuits for selectivity. Four tuned circuits should give a selectivity sufficient for anyone. The individual stages have not been shielded since the tuned transformers are of a type not calculated to pick up appreciable energy from passing Radio waves nor create much of a field around themselves which would cause interaction between stages. The condensers have been widely spaced so that capacitive coupling between stages, via the adjacent sets of condenser plates, is reduced to a negligible minimum.

A third feature is to be found in the push-pull output stage, just at present one of the most popular points looked for in sets. This is a sort of second childhood for push-pull. It was extremely popular several years ago, then sank into oblivion for awhile as the battle for selectivity went on, and then with selec-



Figure 1

and plate circuit return leads so there will be no "hum." Were we to attach these returns to other circuits to either side of the AC heated filament, there would be a terrific hum in the speaker due to the rise and fall of voltage on each side of the filament with every alternation of the 60 cycle current.

The 227 detector tube, which by the way can also be used as an amplifier, if desired, incorporates a heater around which is a cathode that is the "filament" as far as relations with the grid and plate circuits are concerned. The raw AC is fed onto this heater, which acts just like that in your grill or curling iron, and immediately warms up the outer shell or cathode. This cathode, being of a material suited to this use, emits the negative electrons just as the filament of a 201 type does when heated directly. There is no electrical connection between heater and cathode within the tube, and they are well insulated.

Since power tubes, designed along the lines of 226, have not as yet made their appearance, we have used 171 type tubes in the output, and makers of transformers to be used in power supplies are providing 5-volt center tapped secondaries on their units for the purpose of light-

capacity. These coils have, in addition, the advantages of compactness and being built in two opposing sections for prevention of direct pick-up by the secondaries.

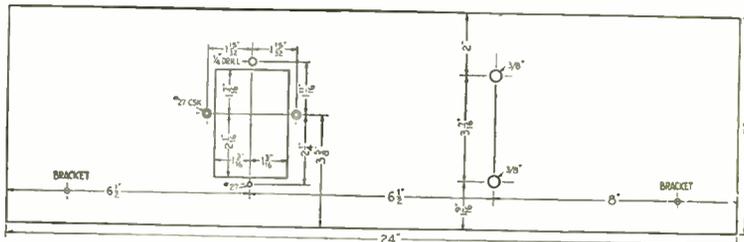


Figure 3

The Hammarlund "Midline" variable condenser gets its name from the fact that its plates are so shaped that the tuning characteristics are midway between those of a straight frequency line condenser and a straight wave length line condenser. The former had the disadvantage that, while it equally separated all stations, it brought the powerful and much desired higher wave stations too closely together, in the opinion of many. The second type bunched the lower wave stations pretty close and spread out the upper end of the scale. Hammarlund believe they have found the preferred medium in the "Midline" unit.

"Midline" Condensers Aid Design

Aside from these desirable tuning features, we find that this condenser includes soldered, non-corrosive brass plates, a sturdy reinforced aluminum frame, a minimum of bakelite strip and a bronze pig-tail. It is unique in its removable shaft, which feature we found useful in the AC-7, so that we could adjust the distance between condensers and their relations to the rest of the units. The fact that means was provided for mounting on either front panel or sub-base came in handy, also, as in this case we prefer to mount on the sub-base. Four of these "Midline" condensers are employed.

Like many another good thing, Modern audio transformers are not as well known as they might be, but on test proved rather exceptional in performance. They are available in five types, one for first stage, one for second stage, an output unit and a pair of push-pull units. In the AC-7 we have used the M-1 for coupling the detector to the first audio

stage and the push-pull team around the second stage. The points that make good audio transformers these days are ample primary, plenty of core and correct winding of the secondary, and in Modern units we find all these points just about perfectly developed. The result is even amplification of the entire desirable range of musical notes with automatic cut-off at the upper end of those that would do no good and might do harm.

Special Thordarson Transformer

There seems to be a difference of opinion between East and West as to the best method of getting results out of the new AC tubes and methods of connecting them into the circuits, but we're going to stick to the Western combination of Thordarson and Carter in our application of these tubes. Circuits have appeared, using parts of Eastern manufacture which connect in the AC tubes somewhat differently than we have here, but since we've never gone wrong on the systems brought out by the two above-mentioned firms, we applied their products in AC-7, and the results have been perfect.

Thordarson have produced the 2445 transformer to give 1.5 volts for the 226,

2.5 volts for the 227 and 5 volts for the 171's. Center taps are provided and Carter has produced a set of fixed and variable resistances to be applied, with this transformer and its taps, to give the AC tubes correct voltages at all points.

Benjamin sockets were used as a matter of course. These are now available with different colored tops so that each type of tube used has a socket of a special color. This helps to avoid placing tubes in the wrong sockets and burning them out. Red topped sockets receive 226 tubes, a green topped one gets the 227 and black capped sockets take the 171 tubes. The matter of adapting their principle of spring construction to the 5-pin 227 must have given Benjamin a little trouble, but the socket which has appeared has the proven floating feature that has long distinguished their product, yet all five connections are well taken care of.

Aerovox Quality

Aerovox condensers are chosen to hold back the voltages at several points because an exceptional grade of pure linen paper is used, a strong but very flexible tin-foil and an impregnating material of very high melting point. They are, of course, wound to be non-inductive and have an excellent reputation in the Radio field. The smaller fixed condensers are made of top grade India Ruby Alen, and the whole assembly, guaranteed within 10 per cent of rated value, is sealed in a protective bakelite case. They test to 1,000 volts D. C.

Ever hear of Coco tubes before? Well, they're made up at Providence, R. I., in a beautifully equipped plant and come

(Continued on page 22)

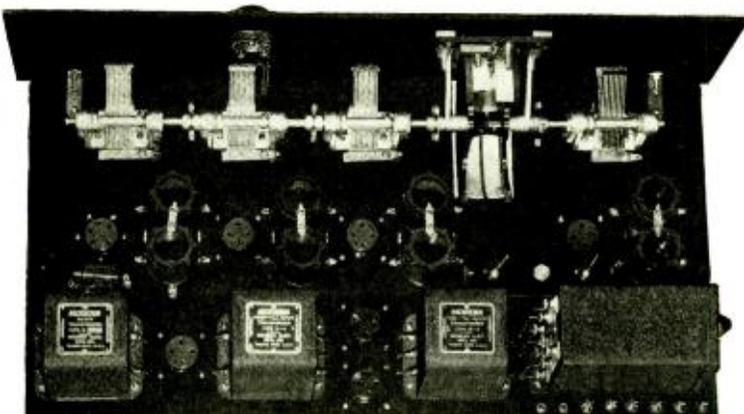


Figure 2

tivity achieved and tone quality much-to-be-desired, push-pull has come back with a bang. It is being applied to 112 tubes, 171's and the mighty 210 amplifier. Some go so far as to push-pull the first stage with 112's and then the second stage with 210's, but that is going a bit farther than seems necessary just now.

AC Tubes Eliminate Eliminator

The most important development, however, is probably in the use of the new AC tubes. Radio has waited a long time for these, with rumors every year that they had been developed, and now, at last, we actually have them. True, it is possible to have an AC set without AC tubes, but it must be done through eliminators or power supply units, which are both expensive and not always adapted to the set to which they are applied.

These AC tubes are of two types, the 226 amplifier and the 227 detector. In both cases the alternating current of the house lighting supply lines is merely reduced in voltage from 110 volts to below 3 and applied as "raw AC" to the filaments or heater. In the case of the 226, a husky filament operates on the AC and means must be applied on the outside and across the AC supply wires to find a point to which we can hitch grid

ing these tubes. You can use either 112 or 171 type tubes in the push-pull output, but we have used 171's in this original model of AC-7.

Camfield Coils Unique

The tuned r. f. transformers are Camfield Duoformers. These come three to a kit, and one kit is needed and one extra type 22 coil. They have been chosen because in their design a means was provided to prevent oscillation and squealing. It has always been difficult to construct tuned r. f. receivers that would not do this, because of the internal capacity within vacuum tubes, which while small, has been sufficient to cause trouble. With the usual type of tuned r. f. coil it has been necessary to provide some means of either lowering the voltages in the plate circuits or endeavoring to so arrange circuits that the capacity within the tube would be compensated for or neutralized.

The Camfield units, however, are arranged to take care of this objectionable tendency to squeal from going into oscillation on the lower wave lengths, and it is found that high efficiency is obtained at all waves without the need of constantly changing an adjustment on the panel or trying to balance the tube

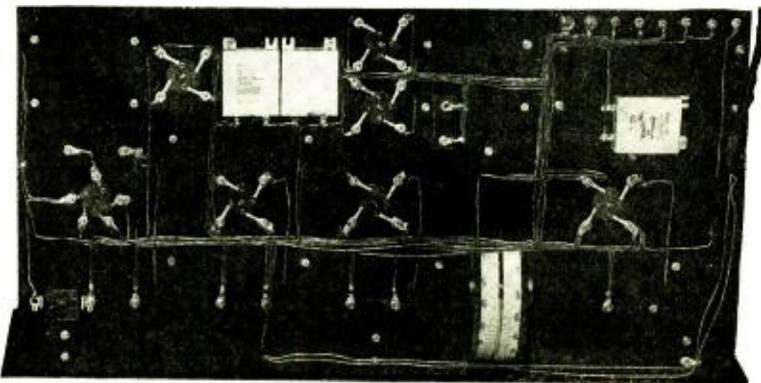


Figure 4

BUILDING AC-SEVEN

(Continued from page 21)

out consistently good. Tubes by this name are not new and have, in fact, been made for several years. As smaller makers came and went, Ceco kept at it through all the excitement of the tube wars, and now has the largest plant in the world devoted exclusively to the making of Radio tubes. The type M-26, an amplifier for either Radio or audio use, needs 1.5 volts on its filament and 1.05 amperes, while the plate supply can be 90 to 135 and not exceed 180. The detector, N-27, must have 2.5 volts and 1.75 amperes on the heater and 45 volts plate supply. As an amplifier, should you care to use it that way, it takes the same plate voltages as the M-26.

Now proceeding to the construction of AC-7, consider first the front view photograph Figure 1. It will be noted that there are surprisingly few holes to be made in the front panel; seven small ones and the large rectangular one which is cut out with a light back saw. The drilling layout for this is Figure 3, and between Figure 1 and Figure 3 the constructor should have no difficulty getting parts in their proper places. The variable resistor on this panel is the 50,000 ohm volume control. No dimensions are given for placing of bracket holes, as these parts vary, but the under side of sub-base is to be 1/2 inch from bottom edge of front panel.

Since the sub-base carries practically all of the apparatus of the AC-7, it is naturally a little more complex in both drilling and wiring, but here again the photographs will help considerably. The top view, looking down on the sub-base, is Figure 2, while the sub-base as viewed from the bottom is Figure 4. The drilling layout is presented as Figure 5.

Drilling Sub-Base

Holes shown in Figure 5 are entirely for mounting equipment, and wiring holes have been omitted for clearness. Wiring holes are drilled beneath each of the soldering lugs on the Duoformers and beneath the rear, stator connection lug of each variable condenser. A hole must be drilled below the switch in the sub-base for the wires to pass up through leading to switch and panel variable resistor.

In the rear row of equipment wiring holes must be drilled below each of the connection terminals on the Modern transformers and three larger holes below the terminals on the Thordarson power transformer. The small strip of bakelite mounted in front of the power transformer and the last audio transformer is supported on small angles, one at each end, so that its top surface is 1 1/2 inches above the surface of the sub-base. For drilling strip see Figure 7.

Looking at the set from the front the three variable resistors on this strip are, from left to right, the unit MW-1,000, the potentiometer AP-10 and the rheostat MW-1/5. The AP-10 unit is to be adjusted with a screwdriver until its exact center is found, to eliminate hum, and is then left strictly alone. The MW-1,000 unit is for securing grid bias on the 226 tubes and can be regulated until best point is determined. The rheostat MW-1/5 should be set, with a voltmeter across the filament line, so that but 1.5 volts is applied and no more.

In mounting the parts on the sub-base the following pointers are necessary: Sockets 1, 2 and 3 (red top) are placed with P and G to the rear, while socket 4 (5-spring) is set with G to the rear. Socket 5 (red top), which is that in rear right corner, is to have P and G to the front, while sockets 6 and 7 (black top) of the push-pull amplifier have P and G to the front. In placing the Modern transformers mount M-1 at the extreme rear right corner with P and G to front, set M-4 (the second from right) with the two G posts to left, and M-5 (that next to the Thordarson power supply) with the two P terminals to right. Camfield coils are set with G and F minus to right.

Adjusting Condensers

The condenser shafts are adjusted within the rotors by loosening the two screws in the thick rotor tube. That in the condenser to left of dial is easily adjusted so that the right end fits into the flexible coupling of the left drum. That at the right of dial is then slipped to left until it fits into the other flexible coupling. A coupling is then slipped onto the right end of this shaft and the shaft of the middle condenser of the three is then moved to left to engage this coupling. This performance is then repeated between the middle condenser and that to its right.

On the under side it will be noted that the bypass and fixed mica condensers are held in place on the lower end of screws used to hold parts in place on the upper side. The wiring of this original model is, admittedly, hard to follow in the photo as it has been cabled, but the constructor can follow schematic wiring diagram Figure 6 and lay in wires according to his own system, cabling if he desires.

When one first begins studying Figure 6 all will seem strange, and it looks

as though there would be many shorts and a lot of high voltages applied to filament circuits. Further study will show, however, that there is a "key" wire to this set, which is the wire from (GND.) to negative "B." All circuits connected to this are at ground potential and, please note, that all grid circuit return leads go to this which eliminates hand capacity.

Filaments Are Biased Plus

The different sets of filaments are then made positive in relation to the common grid return wire GND.—negative B. It has been common practice to make grids negative to the filaments with a "C" battery; of course, this is really the same thing since positive and negative are relative terms. In AC-7, though, it is the grid return wires that are at GND. potential and the filaments at various plus relationships to them.

For example, the filaments of the four

226 tubes are put at 6 volts positive to the grounded grid returns by resistor MW-1,000, while the filaments of the '71 tubes are 40.5 volts plus to the common grid return because of unit P-1,000-60. The detector grid return and the cathode

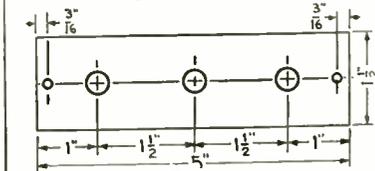


Figure 7

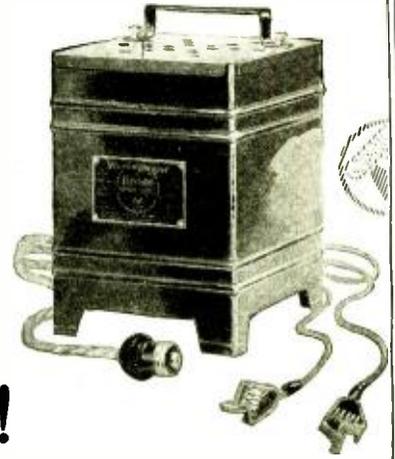
are both grounded with no difference of potential. On the other hand, the detector had to have something queer about it, so we find it necessary to make the heater 45 volts plus in relation to the

cathode, which is done by connecting the center tap of the 2.5 volt Thordarson winding to plus 45 of the "B" supply.

In wiring it is a good idea to copy Figure 6 very accurately and about four times as large as shown, then check off each wire with a colored pencil as it is put in the set. Wire filament circuits with twisted rubber covered wire. When you are sure all wires are in, slip the grid leak in the clips provided on the grid condenser .00025 mfd., put a 226 in sockets 1, 2, 3 and 5, a 227 in socket 4 and 171's in sockets 6 and 7. Turn rheostat MW-1/5 so that all resistance is "in" and turn switch on set. The 171 tubes should glow at once. Now clip voltmeter leads onto any pair of filament binding posts on sockets 1, 2 or 3 and turn up MW-1/5 until meter shows 1.5 volts. Plug speaker cord tips into Imp jacks at rear edge.

(Continued on next page)

Want trickle charging? Want full rate charging too? then you want Rectigon!



YOU need only one charger—the Westinghouse Rectigon.

Rectigon gives you two charging rates—a "trickle" and a "high". With it you can get everything that you want from a trickle charger. But, when your set has been in almost continuous operation for a number of hours and a trickle charger can't bring the battery back—then's when you'll need Rectigon most.

For Rectigon's high charging rate will give the battery its full strength quickly and surely. Another change of the Rectigon leads and you recharge your wet "B"—all with one charger, the Rectigon. Also

3 Ampere Rectigon

~~\$18.00~~
now

\$14.00

5 Ampere Rectigon

~~\$28.00~~
now

\$24.00

charges your automobile battery.

Westinghouse makes Rectigon—and Westinghouse knows radio. You remember when the first program came from KDKA—perhaps you're listening to Westinghouse radio every night now. Rectigon is simple and safe. It uses no acids or chemicals—has no moving parts to break or wear out. No harm done if you tune in while charging—none if the power goes off while Rectigon is in the circuit. For the cost of a few outside chargings, you can put Rectigon in your cabinet and forget the annoyance of weak or run-down batteries.

Westinghouse Rectigon Battery Charger

WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY, EAST PITTSBURGH, PA.
Offices in All Principal Cities • Representatives Everywhere
Tune in with KDKA—KYW—WBZ—WBZA

Rectox—for trickle charging only—will transform your wet "A" battery into a light-socket power unit. Replace your power every time you turn off the set. Rectox is trouble free—uses no acids or chemicals, has no moving parts. Adjustable to 1/2 or 3/4-ampere charging rates.



Besides Rectigon and Rectox for better battery charging, Westinghouse also makes Micarta panels and tubing for better insulation, and radio testing instruments for better reception.



BUILDING A-C-SEVEN

(Continued from page 22)

Eliminating Hum

Now turn off set and connect in the "B" power wires from either battery or "B" eliminator. If an eliminator is used, its 110-volt plug can be pushed into the socket provided on the rear end of the Thordarson transformer 2445 and set switch will then control it. When set switch is again turned on there will be considerable hum. The first thing to do is set AP-10 with a screwdriver to find the electrical center, which should minimize the hum almost entirely.

Unit MW-1,000 on the strip is now moved until about half its resistance is in circuit and one tunes for a signal. While doing this adjust the Hi-Ohm panel control back and forth, as we want plenty of signal strength for this first work and do not know the position of Hi-Ohm as yet to get it. Presuming we find a program, adjust Hi-Ohm for moderate strength and then adjust MW-1,000 until reproduction is both loud and clear, then leave it alone.

Now find a rather weak signal and we're ready to set the condensers. This setting of variable condensers should preferably be made on a rather low wave length station. Get program as loud as possible and then, one at a time, loosen the screws in rotor of each condenser and delicately turn it with a short stick for maximum response, being sure that the other condensers do not turn while working on any one. Thus, when you get through, each of the three circuits controlled by the three condensers to right of dial will be at maximum resonance. The condenser at the left does not need this treatment, since it operates independently, but if you want both dials to read approximately alike, tune in station to maximum, loosen screw holding left drum to shaft and set it with the other drum as to numbers. Then tighten

LIST OF PARTS FOR AC-7

Hammarlund Mfg. Co., Inc., 424 West 33rd St., N. Y. C.:	Carter Radio Co., 300 So. Racine Ave., Chicago:
4 Midline Condensers, Type ML-17, @ \$5.50	1 Potentiometer, Type AP-10
1 Illuminated Drum Dial	1 Rheostat, Type MW-3/8
2 Insulated Flexible Couplings, @ \$0.60	1 Variable Resistor, Type MW-1000
	1 Resistance Strip, Type P-1000-60
	1 "Hi-Ohm" Volume Control, Type L, 50,000 ohms
Camfield Radio Mfg. Co., 35 East Wacker Drive, Chicago:	1 "Imp" Power Switch, Type 110
1 Duoformer Kit, Type 22K	2 Tip Jacks, Code No. 10, @ \$0.10
1 Duoformer Coil, Type 22	
Modern Electric Mfg. Co., Toledo, Ohio:	Thordarson Elec. Mfg. Co., 500 W. Huron St., Chicago:
1 Transformer, Type M-1	1 Filament Supply Transformer, Type T-2445
1 Push-Pull Input, Type M-4	
1 Push-Pull Output, Type M-5	Miscellaneous:
Benjamin Elec. Co., 120 So. Sangamon St., Chicago:	7 Binding Posts—ANT., GND., Neg. B, Plus 45, Plus 90, Plus 135, Plus 180
4 Sockets, Type 9044, Red Tops, @ \$0.50	You will also need 3 heavy angles, 3/8" wide x 3/8" x 2", 1 roll of Celatrite flexible bus wire, 2 dozen round head brass machine screws, 6-32 by 3/8", 2 dozen round head 6-32 by 1/4", 4 dozen hex nuts 6-32 and 5 feet of twisted rubber covered flexible No. 14 wire
2 Sockets, Type 9044, Black Tops, @ \$0.50	
1 Socket, Type 9037, Green Top	Ehrlert Radio Furniture Co., 2864 Lincoln Ave., Chicago:
Formica Insulating Co., 4600 Spring St., Cincinnati:	1 Cabinet as shown Figure 1
1 Walnut Bakelite Panel, 7" x 24" x 1/8"	C. E. Manufacturing Co., 702 Eddy St., Providence, R. I.:
1 Black Bakelite Sub-base, 1 1/4" x 2 3/4" x 1/8"	4 A. C. Tubes, Type M-26, @ \$3.00
1 Black Bakelite Strip, 5" x 1 1/2" x 1/8"	1 A. C. Tube, Type N-27
Aerovox Wireless Corp., 70 Wash. St., Brooklyn, N. Y.:	2 Power Tubes, Type J-71, @ \$4.50
3 Filter Condensers, Type 200 Short, 1.0 mfd. @ \$0.90	
1 Africa Condenser, Type 1475, .00025 with clips	
1 Mica Condenser, Type 1450, .0025 mfd.	

(The Radio Digest Shopping Service will purchase all or any of the above specified parts, at the prices listed, for builders of the AC-Seven Receiver who may be located in isolated communities or unable to obtain the parts from local dealers. Address: Shopping Service, Radio Digest, 510 N. Dearborn St., Chicago, and enclose express or postal money order covering total cost of parts ordered.)

160 for the plates. This is just about the right voltage for 112's when 10 1/2 volts "C" bias is used.

It is not a bad idea, no matter what make is used, to have an extra tube of the 226 type around so you can pick out the best 4 out of 5 for actual use, with the other as a spare for an emergency. Tubes have always varied a little in efficiency, and the 226 types are no exception. The adjusting and setting of the resistance units and the condensers may seem a little arduous and a bother, but once they're set you are through bothering with them. The convenience of use with AC-7 is worth a little trouble. Month after month one merely steps up to the receiver, snaps the switch, enjoys the programs and snaps it off. No battery testing, no refilling, no wondering if it is up or down. Tuning is easy and, in most localities, agreeably sharp.

Away from the cities the length of aerial is not particularly important, but in cities where there are powerful locals do not get too long an aerial. This point is true of any tuned r. f. set and no particular fault of AC-7. Close to big stations keep the antenna below 60 feet, including lead-in, or use an attic or picture moulding aerial. Above all, have a first-class ground. It is important wherever the alternating current is applied to a set to have the very best ground connection to water pipes or wet earth possible.

PICKARD LAYS LAW

(Continued from page 5)

South and certain Mid-Western sections is where hardship is felt. Small town and rural patrons, the most faithful and enthusiastic listeners, number at least half of the Radio audience.

Square Deal for Farmer

The Federal Radio commission is of the opinion that this group is entitled to good Radio, and it is going out to see that they get it. Stations causing interference on each heterodyning channel will be asked by the commission in the public interest, convenience and necessity to take steps between themselves to see that Radio programs instead of disagreeable whistles are available to listeners on their respective channels. Whether they attain the desired results with time division or by control of power or frequency will be their responsibility. Failure of the broadcasting bed-fellows occupying a given channel, which is not generally available to listeners throughout the country because of interference, to get together on a solution will result in arbitrary orders by the commission.

Plans to clear at least 40 channels of interference are definitely under way, and broadcasting stations, parties to heterodyning complaints, will be notified within the next few days.

The recent series of changes in assignments, effective November 1, have made a decided improvement in reception, according to reports from listeners, many of whom urge still further changes as good reception weather reveals heterodyning.

100 Stations Changed

An example of broadcasters' willingness to cooperate with the commission is evidenced by the fact that of the hundred or more stations involved in recent orders requesting them to divide time, lower power or to shift wave lengths, only a few protested and asked for a public hearing. Of those already heard by the commission, none have been able to produce sufficient evidence that such orders were not in the public interest. In this connection it is interesting to note that members of Congress almost invariably express their interest in behalf of the listener rather than the broadcasters, and are entirely sympathetic with the commission's endeavor to decide each case on its relative merits.

The feeling is becoming prevalent in certain broadcasting quarters that unless interference problems are cured to the extent that listeners may enjoy a variety of programs, that wired wireless will be the answer to the problem. This is a challenge to broadcasters which will not likely go unheeded, and it is believed in the interest of the art that they will assume a full share of responsibility in adjusting interference problems to which they are a party. The life blood of the Radio industry to a large extent lies in the fascination and romance of dialing distant stations. Right now it would seem that the commission must decide whether or not this alluring phase of Radio must go or stay. It is the public reaction which will be the deciding factor. The question is, shall the listener, the "Radio fisherman," be limited to a choice of a few neighbor fishing holes, or will he insist on the entire United States for his angling activities?

Chicago Has 72,530 Watts

CHICAGO.—The combined power of the Chicago broadcasting stations is 72,530 watts, according to the last statistics of the Radio commission. There are 69 stations in the district having power from 15 to 15,000 watts each.

Choose Correct "B" Power Unit

If you use 171 type tubes in the push-pull stage and want to apply a "B" power unit instead of batteries, be sure that its high voltage tap can deliver 210 to 220

volts under moderate load. Your dealer is able, in which case the grids would draw less voltage, there would only be about

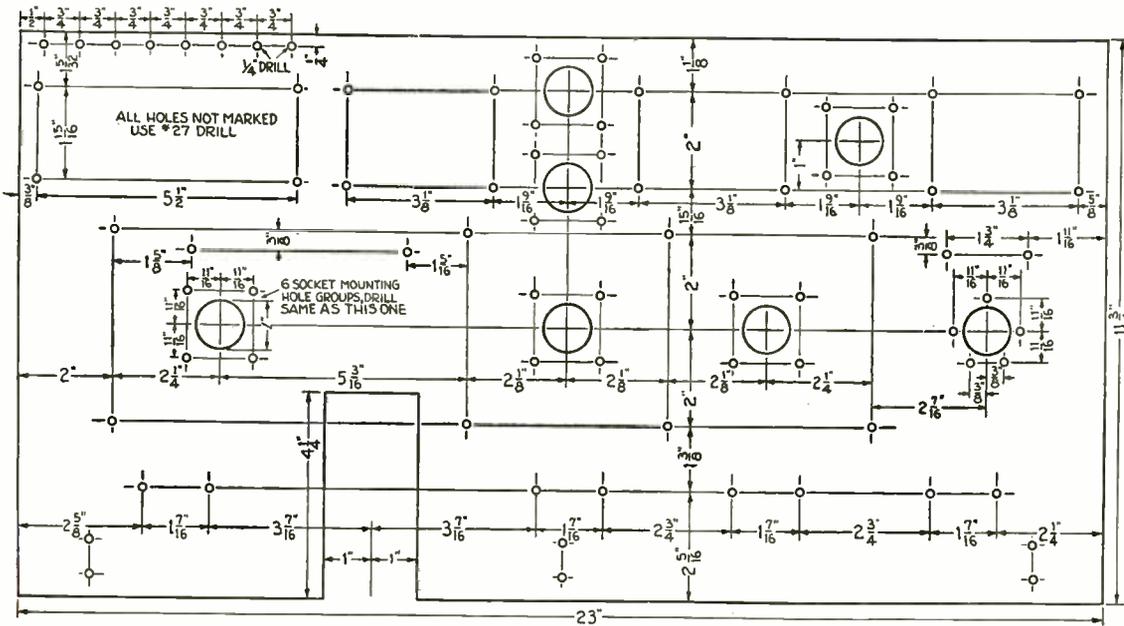


Figure 5

screw and the two drums will tune almost together up and down the scale. volts under moderate load. Your dealer can ascertain this for you. This point is able, in which case the grids would draw less voltage, there would only be about

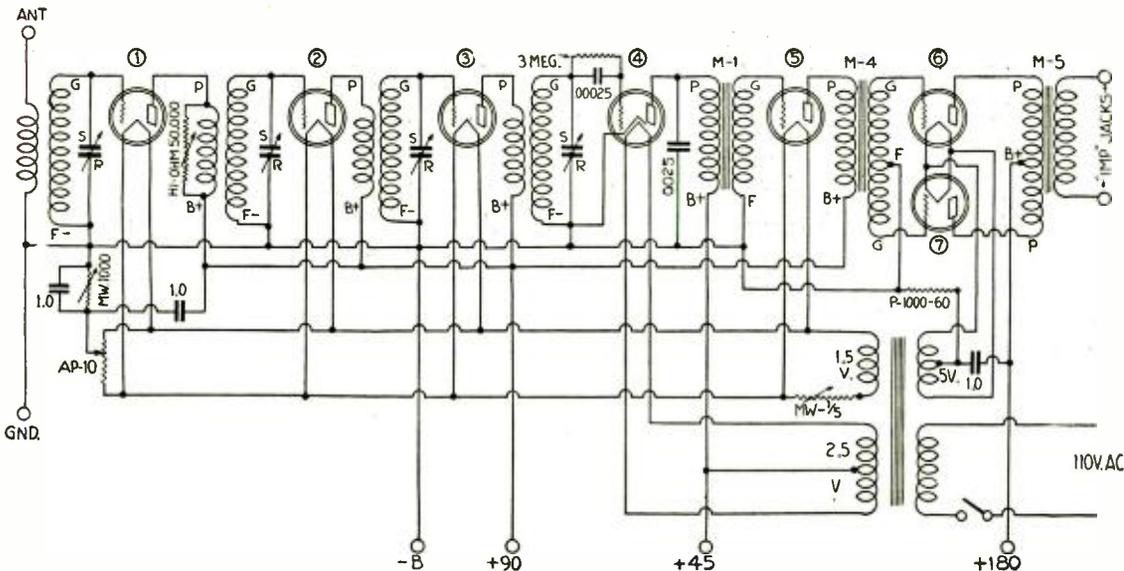


Figure 6

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No. 5

Let's Number the Wave Bands?

NOW that the Radio Commission has been reorganized, and it soon will show some intelligent supervision of wave lengths, it is timely that the Commission and the Radio industry consider the very practical suggestion of Ralph H. Langley of the Crosley Radio Corporation, Cincinnati, to number the wave channels as an added facility for the Radio set owner.

In brief, Mr. Langley very intelligently proposes that the 96 wave channels available for broadcasting be numbered from 1 to 96 inclusive. He advances the argument that the average listener is not interested in the technicalities surrounding broadcasting. The advance from the meter wave to the kilocycle, he claims, was an intelligent step in the right direction, but it did not go far enough. By numbering the channels, Mr. Langley contends, it would simplify reception—thus giving the listener in keener enjoyment in his programs.

He points out that the present system is very similar to having your home numbered in latitude and longitude, giving as an example, "north 42 27' 35.56", east 75 17' 45.11". This would be about as simple, and easy, and logical, and technically correct as the present wave length in meters or the frequency in kilocycles for a broadcasting station. Not only are houses and offices conveniently numbered, but so are the telephones. "Why not, then, use plain simple numbers for the broadcast frequencies and wave lengths?" asks Mr. Langley.

By numbering the wave channels, when you wanted KDKA at Pittsburgh you would turn to channel 40. The next evening when you again wanted to dial KDKA you would again turn to the number 40 on your set. There would be numbers on the dial from 1 to 96 representing the 96 broadcasting channels. You would soon remember the fact that your favorite broadcasting stations are on channels 6, 22, 40, 60 and 81. If you were anxious to hear a certain program on an important station you could readily turn to the number and bring it in, i. e., if you wanted to tune in WEAf, you would dial to number 6 and get the station immediately.

Another advantage of the system is that all sets will have the same numbers on their dials. When a new set is acquired there will be no necessity for logging it for your favorite stations. If you operate a set in some one else's home you will know immediately what number to turn to.

In the future, broadcasting stations may be allowed to transmit on more channels than the 96 we have at the present time. When this happens it is more than sure to be below the 200 wave, or 1500 kilocycles. Then the series of 96 numbers will be continued from 96 up. In starting the numbering system at the 200 low wave, or 1500 low frequency end, there will be a margin to accommodate the short waves. This system also provides that the smaller numbers will be for those channels now allotted to the important and best known stations.

Radio Digest recommends serious consideration of this keen idea of Mr. Langley's.

A Washington correspondent writes: "Rear Admiral William H. G. Bullard, Chairman of the Radio Commission, is classed as an old navy bulldog, trained to receive and execute orders." Whose orders?

Waves 499.7 to 370.2 meters for national broadcasting is the plan of the Commission. Who beside WEAf and WJZ will get an exclusive wave length?

Leaving the heir: My boy, learn to think clearly. The thinkers are the only real wealth of the nation.



THE READER'S VIEW

Answering Major Mott

AFTER reading Major Mott's harangue in the November DIGEST I dashed to a mirror fully expecting to see horns sprouting. Imagine my surprise to find that my general appearance had not altered at all. Nor were there any wings visible to carry me through the air on my implied vocation as a Jersey Pest.

The Major's letter was so ridiculously violent that one wondered at once wherein a gentleman with so long a list of titles could have had his personal corns trod on to such an extent as to cause his truculent bombast. The answer was found in past and present copies of RADIO DIGEST. I find in the August 1925 roster of stations the following: "KFWO, Avalon, Calif. 211.1 m. 250 watts. Major Lawrence Mott etc, etc." Later editions of DIGEST brought the same notice but in the re-allocation of wavelengths by the commission we find station KFWO is now on 299.8 meters. So that's the nigger in the woodpile! The Major's station is in a glass house on 299.8 meters and he felt that stones thrown at the commission might in time so crystallize public opinion as to force him back to his 211.1 meter wave where his station no doubt belongs.

The Major refers to me as the "gentleman from the notoriously wet state." Let me inform the Major that I was NOT in a "wet state" when I wrote my letter although from the tone of his one might be pardoned for assuming that something intended for his stomach had gone to his head. However, I fail to see where the fact that Jersey as a wet state has anything to do with Radio, we merely vote as we drink.

To quote the Major's own words—"It is SO easy to tear down . . ." May I remind the former A. P. correspondent that it was just this that I complained of? My contention was and still is that the broadcasting stations were ideally allocated under Mr. Hoover's administration and the first act of the present commission should have been to return all stations to such wave and power as they had under the department of commerce regulation previous to the period of Piracy. Stations not on the air at the time of the "WJAZ decision" should have been treated as "new stations."

The Major's inquiry about what my action might have been had I been a commissioner is entirely beside the point. The position calls for a big man—much bigger than I ever hope to be BUT—there is great difficulty in getting BIG MEN who will think first of the listening public and who can understand that theory is very often wrong in Radio—so often in fact that any DX fan can disprove Dr. Goldsmith's remarks about service areas. Personally I get my dinner muscle from Miami, Cleveland, New Orleans, Chicago, Nashville, Jacksonville, etc., in spite of the fact that I am but seventeen miles from New York City and you know we now have twenty metropolitan transmitters located on this side of the Hudson. But I know lots of people with supposedly excellent receivers who are able to get very little distance until locals have signed off for the night because of the high power used by certain stations in this district.

Because I do not consider myself qualified to be a Radio commissioner I suppose the Major would say I have no right to criticize. When this gentleman of many titles (don't forget DX hunters that he's a Game Warden!). When, I say, this gentleman was "City Editor of one of our greatest New York City sheets" did he ask a reporter, "Could you fill the office of mayor?" before sending him out to criticize the incumbent of that office?

Enough of such talk! The Major has made a great "to-do" about the matter and shown by his remarks that he has yet to learn good manners. May he come to his senses and talk like a man if he has anything further to say.

I am wondering what other readers of the Digest think of the matter and realizing that this, our favorite Radio magazine, cannot possibly print the opinions of all who may care to write, perhaps the readers would be kind enough to address such communications direct to me. Whether you agree or disagree with my opinion I will welcome your letters.

Thanking you all for your kindness and patience in reading my poor attempts to explain the position of such part of the listening public as may feel as I do,

L. S. J. CRANSE,
22 South St., Summit, N. J.

Another Dig at Cranse

AFTER reading the article in the October issue of Radio Digest, signed by Mr. L. S. J. Cranse, 22 South St., Summit, N. J., I have come to the conclusion that President Coolidge did make a very serious mistake in appointing the present Radio Commission. He should have availed himself of the wisdom, knowledge and evident ability of Mr. Cranse.

Mr. Cranse wants to know why so and so but does not say why not so and so.

He wants to know why WSM was raised to 341 meter wave and WOC dropped to 353 meters. I do not suppose that in either case the station in question had anything to do with the change but in a spirit of co-operation accepted what the Radio commission gave them.

I read a good deal about favorable wave lengths. What makes a favorable wave length? As I understand, one wave length is in itself as good as another except that the shorter the wave the further it will carry; if this is so, then a choice wave is one that is not interfered with by another, and I believe that the Radio Commission is honestly striving to make every wave length a choice one. This cannot be done in a day, in a month, or in a year, but will take time.

I agree with Mr. Cranse that there are stations that we got clearly last winter that we do not get so well now, on the other hand we are now getting stations that we did not get last year, on the whole from our location here in the South, I would state that there has been much improvement.

DUNCAN R. DORRIS, 2011 Linden Ave.,
Nashville, Tenn.

"PLEASE, MORE WAVES?"



RADIO INDI-GEST

Here's How!

I've gone on thrilling "ocean trips,"
Got seasick and all that,
Witnessed some dandy circuits
With jolly Al and Pat.
I know that all the Frenchmen in
The world cannot be wrong,
Pat's proved that rather startling fact,
He sure can sing that song.
Al adds his bit and my, oh, my,
That boy can surely play.
He makes that organ fairly talk,
And that's a lot to say.
Now I'll bet lots of you agree
With this, right off the bat.
So what do you say we drink, right now,
A toast to Al and Pat.

—Althild.

Little Alfie's Essay

ON June 29 there was an eclipse of the sun. The B. B. O. C. planned a hole lot of Rajo experiments for it, because they wanted to no more about the Hevyside layer. Pa says Ma's cakes always remind him of the Hevyside layer and he noes enuf about them already. He says he can't imagine why they make such a fuss about an eclisps, as he has lived in England for over 40 years and can only remember about 1/2 a dozen days when the sun wasn't eclisped.

An eclisps is something going across the sun so that you can't see it, so why bother to have an eclisps? When there is an eclisps a dark shadow crosses the horizon which makes everything cold and gloomy. Pa says a similar thing happens when Ma's Aunt Eliza comes to stay with us. And he says that even if you look at Ma's Aunt Eliza threw smoked glasses, it duzzent make the site any more bearable.

But what good is an eclisps ennyway? Who says it has to be? Is it the Government or the British Broadcasting Corruption? Pa says the orful governments of modern times would be capable of ennything, but then he says the same thing about the girls of today and even of jazz, so I doant noe what to think. But eclisps aren't enny good to me. If we cud have a holiday from skool every time there was an eclisps, their mite be sumthing in it. But did we get a holiday for it? No. There is nothing but injustice for boys in this world. Teacher says this eclisps want our again for 273 years. Well, I doant care and neether does Pa.

LONDON BOBBY.

Boston Gets the Bean

ROSCOE, Keeper of the Sacred Saccharine, come forth!

Unlock the secret chamber containing the precious Jelly Beans, and prepare at once your most rare and costly Blue Jelly Bean. Dispatch it pronto to Frederick F. Johnson of Boston.

'Tis but his just reward for having prepared the riddle of the Word Steeple chase with precision and perfection. Following is the course and his rendering:

Transmitter
Studio
Solo
Piano
Cornet

"Vell, mine frendt, I go home mit der gal und I stt down in der entransmitter, and right avay she starts a fight! She say she under-studio her dad money vot I do not pay, vich vas a lie, und how could I be solo? I hate lightings so so I say 'come on let's go to der popcorn refreshments stand for a bidt to eadt.' What vashl we eadt? Vell, I tell you dere vas wehlers, und sauerkraut, piano some cornet too a plendty."

Let the Blue Jolly Bean go forward this day fast freight.

Here's the next course:
Resistance, microphone, soprano, tenor, duet. Get on your marks, get set . . . Go!

INDI

SERIAL MELODRAMA THRILLS WLW LISTENERS

WOW makes visiting Radio fans feel at home by having pretty hostesses like Blanche Webber, below, take care of them. Miss Webber is also an entertainer.



GRAYS WONDER CITY syncopators, featuring the little child wonder, Eleanor Gray, is a new feature at WRVA. Howard De Long, below, is the dramatic tenor at WDDO.



HIGH LIGHTS OF THE AIR

THE RADIO season is at its height with the Chicago Civic Opera hour coming over the Blue Chain each Thursday night at 9 p. m. Central time and the New York symphony on the same chain each Saturday night at 8 p. m. Eastern time. The Boston symphony will also be on the air over WBZ every Saturday night during December.

The Atwater Kent artists who will appear during the Sunday 9:15 p. m. Eastern time programs of the Red Chain are: December 4, Reinald Werrenrath, baritone; December 18, Marla Kurenko, soprano, and December 25, the Christmas quartet, composed of Betsy Lane Shepherd, soprano; Elsie Baker, contralto; Arthur Hackett-Granville, tenor, and William Simmons, baritone.

One of the monthly features from the Great Plains region is the tenth annual rendition of Handel's "Messiah" by the Independence Messiah choir. This organization, which is composed of 225 voices, will be directed by Paul N. Craig and broadcast by KLDL.

International luncheon clubs are being featured on the Thursday night programs of WNNC. Not only are the clubs producing the best entertainment possible, but they are also trying to acquaint the Radio public with the civic creative ideas behind

the various organizations. December 1, the Asheville Optimist club presents the program; December 8, the Asheville American B. club, and December 15, the Asheville Rotary club.

Two popular light operas are being featured this month by CKCL, Toronto. On Tuesday, December 13, the popular opera, "The Merry Widow," goes on the air. On Tuesday, December 27, "The Gondoliers" will be produced.

If you have missed the first four episodes of "Flying Gold," the thrilling melodrama now being played at WLW, it will not be too late to engage a front row loud speaker seat for each Monday night at 7:15 p. m. Eastern time during December. Not only is the play about aviators, but the eight actors are actual or incipient aviators. Martha Croninger, the heroine, is one of the first girls in Cincinnati to learn to fly. Even the author, Mrs. Susan H. Embury, is an aviator and owns her own plane; consequently the play is full of thrills. A race, a fight in the air, and a rescue will more than draw a crowd of carphones.

Of course, all the stations will assist the old year out but none will do it more gracefully than WLS, with Chubby Parker, Ralph Emerson and Maurie Sherman's College Inn orchestra presiding.

10, time, WBZ, WBAL, WLAM, KDKA, WJR, KYW, WTMJ; 10, Balkite hour, WBZ, WBAL, WLAM, KDKA, WLW, WJR, KYW, WCO, KSD, WUCF, WHO, WOW, WDAF, WAGN, WEBB; 11, slumber music.

WLW Cincinnati, Ohio (428.3m-700kc) 7 p. m. orchestra; 10, Crosby Cossacks; 10:45, Tommy and Irene; 11, orchestra.

WMAK Buffalo, N. Y. (545.1m-550kc) 6:15 p. m. dinner music; 7:30, talk; 9, popular program; 11:05, Ballroom Music.

WNAC Boston, Mass. (461.3m-580kc) 6:30 p. m. dinner concert; 9:15, Metropolitan theater; 10:15, dance music; 11:05, orchestra.

WPG Atlantic City, N. J. (272.6m-1100kc) 7:05 p. m. dinner music; 10, movie broadcast; 10:20, Grah bag; 11:15, dance orchestra.

WRC Washington, D. C. (468.5m-640kc) 7 p. m. Kitt hour of music; 8, WEAL; 10:30, band.

WRVA Richmond, Va. (254.1m-1180kc) 8 p. m. program; 11:30, Carry Me Back to Old Virginia.

WSAI Cincinnati, Ohio (361.2m-830kc) 7 p. m. poems; 7:25, talk; 7:45, music; 8:00, WEAF; 9, program; 10:30, WEAF; 11, orchestra.

WSEA Norfolk, Va. (283m-1140kc) 6:45 p. m. dinner music; 8, studio recital; 10, orchestra.

WTAG Worcester, Mass. (516.9m-580kc) 8 p. m. travel talk; 9, WEAF; 10, WEAF.

WTAM Cleveland, Ohio (399.6m-750kc) 6 p. m. orchestra; 8, studio program; 8:30, WEAF; 11, orchestra.

WCCO Minneapolis-St. Paul, Minn. (405.2m-740kc) 7:30 p. m. WEAF; 9, WEAF; 9:30, WJZ.

WCFI Chicago, Ill. (463.6m-620kc) 8-12 p. m. popular hour.

WDAF Kansas City, Mo. (370.2m-810kc) 6 p. m. School of the Air; 7, WEAF; 11:45-1, Sighhawk frolic.

WEBH Chicago, Ill. (365.6m-820kc) 7-10 p. m. N.B.C.; 10, orchestra.

WENR Chicago, Ill. (288.3m-1040kc) 8, orchestra, artists; 9:30, popular program.

WFAA Dallas, Tex. (499.7m-600kc) 7 p. m. musical program.

WGN Chicago, Ill. (305.5m-800kc) 6:10 p. m. Punch and Judy; 6:35, ensemble; 8, WEAF; 10:10, Sam 'n' Henry; 10:20, Music Box; 10:40, Correll and Gossett.

WHAS Louisville, Ky. (461.3m-650kc) 7:30 p. m. WEAF; 8, studio concert.

WHB Kansas City, Mo. (336.9m-890kc) 7 p. m. dinner hour organ; 8, evening concert; 9:30, dance music.

WHO Des Moines, Ia. (535.4m-560kc) 6:30 p. m. dinner concert; 8, WJZ; 9, program; 9:30, WEAF; 10, Little symphony.

WHT Chicago, Ill. (416.4m-720kc) 8:30-10 p. m. evening program.

WIBO Chicago, Ill. (416.4m-720kc) 7:10 p. m. music; 8, WJZ; 9, popular program.

WTMJ Milwaukee, Wis. (293.9m-1020kc) 7:30 p. m. popular hour; 8:30, program; 9:30-12, frolic.

KFI Los Angeles, Calif. (468.5m-640kc) 7 p. m. University of S. C.; 8, drama hour; 9, orange network; 10, musical.

KFBI San Francisco, Calif. (454m-660kc) 6:20 p. m. beauty talk; 7, musical; 9, studio program; 10, dance orchestra.

KFWB Hollywood, Calif. (361.2m-830kc) 6:7 p. m. dinner concert; 7:50, news; 8:9, features; 9:10, program; 10-11, frolic.

KGO Oakland, Calif. (384.4m-780kc) 6:6-5:5 p. m. Stanislaus Hen's Little symphony; 8, drama hour; 9:10, orange network; 10, orchestra.

KGW Portland, Ore. (491.5m-610kc) 6-7 p. m. dinner concert; 8, concert; 10, National Broadcasting company.

KHJ Los Angeles, Calif. (416.4m-720kc) 6:30-7:30 p. m. children's hour; 8:10, string quartet.

KPO San Francisco, Calif. (422.3m-710kc) 6:30-7 p. m. organ; 8-9, program; 9-10, music; 10-11, music.

Thursday, silent night for: KFAB, KIX, KOA, WDDO, WEOA, WEMC, WLIT, WOU, WOS.

FRIDAY, DECEMBER 2

Headliners			
Eastern 6:30 p.m.	Central 6:30	Mountain 4:30	Pacific 3:30
WSUI (475.9m-630kc) "Art," Prof. Stites.	5:30	5:30	4:30
WUC (535.4m-560kc) Esther Z. Nelson, organist.	7	6	5
KMA (394.5m-760kc) orchestra.	7:30	7:30	6:30
KSAK (331.1m-590kc) "Dues," Longfellow Still.	8	8	7
WJZ (475.9m-630kc) Second Semester French.	8	7	6
KOH (277.6m-1080kc) Billy and Helen.	8:30	8:30	7:30
KFDY (440.9m-680kc) Military ball.	9	9	8
KFI (468.5m-640kc) Ballads of all lands.	9:30	9:30	8:30
KOH (277.6m-1080kc) Hess Beatrice Battey, pianist; Marie Kasmanov, violinist.	10	10	9
KMBC (270.1m-1160kc) KMBC string trio.	10:30	10:30	9:30
KRA (325.9m-920kc) Folk songs, national anthems of various countries; Scotch music.	11	11	10
WDDO (245.9m-1220kc) American Business club program.	11:30	11:30	10:30
WLS (344.6m-870kc) WLS Jubilee.	12	12	11
WJR-WXN (440.9m-680kc) Morris Gilhmet and his Troubadours.	12:30	12:30	11:30
KFI (468.5m-640kc) Ira D. Morgan, baritone.	1:30	1:30	12:30
KGW (491.5m-610kc) Hoop O'wits.	2:30	2:30	1:30

Regular Friday Features

Eastern Time Stations			
KDKA Pittsburgh, Pa. (315.6m-850kc) 7:30, sketch; 8:30, concert; 9:30, WJZ.	8:30	8:30	7:30
WBAL Baltimore, Md. (285.5m-1050kc) 6:30 p. m. dinner orchestra; 7:30, music; 8:30, string trio; 9, WJZ; 10, WJZ.	7:30	7:30	6:30
WBZ Springfield, Mass. (333.1m-900kc) 6, evening program; 9, WJZ; 9, music; 10:30, orchestra.	6:30	6:30	5:30
WCAE Pittsburgh, Pa. (516.9m-890kc) 7 p. m. dinner concert; 9, WEAF; 10, WEAF; 11:30, club revue.	7:30	7:30	6:30
WCSH Portland, Me. (483.6m-620kc) 7:30 p. m. WEAF.	7:30	7:30	6:30
WDBO Orlando, Fla. (288.3m-1040kc) 9:30 p. m. dance program.	9:30	9:30	8:30
WEAF New York, N. Y. (491.5m-610kc) 7:30 p. m. Howard Comfort hour; WEEL, WTIC, WJAR, WTAC, WNSH; 8, half hours with great composers; WEI, WFL, WFSB, WFSM, WFTS, WFTV, WFLA, WFLB, WFLC, WFLD, WFLG, WFLH, WFLI, WFLJ, WFLK, WFLM, WFLN, WFLP, WFLR, WFLS, WFLU, WFLV, WFLX, WFLY, WFLZ, WFLA, WFLB, WFLC, WFLD, WFLG, WFLH, WFLI, WFLJ, WFLK, WFLM, WFLN, WFLP, WFLR, WFLS, WFLU, WFLV, WFLX, WFLY, WFLZ.	7:30	7:30	6:30
WGBF Boston, Mass. (365.6m-820kc) 7:30 p. m. WEAF; 8:30-10:30, WEAF; 10:35, weather.	7:30	7:30	6:30
WFLA Clearwater, Fla. (508.2m-590kc) 8:32 p. m. music; 9:45, dance program.	8:32	8:32	7:32
WGHF Detroit, Mich. (319m-940kc) 8 p. m. organ; 9, program; 9:30, orchestra.	8	8	7
WGR Buffalo, N. Y. (302.8m-890kc) 8-9 p. m. ensemble; 9:30, concert; 11:05, supper music.	8	8	7
WGY Schenectady, N. Y. (379.5m-790kc) 7:30 p. m. college lecture; 8:30, WEAF; 9, WEAF; 10, program; 11, WEAF; 11:30, organ.	7:30	7:30	6:30
WIP Philadelphia, Pa. (508.2m-590kc) 8 p. m. program; 11:05, orchestra; 11-10, WGBS.	8	8	7
WJAX Jacksonville, Fla. (336.9m-890kc) 8 p. m. recital; 9, WEAF; 10, WEAF; 11, WEAF.	8	8	7
WJR Detroit, Mich. (440.9m-680kc) 6:30 p. m. Petite symphony; 8, WJZ; 10, WJZ; 11, orchestra.	6:30	6:30	5:30
WJZ New York, N. Y. (454.3m-860kc) 6 p. m. orchestra; 8, to be announced; 9, Maxwell House hour; 9:30, WBAL, WHAM, KDKA, WJR, KYW, WTMJ, WYAC, WSD, WJAC, WHO, WDAF, WHAS, WSM, WWC, WBB, WPT, WJAZ, KPRC, WBAF;	6	6	5

THURSDAY, DECEMBER 1

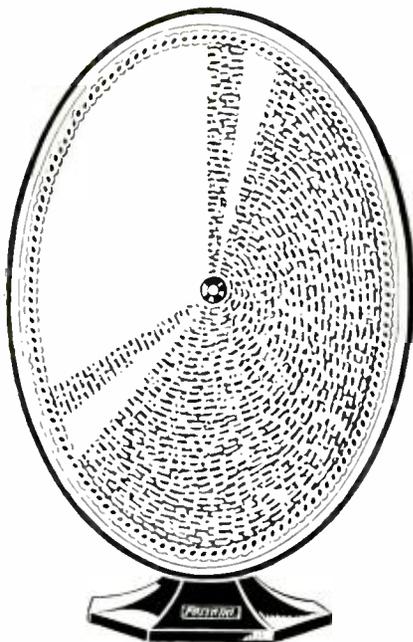
Headliners			
Eastern 7:30 p.m.	Central 6:30	Mountain 5:30	Pacific 4:30
KSAC (333.1m-900kc) Anniversary program.	6:30	5:30	4:30
WLAC (225.4m-1330kc) Conversational French. Robert T. Clarke.	7:30	6:30	5:30
KFKU (254.1m-1150kc) "Debate—Gathering and Selecting Material." Prof. E. C. Buchler.	8	7	6
KMA (394.5m-760kc) Ruby trio.	8:30	7:30	6:30
WSUI (475.9m-630kc) "Everyman's Poetry," Prof. Frank L. Mott.	9	8	7
WTIC (535.4m-560kc) Fields Blue Boys.	9:30	8:30	7:30
KFDY (440.9m-680kc) Sylvia Robinson, violinist.	10	9	8
WLS (344.6m-870kc) "Unusual Band Instruments."	10:30	9:30	8:30
KLBN (270.1m-1160kc) Elvins Davis, pianist.	11	10	9
KOH (277.6m-1080kc) Harold Fair's Piano Ramblings.	11:30	10:30	9:30
WCHD (344.6m-870kc) Mixed quartet.	12	11	10
KFI (468.5m-640kc) Henry Starr, pianist.	12:30	11:30	10:30
KMBC (270.1m-1160kc) Mildred Clark, soprano.	1	0	-1
KOH (277.6m-1080kc) Howe and Eric.	1	0	-1
WJZ (475.9m-630kc) WBZ (333.1m-900kc), WBAL (285.5m-1050kc), WLAM (277.6m-1080kc), KDKA (315.6m-850kc), WYAC (345.3m-700kc), WJZ (440.9m-680kc), KFW (526m-570kc), WHO (535.4m-560kc), WJW (508.2m-590kc), WGN (308.9m-980kc), WMAO (447.5m-670kc), WEHI (365.6m-820kc), WYAC (405.2m-740kc), KSD (545.1m-550kc), WOC (374.8m-800kc), WDAF (370.2m-810kc), Chicago Civic Opera.	1	0	-1
WNNC (296.9m-1010kc) Asheville Optimist club.	10:05	9:05	8:05
WIP (508.2m-590kc) Stetson Chapourian banjo club.	10:40	9:40	8:40
KGW (491.5m-610kc) Tommy Luke's Flower Girls.	11	10	9
CFC (357m-840kc) London Versatile Canadians.	11	10	9
WADC (296.9m-1010kc) Paul Howell and his Playboys.	11	10	9
WLAC (225.4m-1330kc) Nashville orchestra.	12 mid.	11	10
KGO (384.4m-780kc), KFI (468.5m-640kc), and orange network, Claribel Patton Wallace, contralto, and Los Angeles artists.	12 mid.	11	10
KRLD (461.3m-650kc) All Dallas Four quartet.	12:30 a.m.	11:30	10:30
KRLD (461.3m-650kc) Walter Self, Ethel Smith.	1	0	-1
KFI (468.5m-640kc) Purcell Mayer, violinist.	1	0	-1

Regular Thursday Features

Eastern Time Stations			
KDKA Pittsburgh, Pa. (315.6m-850kc) 7:30, sketch; 8:30, concert; 9:30, WJZ.	8:30	8:30	7:30
WBAL Baltimore, Md. (285.5m-1050kc) 6:30 p. m. dinner orchestra; 7:30, music; 8:30, string trio; 9, WJZ; 10, WJZ.	7:30	7:30	6:30
WBZ Springfield, Mass. (333.1m-900kc) 6, evening program; 9, WJZ; 9, music; 10:30, orchestra.	6:30	6:30	5:30
WCAE Pittsburgh, Pa. (516.9m-890kc) 7 p. m. dinner concert; 9, WEAF; 10, WEAF; 11:30, club revue.	7:30	7:30	6:30
WCSH Portland, Me. (483.6m-620kc) 7:30 p. m. WEAF.	7:30	7:30	6:30
WDBO Orlando, Fla. (288.3m-1040kc) 9:30 p. m. dance program.	9:30	9:30	8:30
WEAF New York, N. Y. (491.5m-610kc) 7:30 p. m. Howard Comfort hour; WEEL, WTIC, WJAR, WTAC, WNSH; 8, half hours with great composers; WEI, WFL, WFSB, WFSM, WFTS, WFTV, WFLA, WFLB, WFLC, WFLD, WFLG, WFLH, WFLI, WFLJ, WFLK, WFLM, WFLN, WFLP, WFLR, WFLS, WFLU, WFLV, WFLX, WFLY, WFLZ.	7:30	7:30	6:30
WGBF Boston, Mass. (365.6m-820kc) 7:30 p. m. WEAF; 8:30-10:30, WEAF; 10:35, weather.	7:30	7:30	6:30
WFLA Clearwater, Fla. (508.2m-590kc) 8:32 p. m. music; 9:45, dance program.	8:32	8:32	7:32
WGHF Detroit, Mich. (319m-940kc) 8 p. m. organ; 9, program; 9:30, orchestra.	8	8	7
WGR Buffalo, N. Y. (302.8m-890kc) 8-9 p. m. ensemble; 9:30, concert; 11:05, supper music.	8	8	7
WGY Schenectady, N. Y. (379.5m-790kc) 7:30 p. m. college lecture; 8:30, WEAF; 9, WEAF; 10, program; 11, WEAF; 11:30, organ.	7:30	7:30	6:30
WIP Philadelphia, Pa. (508.2m-590kc) 8 p. m. program; 11:05, orchestra; 11-10, WGBS.	8	8	7
WJAX Jacksonville, Fla. (336.9m-890kc) 8 p. m. recital; 9, WEAF; 10, WEAF; 11, WEAF.	8	8	7
WJR Detroit, Mich. (440.9m-680kc) 6:30 p. m. Petite symphony; 8, WJZ; 10, WJZ; 11, orchestra.	6:30	6:30	5:30
WJZ New York, N. Y. (454.3m-860kc) 6 p. m. orchestra; 8, to be announced; 9, Maxwell House hour; 9:30, WBAL, WHAM, KDKA, WJR, KYW, WTMJ, WYAC, WSD, WJAC, WHO, WDAF, WHAS, WSM, WWC, WBB, WPT, WJAZ, KPRC, WBAF;	6	6	5

Central Standard Time Stations

KMA Shenandoah, Ia. (394.5m-760kc) 9:10-30 p. m. Mandolin Music.	9:10-30	9:10-30	8:10-30
KOIL Council Bluffs, Ia. (277.6m-1080kc) 6 p. m. program; 7:30, program; 8:30, orchestra.	6	6	5
KPRC Houston, Tex. (293.9m-1020kc) 7:30-9:30 p. m. studio concert.	7:30-9:30	7:30-9:30	6:30-8:30
KTHS Hot Springs National Park, Ark. (384.4m-780kc) 8 p. m. solo program; 9, dance frolic.	8	8	7
KYOD Tulsa, Okla. (348.6m-860kc) 6 p. m. instrumental and vocal; 7:30, WJZ.	6	6	5
KYW Chicago, Ill. (526m-570kc) 7-8 p. m. program; 8:10, WJZ; 10, program; 10:42, Congress carnival.	7-8	7-8	6-7
WBAP Fort Worth, Tex. (499.7m-600kc) 6 p. m. orchestra; 9, WEAF; 10, music; 10:45, concert; 11:15, organist.	6	6	5
WBBM Chicago, Ill. (389.4m-770kc) 7-11 p. m. program; 11, Hank and His Gang.	7-11	7-11	6-10
WBCN Chicago, Ill. (288.3m-1040kc) 7 p. m. program.	7	7	6
WCBD Zion, Ill. (344.6m-870kc) 8 p. m. Cornet quartet, vocal solo trio.	8	8	7



IT isn't by mere chance that Farrand Speakers are heard each night by more than a million radio listeners. It isn't by mere chance that Farrand Speakers command their full price at all times, while other cones are repeatedly "cut" in order to further their sale. **Q**Radio listeners throughout the world have bought Farrand Speakers on the unfailing, unbiased judgment of their own ears. **Q**And now, this season, comes an even better Farrand Speaker—the *Farrand Oval*—to set an even higher standard for Farrand tonal quality. You'll be thrilled anew by its matchless performance, its ability to accept volume, its artistry of appearance. **Q**More than ever before, "The Ear Says *Buy!*" to a Farrand demonstration. At all dealers.

Farrand NEW OVAL

FOUR MODELS—The *Oval* SENIOR (Model 24), at \$32.50—The *Oval* JUNIOR (Model 20), at \$16.50—The *Oval* WALL (Model 30), at \$45—The *Oval* PEDESTAL (Model 30-P), at \$60.00. Slightly higher in Far West and Canada.

FARRAND MANUFACTURING CO., INC., LONG ISLAND CITY, N. Y.



When the big
parades of talent
entertain the nation—

"You're *there* w

This new Crosley Bandbox is an achievement almost as great as radio itself.

Battery or automatic socket power unit operated \$55. A C type taking power direct from house lighting current \$110.

Both sets exactly alike in performance, but the A C model needs no batteries and never will.

On every hand manufacturers, retailers, radio fans and prospective owners exclaim—"how does Crosley do it for the price."

After 5 years' experience in production on a most gigantic scale, Crosley invested over half a million dollars this past summer in manufacturing equipment for this wonder set which amazes the radio engineer and staggers the imagination of the layman.

Expert radio purchasers check the most costly radios made for features Crosley builds in the Bandbox for \$55.

Absolute balance!

Total Shielding!

Genuine Neutrodyne!

Latest refinements in fittings and operation!

Adaptability to any type of installation!

From an engineering standpoint nothing greater in radio is available to the public, for Crosley is licensed to make full use of the patents, research and developments of the world's greatest electrical and radio industries—The Radio Corporation of America, The General Electric Co., The Westinghouse Co., The American Telephone & Telegraph Co., The Latour and The Hazeltine Corporations.

Coils are copper shielded! Condensers cadmium-plated steel shielded! Wiring totally shielded from all other elements! Genuine Neutrodyne balance! To these Crosley adds an exclusive feature in the Acuminators,

sub-controls designed solely to make the one dial Bandbox radio's most selective and sensitive receiver as well as radio's easiest operated set.

The Acuminators sharpen the tuning of the Bandbox so acutely that far distant, weak signals never heard on ordinary single dial receivers are comparable with local and nearby stations for volume and clarity.

Not content with such full measure of value, Crosley incorporates a volume control enabling operators of the set to cut the music of local stations to a mere whisper without detuning the set. Dwellers in cities where many stations are located will appreciate this as detuning for soft volume is impossible.

The single control has an illuminated dial. The Bandbox is equipped with a long cable containing all power and outside leads in one brown fabric covered lead.

The flexibility of the Bandbox is perhaps one of its greatest features. It can be installed anywhere for it

The Crosley Radio Corp.
Powel Crosley Jr.
President
Cincinnati, Ohio.

CROSLEY

Montana, Wyoming, Colorado, New Mex



The 6 tube
Bandbox
\$55

AC Model With
Converter
\$110

12-inch Ultra Musicone, \$9.75
16-inch Super Musicone, \$12.75

With a Crosley"

meets all conditions. It is small—only 20 inches long and 7 inches high. The outside case is easily removed for cabinet installation. The ingenious assembly of all controls in one spot makes it possible to adapt the Bandbox to any cabinet.

Operation of the AC Bandbox receiver from house current is possible with the new amazing R. C. A. alternating current tubes UX226 and UY227.

These tubes utilize for their filaments and heating regular alternating current from the house lighting circuit.

The current is stepped down by means of a transformer without need of rectifiers to supply the heat necessary for the functioning of the tubes. The converter box, which is included with the Crosley AC Bandbox can be tucked away out of sight. It is connected to the Bandbox by a cable and also supplies the current for the plate voltages on the tubes replacing B batteries.

Thus the Crosley AC Bandbox functions entirely from the regular house lighting current without need of batteries, battery chargers, or any of the other usual paraphernalia which requires attention, care and early replacement.

The Crosley AC Bandbox with the new alternating current tubes is truly revolutionary, and brings to the radio user an entirely new conception of care-free radio entertainment of the highest standard of performance, \$110.

These new Bandbox receivers are now on display at over 16,000 Authorized Crosley dealers. Their faultless reception of the many wonderful events constantly on the air is proving such a startling demonstration that a national enthusiasm sweeps the country in the natural exclamation—"You're there with a Crosley!" If you cannot locate the nearest dealer write Dept. 49, for his name and literature.

THE MUSICONES

Companions to the Bandbox in achievement and affinities for perfect performance.

Fine receiving circuits do not make fine sounds. The loud speaker has this great responsibility. Crosley has been fortunate in the development of the Musicone. Exclusive patented features have made it as fine as any on the market. Its demonstrated popularity makes it the biggest selling loud speaker today. Such leadership, instantly won when it brought a new enjoyment to radio in 1925, is maintained today by constant improvements.

Better and better in performance it goes lower and lower in price. The Ultra-Musicone in 1925 was \$17.50. Today, a much finer instrument, it is \$9.75. The Musicone is widely imitated, but remember this, the cone is not the secret of its perfect performance. That rests in the Crosley patented actuating unit.

YRADIO

Crosley is licensed only for Radio Amateur Experimental and Broadcast Reception.

co and West, prices slightly higher



ENGLISH DE LUXE ALL ELECTRIC MODEL
Ten Tubes

In the Better Homes Zenith Is Preferred



PREFERENCE among buyers of taste and discrimination has marked the career of Zenith Radio from the beginning. Refusal of Zenith to deal in radio mediocrity and half-quality has won for Zenith Radio a following in the better homes of America. Today, Zenith is the world's largest manufacturer of high grade radio.

Zenith leadership in radio is exemplified by the development of the ALL ELECTRIC receiver. Zenith was the first to perfect and market the ten tube ALL ELECTRIC receiver—now it is the first to equip this revolutionary instrument with a power speaker. So fine is the performance of this instrument, that all who hear it proclaim the Zenith ten tube ALL ELECTRIC as radio's supreme achievement. You, too, will agree when you hear a Zenith demonstration. Visit a Zenith dealer.

ZENITH
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TRADE MARK REG. **RADIO**

Three different circuits—6, 8 and 10 tubes—battery or electric—some with antenna—some with loop—others without loop or antenna—16 Models.

\$100 to \$2500

Licensed only for Radio amateur, experimental and broadcast reception.

Western United States prices slightly higher.

ZENITH RADIO CORPORATION, 3620 IRON STREET, CHICAGO, ILL.

RADIO STATIONS WATCH OLD YEAR DIE

WGY Schenectady, N. Y. (375.5m-790kc) 10:30 a. m. service; 4. organ; 7:20. Capital theater; 9:15. WEAF.

WIP Philadelphia, Pa. (508.2m-590kc) 9:30 p. m. WGBS, or 7:15 p. m. service.

WJAX Jacksonville, Fla. (336.9m-890kc) 6:30 p. m. dinner music; 8. service; 10. organ.

WJR-WCX Detroit, Mich. (440.9m-680kc) 10 a. m. First Baptist church; 2. WJZ; 6. twilight hour; 8:15. WJZ; 10. song service; First Baptist church of Pontiac.

WJZ New York, N. Y. (451.2m-660kc) 1 p. m. Mediterraean, WRC; 2. Roky; WBZ; KDKA; KYW; WRC; WOC; WJR; WOW; 5:30. vespers; 7. organ; 7:30. musical literature; WBAL; 8:15. Collier hour; WBZ; KDKA; KYW; WJR; WGL; WDAF; KSD; WLW; 9:15. Vibrant Melodies; 9:45. singers; 10. time; WBZ; WHAM; 10:15. Don Amazo; KDKA; KYW; WTMJ.

WLIT Philadelphia, Pa. (405.2m-740kc) 11 a. m. service; 2 p. m. orchestra.

WLW Cincinnati, Ohio (428.3m-700kc) 7:15 p. m. service; 8:15. WJZ; 9:15. orchestra.

WMAK Buffalo, N. Y. (545.1m-550kc) 7:50 p. m. service; 9. Columbia chain.

WNAC Boston, Mass. (461.3m-650kc) 7:30 p. m. service; 9. Columbia chain; 10. Columbia chain.

WOO Philadelphia, Pa. (508.2m-590kc) 2:30 p. m. exercise; 6. organ.

WOR Newark, N. J. (422.3m-710kc) 3-5 p. m. Columbia chain; 7:45. Sunday evening musicale; 9. Columbia chain.

WPG Atlantic City, N. J. (272.6m-1100kc) 4:15 p. m. community recital; 5:15. twilight hour; 9:10. evening program; 10. Sunday evening musicale.

WRC Washington, D. C. (468.5m-640kc) 11 a. m. service; 1 p. m. WJZ; 2-3. WEAF; 4. Washington cathedral; 7:20. WEAF; 9:15. WEAF; 10:15. WEAF.

WSAI Cincinnati, O. (361.2m-830kc) 7:45 p. m. chimes; 8:30. time; 8:15. program; 9:15. WEAF; 10:15. WEAF.

WSEA Norfolk, Va. (263m-1140kc) 7 p. m. dinner concert.

WTAC Worcester, Mass. (516.9m-580kc) 7:30 p. m. studio program; 10. dance orchestra.

WTAM Cleveland, O. (399.8m-750kc) 3 p. m. musical; 6:30. orchestra; 7. studio program; 8. service; 9:15. WEAF; 10:15. orchestra.

WTIC Hartford, Conn. (535.4m-560kc) 4:30 p. m. Howard Radio hour; 5:30. ensemble; 6:30. Melodies for Folks at Home.

WWJ Detroit, Mich. (352.7m-850kc) 10:30 a. m. service; 7:20. WEAF; 9:15. WEAF.

WWNC Asheville, N. C. (296.9m-1010kc) 7:30 p. m. service.

Central Time Stations

KFAB Lincoln, Neb. (309.1m-970kc) 11 a. m. service; 9 p. m. symphony.

KLDS Independence, Mo. (270.1m-1110kc) 8:30 a. m. Bible study; 11. studio service; 2 p. m. KLDS string quartet; 3. Radio church; 6:30. vespers; sermon; 9:15. services, choir.

KOIL Council Bluffs, Ia. (277.6m-1080kc) 11 a. m. service; 2 p. m. Columbia chain; 7:30. children's hour; 10:30. Ambassador.

KSD St. Louis, Mo. (545.1m-550kc) 6:20 p. m. WEAF; 8:15. WEAF.

KTHS Hot Springs National Park, Ark. (384.4m-780kc) 11 a. m. services; 8:10-30 p. m. soloists.

KVOO Tulsa, Okla. (348.6m-860kc) 5 p. m. gospel hour; 7. piano solo; 8:15. WEAF.

KYW Chicago, Ill. (526m-570kc) 1 p. m. WJZ; 7:15-8:15. WJZ; 8:17. good readings; 9:15. WJZ.

WBAP Ft. Worth, Tex. (499.7m-600kc) 11 a. m. services; 12:30-1:30 p. m. Kiddies' hour; 9:30-11. sacred concert.

WBBM Chicago, Ill. (389.4m-770kc) 12 mid. Nutty club.

WCBD Zion, Ill. (344.6m-870kc) 8 p. m. trios, mixed quartet; Zion choir.

WCCO Minneapolis-St. Paul, Minn. (405.2m-740kc) 9:45 a. m. services; 10:50. services; 4:10 p. m. House of Hope Presbyterian church; 7:15. WJZ; 8:15. BEAF.

WCFL Chicago, Ill. (483.6m-620kc) 7:45 p. m. service; 9:15. musicale.

WDAF Kansas City, Mo. (370.2m-810kc) 7:15 p. m. service; 8:15. WEAF.

WDD Chattanooga, Tenn. (245.8m-1220kc) 11 a. m. service; 5. Bible forum; 7:30. service; 9:30. concert.

WEBB Chicago, Ill. (365.6m-820kc) 10:30 a. m. Seventh Church of Christ, Scientist; 6:30 p. m. organ; 7:30. Northshore theater; 8:15. Edgewater Beach Hotel orchestra.

WENR Chicago, Ill. (288.3m-1040kc) 9:30-11 p. m. classical program.

WFAA Dallas, Tex. (499.7m-600kc) 2:45 p. m. Farmers' hour, musical; 6-7. Bible class; 8:15. WEAF; 11-12. orchestra.

WGN Chicago, Ill. (305.9m-980kc) 6:20 p. m. Punch and Judy; 6:50. string quintet; 8. Auld Sandy; 8:15. WEAF; 9:15. Our Music Room; 10:10. Sam 'n' Henry; 10:30. organ.

WHAS Louisville, Ky. (461.3m-650kc) 10 a. m. services; 6:20. WEAF; 8:15. orchestra.

WHB Kansas City, Mo. (336.9m-890kc) 7 p. m. Radio service; 11:15. organ.

WHO Des Moines, Iowa (535.4m-560kc) 11 a. m. services; 6:20 p. m. WEAF; 8:15. WEAF.

WHY Chicago, Ill. (416.4m-720kc) 8:30 p. m. sacred concert.

WIBO Chicago, Ill. (416.4m-720kc) 7:10 p. m. program; 10. concert.

FARMERS' PROGRAM INDEX

Special Farm Features

Weather

Local Time

KDKA, 10:10 a. m., 10 p. m.

KFH, 8:30 p. m.

KFKX, 10:55 a. m., 11:55 p. m.

KFNF, 7:30 a. m., 12:40 p. m.

KFOA, 4:30 p. m.

KFWI, 10:30 a. m.

KGA, 6 p. m.

KGO, 12:30 p. m., 7:03 p. m.

KGW, 10 a. m., 7:30 p. m.

KJR, 12 p. m.

KMMJ, 9:30 a. m., 12:30 p. m.

KMOX, 1 p. m.

KOA, 11:45 a. m.

KOIL, 11:45 a. m., 5:45 p. m.

KOMO, 12:15 p. m., 8 p. m.

KPO, 12 p. m.

WAAM, 7:15 p. m.

WABC, 11:55 a. m., 11 p. m.

WBZ, 5:55 p. m., 11:30.

WCAE, 3:40 p. m.

WCSH, 7:10 p. m.

WDCO, 9:45 a. m., 10 p. m.

WDDO, 7:40 p. m.

WEEI, 11:40 p. m.

WFLA, 10:30 a. m., 9:30 p. m.

WFLA, 8:30 p. m.

WGY, 12:01 p. m.

WHAD, 10:30 a. m., 2 p. m.

WHO, 10 a. m.

WIP, 1:30 p. m.

WJZ, 2 p. m.

WLW, 11:15 p. m., 12.

WMC, 9:45 a. m., 12 n., 2:30 p. m.

WQAL, 10 a. m.

WOC, 12:30 p. m.

WOI, 10:30 a. m.

WOO, 11:30 a. m., 9:55 p. m.

WOL, 10:30 a. m.

WSM, 11:45 a. m.

WTAG, 12:59 p. m.

Monday

Eastern	Central	Mountain	Pacific
9 a. m.	8	5	2
KFAI (285.5m-1050kc), Poultry talks.	9		
12	10	7	4
WHK (265.3m-1130kc), Farm flashes.	9:05		
12:05	11:05	8:10	5:15
WGE (516.9m-580kc), Farm flashes.	9:15		
WJAX (336.9m-890kc), Farm flashes.	9:30		
12:30	11:30	8:30	5:35
WJR-WCX (440.9m-680kc), Farm service.	9:45		
WMAK (545.1m-550kc), Farm flashes.	10		
12:45	11:45	8:45	5:45
WGY (379.5m-790kc), Farm flashes.	10:10		
WWSM (340.7m-800kc), Farm talks.	10		
12	11	8	5
WHB (336.9m-890kc), Farm flashes.	10:35		
WKAR (230.6m-1300kc), Farm talks.	10:45		
WKBH (220.4m-1360kc), U. S. Farm talks.	11:05		
WRHM (260.7m-1150kc), U. S. Farm talks.	10:10		
1:10	12:10	9:10	6:15
WMAQ (447.5m-670kc), Prairie Farmer.	10:15		
1:15	12:15	9:15	6:15
WTAW (483.6m-620kc), Farm talks.	10:20		
1:20	12:20	9:20	6:20
WFAA (499.7m-600kc), Farmers' hour.	10:30		
1:30	12:30	9:30	6:30
WFAA (499.7m-600kc), Farmers' hour.	10:35		
1:35	12:35	9:35	6:35
KSAK (333.1m-900kc), Farm talks.	10:45		
1:45	12:45	9:45	6:45
WOI (265.3m-1130kc), Animal Husbandry.	11:05		
1:50	12:50	9:50	6:50
WDAY (361.2m-830kc), U. S. Farm talks.	11:05		
2:05	1:05	10:05	7:10
6:20	5:20	4:20	3:20
WDHO (288.3m-1040kc), Farm flashes.	3:50		
6:50	5:50	4:50	3:50
WSEA (263m-1140kc), U. S. Farm school.	4:55		
7:55	6:55	5:55	4:55
WAMI (225.4m-1330kc), U. S. Farm school.	5		
8	7	6	5
KSAC (333.1m-900kc), Farm courses.	5:10		
WCSH (483.6m-620kc), Farm feature.	5:20		
8:10	7:10	6:10	5:10
KTGA (296.9m-1010kc), U. S. Farm school.	5:20		
8:20	7:20	6:20	5:20
WFBG (280.2m-1070kc), U. S. Farm school.	5:30		
8:30	7:30	6:30	5:30
WHB (336.9m-890kc), Poultry talks.	6		
9	8	7	6
WJNC (516.9m-580kc), Farm talk.	6:20		
9:20	8:20	7:20	6:20
KQW (296.9m-1010kc), U. S. Farm talks.	6:20		

Tuesday

Eastern	Central	Mountain	Pacific
9 a. m.	8	5	2
KMAJ (285.5m-1050kc), Poultry talks.	8:20		
11:20	10:20	9:20	8:20
WCSH (483.6m-620kc), Farm features.	9		
12	11	10	9
WHK (265.3m-1130kc), Farm flashes.	9:05		
12:05	11:05	10:05	9:05
WCAE (516.9m-580kc), Farm flashes.	9:15		
WJAX (336.9m-890kc), Farm flashes.	9:30		
12:30 p. m.	11:30	10:30	9:30
WJR-WCX (440.9m-680kc), Farm service.	9:45		
WMAK (545.1m-550kc), Farm flashes.	10		
12:45	11:45	10:45	9:45
WGY (379.5m-790kc), Farm flashes.	10:10		
12:45	11:45	10:45	9:45
WWSM (340.7m-800kc), Farm talk.	10		
1	12	11	10
WCCO (405.2m-740kc), Farm hour.	10:30		
1:30	12:30	11:30	10:30
WFLA (499.7m-600kc), Farmers' hour.	10:35		
1:35	12:35	11:35	10:35
KSAC (333.1m-900kc), Farm talks.	10:40		
1:40	12:40	11:40	10:40
KFIE (270.1m-1110kc), State farm talks.	10:45		
1:45	12:45	11:45	10:45
WOI (265.3m-1130kc), Plant pathology.	12		
2	1	12	11
KOMO (305.9m-890kc), Garden talk.	12		

Eastern	Central	Mountain	Pacific
6:20	5:20	4:20	3:20
WDHO (288.3m-1040kc), Farm talks.	5:50	4:50	3:50
7:55	6:55	5:55	4:55
WAMI (225.4m-1330kc), U. S. Farm talks.	5:30	4:30	3:30
8:20	7:20	6:20	5:20
WFBG (280.2m-1070kc), U. S. Farm school.	6:20	5:20	4:20
9:20	8:20	7:20	6:20
KQW (296.9m-1010kc), U. S. Farm talks.	6:30	5:30	4:30
9:30	8:30	7:30	6:30
KOA (325.9m-920kc), Farm Question box.	6:30	5:30	4:30

Wednesday

Eastern	Central	Mountain	Pacific
11:40 a. m.	10:40	9:40	8:40
WCSH (483.6m-620kc), Farm feature.	10		
12	11	10	9
WHK (265.3m-1130kc), Farm flashes.	9:05		
12:05	11:05	10:05	9:05
WCAE (516.9m-580kc), Farm flashes.	9:15		
WJAX (336.9m-890kc), Farm flashes.	9:30		
12:30	11:30	10:30	9:30
WJR-WCX (440.9m-680kc), Farm service.	9:45		
WMAK (545.1m-550kc), Farm flashes.	10		
12:45	11:45	10:45	9:45
WGY (379.5m-790kc), Farm flashes.	10:10		
12:45	11:45	10:45	9:45
WAI (265.3m-1130kc), U. S. Farm flashes.	10:15		
WSM (340.7m-800kc), Farm talks.	10		
12	11	10	9
WHB (336.9m-890kc), Farm flashes.	10:30		
WLS (344.6m-870kc), Dinner bell program.	10:35		
WKBH (220.4m-1360kc), U. S. Radio farm talks.	10:40		
WRHM (260.7m-1150kc), U. S. Farm talks.	10:10		
1:10	12:10	11:10	10:10
WMAQ (447.5m-670kc), Prairie Farmer.	10:15		
1:15	12:15	11:15	10:15
WFAA (499.7m-600kc), Farmers' hour.	10:30		
1:30	12:30	11:30	10:30
WFAA (499.7m-600kc), Farmers' hour.	10:35		
1:35	12:35	11:35	10:35
KSAK (333.1m-900kc), Farm talks.	10:45		
1:45	12:45	11:45	10:45
WOI (265.3m-1130kc), Poultry talk.	11:05		
1:50	12:50	11:50	10:50
WAW (379.5m-790kc), Agni program.	11:05		
6:50	5:50	4:50	3:50
WSEA (263m-1140kc), U. S. Farm talks.	4:30		
7:30	6:30	5:30	4:30
WTAW (428.3m-700kc), Farm federation bureau.	4:55		
7:55	6:55	5:55	4:55
WAMI (225.4m-1330kc), U. S. Farm talks.	5:20		
8:20	7:20	6:20	5:20
WOS (422.3m-710kc), Farm talk.	5:20		
8:27	7:27	6:27	5:27
KOA (325.9m-920kc), Farm talk.	5:27		
8:30	7:30	6:30	5:30
WFBG (280.2m-1070kc), U. S. Farm school.	5:30		

Thursday

Eastern	Central	Mountain	Pacific
11	10	9	8
WHK (265.3m-1130kc), Farm flashes.	9:05		
12:05	11:05	10:05	9:05
WCAE (516.9m-580kc), Farm flashes.	9:15		
12:20 p. m.	11:20	10:20	9:20
WCSH (483.6m-620kc), Farm program.	9:45		
WJR-WCX (440.9m-680kc), Farm service.	10		
12:43	11:43	10:43	9:43
WGY (379.5m-790kc), Farm flashes.	10:10		
12:45	11:45	10:45	9:45
WAI (265.3m-1130kc), U. S. Farm flashes.	10:15		
WSM (340.7m-800kc), Farm talks.	10		
12	11	10	9
WHB (336.9m-890kc), Farm flashes.	10:30		
WKBH (220.4m-1360kc), U. S. Farm talks.	10:35		
WLS (344.6m-870kc), Dinner bell program.	10:40		
WTAW (428.3m-700kc), Farm program.	10:10		
1:15	12:15	11:15	10:15
WFAA (499.7m-600kc), Farmers' hour.	10:30		
1:30	12:30	11:30	10:30
KSAK (333.1m-900kc), Farm talks.	10:45		
1:45	12:45	11:45	10:45
WOI (265.3m-1130kc), Farm crops.	11:05		
1:50	12:50	11:50	10:50
KOMO (305.9m-890kc), Poultry talk.	11:05		
2:10	1:10	10:10	9:10
KUOA (296.9m-1010kc), U. S. Farm school.	11:10		

WJAX Jacksonville, Fla. (336.9m-890kc) 8 p. m. symphony orchestra; 11:10, organ.

WJR-WCX Detroit, Mich (440.9m-680kc) 7:30 WJZ; 9:30, studio program; 10:30, dance music.

WJZ New York, N. Y. (454.2m-660kc) 7 p. m. Shoemakers; 7:30, Roxy and his gang; WBZ, KDKA, K.Y.W., WRC, WSB, WHAL, WJR, WHAM, WHT, WTSJ; 9, novelty hour; KPKA, WHAM; 10, time, WBZ, KDKA, special hour; 11, orchestra.

WLIT Philadelphia, Pa. (405.2m-740kc) 7 p. m. WEAF; 9, grand opera.

WLW Cincinnati, Ohio (428.3m-700kc) 7 p. m. orchestra; 9:10, program; 11, studio program.

WMAK Buffalo, N. Y. (545.1m-550kc) 7:50 p. m. service; 9, Columbia chain.

WNAC Boston, Mass. (461.3m-650kc) 7:30 p. m. program; 9, Columbia chain.

WOO Philadelphia, Pa. (508.2m-590kc) 7:30 p. m. dinner music; 8:05, organ.

WOR Newark, N. J. (422.3m-710kc) 7:30 p. m. orchestra; 9, novelty hour; 10:07, orchestra.

WPG Atlantic City, N. J. (272.6m-1100kc) 6:45 p. m. organ; 9, program; 10:30, orchestra; 11:15, N.Y. Sitter; 11:30, dance orchestra.

WRC Washington, D. C. (468.5m-640kc) 7:20 p. m. WEAF; 9:15, WEAF; 10:30, Syncopators.

WRVA Richmond, Va. (254.7m-1180kc) 8 p. m. orchestra; 9:10, Melody Boys; 12, Back to Old Virginia.

WSAI Cincinnati, O. (361.2m-830kc) 8 p. m. WEAF; 11, WEAF.

WVA Norfolk, Va. (263m-1140kc) 7 p. m. dinner concert; 8, studio recital; 9, club; 11, popular program.

WTAG Worcester, Mass. (516.9m-580kc) 8 p. m. program.

WTAM Cleveland, Ohio (399.8m-750kc) 6 p. m. orchestra; 8:30, WEAF; 10:30, studio program; 11:30, organ.

WTD Hartford, Conn. (535.4m-560kc) 6:30 p. m. program; 8, New Departure orchestra; 8:30, WEAF; 10:30, orchestra.

WWJ Detroit, Mich. (352.7m-850kc) 5 p. m. WEAF; 9:30, W.E.A.F.; 10:30, WEAF.

WWNC Asheville, N. C. (296.9m-1010kc) 7 p. m. dinner music; 9, old-time music.

WHB Kansas City, Mo. (336.9m-890kc) 7-8 p. m. music; 8-9.

WHO Des Moines, Iowa (535.4m-560kc) 6:30 p. m. orchestra; 9-30, dance orchestra; 11, organ.

WMAQ Chicago, Ill. (447.5m-670kc) 6 p. m. dinner program; 8, program.

WMO Memphis, Tenn. (516.9m-580kc) 8 p. m. farm talk; 8-9, WEAF; 9-30, orchestra.

WMC Davenport, Ia. (374.8m-800kc) 7:30, WEAF; 8:30, WEAF; 9-30, orchestra.

WOS Jefferson City, Mo. (468.5m-640kc) 8 p. m. program.

WOW Omaha, Nebr. (508.2m-590kc) 6:30 p. m. WJZ; 8:30, WEAF.

WSB Atlanta, Ga. (475.9m-630kc) 6:30 p. m. WJZ; 8, farm program; 10:45, artists.

WSM Nashville, Tenn. (340.7m-880kc) 6:30 p. m. WJZ; 8, music; 8:45, frolic.

WSNB New Orleans, La. (322.4m-830kc) 8:30-10:30 p. m. Sunday South syncopators, theater orchestras, Billy Hirschard, Louis Beyer, popular songsters.

WTMJ Milwaukee, Wis. (293.9m-1020kc) 6:30 p. m. WJZ; 7:30, WEAF; 8:30, WEAF; 10:30, program; 11, organ.

Mountain Standard Time Stations

KOA Denver, Colo. (325.9m-920kc) 8 p. m. Scheuerman's Colorado orchestra; 8:15, studio program.

Pacific Standard Time Stations

KFI Los Angeles, Calif. (468.5m-640kc) 7-8 p. m. music; 8-9, orange network; 9-10, program, KFO; 10, program.

KFRC San Francisco, Calif. (454m-660kc) 7 p. m. Cecilians; 8, jamboree; 10, frolic.

KGO Oakland, Calif. (508.2m-590kc) 8-9 p. m. orchestra; 8-9, orange network; 9, book chat, KGW Portland, Ore. (491.5m-610kc) 8, National Broadcasting company; 9-10, concert.

KLX Oakland, Calif. (508.2m-590kc) 8-9 p. m. studio program; 9-10, Lake Merritt Ducks.

KPO San Francisco, Calif. (422.3m-710kc) 6:30-7 p. m. organ; 8-9, orange chain; 9-10, studio program; 10-11, program.

Monday, silent night for: KFDM, KHJ, KLDS, WFI, WGBS, WOAI, WSAI.

Central Time Stations

KFAB Lincoln, Neb. (309.1m-970kc) 5:30-6:30 p. m. Hotel Lincoln orchestra; 8:30-10:30, orchestra.

KMA Shenandoah, Ia. (394.5m-760kc) 9-10:30 p. m. music.

KOIL Council Bluffs, Ia. (277.6m-1080kc) 6 p. m. ensemble; 7:30, classical program; 9, soloists; 10:30, orchestra.

KPRC Houston, Texas (286.9m-1010kc) 7:30-9:30 p. m. studio concert.

KSD St. Louis, Mo. (545.1m-550kc) 9:30-10:30 p. m. music.

KSO Clarinda, Ia. (227.1m-1320kc) 7:30 p. m. orchestra.

KTHS Hot Springs National Park, Ark. (384.4m-780kc) 8 p. m. vocal numbers; 8:30 p. m. feature program.

KTOD Tulsa, Okla. (348.6m-860kc) 6 p. m. dance orchestra; 6:45, concert; 7:15, theater orchestra.

KYV Chicago, Ill. (526m-570kc) 6:32 p. m., orchestra; 10:15, verandah.

WAMD St. Paul-Minneapolis, Minn. (225.4m-1330kc) 7:30 p. m. program; 11:15, organ.

WBAP Ft. Worth, Tex. (499.7m-600kc) 6 p. m. orchestra; 8, program; 10, program; 10:45, program; 11, theater.

WCCO Minneapolis-St. Paul, Minn. (405.2m-740kc) 6:30 p. m. dinner concert; 8:30, WEAF.

WCOA Pensacola, Fla. (249.9m-1200kc) 8 p. m. program.

WDAF Kansas City, Mo. (370.2m-810kc) 6 p. m. school of the air; 7:30-9:30, WEAF; 9:30, orchestra; 11:45-1, Nighthawk frolic.

WDOD Chattanooga, Tenn. (245.8m-1220kc) 7-8 p. m. dinner hour; 9, studio program; 10, popular music.

WFH Chicago, Ill. (365.6m-820kc) 9 p. m., program.

WFAA Dallas, Tex. (499.7m-600kc) 7-8 p. m. orchestra; 9, quartet.

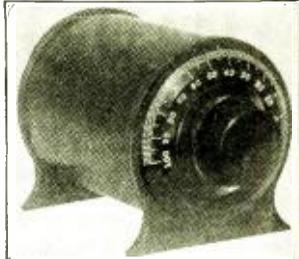
WGN Chicago, Ill. (306m-840kc) 6:35 p. m., ensemble; program; 10, Sam N. Henry.

WHAS Louisville, Ky. (461.3m-650kc) 8 p. m. program; 8:30, N. B. P.

TUESDAY, DECEMBER 6
Headlines

Eastern	Central	Mountain	Pacific
6:30 p.m.	5:30	4:30	3:30
WGI (475.9m-630kc) "Why Plants Are Plants," Prof. R. B. Wylie.	6:30	5:30	4:30
7:30	6:30	5:30	4:30
W (440.9m-680kc) "The Dreamers."	7	6	5
KMA (394.5m-760kc) A string trio, KSAC (333.1m-990kc) music, Mrs. Earl Litwiler, Mrs. H. J. Wylie.	8:30	7:30	6:30
WCU (475.9m-630kc) "In Early Territorial Days," Prof. Bruce E. Mahan.	8:30	7:30	6:30
WJWD (245.8m-1220kc) Brunswick half hour.	9:30	8:30	7:30
WLS (344.6m-870kc) "Personalities in Music," Verdi.	6	7	6
KLDS (270.1m-1110kc) Margaret Mandeville, soprano.	8:30	7:30	6:30
KOIL (277.6m-1080kc) Katherine Cheye Lemen, contralto.	8:30	7:30	6:30
KYIS (384.4m-780kc) City of Roses, WTH (535.4m-560kc) Akay Harmony Belles, band.	9	8	7
KMBC (270.1m-1110kc) Walton Lockman, baritone.	9	8	7
KRLI (461.3-650kc) Arthur A. Everts Diamond band.	10:30	9:30	8:30
WJR-WCX (440.9m-680kc) Red Apple club.	10:30	9:30	8:30
WLAG (225.4m-1330kc) Crystal quartet.	12 mid.	10	9
KXN (336.9m-890kc) Chinese theater program.			

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What Some of Our Users Say
TESTIMONIALS.

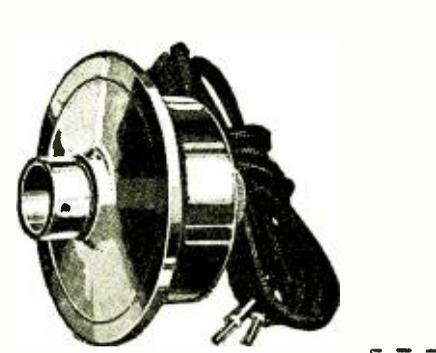
Gentlemen: Your Reesonator received and sure does all if not more than you claim for it. Please ship me at once, by C.O.D. parcel post, six more of the same kind. I cannot say enough for this unit. Respectfully yours, Vincent Walker, Bruce, Wis.

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- 5 Don Sanders' Original "Night Hawks"
- 6 George Hay, 1924 Gold Cup announcer
- 7 Fred Green, Lucky Boys of WLS
- 8 "Roxy" Rothafel of WEAF, chain fame
- 9 The Hired Hand, famous "Substitute Announcer" of WHAF
- 10 Jerry Sullivan, of Chi-CAV-go fame
- 11 W. B. Emery, Big Brother of WERI
- 12 "Bill" W. G. Hay, ex-KFKX, now of WLHB
- 13 Hal Jones, Boys' jovial singers of WEAF
- 14 Lamolein Kay, "Little Colonel" of WSB
- 15 Leo Fitzpatrick, "Merry Old Chief," WJR
- 16 Harry Field, 1925 Gold Cup runner-up
- 17 Al Carney, organ favorite at WHT
- 18 Earl E. May, 1926 Gold Cup announcer
- 19 Vincent Lopez, No. 1 Pennsylvania orchestra
- 20 Bert Davis, "Clown of the Air"
- 21 Art Gilliam, "The Whispering Pianist"
- 22 The Sunflower, fame of WHAF
- 23 Harry Erhart, "Dream Daddy" of WLIT
- 24 Correll and Gosden of "Kinky Kids Parade" fame, at WERI and other stations
- 25 Norman Brakenshire, popular at WRC, WJZ
- 26 June Sovaak, Blues Singer of Twin Cities, WCCO
- 27 Jean Sargent, the original, now at WHT
- 28 Ralph Emerson, popular organist at WLS
- 29 Edna Adams, of KFRC
- 30 Pat Barnes, vaudeville announcer at WHT
- 31 Walter Wilson, "Uncle Bob" of KYW
- 32 Ray O'Vac Texas, known country-wide
- 33 Art Link, KVV's Mrs. Schlagenhauer
- 34 Fred Hamm of WTAS, now WLHB, fame

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WFI Philadelphia, Pa. (405.2m-740kc) 7:15 p. m. questions; 8:30-11:30, WEAF.

WFLA Clearwater, Fla. (508.2m-590kc) 8:30 p. m. open house; 9:45, dance program.

WGBS New York, N. Y. (348.6m-860kc) 6:30 p. m. entertainers.

WGHP Detroit, Mich. (312m-940kc) 6 p. m. dinner concert; 9, Columbia chain.

WOR Buffalo, N. Y. (302.8m-890kc) 7:45 p. m. piano lessons; 8, orchestra; 9, WEAF; 11:05-12 mid., music.

WGY Schenectady, N. Y. (379.5m-790kc) 8:30, WEAF; 9:30, coffee hour.

WHN New York, N. Y. (394.5m-760kc) 6:30 p. m. orchestra; 11:30, Silver Slipper orchestra.

WHK Cleveland, O. (265.3m-1130kc) 6 p. m. serenaders; 8, music; 10:15, orchestra.

WJAX Jacksonville, Fla. (336.9m-890kc) 9, WJZ, recital; 10, dance orchestra.

WJR-WCX Detroit, Mich. (440.9m-680kc) 7 p. m. travel hour; 9, dance orchestra; 10, Merry Old Chief; 11:30, orchestra.

WJZ New York, N. Y. (454.2m-660kc) 8 p. m. Champion Sparkers, KDKA, KYW, WLW, WJZ; 8:30, Spangis, Foresters, WJZ, KJDK, KYW; 9, to be announced; 10, to be announced; 10:30, orchestra.

WLW Cincinnati, Ohio (428.3m-700kc) 7:30 p. m. farm radio council talk; 8, WEAF; 10, trio; 11, organist.

WMAK Buffalo, N. Y. (545.1m-550kc) 6:15 p. m. dinner music; 8, hand; 9, Columbia chain; 11:05, Silver Slipper.

WMA New York, N. Y. (370.2m-810kc) 6:30 p. m. orchestra; 10, musicale; 12:30, frolic club.

WMSC New York, N. Y. (236m-1270kc) 9-11:30 p. m. program.

WNAC Boston, Mass. (461.3m-650kc) 7:30 p. m. program; 9, Columbia chain; 11:05, dance music.

WOO Philadelphia, Pa. (508.2m-590kc) 7:30 p. m. musicale; 8:50, music; 9:25, orchestra.

WOR Newark, N. J. (422.3m-710kc) 6:15 p. m. program; 9, Columbia chain; 11, orchestra.

WPG Atlantic City, N. J. (272.6m-1100kc) 7:05 p. m. dinner music; 7:35, minstrel; 9:10, studio program; 10, band; 11:15, dance music.

WRC Washington, D. C. (468.5m-640kc) 7:30-10:30, WEAF; 10:30, orchestra.

WRVA Richmond, Va. (254.1m-1180kc) 8 p. m. musicale.

WSAI Cincinnati, Ohio (361.2m-830kc) 7 p. m. chimes; 7:30-9:15, WEAF; 9:15, studio program; 9:30, WEAF; 10:30, WEAF.

WSEA Norfolk, Va. (263m-1140kc) 6:45 p. m. dinner concert; 8, studio program; 11, dance music.

WTAC Worcester, Mass. (518.9m-580kc) 7:30 p. m. WEAF; 8:30, musicale; 9, program; 9:30, WEAF; 10:30, dance orchestra.

WTAM Cleveland, O. (399.8m-750kc) 6 p. m. orchestra; 7, talks; 8:30, WEAF; 10:30, studio program; 11, orchestra.

WTIC Hartford, Conn. (535.4m-560kc) 7-11 p. m. program.

WWJ Detroit, Mich. (352.7m-850kc) 6 p. m. dinner musicale; 7:30, WEAF; 10:30, organ.

WWNC Asheville, N. C. (296.9m-1010kc) 7 p. m. dinner musicale.

WBBM Chicago, Ill. (389.4m-770kc) 7 p. m. dinner concert; 8-11, popular program.

WCCO Minneapolis-St. Paul, Minn. (405.2m-740kc) 7:30 p. m. WEAF.

WCFL Chicago, Ill. (483.6m-620kc) 7:15-12 mid. program; 8, WEAF.

WCOA Pensacola, Fla. (249.9m-1200kc) 8 p. m. program.

WDAF Kansas City, Mo. (370.2m-810kc) 7:30-9:30 p. m. WEAF; 9:30, Cavaliers; 11:45-1 a. m., Night-hawk frolic.

WDDO Chattanooga, Tenn. (245.8m-1220kc) 7-10 p. m. music.

WEBB Chicago, Ill. (365.6m-820kc) 7 p. m. orchestra; 9-11, program; 12, revue.

WGN Chicago, Ill. (305.9m-890kc) 8:30 p. m., WEAF; 9:30, musicale; 10:10, "Sam n Henry"; 10:20, Music Box; 10:40, melody time.

WHAS Louisville, Ky. (461.3m-650kc) 7:30 p. m., music.

WHB Kansas City, Mo. (336.9m-890kc) 7-8 p. m. string trio.

WHO Des Moines, Ia. (535.4m-560kc) 6:30 p. m. Little Symphony; 8:30, Harmony Twins; 9:30, orchestra; 10, Serenades.

WHT Chicago, Ill. (416.4m-720kc) 8:30 p. m. musicale.

WHB Chicago, Ill. (416.4m-720kc) 7:10 p. m. program; 10, musicale.

WJAZ Chicago, Ill. (263m-1140kc) 7 p. m. Program; 9, studio concert.

WJJD Chicago, Ill. (365.6m-820kc) 8-9 p. m. children's musical hour; 11-12, Victorians.

WLAC Nashville, Tenn. (226m-1330kc) 7 p. m. classical program; 8, popular music.

WLBB Chicago, Ill. (306m-980kc) 7-7:30 p. m. program; 7:30, WEAF; 11-12, Hoodlums; 12, dance music.

WLS Chicago, Ill. (344.6m-870kc) 7:30 p. m. orchestra; 9, choral music; 10:30, Hodge Podge; 11-12, popular program.

WMAQ Chicago, Ill. (447.5m-670kc) 7 p. m. Northwestern university; 8, Columbia chain; 10, Stevens hotel orchestra.

WMBB Chicago, Ill. (252m-1190kc) 6 p. m. dinner musicale; 10:30, program.

WMC Memphis, Tenn. (516.9m-590kc) 8 p. m. WJZ; 9, WEAF.

WQAI San Antonio, Tex. (319m-940kc) 8:30-9:30 p. m. Utah hour.

WOC Davenport, Ia. (374.8m-800kc) 7:30 p. m. WEAF; 8:30, WEAF; 9:30, talks.

WOS Jefferson City, Mo. (422.3m-710kc) 7 p. m. Farm school; 8, program.

WOW Omaha, Neb. (508.2m-590kc) 7 p. m. WEAF; 8, Harmony Four; 9, classical; 9:30, WEAF.

WSB Atlanta, Ga. (475.9m-630kc) 8-10, WEAF; 10:45, concert.

WSM Nashville, Tenn. (340.7m-880kc) 7:15 p. m. dinner concert; 8, WEAF; 8:30, WEAF; 9:30, music; 10:30, organ.

WSMB New Orleans, La. (32.4m-930kc) 8:30-10:30 p. m. Public School of the Air program; features.

Mountain Standard Time Stations

KOA Denver, Colo. (325.9m-920kc) 8 p. m. Scheuerman's Colorado orchestra; 8:15, studio program.

Pacific Standard Time Stations

KFI Los Angeles, Calif. (468.5m-640kc) 7:30 p. m. Nick Harris; 8-9, program, California Petroleum corp.; 9, orange network; 10, classic music.

KFRC San Francisco, Calif. (454.3m-660kc) 6:20 p. m. program; 8, WJZ; 10-12 mid., dance program.

KFWB Hollywood, Calif. (361.2m-830kc) 6-7 p. m. dinner hour; 7:50, news; 8-9, features; 9-10, orchestra; 10-11, Rainbo orchestra.

KGO Oakland, Calif. (384.4m-780kc) 6-6:55 p. m. dinner concert; 8, vaudeville; 9, National Broadcasting company; 10, orchestra.

KGON Portland, Ore. (491.5m-610kc) 8-9 p. m. concert; 10, National Broadcasting company.

KPO San Francisco, Calif. (422.3m-710kc) 6:30-7 p. m. organ; 8-9 Atwater Kent artists; 9-10, orange network; 10-11, studio program.

Wednesday, silent night for: WBAF, WCBD, WFAA, WFI, WGBF, WGBS, WIP, WRR.

THURSDAY, DECEMBER 8

Headliners

Eastern	Central	Mountain	Pacific
6:30 p.m.	5:30	4:30	3:30
WSUI (475.9m-630kc) Current events. Prof. Ralph E. House.			
WPTC (535.4m-560kc) Hotel Bond trio.			
WJR-WCX (440.9m-680kc) At Eventide.	4		
7:30	6:30	5:30	4:30
WLAJ (225.4m-1330kc) "Salesmanship," E. J. Eberling.			
8	7	6	5
KFKU (254.1m-1150kc) Virginia Lee, soprano. KMA (374.5m-760kc) Mays Mandolin musicians. KOIL (277.6m-1080kc) Robert Worthington Davis, homespun poet.			
WNLJ (475.9m-630kc) "Epic Poetry," Prof. Frank L. Mott.			
8	7	6	5
KDS (270.1m-1110kc) Kenneth Jarman, tenor.	6		
9:30	8:30	7:30	6:30
KTIS (384.4m-780kc) Pete Phillips, tenor.			
9:45	8:45	7:45	6:45
KTIS (384.4m-780kc) Ethel Wilson, pianist.			
10	9	8	7
KOIL (277.6m-1080kc) Howie and Eric.			
WFAA (499.7m-600kc) Mjckwitz club.			
WJZ (454.2m-660kc), WJZ (333.1m-900kc), WBAL (285.5m-1050kc), WHAM (277.6m-1080kc), KDKA (315.6m-950kc), WLW (428.3m-700kc), WJR (440.9m-680kc), KYW (526m-570kc), WHO			

Eastern	Central	Mountain	Pacific
10	9	8	7
(335.4m-560kc), WOV (508.2m-590kc), WGN (305.9m-890kc), WMAQ (405.2m-740kc), WEBB (365.6m-820kc), WCCO (405.2m-740kc), KSD (545.1m-550kc), WVUC (374.8m-800kc), WDAF (370.2m-810kc), Chicago Civic opera.			
WVNC (296.9m-1010kc) Asheville American Boosters club.			
11	10	9	8
KNX (336.9m-890kc) Claire Mellonino, pianist.			
12 mid.	11	10	9
KRLD (461.3m-650kc) All Dallas Four.			
For Regular Features See Thursday, December 1.			

FRIDAY, DECEMBER 9

Headliners

Eastern	Central	Mountain	Pacific
6:30 p.m.	5:30	4:30	3:30
WSUI (475.9m-630kc) "Child Welfare," Prof. Bird T. Baldwin.			
7	6	5	4
KNX (336.9m-890kc) Desmond's College Rally program.			
KRLD (461.3m-650kc) Ruth Muse.			
KSAC (333.1m-900kc) "The Pageant—A Community Art," Prof. Osceola Hall Burr.			
8:30	7:30	6:30	5:30
WHAS (461.3m-650kc) U. of Louisville program.			
9:30	8:30	7:30	6:30
KOIL (277.6m-1080kc) Bess Beatrice Batey, pianist.			
KTIS (384.4m-780kc) Mrs. Guinn Massey, pianist.			

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Table with 4 columns: Eastern, Central, Mountain, Pacific. Lists radio stations and their frequencies for Friday, December 2.

SATURDAY, DECEMBER 10 Headliners

Table with 4 columns: Eastern, Central, Mountain, Pacific. Lists radio stations and their frequencies for Saturday, December 10.

SUNDAY, DECEMBER 11 Headliners

Table with 4 columns: Eastern, Central, Mountain, Pacific. Lists radio stations and their frequencies for Sunday, December 11.

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MONDAY, DECEMBER 12 Headliners

Table with 4 columns: Eastern, Central, Mountain, Pacific. Lists radio stations and their frequencies for Monday, December 12.

TUESDAY, DECEMBER 13 Headliners

Table with 4 columns: Eastern, Central, Mountain, Pacific. Lists radio stations and their frequencies for Tuesday, December 13.

WEDNESDAY, DECEMBER 14 Headliners

Table with 4 columns: Eastern, Central, Mountain, Pacific. Lists radio stations and their frequencies for Wednesday, December 14.

Table with 4 columns: Eastern, Central, Mountain, Pacific. Lists radio stations and their frequencies for Thursday, December 15.

THURSDAY, DECEMBER 15 Headliners

Table with 4 columns: Eastern, Central, Mountain, Pacific. Lists radio stations and their frequencies for Thursday, December 15.

Christmas Suggestion

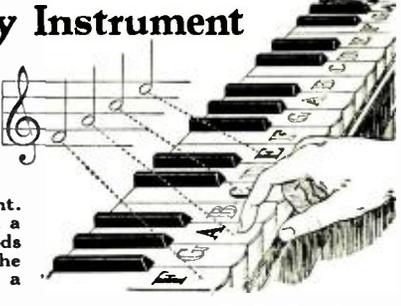
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Eastern	Central	Mountain	Pacific
8 p. m.	7	6	5
Eastern	Central	Mountain	Pacific
WJLT (475.9m-630kc) "The Short Story in Verse." Prof. Frank L. Mott.	7:30	6:30	5:30
KLDS (270.1m-1110kc) Claude Rader, violinist.	7:30	6:30	5:30
KTHS (384.4m-780kc) Margaret Glass, organist.	7:30	6:30	5:30
WJZ (454.2m-660kc) WBZ (333.1m-900kc) WBAL (285.5m-1050kc) WIIA (277.6m-1080kc) KDKA (315.6m-950kc) WLW (428.3m-700kc) WJR (440.9m-680kc) KYW (526m-570kc) WHO (535.4m-560kc) WJAF (508.2m-590kc) KVM (526m-570kc) WMAO (447.5m-670kc) WEBH (365.6m-820kc) WCCO (374.8m-800kc) KSD (545.1m-550kc) WOC (374.8m-800kc) WDAF (370.2m-810kc) Chicago Civic opera.	8:30	7:30	6:30
WJNC (296.9m-1010kc) Asheville Rotary club.	12 mid.	11	9
KRLD (461.3m-650kc) All Dallas Four.	10	9	8

Eastern	Central	Mountain	Pacific
8 p. m.	7	6	5
Eastern	Central	Mountain	Pacific
WSM (340.7m-880kc) WMC (516.9m-580kc) WSB (475.9m-630kc) WFEI (365.6m-820kc) WTIC (535.4m-560kc) WJAF (374.8m-800kc) WTAG (516.9m-580kc) WSSH (483.6m-820kc).	7:10	6:10	5:10
WHRZ (333.1m-900kc) Boston symphony.	7:10	6:10	5:10
KLDS (270.1m-1110kc) J. M. Sexton, bass.	7:30	6:30	5:30
KTHS (384.4m-780kc) Old time barn dance.	7:30	6:30	5:30
WBAL (285m-1050kc) Municipal Band of Baltimore.	8:30	7:30	6:30
WJR-WCX (440.9m-680kc) Cotton Pickers.	9:30	8:30	7:30

Eastern	Central	Mountain	Pacific
7:50	6:50	5:50	4:50
Eastern	Central	Mountain	Pacific
WLW (428.3m-700kc) "Flying Gold" episode.	6:50	5:50	4:50
KSSAC (333.1m-900kc) Applied Sociology.	6:50	5:50	4:50
KTHS (384.4m-780kc) KTHS Third Birthday party.	7:30	6:30	5:30
WTIC (535.4m-560kc) New Departure orchestra.	7:30	6:30	5:30
WSTU (475.9m-630kc) Pittsburgh-Iowa basketball game.	7:30	6:30	5:30
WJNC (296.9m-1010kc) Happiness Girls.	8:30	7:30	6:30
KMA (394.5m-760kc) Marimba and vibraphone music.	8:30	7:30	6:30
KGW (491.5m-610kc) Italian music.	8:30	7:30	6:30
KOLL (227.6m-1080kc) Mose and Charlie.	8:30	7:30	6:30

Eastern	Central	Mountain	Pacific
8	7	6	5
Eastern	Central	Mountain	Pacific
KMA (394.5m-760kc) A string trio.	7:30	6:30	5:30
KSSAC (333.1m-900kc) Lecture. Pres. F. D. Farrell.	7:30	6:30	5:30
WSTU (475.9m-630kc) "How Iowa Became a State." Prof. Bruce E. Mahan.	7:30	6:30	5:30
KTHS (384.4m-780kc) Arlington orchestra.	7:30	6:30	5:30
KLDS (270.1m-1110kc) Lois Swaney, soprano.	7:30	6:30	5:30
WLW (428.3m-700kc) basketball. Nashville Burke Terrors. Clenson college.	7:30	6:30	5:30
KOLL (227.6m-1080kc) Ambassadors.	7:30	6:30	5:30

FRIDAY, DECEMBER 16

Eastern	Central	Mountain	Pacific
6:35 p.m.	5:35	4:35	3:35
Eastern	Central	Mountain	Pacific
KRLD (461.3m-650kc) Alexander Skavena, violinist.	6:35	5:35	4:35
KMA (394.5m-760kc) Corn Husker trio.	6:35	5:35	4:35
WTIC (535.4m-560kc) Esther A. Nelson, organist.	6:35	5:35	4:35
KSSAC (333.1m-900kc) General Science lectures.	6:35	5:35	4:35
WJNC (296.9m-1010kc) Second Semester Spanish.	6:35	5:35	4:35
KOIL (277.6m-1080kc) Billy and Helen.	6:35	5:35	4:35
KTHS (384.4m-780kc) Mrs. Charles Caldwell, contralto.	6:35	5:35	4:35
WDOD (245.8m-1220kc) American Business club program.	6:35	5:35	4:35
WJR-WCX (440.9m-680kc) Sunshine Boy and his Guitar.	6:35	5:35	4:35
KGW (491.5m-610kc) Phantoms of Broadway.	6:35	5:35	4:35
WLS (344.6m-870kc) Campus Firts.	6:35	5:35	4:35

SATURDAY, DECEMBER 17

Eastern	Central	Mountain	Pacific
7:30 p.m.	6:30	5:30	4:30
Eastern	Central	Mountain	Pacific
WLAAC (225.4m-1330kc) All-Travelers banquet.	7:30	6:30	5:30
KMA (394.5m-760kc) Musketeers.	7:30	6:30	5:30
KRLD (461.3m-650kc) Peg Moreland.	7:30	6:30	5:30
WJZ (454.2m-660kc) WBAL (285.5m-1050kc) WHAM (277.6m-1080kc) KDKA (315.6m-950kc) WLW (428.3m-700kc) WJR (440.9m-680kc) KYW (526m-570kc) WMAO (447.5m-670kc) WOC (374.8m-800kc) WHO (535.4m-560kc) WJAF (508.2m-590kc) WDAF (370.2m-810kc) WHAS (461.3m-650kc).	7:30	6:30	5:30

SUNDAY, DECEMBER 18

Eastern	Central	Mountain	Pacific
5:30 p.m.	4:30	3:30	2:30
Eastern	Central	Mountain	Pacific
WTIC (535.4m-560kc) Walter Dawley, organist.	5:30	4:30	3:30
KOIL (277.6m-1080kc) Ambassadors orchestra.	5:30	4:30	3:30
KVOO (348.6m-860kc) Christmas cantata.	5:30	4:30	3:30
KLDS (270.1m-1110kc) "The Messiah," Messiah choir.	5:30	4:30	3:30
WEAF (491.5m-610kc) WFL (405.2m-740kc) WRC (468.5m-640kc) WGY (379.5m-790kc) WGR (302.8m-990kc) WCAE (516.9m-580kc) WTAM (399.6m-750kc) WWJ (352.7m-850kc) WSAI (361.2m-830kc) WGN (305.9m-980kc) KSD (545.1m-550kc) WCCO (405.2m-740kc) WVC (374.8m-800kc) WHO (535.4m-560kc) WOW (508.2m-590kc) WDAF (370.2m-810kc) KVOO (348.6m-860kc) WFAA (499.7m-660kc) WSM (340.7m-880kc) WMC (516.9m-580kc) WSB (475.9m-630kc) WBT (258.5m-1160kc) Marie Kurenko, soprano.	9:15 p.m.	8:15	7:15
KTHS (384.4m-780kc) Best loved ballads. Mrs. Harry Jones.	9:15 p.m.	8:15	7:15
WSTU (475.9m-630kc) Alumni hour.	9:15 p.m.	8:15	7:15
WJBT (389.5m-770kc) Back Home hour.	9:15 p.m.	8:15	7:15

MONDAY, DECEMBER 19

Eastern	Central	Mountain	Pacific
7:30 p.m.	6:30	5:30	4:30
Eastern	Central	Mountain	Pacific
WJZ (454.2m-660kc) WBZ (333.1m-900kc) WBAL (285.5m-1050kc) WHAM (277.6m-1080kc) WRC (468.5m-640kc) KDKA (315.6m-950kc) WJR (440.9m-680kc) KYW (526m-570kc) WMAO (447.5m-670kc) WOC (374.8m-800kc) WHO (535.4m-560kc) WJAF (508.2m-590kc) WDAF (370.2m-810kc) WSB (475.9m-630kc) WBT (258.5m-1160kc) Roxey's gang.	7:30 p.m.	6:30	5:30

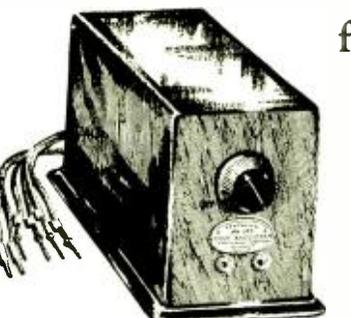
TUESDAY, DECEMBER 20

Eastern	Central	Mountain	Pacific
6:30 p.m.	5:30	4:30	3:30
Eastern	Central	Mountain	Pacific
WJBT (389.5m-770kc) "Social Hygiene," Dr. A. V. Hardy.	6:30	5:30	4:30
WTIC (535.4m-560kc) Trinity College dialogue.	6:30	5:30	4:30
WJBT (389.5m-770kc) Louise Connor.	6:30	5:30	4:30

WEDNESDAY, DECEMBER 21

Eastern	Central	Mountain	Pacific
6:30 p.m.	5:30	4:30	3:30
Eastern	Central	Mountain	Pacific
WSTU (475.9m-630kc) New Things in Physics.	6:30	5:30	4:30
WTIC (535.4m-560kc) Sea Gull dinner group.	6:30	5:30	4:30
WJBT (389.5m-770kc) William Crummett, Jr., tenor.	6:30	5:30	4:30
WJBT (389.5m-770kc) Christmas Carol, Tuesday Morning music club.	6:30	5:30	4:30
WJBT (389.5m-770kc) string band.	6:30	5:30	4:30
WLAAC (225.4m-1330kc) Billy O'Gunnor, tenor.	6:30	5:30	4:30

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Eastern	Central	Mountain	Pacific
8:30 KTHS (384.4m-780kc) Margaret Glass, organist.	8:30 Margaret Glass, organist.	7:30 Margaret Glass, organist.	6:30 Margaret Glass, organist.
10 KOIL (277.6m-1080kc) West Sisters string quartet.	9 West Sisters string quartet.	8 West Sisters string quartet.	7 West Sisters string quartet.
WLS (344.6m-870kc) Chicago Madrigal club.	11 Chicago Madrigal club.	11 Chicago Madrigal club.	10 Chicago Madrigal club.
1 a.m. KGW (491.5m-610kc) Popular music.	12 Popular music.	11 Popular music.	10 Popular music.

For Regular Features See Wednesday, December 7.

THURSDAY, DECEMBER 22

Headliners

Eastern	Central	Mountain	Pacific
6:30 p.m. WSUI (475.9m-630kc) Current events.	5:30 Current events.	4:30 Current events.	3:30 Current events.
WTIC (535.4m-560kc) mid-week religious sing. St. John's choir.	5 mid-week religious sing.	4 mid-week religious sing.	3 mid-week religious sing.
KMA (394.5m-760kc) Ruby trio.	6 Ruby trio.	5 Ruby trio.	4 Ruby trio.
KRLD (461.3m-650kc) Leland Johnson.	7 Leland Johnson.	6 Leland Johnson.	5 Leland Johnson.
KDS (270.1m-1110kc) Grenawalt, Smith, soprano.	8 Grenawalt, Smith, soprano.	7 Grenawalt, Smith, soprano.	6 Grenawalt, Smith, soprano.
9:30 KTHS (384.4m-780kc) Ross Graham, bass.	8:30 Ross Graham, bass.	7:30 Ross Graham, bass.	6:30 Ross Graham, bass.
10 KYL (277.6m-1080kc) Howie and Eric.	9 Howie and Eric.	8 Howie and Eric.	7 Howie and Eric.
WBAL (454.2m-660kc) WBZ (333.1m-900kc) WHAM (277.6m-1080kc) KDKA (315.6m-950kc) WLAV (428.3m-700kc) WTK (440.9m-680kc) KRW (526m-700kc) WIO (535.4m-560kc) WJW (508.2m-590kc) WGN (305.9m-980kc) WMAQ (447.5m-670kc) WEHI (365.6m-820kc) WCCO (405.2m-740kc) KSD (495.2m-740kc) WDAF (370.2m-810kc) Chicago Civic opera.	10 Chicago Civic opera.	9 Chicago Civic opera.	8 Chicago Civic opera.

WLAS (225.4m-1330kc) Boh Cason, Piano Wizard. For Regular Features See Thursday, December 1.

FRIDAY, DECEMBER 23

Headliners

Eastern	Central	Mountain	Pacific
5:30 p.m. WSUI (475.9m-630kc) Current events.	5:30 Current events.	4:30 Current events.	3:30 Current events.
KMA (394.5m-760kc) Corn Husker trio.	6 Corn Husker trio.	5 Corn Husker trio.	4 Corn Husker trio.
9:30 KSC (333.1m-900kc) "The Poetry of the Farm," Prof. Albert Dickens.	8:30 "The Poetry of the Farm," Prof. Albert Dickens.	7:30 "The Poetry of the Farm," Prof. Albert Dickens.	6:30 "The Poetry of the Farm," Prof. Albert Dickens.
KVOO (348.6m-860kc) Princess Pakauli and Chief Roaring Thunder.	7 Princess Pakauli and Chief Roaring Thunder.	6 Princess Pakauli and Chief Roaring Thunder.	5 Princess Pakauli and Chief Roaring Thunder.
9:30 KOIL (277.6m-1080kc) Bess Beatrice Battery, pianist.	8:30 Bess Beatrice Battery, pianist.	7:30 Bess Beatrice Battery, pianist.	6:30 Bess Beatrice Battery, pianist.
9:45 KTHS (384.4m-780kc) Mrs. Thomas Avey, soprano.	8:45 Mrs. Thomas Avey, soprano.	7:45 Mrs. Thomas Avey, soprano.	6:45 Mrs. Thomas Avey, soprano.
KTHS (384.4m-780kc) Harmonium solos. Lena Latone.	8:45 Harmonium solos. Lena Latone.	7:45 Harmonium solos. Lena Latone.	6:45 Harmonium solos. Lena Latone.
10 WLS (344.6m-870kc) Apollo club.	9 Apollo club.	8 Apollo club.	7 Apollo club.
12 mid. WTIC (535.4m-560kc) Ben Bernie and his orchestra.	11 Ben Bernie and his orchestra.	10 Ben Bernie and his orchestra.	9 Ben Bernie and his orchestra.
1:30 a.m. WLS (344.6m-870kc) Ford and Glenn.	12:30 Ford and Glenn.	11:30 Ford and Glenn.	10:30 Ford and Glenn.
KGW (491.5m-610kc) Hoot Owls.	12:30 Hoot Owls.	11:30 Hoot Owls.	10:30 Hoot Owls.

For Regular Features See Friday, December 2.

SATURDAY, DECEMBER 24

Headliners

Eastern	Central	Mountain	Pacific
8 p.m. KMA (394.5m-760kc) German songs.	7 German songs.	6 German songs.	5 German songs.

Eastern	Central	Mountain	Pacific
8 p.m. WLAS (225.4m-1330kc) Christmas carols.	7 Christmas carols.	6 Christmas carols.	5 Christmas carols.
WIZ (454.2m-660kc) WBAL (285.5m-1050kc) WHAM (277.6m-1080kc) KDKA (315.6m-950kc) WLAV (428.3m-700kc) WTK (440.9m-680kc) KRW (526m-700kc) WIO (535.4m-560kc) WJW (508.2m-590kc) WGN (305.9m-980kc) WMAQ (447.5m-670kc) WEHI (365.6m-820kc) WCCO (405.2m-740kc) KSD (495.2m-740kc) WDAF (370.2m-810kc) Chicago Civic opera.	8 Chicago Civic opera.	7 Chicago Civic opera.	6 Chicago Civic opera.

For Regular Features See Saturday, December 3.

SUNDAY, DECEMBER 25

Headliners

Eastern	Central	Mountain	Pacific
5:30 p.m. WEAF (491.5m-610kc) and chain, Moscow Art orchestra.	4:30 and chain, Moscow Art orchestra.	3:30 and chain, Moscow Art orchestra.	2:30 and chain, Moscow Art orchestra.
KTHS (384.4m-780kc) Christmas Eve dance frolic.	8 Christmas Eve dance frolic.	7 Christmas Eve dance frolic.	6 Christmas Eve dance frolic.
KVOO (348.6m-860kc) Metropolitan male quartet.	8 Metropolitan male quartet.	7 Metropolitan male quartet.	6 Metropolitan male quartet.
WBAL (285.5m-1050kc) Municipal Band of Baltimore.	8 Municipal Band of Baltimore.	7 Municipal Band of Baltimore.	6 Municipal Band of Baltimore.

For Regular Features See Saturday, December 3.

Eastern	Central	Mountain	Pacific
8 KVOO (348.6m-860kc) Christmas carols.	6 Christmas carols.	5 Christmas carols.	4 Christmas carols.
8:30 KOIL (277.6m-1080kc) Special Christmas program.	7:30 Special Christmas program.	6:30 Special Christmas program.	5:30 Special Christmas program.
9:15 WEAF (491.5m-610kc) WFEI (365.6m-820kc) WFI (405.2m-740kc) WFC (468.5m-640kc) WGY (479.5m-790kc) WGR (302.8m-590kc) WCAE (516.9m-580kc) WTAM (399.8m-750kc) WWJ (352.7m-850kc) WSAI (361.2m-830kc) WGN (305.9m-980kc) KSD (495.2m-740kc) WOC (374.8m-800kc) WHO (535.4m-560kc) WOW (508.2m-590kc).	8:15 Special Christmas program.	7:15 Special Christmas program.	6:15 Special Christmas program.

Eastern	Central	Mountain	Pacific
9:15 p.m. WDAF (370.2m-810kc) KVOO (348.6m-860kc) WFAA (499.7m-600kc) WSM (340.7m-880kc) WMC (516.9m-580kc) WSH (475.9m-630kc) WBT (285.5m-1160kc) Special Atwater Kent Christmas program, Christmas quartet.	8:15 Special Atwater Kent Christmas program, Christmas quartet.	7:15 Special Atwater Kent Christmas program, Christmas quartet.	6:15 Special Atwater Kent Christmas program, Christmas quartet.
9:30 KTHS (384.4m-780kc) sacred selections, Edward Barry, tenor.	8:30 sacred selections, Edward Barry, tenor.	7:30 sacred selections, Edward Barry, tenor.	6:30 sacred selections, Edward Barry, tenor.
9:45 KTHS (384.4m-780kc) Mrs. George Fletcher, soprano.	8:45 Mrs. George Fletcher, soprano.	7:45 Mrs. George Fletcher, soprano.	6:45 Mrs. George Fletcher, soprano.

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SATURDAY, DECEMBER 31

Headliners

Eastern 8 p.m.	Central	Mountain	Pacific 5 p.m.
KMA (394.5m-740kc) German songs.	WVAL (285.5m-1050kc) WJZ (454.3m-940kc) KJLKA (315.5m-750kc) WJAM (277.6m-1080kc) KJLKA (315.5m-750kc) WJAM (277.6m-1080kc) WJAM (277.6m-1080kc) WJAM (277.6m-1080kc)	WJAM (277.6m-1080kc) WJAM (277.6m-1080kc) WJAM (277.6m-1080kc) WJAM (277.6m-1080kc)	WJAM (277.6m-1080kc) WJAM (277.6m-1080kc) WJAM (277.6m-1080kc) WJAM (277.6m-1080kc)
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Beane Resigns

E. A. BEANE, the first Radio supervisor of the Ninth district, has resigned his position to supervise his own private business. This change will not materially affect the situation in this district, because at the present time, this office receives all its orders from the Radio Commission in Washington; D. C., and Mr. Beane leaves two capable assistants in charge.

The business Mr. Beane is undertaking is to be called E. A. B. engineers and it will service super-power stations. As he served in the Radio division of the U. S. army, Mr. Beane has been one of the pioneers in Radio work, and is well equipped to advise broadcasters.

KHJ Changes Hands

KHJ, Los Angeles, the home of Uncle John Daggett and Queen Titania, has been sold to Don Lee, Inc. It will seem queer to fans who have known this station for the last four years to think of the Los Angeles Times broadcaster under a new management.

However, Don Lee, Inc., already owns one station, KFRC, San Francisco, and has been giving the listener the best of Radio productions. The same grade of programs will be produced at KHJ. With the purchase of this station Don Lee, Inc., is beginning a new Pacific chain.

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Improve Haiti Broadcasting
PORT AU PRINCE, HAITI.—Haiti broadcasting has now been made practical with regular Friday night and Saturday morning programs. Static always has been a serious disturber here. Tests are being made with land wires to certain provincial towns in an effort to improve reception in these places.

You Can Learn to Paint in Oils

Thousands have done it. Our amazing new method teaches you quickly and easily. No long course of training. You can oil paint portraits and art subjects, immediately.

Oil Paint Outfit, FREE

We assist you in obtaining steady employment. Many earn \$75.00 a week and more. Learn in YOUR SPARE TIME. Previous training not necessary.

Send for Free Illustrated Booklet TODAY. This is Your Opportunity.

Mail This Coupon

Pictorial Art Studios, Inc.,
7226 Broadway, Chicago, Ill., Dept. RS
Please send your Free Illustrated Book.

Name

Address

Most Amazing INVENTION in 25 years "Cleans Up" for Agents

\$90 WEEKLY IN SPARE TIME!

Men, here is a wonder—the most sensational invention of the age! If you're looking for a rapid fire seller—an item that nets you 100% profit—an item that sells itself to 7 out of 10 men on demonstration—You got it in Ve-Po-Ad, the amazing new vest pocket adding machine!

Sells for \$2.95—You Make \$1.65

This most remarkable invention does all the work of a \$300 adding machine, yet fits the vest pocket and sells for only \$2.95! It sells on sight to storekeepers, business men, and everyone who uses figures—and makes you over 100% profit on every sale! Ve-Po-Ad does any kind of figuring in a jiffy, yet weighs but 3 oz. Counts up to a billion. Shows total visible at all times. Perfectly accurate, lightning fast. Never makes a mistake or sets out of order. Over 100,000 in daily use!

Get Your Machine FREE

Live wire salesmen are dropping everything else and flocking to Ve-Po-Ad. Ve-Po-Ad brings them quick money and lots of it. Shapiro out in California made \$375 in one week! You can "clean up" over \$25.00 a week! You need no previous sales experience—Ve-Po-Ad sells itself! If you are really interested in earning a steady, substantial income, write at once for full details of my MONEY-MAKING PLAN and FREE VE-PO-AD given to new Agents. Do it NOW—TODAY!

C. M. CLEARY, Dept. 879
184 W. WASHINGTON ST. CHICAGO, ILL.

Specified for the AC-7 described in this issue



MODERN Type M Transformers

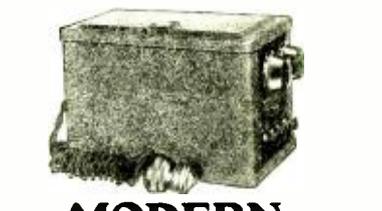
Modern Type M Transformers, approved by every modern laboratory to which they have been submitted, have been selected for use in the AC-7 described in this issue. Results alone justify this approval and use by these engineers, and these audio transformers will give you the finest results in either the AC-7 hook-up or in your own set.

Modern Type M Transformers represent a new goal in the design of audio amplifying units. Large cores, large wire sizes and perfect proportioning result in splendid volume with the finest of tone quality throughout the entire audible range.

They are guaranteed to perform satisfactorily. If your dealer cannot supply you order direct.

- Types M-1 and M-2, \$8.50 Each
- Type M-3 Output, \$8.00
- Types M-4 and M-5, Push-Pull, \$10.00 Each

End "B" Current Troubles with a



MODERN "B" Compact

Proven dependable in daily use through two strenuous seasons, the Modern "B" Compact is the B power unit that will operate your set to your satisfaction. Ample capacity for seven and eight tube sets. Four B connections, two variable controls. Designed for use with Raytheon tube which is not included.

Price \$26.50

The Modern Electric Mfg. Co.
Toledo, Ohio

Abox "A" BATTERY ELIMINATOR

With ABOX on the job your "A" power will never fail when it is needed. There is no battery—no charger—no relay—no rectifying tubes—no parts to wear out, no charging. No cause for service or worry.

ABOX keeps right on delivering peak power direct from the light socket to your radio—night after night, year after year. Its strength does not ebb. ABOX assures unflinching reception, possible with no other source of "A" power.

Regardless of what receiver you have, using eight tubes or less, all you need to enjoy true electric "A" power—is ABOX and a light socket. Two simple connections, which you can easily make yourself, is all there is to do.

Radio dealers everywhere highly recommend ABOX.

The ABOX FILTER can be used to filter the output of your charger if you have one. Ask for special circular. Price \$19.50, slightly higher next of the Rockies.

Send for interesting booklet "ABOX and The Light Socket"

Licensed by The Andrew-Hammond Corporation, under Patent No. 1,857,293 and applications

4-volt model for Radio sets or any receiver using small tubes, \$27.50

Slightly Higher Wire of the Rockies

St. Arly Higher Wire of the Rockies

\$32.50

The Abox Company

215 North Michigan Avenue Chicago, Illinois

Modern Electric Mfg. Co. 112 Toledo, Ohio.

I enclose 2c stamp. Please send booklet checked.

Type M Circuits

Proper operation of "B" power unit

Name

Address

City

POPULAR ORCHESTRAS

(Continued from page 14)

Table listing various orchestras and their vote counts, including Jack Chapman's LaSalle Hotel orch., WMAQ, Trianon orchestra, WMBB, Emerson Gill's Bamboo Garden orch., WTAM, Fred Murrell's orchestra, KPFEQ, Ray Miller's orchestra, WLS, Ambassador's orchestra, KOIL, Palmer House symphony, WJJD, Crosley Cossacks, WLW, Ben Pollack's orchestra, WBBM, Dick Long's orchestra, WCCO, Hoodlums, WLIB, Edgewater Beach Hotel orch., WEBB, Little symphony orchestra, WLS, Jean Goldkette's Blue Room orch., WJR, Alexander's Virghians, WSBC, Eddie Kuhn's Kansas City Athletic Club orchestra, WDAF, Stevens Hotel orchestra, WQJ, Waddy Wadsworth's Terrace Garden orchestra, WJBT, St. Paul Athletic Club orch., WCCO, Art Krueger's Wisconsin Hotel Badger Room orchestra, WTMJ, Formica concert orchestra, WLW, Jack Crawford's orchestra, WDAF, Guy Lombardo, Royal Canadians, WTAM.

DISTRICT NO. 4—WEST. Comprising: North and South Dakota, Nebraska, Kansas, Oklahoma, Texas, Montana, Wyoming, Colorado and New Mexico. List includes Seven Aces, WBAP, Royal Fontenelle orchestra, WOW, Joe Willrich's orchestra, KPRC, Parrino-Sparkman orchestra, WFAA, Scheurman's Colorado orch., KOA, Troutdale orchestra, KPAB, Collegians, WFAA, Music Masters, WBAP, Ernest Loomis' Victor Recording orchestra, KOA, Houstonians' dance orchestra, KPRC, Tracy-Brown's orchestra, WOW, La Marquita and her Castilian orch., WFAA, Dick Richardson's Dallas Country Club orchestra, WFAA.

DISTRICT NO. 5—FAR WEST. Comprising: Idaho, Arizona, Utah, Nevada, California, Washington. List includes Max Dohn's studio orchestra, Pacific Coast Network, Bill Funk's Packard Six orch., KFI, Walter Krausgrill's Balconades Ballroom orchestra, KFRC, Pacific Coast Club orchestra, KFON, Herman Kenin's orchestra, KGW, White King orchestra, KGW, Anson Week's Hotel Mark Hopkins orchestra, KFRC, Cloverleaf orchestra, KFON, Vic Meyer's orchestra, KJL, Good Humor orchestra, KGW, KFRC dance orchestra, KFRC, Coconut Grove orchestra, KNX, States Restaurant orchestra, KPO.

DISTRICT NO. 6—CANADA. Comprising: The entire Dominion of Canada. List includes Eye-ready symphony orchestra, CKNC, Chateau Laurier concert orch., CNRO, Palm Room orchestra, CKCL, Cabaret Belmont orchestra, CNRV, Charlie Bodley's dance orch., CKNC, CNRC orchestra, CNRC, Harold Rich-Morris London Versatile Canadians, FCA, Ionian serenaders, CNRA, W. Knight Wilson's capitolians, CNRR.

Rules and Conditions

- 1. The contest starts with this issue of Radio Digest, November 1, 1927, and ends at midnight, April 10, 1928. All mail enclosing ballots must bear the postmark on or before midnight, April 10, 1928.
2. Ballotting will be by means of coupons appearing in each monthly issue of the Radio Digest and by special ballots issued only when requested at the time of receipt of paid in advance mail subscriptions to Radio Digest when received direct and not through subscription agencies according to the schedule given in paragraph 4.

When requested at the time of receipt of paid in advance mail subscriptions, old or new, to the Radio Digest when received direct and not through subscription agencies according to the following voting schedule:
1-year paid in advance mail subscription \$ 3.00 150 votes
2-year; two 1-year paid in advance mail subscriptions direct 6.00 325 votes
3-year; three 1-year; one 1 and one 2-year paid in advance mail subscriptions direct 9.00 500 votes

For each two consecutively numbered coupons sent in at one time a bonus of five votes will be allowed.
For each three consecutively numbered coupons, a bonus of fifteen votes will be allowed.
For each four consecutively numbered coupons a bonus of twenty-five votes will be allowed.
For each five consecutively numbered coupons a bonus of thirty-five votes will be allowed.
For the complete series of the six consecutive time a bonus of fifty votes will be consecutively numbered coupons sent in at allowed.
4. Special ballots will be issued only

4-year; four 1-year; two 2-year; one 3-year and one 1-year; (Continued on next page)

Now That Everybody

Demands Electrically-Operated Radios! Dongan Is in Production on All Types of A. C. Tube Transformers

Six months ago Dongan engineers were preparing for the day when the industry unanimously accepted complete electrical operation of receiving sets. For every new tube brought forth, Dongan designed the proper transformer or power unit.

Today you can secure from the production line Transformers and Power Supply Units for whatever type of A C or A B C tube you have chosen. For Dongan has been in production on approved types for many months.

Here Is the Newest

No. 6515 Transformer for use with 4 UX 226, 1 UY 227 A C Tubes and 1 UX 171 Tube. Together with a B Eliminator, this new transformer will convert old type set into an efficiently operating A C set.

\$4.75 LIST

This is one of 14 types ranging in price from \$3.50 to \$8.00 for use with the new types of A C Tubes.

Fans—order from your dealer or send check or money order to factory direct.

Manufacturers are invited to write for any kind of information from our engineering department.

Dongan Electric Manufacturing Co. 2983-3001 Franklin Street Detroit

DONGAN

EXTRA



DISTANCE MORE STATIONS NOW POSSIBLE

when using the Prexto combination. Makes your set twice as powerful. Equivalent to adding two more tubes to your set. Uses the same amount of current as two 201A tubes. Receive stations you never have heard before. Brings the weak stations in like locals. Improves the speaker tone 40%. Very simple to install. Replace the tube in the detector socket and first stage of Radio frequency, with a Prexto tube. No changes in wiring of set. Tested by leading Radio laboratories and Radio magazines. Guaranteed for one year against all defects. Use this combination and enjoy real long distance reception. Makes the old set work like a new set and the new set better. Only sold direct. Price \$8.00 per set, postpaid. Satisfaction Guaranteed. Order today!

Name:
Address:
City: State:



WEBSTER BONE-DRILL LIGHT SOCKET POWER



WEBSTER "B" Units the Leader for Past Two Years

LATEST Complete Power Unit for NEW A-C TUBE SETS. B value for all tubes. Separate filament winding for 226 Audio and Radio, 227 Detector and filament, and necessary "C" bias for 171 power tube.

Just What's Needed to rebuild battery sets to A-C tube operated. Write for full particulars. THE WEBSTER COMPANY, 856 Blackhawk St. Chicago.

Steinite ELECTRIC RADIO



America's Lowest Priced Time-Tested Electric Radio!

LET your local dealer show you the Steinite time tested, all electric radio! Note the rich beauty of the solid genuine Philippine mahogany cabinet, finished in Duco! With the Steinite electric all the power of your power line is yours!

Amazing Performance! You get distant stations without even a hint of distortion! And you never tire of Steinite's rich, mellow tone! Six tubes—and two illuminated dials. It operates on a penny an hour! Remember—when you make comparisons—that the Steinite has absolutely no outside attachments! Licensed under R. C. A. Patents.

STEINITE RADIO COMPANY. General Sales Offices: 506 S. Wabash Ave., Chicago. Factories: Atchison, Kansas. Batteries - Eliminators! Acids - Water or Attachments!

STOPS RADIO INTERFERENCE ON YOUR SET. SIMPLE AND EASY TO OPERATE. NO TOOLS REQUIRED TO INSTALL, SIMPLY ATTACH YOUR AERIAL LEAD IN TO ONE OF THE LEADS ON THE LIMITATOR AND RUN THE REMAINING LEAD TO YOUR ANT. POST ON YOUR SET. This is a new interference eliminator that limits the interfering stations from spreading all over your tuning dials. It keeps them separated from interfering with each other, helps to bring out some stations stronger. Built with the new type four-lobe cyclone coil, neatly and substantially constructed, nothing frail, everything enclosed. Don't confuse with anything you have ever tried. Wonderful for broad tuning sets. Works on any aerial except a loop. Try The "KING LIMITATOR" BEST EVER OFFERED FOR ONLY ONE DOLLAR MONEY BACK IF NOT SATISFIED WITH RESULTS. ARLINGTON RADIO MFG. CO. BOX 42 FIRESTONE PK. STA. AKRON, OHIO. PIN YOUR DOLLAR TO THIS AD. Name: Address: MAKE OF SET? POSTPAID ORDER AT ONCE

paid in advance mail subscriptions direct. 12.00 750 votes
 5-year; five 1-year; one 2-year, and one 3-year; two 2-year and one 1-year; one 4-year and one 1-year; paid in advance mail subscriptions direct. 15.00 1,000-votes
 10-year; ten 1-year; five 2-year; three 3-year and one 1-year; two 4-year and one 2 or two 1-year; two 5-year paid in advance mail subscriptions direct 30.00 2,500 votes

5. For the purposes of the contest the United States has been divided into five districts. Canada will comprise the sixth district. District number one, known as the "EAST," will include the states of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, and District of Columbia. District number two, known as the "SOUTH," will comprise the states of Virginia, West Virginia, North and South Carolina, Georgia, Florida, Louisiana, Mississippi, Alabama, Tennessee, Arkansas, and Kentucky. District number three, known as the "MIDDLE-WEST," will include the states of Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri. District number four, known as the "WEST," will comprise the states of North and South Dakota, Nebraska, Kansas, Oklahoma, Texas, Montana, Wyoming, Colorado, and New Mexico. District number five, known as the "PACIFIC WEST," will consist of the states of Idaho, Arizona, Utah, Nevada, California, Washington, and Oregon. District number six, known as Canada, will comprise the entire Dominion of Canada.

6. The orchestra polling the highest number of votes of all six districts will be declared THE WORLD'S MOST POPULAR ORCHESTRA and will be awarded a golden plaque. After the grand prize winner is eliminated the orchestra polling the highest vote in the district in which they are registered will be declared to be the MOST POPULAR of their district and each awarded a silver plaque. No orchestra is to receive more than one prize.

7. In the event of a tie for any of the prizes offered, prizes of identical value will be given to each tying contestant.

8. Any question that may arise during the contest will be decided by the Contest Editor, and his decision will be final.

Lafount Appointed

THE Radio commission is expected to receive a fresh point of view with the advent of Harold A. Lafount, the new Pacific coast commissioner. Although Mr. Lafount has been interested in Radio for the last five years, he has never been connected professionally with any Radio station or business. This should enable him to give the commission the unbiased attitude of the listener.

A native of Logan, Utah, Mr. Lafount came to Salt Lake city fifteen years ago. From here he directs the development of irrigation projects in both Utah and Idaho. He is particularly interested in the colonization of such projects.

Commissioner Lafount will fill the place left vacant by the recent death of John P. Dillon.

Joe is Experienced

LITTLE JOE WARNER, WFL, Chicago, sings his songs to the children in every dialect known to the tongue of man. Radio Digest coined the word "Dialectician" in a recent description of his hit before the mike. Now, Joe is always announced by Maurice Wetzel as the "WFL Dialectician." He plans a vaudeville tour in which he will be officially billed by that word. Little Joe says he owes his measure of success in entertaining children to his own children.

"I am in the studio at bed time hour," he said, "and rarely have a chance to see them off to bed so I do it over the air. I sing to them as I would do if I were at home. What interests them interests other children. They are much alike in their fancies. We do not take them seriously enough. They see through our shams and silly efforts to amuse them more keenly than the most of us realize. I have found that out by actual experience. I learn a great deal from my own three little ones. When I sing before the microphone I sing to them; I see them before the loudspeaker in my own home as they really are, and I know what they like because they tell me."

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912.

Of Radio Digest, illustrated, published monthly at Chicago, Illinois, for October 1, 1927. State of Illinois.

County of Cook, ss.
 Before me, a notary public in and for the State and county aforesaid, personally appeared E. C. Rayner, who having been duly sworn according to law, depose and says that he is the Publisher of the Radio Digest, illustrated, and that the following is to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc. of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 411, of the Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, E. C. Rayner, 4719 Madison Avenue, Chicago, Illinois; Editor, Harold P. Brown, 6361 University Avenue, Chicago, Illinois; Managing Editor, Bruce, Business Manager, None.
2. That the owner is (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.) E. C. Rayner, 4719 Madison Avenue, Chicago, Illinois; George Seaman, 2350 Parkway, West Chicago, Illinois; E. C. Ryan, 310 N. Dearborn St., Chicago, Illinois; D. R. Seaman, 49 Cedar Avenue, Chicago, Illinois; Joseph Seaman, 250 Fifth Avenue, New York City; A. E. Hafler, Honel Elms, 53rd and Cornell Ave., Chicago, Illinois.
3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.
4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholders or security holders appear upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and that affiant has no reason to believe that any other direct or indirect in the said stock, bonds, or other securities than as so stated by him.
5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise to paid subscribers during the six months preceding the date shown above is..... (This information is required from daily publications only.)

E. C. RAYNER, (Signature of Publisher)
 Sworn to and subscribed before me this 28th day of September, 1927.
 J. H. Dirnberger.
 (SEAL) (My commission expires June 12, 1929.)

We Are Operating Complete Service Laboratories —

Repairing and reassembling all sets to bring them up to the 1928 model and guarantee your set to work equal to any new set. All sets are tested in sound proof shielded room which enables us to make this guarantee and a low price for repairing. We custom build super heterodynes of the same parts specified by their designers. Free of charge to those buying kits from us.

New Remler 1928 Infradyne.....	\$180.00
New Improved Nine-in-Line.....	127.00
Camfield Super Selective Nine.....	124.00
Melo-Head Hot-Spot 14.....	150.00
Lincoln Super Receiver.....	110.00
Thomson Super Seven.....	79.30
Eight-in-Line Super.....	126.10
M-S Eight Portable Economy.....	82.50
Popular Mechanics' Economy Nine.....	61.85
Victorene Circuit.....	110.00
Tvrem Ten.....	142.00
World's Record Super Ten.....	137.00
Best Nine-Tube Super Remler.....	112.00
Silver Marshall Eight-Tube Super.....	90.00
Aero Seven Receiver.....	59.55
Strobodine Receiver.....	129.97
Hazeltine Neutrodyne.....	39.60

These or any other super heterodyne circuit will be built free of charge at the above prices. Set builders and dealers get our surprisingly low prices on all super kits and parts. Whatever you want we have. The above kits are complete. All orders will be taken care of the day received. Send sets to be repaired and rebuilt American Express prepaid.

DETROIT RADIO LABORATORIES
 2506 Park Street
 DETROIT, MICH.

Amazing New Ground Antenna

GETS FARAWAY STATIONS LOUD AND CLEAR REGARDLESS OF STATIC CONDITIONS
 Radio Engineers and hundreds of users testify that Aer-O-Limitator, the sensational new Ground Antenna, gets better long distance reception, almost unbelievable freedom from static and outside noises, far greater selectivity and marvelously clear and sweet tone quality. R. Curtis, of Ill., says: "There's no such thing as static trouble since I got my Aer-O-Limitator. I get stations I never got before—so loud and clear I would almost swear they were in the next room if not that you are free from troublesome overhead aerials that everyone now knows are static-gatherers. Aer-O-Limitator (Ground Antenna) is simple and easy to install. Takes but a few minutes."

FREE TRIAL
 Make this thrilling test at our risk! Install an Aer-O-Limitator (Ground Antenna). Leave your old overhead aerial up. Try out on a night when static is bad. If you do not get a wonderful improvement in freedom from static, greater selectivity and clear, sweet tone without interfering noises, if you can't get good reception on stations that are drowned by static on your old aerial, you need not pay us a red cent for this test. Send coupon today for scientific evaluation of Aer-O-Limitator (Ground Antenna), proof of performance, and our conclusive iron-clad guarantee and remarkable Free Trial Offer. Send coupon today!

Rush This Important Coupon

CURTAN MFG. CO.,
 154 E. Erie Street, Dept. 823-T,
 Chicago, Ill.

Please send me at once complete description of Aer-O-Limitator with details of guarantee, scientific proof and FREE TRIAL OFFER.

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

No "A" Batteries with these TELEVOCALLS

The new Televoacal A. C. 226 and 227 Tubes operate direct from A. C. current and require no "A" Battery. Televoacal T. C. 112A and 171A Power Tubes are made with oxide-coated filaments taking but half the current — ¼ amperes as against ½ amperes heretofore.

For best results insist on Televoacal Quality Tubes for all purposes. All standard types featured by the exclusive Televoacal Support—all fully guaranteed.



Televoacal Corp.
 Televoacal Building
 Dept. D-3, 588 12th St.,
 West New York, N. J.

TELEVOACAL QUALITY TUBES

For Best Results

"A-C SEVEN" RECEIVER

Use Only the Specified!
HAMMARLUND PARTS
 Specified by the Designer

The HAMMARLUND "MIDLINE" CONDENSER



HAMMARLUND MFG. CO.,
 424-438 W. 33rd St., New York, N. Y.

For Better Radio Hammarlund PRECISION PRODUCTS

The HAMMARLUND ILLUMINATED DRUM DIAL



Faithful Service

The function of a power resistance is to control voltage and current — accurately — permanently — silently. AEROVOX PYROHMS used with GOOD equipment make a BETTER power unit.

AEROVOX PYROHMS are built to last — are used by more than 20 leading power unit manufacturers. — This is conclusive evidence of their reliability — accuracy — worthiness.

Made in all values of resistance for continuous duty at 20, 40, 100 and 200 watts.



Sales Build New Steinite Factory

Interesting news comes from the general sales office of the Steinite Radio Company of Atchison, Kansas. A new factory, having floor space of 13,000 square feet, has been erected to take care of the enormous sales of the completely synchronized electric set manufactured by this firm. This plant triples the production facilities of the original factory, which was already said to be the largest in the middle-west.

The new set is manufactured in three models, priced at \$100, \$135 and \$165, and represents the biggest stride yet taken in the direction of electrical Radio. It is complete in one cabinet, having absolutely no outside attachments. No batteries or chargers, acids, or water, are used.

GUARANTEED RAILROAD WATCH



GUARANTEED: To introduce our Bartrain Jewellery and Elgin Watch Catalog we offer this elegant watch. Am. lever movement, nickel silver-plated case, stem wind and set. Fully guaranteed by million dollar co. Accurate time keeper. Special sale price, \$4.98. Send no money. Pay postman on arrival. Watch is yours. Satisfaction guaranteed or money refunded. J. KRINSLEY CO., 236 N. Clark St. Dept. 82 CHICAGO

MAKES A COMPLETE MACHINE SHOP

EVERY-USE Electric MOTOR ATTACHMENT ONLY \$3.95 Features on shaft of small motor in a jiffy. Holds attachments for Grinding, Polishing, Sawing, Drilling, etc. MADE TO FIT 1/2-inch, 3/4-inch and 1-inch shafts. STATE SIZE. Electric Motors at Greatly Reduced Prices. Write Us YOUR Requirements. UNITED ELECTRIC MOTOR CO. 178-M Centre Street, New York

'B' BATTERY ELIMINATOR

Only \$7.95

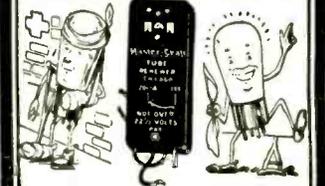
MONEY-BACK GUARANTEE No more worry with "B" Batteries! Hook up a Roll-O "B" Battery Eliminator and forget battery troubles forever. This wonderful new invention means better reception, sharper tuning. Gives you more real pleasure from your set. Completely Equipped—No "Extras" to Buy Operates perfectly on direct or alternating current, giving up to 90 volts current, and using the full watt of the power supply. Simple directions enclosed—anyone can plug it in to any kind of set up to six tubes. Constant voltage gives set more power. Costs no more than the set because it is built in a beautifully finished metal case, with genuine Bakelite top. SEND YOUR ORDER NOW "B" Batteries won't let it work right. Order your Eliminator NOW. Write name and address on a piece of paper, pin a dollar bill to it, and mail it TODAY. Pay postman balance (\$8.95 plus a few cents postage) when he delivers your Eliminator. Use it ten days. If not more than satisfied, return it and get your money back. THE ROLL-O RADIO CO. Dept. C-200, 3d & Sycamore, Cincinnati, O.



Tobacco Habit BANISHED Let Us Help You No craving for tobacco in any form after you begin taking Tobacco Redeemer. Don't try to quit the tobacco habit unaided. It's often a losing fight against heavy odds and may mean a serious shock to the nervous system. Let us help the tobacco habit to quit YOU. It will quit you, if you will just take Tobacco Redeemer according to directions. It is marvelously quick; thoroughly reliable.

Not a Substitute Tobacco Redeemer contains no habit-forming drugs of any kind. It is in no sense a substitute for tobacco. After finishing the treatment you have absolutely no desire to use tobacco again or to continue the use of the remedy. It makes not a particle of difference how long you have been using tobacco, how much you use or in what form you use it—whether you smoke cigars, cigarettes, pipe, chew plug or fine cut or use snuff. Tobacco Redeemer will positively remove all craving for tobacco in any form in a very few days. This was absolutely guaranteed in every case or money refunded. Write today for our free booklet and positive proof that Tobacco Redeemer will quickly free you of the habit. NEWELL PHARMACAL COMPANY Clayton Station Dept. 842 ST. LOUIS, MO.

Master-Craft TUBE REJUVENATOR



At Last! New Tubes for Old at Amazing Low Cost! Why pay enormous prices for a tube rejuvenator? Here's one for a dollar positively guaranteed to rejuvenate any tube in 45 seconds! No other parts needed, good for any number of tubes and so very simple to operate a child can do it. This amazing new invention will equal in every way higher priced devices.

Positively GUARANTEED \$1.00 Popular Science Institute of Standards, Popular Radio Laboratory, Radio Engineering 15 leading Radio Laboratories endorse it. No more tube waste. No more high cost! If your dealer can't supply send a dollar for guaranteed Master-Craft, postpaid. Do it right now. Give your old tubes new life instantly. Address: MASTER-CRAFT PRODUCTS CO. Dept. B, 3803 N. Clark, Chicago

Hotel Eastgate Ontario at St. Clair Chicago Telephone Superior 3580 2 Blocks North and 1 Block East of Tribune Tower Just a "Whisper" from the Loop Unlimited Parking Cafe offering unexcelled cuisine at moderate prices Rates \$2.50 to \$4.00 Per Day — No Higher Special Rates to Permanent Guests

Here At Last! Guaranteed \$1.29 Tubes

Now a fully guaranteed general purpose 201-A tube which produces greatly superior results at the startlingly low price of \$1.00. Can be used as a detector and amplifier in all stages. Not equal in operation or control. Economical in current consumption. Famous World quality. SEND ORDER NOW Just state how many tubes wanted and order will be shipped same day as received. C. O. D. 5% discount for cash with order. We will replace without charge any tube which does not operate satisfactorily on your set provided the filament lights. Every tube tested for filament operation before shipment. This tube will give satisfactory service. There is no need to pay more. Send order today. WORLD BATTERY COMPANY 1219 South Wabash Avenue Dept. 55, Chicago, Illinois Station W. S. E. C., owned and operated by World Battery Company

\$75 to \$125 Weekly

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OFFICIAL CALL BOOK AND LOG

Corrected Every Issue

KDKA
E. Pittsburgh, Pa. 315.6m-950kc. 50,000 watts. Westinghouse Elec. & Mig. Co. Daily ex Sun 10 am, 12n., 3:05 pm, 4:35, markets, weather; 11:57, time; 2:30 pm, and every 30 min. Baseball; 5, dinner concert; 6:20, road reports. Daily ex Sun, Sat, 7 WJZ. Tues, 6 pm, sacred songs; 10:35, Grand theater revue. Wed, 6:30 pm, power; 7:30, Homer Smith, concert. Thurs, 6:30, Fri, 10:30 pm, dance program. Sun, 1 pm, WJZ; 5:30, 6:30, base-ball; 6, Midsummer Dream, KDKA Little sym-phony; 7:15, WJZ, Eastern.

KDLR
Devils Lake, N. Dak. 230.6m-1300kc. 15 watts. Radio Elec. Co. Announcer, Harold Serumgard here. Wick. Daily ex Sun 7:30 am, news, music; 12:20-12:30 pm, weather; 6-6:30, markets. Mon, 9:30-11:30 pm, Sun, 11 am, church. Founded Jan. 25, 1925. Central.

KDYL
Salt Lake City, Utah. 258.5m-1160kc. 100 watts. Intermountain Broadcasting Corp. Announcer, Philip G. Lasky. Slogan, "On the Air—Goes Everywhere." Daily ex Sun, 2-5 pm, 6-12 mid. Sun, 3-4:30 pm, 8-9, Mountain.

KELW
Burlbank, Calif. 228.9m-1310kc. 250 watts. Earl L. White. Daily ex Sun, 11-2 pm, 5-10, Wed, 11-2 pm, 5-7 pm, 9-10. Last Sat, in month 10-1 am, frolic. Pacific.

KEX
Portland, Ore. 239.9m-1250kc. 2,500 watts. West-ern Broadcasting Co. Announcer, Jack Barnett. Daily ex Sun, 9:15-3 pm, 5:30-12 mid. Sun, 6:30-10 pm, Pacific.

KFAB
Lincoln, Nebr. 309.1m-970kc. 5,000 6am-7pm, 2,000 watts. Nebraska Buick Auto Co. Announcer, Gayle Grubik. Daily ex Sun, 9:30-9:55 am, weather re-ports; 3-4 pm, Mon, Tues, Wed, Fri, 10:30-11 am, home economics. 11:45-12:30 pm, 3:30-4 pm, 5:30-6:30. Daily ex Thurs, 7:30-8 pm, 8, Sun, 11 am, 9-10 pm. Founded Dec. 4, 1924. Central.

KFAD
Phoenix, Ariz. 272.6m-1100kc. 500 watts. Electrical Equip. Co. Announcer, Arthur C. Anderson. Slogan, "The Voice of Phoenix." Daily ex Sun, Mon, 3-4 pm, 6-9, Wed, Sat, 10-11 pm, Sun, 11 am-12:30 pm, 8-10. Founded Oct. 30, 1921. Mountain.

KFAU
Boise, Idaho. 285.5m-1050kc. 4,000 watts 6 am-6 pm, 2,000 watts. Independent School Dist. of Boise. Mon, Tues, Wed, Thurs, Fri, 12:30-1 pm, weather, markets, U. S. program. Tues, 7:30-8 pm, children's hour; 8-10, music. Thurs, 8-10 pm, Sun, 3-4 pm, 7-30-9 pm. Founded Oct. 1921. Mountain.

KFBB
Havre, Mont. 275.1m-1090kc. 50 watts. F. A. Buttery Co. Announcer, E. C. Baer. Daily ex Sun, 12:30-1:30 pm, music, markets, weather reports. Wed, 7:30-9 pm, Sun, 1-1:30 pm. Founded 1921. Mountain.

KFBC
San Diego, Calif. 247.8m-1210kc. 100 watts. Bal-bine Theater Bldg. Daily ex Sun, 9:30-10:30 am, 12:45-1:45 pm, 5-10. Sun, 10-12 am, Bible lesson. Pacific.

KFBK
Sacramento, Calif. 535.4m-560kc. 100 watts. Sacra-mento Bee. Kimball-Opson Co. Announcer, R. K. Clark. Tues, Sat, 7:30-10 pm, Thurs, 8-10:30 pm. Founded 1921. Pacific.

KFBL
Everett, Wash. 223.7m-1340kc. 50 watts. Lesse Bros. Tues, Thurs, Sat, 7-8 pm, Mon, Wed, Fri, 6:30-8 pm, Sun, 11-12n. Founded Sept. 1922. Pacific.

KFBU
Laramie, Wyo. 428.3m-700kc. 500 watts. Bishop N. S. Thomas. Announcer, F. C. Smith. Sunday service. Daily 11 am, 7:30 pm. Pacific.

KFCB
Phoenix, Ariz. 243.8m-1230kc. 125 watts. Nielsen Radio Supply Co. Announcer, E. A. Nielsen. Slogan, "Kind Friends Come Back." Mon, Thurs, 8-9 pm, Sat, 8-10 pm, Sun, 9-11 am. Mountain.

KFCR
Santa Barbara, Calif. 211.1m-1420kc. 50 watts Santa Barbara Broadcasting Co. Daily ex Sun, 12-1 pm, 5-7 pm, 7-7:20, 7:20-7:30. Mon, Tues, Wed, Thurs, 7:30-9:30 pm, Fri, 7:30-10 pm, Sat, 12-1 pm, 6:15-7:30 pm, Sun, 7:15-8:15 pm, 8:15-9 pm, Pacific.

KFDM
Beaumont, Tex. 483.6m-620kc. 500 watts. Mag-nolia Petroleum Co. Announcer, "Static." Slogan, "Call for Dependable Magnolene." Tues, Fri, 12:30-12:55 pm, band concert; Tues, 8-10 pm, Fri, 8:30-10:30 pm; Sun, 8-9 pm. Founded Oct. 1, 1924. Cen-tral.

KFDX
Shreveport, La. 236.1m-1270kc. 250 watts. First Baptist church. Announcer, John S. Ramond. Wed, 9-10 pm, Sun, 10:50-12 n., 7:45-9. Founded 1922. Central.

KFDY
Brookings, S. D. 440.9m-680kc. 500 watts. State College of Agriculture and Mechanical Arts. An-nouncer, Albert Kranz. Daily ex Sun, 12:30-1:15 pm, Tues, Thurs, 7:30-9 pm.

KFDZ
Minneapolis, Minn. 215.7m-1390kc. 10 watts. Harry O. Iverson. Sat, 8 pm. Central.

KFEC
Portland, Ore. 214.2m-1400kc. 50 watts. Meier & Frank Co., Inc. Announcer, R. E. Haritzoff. Daily ex Sun, 12 m, weather reports; 4-5 pm, music, 6-7, Pacific.

KFEL
Denver, Colo. 247.8m-1210kc. 250 watts. Eugene P. O'Fallon, Inc. Announcer, J. H. Hathaway. Daily ex Sun, 7:15 am, 10, 11, 2, 4, 5, 6, 7, Tues, Thurs, 8 pm, Tues, 10 pm, Fri, 11 pm, Sun, 8:30 am, 10, 2:30 pm, 4:30. Mountain.

KFEQ
St. Joseph, Mo. 230.6m-1300 kc. 1000 watts. J. L. Scroggin, Announcer, Clarence Koch. Daily ex Sun, 8:45 am, 9, 10, 11, 12, 2, markets; 5 music; 6-8 pm, music, 8:30-10. Mon, 11-12 mid. Sun, 11-12 n.

KFEY
Kelloug, Idaho. 232.4m-1290kc. 10 watts. Union High School Station. Announcer, Walter C. Clark. Slogan, "Voice of the Cœur D'Alenes." Mon, Thurs, 7-8 pm, Sun, 11 am, 7:30 pm. Pacific.

KFGQ
Boone, Iowa. 209.7m-1430kc. 10 watts. Boone Biblical school. Founded April 1923.

KFH
Wichita, Kan. 245.8m-1220kc. 500 watts. Hotel Lassen. Announcer, J. L. Fox. Daily ex Sun, 8:30 am, 9, 10, 11, 1-2 pm, markets; 1:15, music, 7:30-9, Sun, 9:30 am, 7:30 pm. Founded Dec. 1, 1925. Central.

KFHA
Gunnison, Colo. 254.1m-1180kc. 50 watts. Western State College of Colorado. Announcer, E. Russell Wightman. "Where the Sun Shines Every Day." Tues, Fri, 7-9:30 pm. Founded May 1922. Mountain.

KFHL
Oskaloosa, Iowa. 212.6m-1410kc. 10 watts. Penn College. Announcer, Donald Haworth. Tues, Fri, 7 pm, Fri, 9:45 am, Sun, 4 pm. Central.

KFI
Los Angeles, Calif. 468.5m-640kc. 5000 watts. East C. Anthony, Inc. Announcer, Leslie Adams. Slogan, "A National Institution." Daily ex Sat, Sun, 5:30-11 pm, Sat, 5:30-2 am, Sun, 11 am, 5:30-11. Installed Spring, 1920. Pacific.

KFIF
Portland, Ore. 214.2m-1400kc. 50 watts. Ben-son Polytechnic School. Announcer, Albert Skei. Omar Bitner. Tues, 8:15-9:15 pm. Pacific.

KFIO
Spokane, Wash. 245.8m-1220kc. 100 watts. North Central High School.

KFIU
Juneau, Alaska. 225.4m-1330kc. 10 watts. Alaska Elec. Light & Power Co. Announcer, O. Schoem-bell. Mon, Wed, Fri, 6-7 pm. Alaskan time.

KFIZ
Fond du Lac, Wis. 267.7m-1120kc. 100 watts. Fond du Lac Commonwealth Reporter. Daily ex Sun, 5 pm, news, markets, weather. Central.

KFKX
Chicago, Ill. 526m-570kc. 2500 watts. Westing-house Elec. & Mig. Co. Daily 10:05 a. m. Daily ex Sun, 5:30 p. m., 10:55. Central.

KFKZ
Kirksville, Mo. 225.4m-1330kc. 15 watts. State Teachers College. Announcer, F. M. Henry. Mon, 8:30-9:30 pm, Thurs, 8-9 pm. Founded 1923. Central.

KFLV
Rockford, Ill. 267.7m-1200kc. 100 watts. Swedish Evangelical Mission Church. Announcer, A. T. Frykman. Mon. 8:15 pm. Founded Oct. 1923. Central.

KFLX
Galveston, Texas. 270.1m-1110kc. 100 watts. George R. Clough.

KFMR
Sioux City, Iowa. 232.4m-1290kc. 100 watts. Morn-ing-side College. Daily ex Sun, Sat, 11:40-12:30 pm, Tues, Wed, Thurs, Fri. 7:30-8:30 pm. Founded 1924. Central.

KFMX
Northfield, Minn. 236.1m-1270kc. 500 watts. Carle-ton College. Daily ex Sun, 10:30 am, time. Fri, 8:15 pm, lecture, 8:45. 10. Sun, 7 pm. Central.

KFNF
Shenandoah, Iowa. 461.3m-650kc. 2000 watts. 6 am-7 pm, Henry Field Seed Co. Announcer, Henry Field. Slogan, "Friendly Station in a Friendly Town." Daily ex Sun, 6:30-8 am, 10-11, 12-2:30 pm; 3, rocking chair time; 5-7, Sun, 8:30-9:30 am, 10:45 am, 2 pm, 3-4, services; 6, Golden Rule, church service. Founded Feb., 1924. Central.

KFOA
Seattle, Wash. 447.5m-670kc. 1000 watts. Rhodes Dept. Store. Announcer, Arthur W. Lindsay. Mon, 10 am-10 pm, Tues, 12-10 pm, Wed, 10 am-11 pm, Thursday, 12-10 pm, Fri, 10 am-12 mid. Sat, 12n-10 pm. Sun, 5:30-6:30 pm. Pacific.

CHALLENGE!

ONE DOLLAR will be paid to the Radio fan submitting the most errors in any one station's listing in this Official Call Book and Log. Letters must reach Radio Digest of- fice not later than a month from date of issue corrected. Readers are not limited to correcting one station, but such corrections must be certified by the stations themselves, and NOT by comparison to other so-called ac- curate broadcasting directories and lists. Readers also must live in same state or province as stations corrected are located. Station verifications must accompany corrections. In case of tie duplicate awards will be paid.

That's just how sure Radio Digest is that this Official Call Book and Log is correct! To make the challenge fair for everyone, broadcasting sta- tions and their employees are barred from this offer.

In this issue is a complete alpha- betical arrangement according to wave lengths, a wave length index, and a state, city index of stations. The information contained in each station data listing is given in the following order: Call letters, city, state, watts antenna input, owner's name, announcer's name, slogan used, if any, name of listener in "club," schedule of operating hours, and kind of time used, as "Central," "Moun- tain," etc.

Each issue of Radio Digest gives one the most complete and accurate Call Book and Log obtainable. This service is original with this publica- tion, and has been maintained from the start. Right of reproduction without permission of any or all of the data contained herein is forbid- den.

KFJB
Marshalltown, Iowa. 247.8m-1210kc. 100 watts. Marshall Electric Co. Announcer, M. F. Easter. Slogan, "Marshalltown, the Heart of Iowa." Daily ex Sun, 10 am, 12-1:30 pm, Daily, 6 pm, 7, Tues, Fri, 8:30 pm, Sun, 11 am, 7:30 pm. Founded June 2, 1923. Central.

KFJF
Oklahoma City, Okla. 272.6m-1100kc. 750-1000 watts. National Radio Mfg. Co. Announcer, Tired Hand. Slogan, "Radio Headquarters of Okla- homa City—The City of Opportunity." Daily ex Sun, 9 am, music; 10-30, markets; 12-1:30 pm, music; 3-5, 7-10, Sun, 9 am, 1, B. S. A., 10, Men's class; 11, services; 8, services. Central.

KFJI
Astoria, Ore. 249.9m-1200kc. 15 watts. E. E. Marsh and Liberty theater. Announcer, E. E. Marsh. Wed, 11-11:30 pm, organ, Sun, 12:30-1:30 pm. Pacific.

KFJM
Grand Forks, N. D. 333.1m-900kc. 100 watts. Uni- versity of North Dakota. Daily, 12m, 6 pm, 8. Founded Oct. 1923. Central.

KFJR
Portland, Ore. 282.8m-1060kc. 100 watts. Ashley C. Dixon & Son. Announcer, Ashley C. Dixon. Sat, Daily ex Sun, Sat, 5-6 pm, 7-8, Tues, 10-11, Thurs, 9:30-10:30 pm, 11-12. Fri, 12-1 am, Sat, 1:30-3 pm, 5-6. Founded Sept. 23, 1923. Pacific.

KFJY
Fort Dodge, Iowa. 232.4m-1290kc. 100 watts. Tunwall Radio Co. Announcer, Carl Tunwall. Daily ex Sun, 10:30-11:30 am, 5:45-7 pm, Tues, 10-11:30 pm, Thurs, Fri, 8:30-9:30 pm, Wed, 3-4 pm, Sun, 11-12:30 pm. Founded Oct. 1923. Central.

KFJZ
Fort Worth, Texas. 249.9m-1200kc. 50 watts. W. E. Branch. Daily ex Wed, Sun, 10:01 am, 4-6 pm, 7-8, 9-10. Sun, 1-3 pm, 6-7. Central.

KFKA
Greeley, Colo. 545.1m-550kc. 200 watts. Colorado State Teachers' College. Announcer, H. E. Green.

KFKB
Milford, Kan. 241.8m-1240kc. 2500-1500 watts. J. R. Brinkley, M. D. Daily ex Sun, 10:15-10:30 am, 12-1:30 pm, Daily ex Sun, Sat, 3-4 pm, 5:30-10, Sun, 8 am, 10, 6-12 mid. Central.

KFKU
Lawrence, Kan. 254.1m-1180kc. 500 watts. Uni- versity of Kansas. Announcer, Ellsworth C. Dent. Mon, Thurs, 7-8 pm. Founded Dec. 15, 1924. Cen- tral.

KFON
Long Beach, Calif. 241.8m-1240kc. 500 watts. Nichols & Warner, Inc. Announcer, Hal G. Nichols. Slogan, "Piggly Wiggly Station. Daily and Sun, 9:30 am-12 mid. Founded March 1924. Pacific.

KFOR
Lincoln, Nebr. 217.3m-1380kc. 100 watts. Howard A. Shuman. Daily ex Sun, 12:30-1:30 pm, 2-3:15. Mon, Tues, Wed, Fri, 6:45-10 pm. Central.

KFOX
Omaha, Nebr. 258.5m-1160kc. 100 watts. Board of Education. Technical High. Daily ex Sun, Sat, 12-1:30 pm. Tues, 7:30-9 pm. Central.

KFOY
St. Paul, Minn. 285.5m-1050kc. 250 watts. Beacon Radio Service. Announcer, M. G. Goldberg. Daily ex Sun, 9 pm. Mon, 7 pm. Founded Mar. 1924. Central.

KFPL
Lubbock, Texas. 275.1m-1090kc. 15 watts. C. C. Baxter, announcer. Mon, Thurs, 8 pm, Sat, 11 pm, Sun, 7:30 am, 1:30 pm. Central.

KFPM
Greenville, Texas. 230.6m-1300kc. 15 watts. The New Furniture Co. Announcer, Dave Ablowich. Jr. Slogan, "The New Furniture Co., the Home of Good Furniture." Located at Greenville, Texas. Where You Find "The Blackest Land, the Whitest People." Daily ex Sun, 1 pm, music. Mon, Wed, Fri, 8 pm, Sun, 11 am, services; 7:30 pm, irregularly. Central.

KFPR
Los Angeles, Calif. 232.4m-1290kc. 250 watts. Los Angeles Co. Forestry Dept. Irregular schedule.

KFPW
Carterville, Mo. 263m-1140kc. 50 watts. St. John M. E. church. S. Slogan, "Keeping Pace with Christ Means Progress." Daily ex Sun, 6:30-7 am, 1-2:30 pm, 2:30-3 pm. Sun, 1-2:30 pm. Central.

KFPY
Spokane, Wash. 245.8m-1220kc. 250 watts. Symons Investment Co. Announcer, E. B. Crane. Daily ex Sun, Sat, 9:45-11 am, 3-5 pm, 6:10-30. Sun, 7-12 mid. Pacific.

KFQA
St. Louis, Mo. 247.8m-1210kc. 50 watts. The Principia. Sun, 11 am. Founded May 9, 1924. Cen- tral.

KFQB
Fort Worth, Tex. 333.1m-900kc. 1000 watts. Lone Star Broadcast Co. Announcer, Zack E. Hurt. Daily ex Sun, 8:30-9:30 am, 12:30-1:30 pm, 7:30-8:30, 9:30-11. Wed, 8:30-9:30 am, 12:30-1:30 pm, Sat, 7:30-11 pm, Sun, 11-12n, 6-7 pm, 7:30-11. Cen- tral.

KFQD
Anchorage, Alaska. 344.6m-870kc. 100 watts. Anchorage Radio Club. Announcer, Frank O. Berry. Mon, Fri, 8-10 pm. Sun, 7:30-9 pm. Alaskan time.

KFQJ
Holy City, Calif. 249.9m-1200kc. 100 watts. W. F. Riker. Announcer, Arthur J. Landstrom. Daily ex Sun, 6:30-7:30 pm, Tues, Fri, 9:30-11 pm, Wed, Thurs, Sat, 9-10 pm, Sun, 11-12 n, 10-11 pm. Pa- cific.

KFWO
Seattle, Wash. 217.3m-1380kc. 100 watts. KFWO, Inc. Pacific. Daily ex Sun, 12-1 pm, 4:30-5:30, 5:30-6, 6-7, 8:30-10, 10-11. Sun, 10-12 n. Pacific.

KFQZ
Hollywood, Calif. 232.4m-1290kc. 100 watts. Taft Radio Company. Announcer, Allan Fairchild. Daily ex Sun, 12-1 pm, 5-6 pm, 6-11. Sun, 7-11 pm. Pacific.

KFRC
San Francisco, Calif. 454.3m-660kc. 1,000 watts. Don Lee, Inc. Announcer, Harrison Holloway. Daily ex Sat, Sun, 7-9 am, 10-12 n, 12-1 pm, 4:30-12 mid. Sat, 7-9 am, 10-12 n, 12-1 pm, 4-12 mid. Sun, 12-1 pm, 12-1 pm, 5-12 mid. Pacific.

KFRU
Columbia, Mo. 249.9m-1200kc. 500 watts. Stephens college. Announcer, La Van Rail. Slogan, "Where Friendliness is Broadcast Daily." Daily ex Sun, 8:30-11:15 am, 3 pm, 6:30, Wed, 7:30-10 pm, Thurs, 7:30-11 pm, Fri, 7:30 am, 9:20, 10:45, 4 pm, 5, 7:30. Founded October 25, 1925. Central.

KFSB
San Diego, Calif. 440.9m-680kc. 500 watts. Airfan Radio Corp. Daily ex Sun, 10-11 am, 6-10 pm, Sun, 11 am, 2-4 pm. Pacific.

KFSG
Los Angeles, Calif. 275.1m-1090kc. 500 watts. Angeles temple. Daily ex Sun, Mon, 10:30-11:30 am, 11:30-12:30, organ; 2:30-3:30 pm, program; 3:30-4:30, vesper; 6:30-7:30. Tues, 7:30-9:15 pm, Wed, Fri, 7:30-9:30 pm, Thurs, 7:30-11 pm, Sat, 7:30-9:30 pm, Sun, 10:30 am, 2:30-4:40 pm, 6:30-9:30, 10-11. Pacific.

KFUL
Galveston, Texas. 258.5m-1160kc. 500 watts. Thomas Grogan & Bros.

KFUM
Colorado Springs, Colo. 282.8m-1060kc. 1000 watts. Corley Mountain Highway. Announcer, Howard Brown. Mon, 5-7 pm, 10-12. Tues, 8-10 pm, Thurs, 8-12 mid. Fri, 10-12 mid. Sat, 8-10 pm.

KFVU
St. Louis, Mo. 234.2m-1280kc. 1000 watts. Con- cordia Theological Seminary (Lutheran). Announcer, Herin, H. Hohenstein. Mon, Wed, Fri, 9 pm, Sat, 6:30 pm, Sun, 3:30 pm, 4, 9:15. Founded Dec. 14, 1924. Central.

KFVP
Denver, Colo. 227.1m-1320kc. 100 watts. Fita- simon's General Hospital, Educational and Recrea- tional Dept. Daily ex Sat, and Sun, 10-11 am, Tues, Thurs, Fri, 7:30 pm. Mountain.

KFVR
Ogden, Utah. 225.4m-1330kc. 500 watts. Peery Build- ing Co. Tues, Thurs, Sat, 9:50-11:50 pm, dan- ce music. Mountain.

KFVS
Oakland, Calif. 256.3m-1170kc. 50 watts. The Gospel Radio. Slogan, "The City of Opportunity." Mon, Wed, Fri, 10-11 am, Wed, Fri, 8-9 pm, Sat, 1:30-2:30 pm, 6:30-7:30. Sun, 9-10 am, 11-12n, 7:45-9 pm, Pacific.

KFUT
Salt Lake City, Utah. 499.7m-600kc. 50 watts. University of Utah.

KFVD
Venice, Calif. 208.2m-1440kc. 250 watts. W. J. & C. M. Whinnie. Announcer, Mary Elizabeth Carter. Daily ex Sun, 9:30-12 n., 4:30-6 pm, 9-12 mid. Wed, 12-2 am. Founded April 1925. Pacific.

KFVE
St. Louis, Mo. 234.2m-1280kc. 2000 6 am-6 pm, 1000 watts. Greater St. Louis Broadcasting Corp. Announcer, Thomas Patrick Convey. Daily ex Sun, Thurs, 9:30 am-11 pm, sloopers' club; baseball, studio concert. Thurs, 9:30 am-6 pm, Sun, 11-9 pm. Central.

KFVG
Independence, Kan. 225.4m-1330kc. 50 watts. First Methodist Episcopal church. Announcer, R. W. Elliott. Slogan, "The Voice of Southeastern Kansas from Independence, the Buckle on the Oil Belt." Tues, 8 pm, Sun, 10:55 am, 7:30 pm. Founded Mar. 1925. Central.

KFVI
Houston, Texas. 238m-1260kc. 50 watts. KFVI Broadcasting Company. Announcer, Harry Waters. Daily ex Sun, 1-2 pm, Mon, Wed, Sat, 8:9:30 pm. Founded 1925. Central.

KFVS
Cape Girardeau, Mo. 223.7m-1340kc. 50 watts. Hirsch Battery & Radio Co. Announcer, W. W. Watkins. Slogan, "The City of Opportunity." Daily ex Sun, 12-15 pm, news, markets, 7:15, music. Founded July 1925.

KFWB
Hollywood, Calif. 361.2m-830kc. 500 watts. Warner Brothers. Announcer, William "Bill" Ray. Mon, Tues, Thurs, Fri, 10-10:40 am, 12-2:30 pm, 4:45-12 mid, Wed, Sat, 10 am, 12n-12 mid. Sun, 7:30-10 pm. Pacific.

KFWC
Pomona, Calif. 222.1m-1350kc. 100 watts. L. E. Wall. Announcer, Bert Elise Wall. Daily ex Sun, 4-6 pm, 7-11. Pacific.

KFWF
St. Louis, Mo. 214.2m-1400kc. 250 watts. St. Louis Truth Center. Slogan, "The Voice of Truth." Announcer, Rev. Charles H. Hartmann. Thurs, 10:45 am, 7:45 pm, Sun, 9 am, 10:45, 7:45 pm. Founded 1925. Central.

KFWI
San Francisco, Calif. 267.7m-1120kc. 500 watts. Radio Entertainment, Inc. Mon, Tues, Wed, Thurs, 8am-11pm, Fri, 7-11 pm, Sat, 7 am-2:30 am, Sun, 7:50-11 pm. Pacific.

KFWM

Oakland, Calif. 236.1m-1270kc. 500 watts. 1000 6 am-6 pm. Oakland Educational Society. Announcer, G. R. Pollock. Mon, Tues, Thurs, Fri, Sat, 8:10 pm. Thurs, 12:30-1:15 pm. 2-4. Tues, Wed, Fri, 2-3 pm. Tues, 12:30-1:15 pm. 2-3. Sun, 9:30-11 am. 12:30-2:30 pm. 7:30-9, 10-11. Pacific.

KFWO

Avalon, Calif. 299.8m-1000kc. 250 watts. Major Lawrence Mott-Signal Corp. Slogan, "Katalina for Wonderful Outings." Daily, 12:30-1:30 pm. 7:30-9. Tues, Fri, Sun, 5-6 pm. Pacific.

KFXD

Jerome, Idaho. 204m-1470kc. 15 watts. KFXD Inc. Daily ex Sun, 12 n. Wed, Sat, 8-10 pm. Sun, 11:20-1:20 pm.

KFXF

Denver, Colo. 282.8m-1060kc. 250 watts. Colorado Radio Corp. Announcer, W. D. Pyle. Slogan, "The Voice of Denver." Mon, Tues, 6-10 pm. Wed, 6:12 mid. Fri, Sat, 6-12 mid. Sun, 8 pm. Mountain.

KFXJ

Colorado, 215.7m-1390kc. 50 watts. R. G. Howell. Slogan, "America's Scenic Center." Daily ex Sun, 7:45-9 pm. 5:30-9. Sun, 7-7:30 pm. Mountain.

KFXX

Oklahoma City, Okla. 223.7m-1340kc. 50 watts. Exchange Ave. Baptist church. Mon, Wed, Fri, 8 pm. Sun, services.

KFXY

Flagstaff, Ariz. 205.4m-1460kc. 25 watts. Mary M. Costigan. Announcer, Cecil J. Walters. Tues, Thurs, Sat, 10:15-11:15 pm. Mountain.

KFYU

Breckenridge, Tex. 211.1m-1420kc. 15 watts. Kirksey Brothers Battery & Elec. Co. Daily ex Sun, 9-10 am, 12-1 pm, 8-10. Central.

KFYR

Bismarck, N. D. 299.9m-1200kc. 250 watts. 509 6 am-6 pm. Hoskins-Meyer, 1450. Announcer, C. F. Dirham. Daily ex Sun, 12:30-1:30 pm. 6:30-8:30 pm. Tues, Thurs, 10-11 pm. Sun, 10:30-12 n. 1-3 pm. Founded Dec. 1925.

KGA

Spokane, Wash. 260.7m-1150kc. 2,000 watts. Northwest Radio Service Co. Daily ex Sun, 11 am; 12, news; 5-8, stocks, weather; 6, time; 6:20, 8, program. Sun, 11 am, 7:30. Pacific.

KGAR

Tucson, Ariz. 234.2m-1280kc. 100 watts. Tucson Citizen. Announcer, Harold S. Sykes. Daily ex Sat, 7-9 pm. Sun, 11 am. Installed June 1926. Mountain.

KGBS

Seattle, Wash. 202.6m-1480kc. 100 watts. Arthur C. Daily. Moore Hotel. Mon, Tues, Wed, Thurs, Fri, 6:30-10 pm. Pacific.

KGBU

Ketchikan, Alaska. 228.9m-1310kc. 500 watts. Alaska Radio & Service Co. Daily ex Wed, Sun, 7-9 pm. Sat, 7-8 pm, 10-12. Pacific.

KGBX

St. Joseph, Mo. 288.3m-1040kc. 100 watts. Foster-Hall, Inc. Announcers, R. D. Foster, R. L. Hill. Daily ex Sun, 7-8 am, 12-1 pm, Sun, 5-6 pm. Wed, 5-7 pm. Tues, Thurs, Fri, 6-10 pm. Sun, 7:30 pm. Founded August 11, 1926. Central.

KGBY

Columbus, Neb. 202.6m-1480kc. 50 watts. Thelen and Laddick. Tues, Sat, Fri, 12:35-1:15 pm, 8-9:15. Central.

KGBZ

York, Neb. 212.6m-1410kc. 100 watts. Announcer, Dr. George R. Miller. Slogan, "Keep Your Hogs and Poultry Healthy." Mon, Wed, Thurs, Fri, Sat, 12:20 am, markets, music, 12-30, 2:30, 7:30. Thurs, Sat, 10:30-11:30 pm, music. Sun, 9 am, service; 3 pm, music-lecture; Alternate Sun, 5 pm. Opened Aug. 1926. Central.

KGCA

Decorah, Ia. 247.8m-1210kc. 10 watts. Bar Bear Clothing Company. Announcer, Charles Greenley. Daily, 12:30-1 pm. Wed, 7-8 pm. Sun, 2-4 pm. Central.

KGCB

Oklahoma City, Okla. 215.7m-1390kc. 50 watts. Wallace Radio Institute.

KGCH

Wayne, Neb. 293.9m-1020kc. 250 watts. Wayne Hospital. Announcer Merrill Shum. Slogan, "Remember Us When We're Old." Daily ex Sat. Mon, 6-8 pm. Tues, Thurs, 4-5 pm. Founded Aug. 1926. Central.

KGCI

San Antonio, Texas. 220.4m-1360kc. 15 watts. Liberty Radio Sales.

KGCL

Seattle, Wash. 230.6m-1300kc. 50 watts. Louis Wasmer. Archie Taft. Announcer, Herman Rice. Mon, Wed, Thurs, 6-7:30 pm, 8:30-11. Tues, Fri, Sat, 3-7:30 pm. Pacific.

KGCN

Concordia, Kan. 208.2m-1440kc. 50 watts. Concordia Broadcasting Co. Daily ex Sun, 12:30-1:30 pm, 7-9. Founded Aug. 1926. Central.

KGCR

Brookings, S. D. 208.2m-1440kc. 15 watts. Cutter Radio Broadcasting Service, Inc.

KGCU

Mandan, N. D. 239.9m-1250kc. 100 watts. Mandan Radio Assn. Announcer, H. L. Dahners. Daily ex Sun, 12:1-30 pm, 6-7. Sun, 11-12n, 4:30-6:30 pm. Mountain.

KGCX

Vida, Mont. 243.8m-1230kc. 10 watts. First State Bank of Vida. Announcer, E. E. Krehshach. Daily ex Sun, 12n, Sun, 11 am, 2-4 pm. Mountain.

KGDA

Dell Rapids, S. D. 254.1m-1180kc. 6 am-6 pm. 15 watts. Home Auto Co. Announcer, Marion Rollins. Sun, 1:30-5 pm. Central.

KGDE

Harrett, Minn. 205.4m-1460kc. 50 watts. Jaren Drug Company. Daily ex Sun, 12-30 pm, music-lecture; 1, news, weather, markets; 4-30; music-lecture, Sun, 10:30-3 pm. 6-8. Licensed Sept. 15, 1926. Central.

KGDJ

Cresco, Iowa. 202.6m-1480kc. 10 watts. R. Rathert.

KGDM

Stockton, Calif. 217.3m-1380kc. 10 watts. Pepper Co. Daily ex Sun, 10-11:30 am, 2-3 pm. Thurs, Sat, 8-10 pm. Central.

KGDP

Pueblo, Colo. 223.7m-1340kc. 10 watts. Boy Scouts of America. Tues, 8 pm. Thurs, 9 pm. Mountain.

KGDR

San Antonio, Texas. 202.6m-1480kc. 15 watts. Joe B. McShane. Announcer, Joe B. McShane. Daily ex Sun, 4:30-5:30 pm. Thurs, 9-10 pm. Central.

KGDW

Humboldt, Neb. 293.9m-1020kc. 100 watts. Frank J. West.

KGDY

Shreveport, La. 212.6m-1410kc. 250 watts. William Erwin Anthony.

KGDY

Oldham, S. D. 206.8m-1450kc. 15 watts. J. Albert Loesch. Thurs, 7:45-11 pm. Central. Founded Dec. 26, 1926.

KGEF

Los Angeles, Calif. 263m-1140kc. 500 watts. Trinity Methodist church.

KGEH

Eugene, Ore. 201.2m-1490kc. 50 watts. Eugene Broadcast Station. Daily ex Sun, 9-10 am, 12:15-12:50 pm, 6:30-8. Sun, 9:45-10:30 am, 6-8 pm. Fri, 10-12 mid. Pacific.

KGEK

Yuma, Colo. 263m-1140kc. 10 watts. 7 am-7 pm. Beehler Electrical Equipment Co.

KGEN

El Centro, Calif. 235.3m-1330kc. 15 watts. E. R. Irey and P. M. Bowles. Daily ex Thurs, Sun, 12:15-1:15 pm. Mon, Wed, Fri, 5:30-6:30 pm. Tues, Sat, 8-9 pm. Thurs, 10-11 pm. Pacific.

KGEO

Grand Island, Neb. 205.4m-1460kc. 100 watts. Hotel Yancey. Mon, Wed, Sat, 8-9 pm. Tues, Fri, 12:25-12:55 pm. Sun, 2-4 pm. Central.

KGEQ

Mimneapolis, Minn. 202.6m-1480kc. 50 watts. Fred W. Herrmann. Mon, 7-8 pm. Tues, 8:30-11:45 pm. Wed, 6:30-8:30 pm. Thurs, 8:30-10:30 pm. Fri, 6:15-9 pm. Sat, 3-5:30 pm. Central.

KGER

Long Beach, Calif. 215.7m-1390kc. 100 watts. C. Merwin Dobyns.

KGES

Central City, Neb. 204m-1470kc. 10 watts. Central Radio Elec. Co.

KGEU

Lower Lake, Calif. 227.1m-1320kc. 50 watts. Lofovana Lodge. Mon, Wed, 7:30-9:30 pm. Fri, 7-9 pm. Sun, 1:45-2:45 pm. 8-9. Pacific. Founded Dec. 1926.

KGEW

Fort Morgan, Colo. 218.8m-1370kc. 100-200 watts. City of Fort Morgan. Announcer, Glenn S. White. Daily ex Sat, Sun, 8:15-8:45 am, markets. Tues, Thurs, 8-10 pm. Sat, 12-1 pm, 8-10. Sun, 11-12n. 2-3 pm. Mountain.

KGEY

Denver, Colo. 201.2m-1490kc. 250 watts. J. W. Dietz.

KGEZ

Kalispell, Mont. 293.9m-1020kc. 100 watts. Flathead Broadcast-Ing Assn. Daily ex Sun, 12-1:30 am. Thurs, 7:30-9 pm. Sun, 11 am, 7:30 pm. Mountain.

KGFJ

Iowa City, Iowa. 223.7m-1340kc. 10 watts. A. G. Dunkel. Daily ex Sun, 12-12:30 pm, 6-6:30. Mon, Tues, Wed, Thurs, Fri, 11-12 mid. Central.

KGFF

Alva, Okla. 205.4m-1460kc. 25 watts. Earl E. Humphreys.

KGFG

Oklahoma City, Okla. 215.7m-1390kc. 50 watts. Full Gospel Church.

KGFH

La Crescenta, Calif. 237.7m-1340kc. 250 watts. Frederick Robinson. Announcer, Formosa J. Robinson. Slogan, "Voice of the Sierras." Mon, Tues, Wed, Fri, 8-10 pm.

KGFI

San Angelo, Tex. 220.4m-1360kc. 15 watts. M. L. Eaves. Daily ex Sun, 9 am, 12n, 3 pm, markets, weather, 8-11, entertainment. Central.

KGFJ

Los Angeles, Calif. 208.2m-1440kc. 100 watts. Ben S. McGlashan. Slogan, "Keeping Good Folks Joyful." Daily ex Sun, 6:30-9:30 am, 12-4:30 pm, 6-9. Pacific. Founded Jan. 18, 1927.

KGFK

Hallock, Minn. 223.7m-1340kc. 50 watts. Kittson County Enterprise. Mon, Wed, Fri, 12-1:30 pm. Agri. reports, news, music. Mon, Fri, 8-10:30 pm. Central.

KGFL

Raton, N. M. 222.1m-1350kc. 50 watts. Radio Trust Co.

KGFM

Yuba City, Calif. 211.1m-1420kc. 15 watts. George W. Johnson. Daily ex Sun, 9:30-10:30 am. Mon, Wed, Fri, 8-10 pm. Pacific.

KGFN

Aneta, N. D. 199.9m-1500kc. 15 watts. Haraldson & Thinstad.

KGFO

Terre Haute, Ind. 204m-1470kc. 100 watts. KGFO, Inc.

KGFP

Mitchell, S. D. 212.6m-1410kc. 100 watts. Mitchell Broadcast Co.

KGFV

Ravenna, Neb. 296.9m-1010kc. 10 watts. Otto F. Sottman. Announcer R. H. McConnell. Slogan, "Catering to the Home Folks." Daily ex Sun, 8-9 am, 11:45-12:15 pm, 3:15-4:15. Central.

KGFX

Pierre, S. D. 254.1m-1180kc. 200 watts. 6 am-6 pm. Dana McNeil.

KGGF

Picher, Okla. 206.8m-1450kc. 100 watts. Dr. D. I. Connell. Daily ex Sun, 7:30-8:30 pm, 8:30-9:30. Central. On air Sept. 1, 1927.

KGGH

Cedar Grove, Ia. 212.6m-1410kc. 50 watts. Bates Radio & Elec. Co. Announcer, A. J. Bates. Mon, Wed, Fri, 7-9 pm. Central.

KGNP

Hardin, Mont. 263m-1140kc. 50 watts. American Legion, Hardin Post, No. 8.

KGO

Oakland, Calif. 384.4m-780kc. 5000 watts. Gen. Elec. Co. Announcer, Howard I. Millholland. Daily ex Sun, 11:30 am, 1 pm, weather, stocks; 6:45-5:55. Dinner concert; 6:55, reports. Daily ex Sun, Wed, Sat, 4-5 pm, concert; 5:30, kiddies club; 8-9, grand opera, 9, time; Tues, 8-9 pm, pilgrims; 9-10, Eveready hour; 10-11, hits and bits; Wed, 6:35 pm, farm; 8-9, vaudeville; 9-10, drama; 10-12, dance music; Thurs, 5-6 pm, boy's hour; 8-9, 9-10. Fri, 5:30-6 pm, 8-9, 9-10, 10-11, 11-12, Sat, 8-9 pm, 9-10, 10-11, Sun, 11 am, 7:30 pm, services; 4, vesper; 5:30-6:30, 9-10, 9-10. Pacific.

KGRC

San Antonio, Texas. 220.4m-1360kc. 50 watts. Gene Roth & Co. Announcer, L. C. Weber. Daily ex Sun, 8:30-9:30 am, 2-3 pm. Mon, Sat, 8:30-9:30 pm. Wed, 9:30-10:30 pm. Fri, 7:30-8:30 pm. Sun, 1-2 pm. Central. Opened Jan. 31, 1927.

KGRS

Amarillo, Texas. 243.8m-1230kc. 150 watts. Gish Radio Service. Announcer, L. B. Cornelius. Daily ex Sun, 6:30 am, 7, 10, 11:45, 6:30-10 pm, 7, 8, Mon, Wed, Fri, 9 pm. Sun, 11 am, 8 pm. Central.

KGTT

San Francisco, Calif. 206.8m-1450kc. 50 watts. A. Mulroy. Announcer, Homer Tyson. Daily ex Sun, 12:30 pm, scripture reading. Tues, Wed, Fri, 8-10 pm. Wed, 2:30-4 pm, Divine healing service. Sun, 2:30-3 pm, Sunday school, 3-5, music; 7:30-10 pm, service. Pacific. Founded Nov. 1925.

KGU

Honolulu, Hawaii. 270.1m-1110kc. 600 watts. Marion A. Mulroy. Announcer, Homer Tyson. Daily ex Sun, Sat, 12-1:15 pm, 4:30-5:30. Thurs, 7:30-9:30 pm. Sat, 2-4:30 pm. Sun, 6-9:30 pm. 157 1/2 meridian. 2 1/2 hours earlier than Pacific.

KGW

Portland, Ore. 491.5m-610kc. 1,000 watts. Oregonian Publishing Co. Announcer, Dick Haller. Slogan, "KGW, Keep Growing Wiser." Daily ex Sun, 10-11:30 am, town crier, household help; 6-7, concert; 7-10, Mon, 9-12 mid. Tues, 9:45-10 am, exercises; 2-3 pm, 7, travelog; 9-11 pm. Wed, 9-10 pm, 10-12, Thurs, 7:30-7:45 pm, amusement guild; 7:45-10 lecture; 9-10, 9-45-10 am, exercises; 7:30-8, 9-12 mid. Sat, 10-12 mid. Pacific.

KGY

Lacey, Wash. 243.8m-1230kc. 50 watts. St. Martin's College. Announcer, Selastian Ruth. Slogan, "Out Where the Cedars Meet the Sea." Sun, Tues, Thurs, 8:30-9:30 pm. Pacific.

KHAC

Pacific Coast. 204m-1470kc. 50 watts. Flying Broadcasters, Inc.

KHJ

Los Angeles, Calif. 416.4m-740kc. 500 watts. Los Angeles Times. Announcer, John S. Daggett. Slogan, "Kindness, Happiness, Joy." Daily ex Sun, Mon, 6 pm, trio; 6:30, children's hour; 7:30, lecture; 8-10, music. Sun, 10 am, 12:30 pm, 7, 4-10. Pacific.

KHMC

Harlingen, Tex. 236.1m-1270kc. 100 watts. Harlingen Music Co. Daily ex Sun, 2-4 pm. Fri, 7-9:30 pm. Central.

KHQ

Spokane, Wash. 370.2m-810kc. 1000 watts. Louis Wallace. Announcer, C. P. Underwood. Slogan, "Tells the World." Daily ex Sun, Wed, 12:30-1:30 pm, 3-3, 6-12 mid. Wed, 7-10 pm. Sun, 10:30 am, 11, 2-10 pm. Pacific.

KIAF

Sittipong, Minn. 422.3m-710kc. 500 watts. Steele Co. Slogan, "Far from the Maddening Crowd." Mon, Wed, Fri, 7-8 pm. Sun, 2-3 pm. Central.

KICK

Red Oak, Iowa. 322.4m-930kc. 100 watts. Atlantic Radio, Inc. Operated by Walnut Grove Products Co. Announcer, H. A. Marshall. Daily ex Sun, 11:50-12:30 pm, question box, markets. Daily ex Sun, 7:45-9 pm. Founded 1923. Central.

KJBS

San Francisco, Calif. 220.4m-1360kc. 50 watts. Julius Brunton & Sons Co. Announcer, Jack Smith. Daily ex Sun, 9-12n, 1:30-5 pm. Mon, Wed, 8-10 pm. Tues, 8-12 mid. Thurs, 8-10 pm. Fri, 8-11 pm. Sun, 1:30-5 pm. Pacific.

KJR

Seattle, Wash. 348.6m-860kc. 2500 watts. Northwest Radio Service Co. Announcer, W. C. Gordon. Daily ex Sun, 10:30 am, shopping service; 11:30, music; 12 n, time, weather; 5:40, stocks; 6, time; 6:10, box office; 6:20, news; 6:30, dinner concert; 8, studio concert; 10, time. Mon, 2, 4 pm. Sun, 11 am, service; 6 pm, dinner concert; 7:45, organ; 8, service; 9:30, studio concert. Pacific.

KKP

Seattle, Wash. 265.3m-1130kc. 15 watts. City of Seattle. Daily ex Sun, 10 pm. Pacific.

KLCN

KPO
San Francisco, Calif. 422.3m-710kc. 1000 watts. Hale Bros. and Chronicle. Announcer, Curtis Peck. Slogan, "The Voice of San Francisco. The City by the Golden Gate." Daily ex Sun. 6:45-7:15, 7:45, health drills; 10:30, utility features; 12 n. time, weather. Daily ex Sun. 1:30-3 pm. concert, talks. Mon, Tues, Wed, Thurs, Fri, 8-11 pm. Sat, 8-12 mid. Fri, 12:45 pm. luncheon talks. Sun. 9:45-10:30 am. service; 6-10 pm. Pacific.

KPPC
Pasadena, Calif. 228.9m-1310kc. 50 watts. Pasadena Presbyterian church. Announcer, George W. 9:45-12:45 pm. 6:45-9. Founded Dec. 25, 1924. Pacific.

KPRC
Houston, Texas. 293.9m-1020kc. 500 watts. Houston Post-Dispatch. Slogan, "Kotton Port Rail Center." Announcer, Alfred I. Daniel. Daily ex Sun. 10:55 am. time; 11, weather, markets; 12 noon, entertainment. Daily ex Fri, Sun, 3-4 pm. Daily ex Sun, Fri, 7:30-9:30 pm. Sun. 11 am, 1 pm, 8 pm. services. Founded May 8, 1925. Central.

KPSN
Pasadena, Calif. 315.6m-950kc. 1000 watts. Pasadena Star-News. Announcers, George Frenger, P. C. Pryor. Daily ex Sun. 12:15 pm, 6 pm. news. Tues, Thurs, Sat, 8-9 pm. Sun. 10:30-12:30 am. Installed Nov. 23, 1925. Pacific.

KQV
Pittsburgh, Pa. 270.1m-1110kc. 500 watts. Doubleday-Hill Elec. Co. Announcer, Howard E. Clark. Mon, Wed, Fri, 4-5 pm. 6-9. Tues, Thurs, 4-5 pm, 6-7. Sun, 1-2 pm. Eastern.

KQW
San Jose, Calif. 296.9m-1010kc. 500 watts. First Baptist church. Daily ex Sun. 12-30 news, music; 5-5:30, children's hour; 5:30-6, studio program; 6, Aunt Sammy; 6:20-6:30, U. S. A.; 6:40, U. S. Farm Radio school; 6:50, Farmers exchange, 7, news, weather, markets; 7:30, farm talks; 7:30, mail bag; 7:40, talk; 7:55, riddles; 8, program. Sun, 10 am, 7:30 pm. Pacific.

KRAC
Shreveport, La. 230.4m-1360kc. 500 watts. Caddo Radio Club. Announcer, R. M. Iwan.

KRE
Berkeley, Calif. 256.3m-1170kc. 100 watts. First Congregational Church of Berkeley.

KRLD
Dallas, Texas. 461.3m-650kc. 500 watts. KRLD, Inc. Announcer, Arthur W. Stowe. Slogan, "Where the Bluebonnets Grow." Daily ex Wed, Sun. 12:30-1:30 pm, 7-8:30, 9:30-10:30. Mon, 11-12 mid. Tues, 8-8:30 pm. Thurs, 8-8:30 pm. Sat, 11-12 mid. org. Central. Founded Oct. 30, 1926.

KRLO
Los Angeles, Calif. 215.7m-1390kc. 250 watts. Freeman Lang, A. R. Scott. Announcer, Walter Hiddick. Daily ex Sun. 12:30-2:30 pm. 5:30-7:30, 9-12 mid. Pacific. Founded Feb. 7, 1927.

KRSC
Seattle, Wash. 211.1m-1420kc. 500 watts. Radio Sales Corp. Announcer, William J. Calsamalia. Daily ex Sun. 9-10 am, 7-7:30 pm. 9-10:30 pm. Mon, Wed, Fri, 3:30-5 pm. Pacific.

KSAC
Manhattan, Kan. 333.1m-900kc. 500 watts. Kansas State Agricultural College. Announcer, Liste L. Longdorf. Daily ex Sat, Sun, 9:55 am, 9:55, 12:35 pm, 6:30-8, Sat, 12-35 pm. 7:55-8:30. Central.

KSBA
Shreveport, La. 267.7m-1120kc. 1000 watts. Shreveport Broadcasting Assn. Announcer, W. G. Patterson. Daily ex Sun. 10:15 am, 12:15 pm, 3:15, markets, weather, news; Tues, Wed, Thurs, 8-10 pm, 8. Mon, 11 pm. Sat, 9 pm. Sun, 11 am, 7:30 pm. Central. Founded March 14, 1922.

KSCJ
Sioux City, Iowa. 243.8m-1230kc. 500 watts. 1000 6 am-6 pm. Perkins Brothers Co. Daily ex Sun. 9:45 am, 10:45, 12:15, stock, markets, weather; 11:30-12:30 pm, news, music; 1:45-3:45 pm. Mon, Tues, Wed, Fri, 6 pm, Sun, 11 am, 7:30 pm. service; 2-4, musicale. Central.

KSD
St. Louis, Mo. 545.1m-550kc. 500 watts. Pulitzer Pub. Co. Announcer, W. P. Corwin. Daily ex Sun. 9:40 am, 10:40, 11:40, 12:40, 1:40, 3:40. Mon, 6:30-11 pm. Tues, Wed, Thurs, Fri, Sat, 7:10-30 pm. Sun, 4:15-10 pm. Founded June 24, 1922.

KSEI
Pocatello, Idaho. 333.1m-900kc. 250 watts. KSEI Broadcasting Assn. Announcer, W. J. O'Connor. Daily ex Sun. 3-4 pm. 6-8, 9-11. Sun. 9-11 pm. Mountain.

KSL
Salt Lake City, Utah. 302.8m-990kc. 1000 watts. Radio Service Corp. of Utah. Announcers, Roscoe Grover, Ted Rogers. Daily ex Sun, 7-8 am. 10-11:30, 12n-1:30 pm, 4-5. Mon, Tues, Wed, 6-11:30 pm. Thurs, 6:30-11 pm. Fri, 6:30-11:30 pm. Sat, 6:30-12 mid. Sun, 11-11 pm, 1:55-3, 5-11:30. Mountain.

KSMR
Santa Maria, Calif. 272.6m-1100kc. 100 watts. Santa Maria Valley Radio Company. Announcer, Sydney C. Beck. Daily ex Sat, Sun, 10:30-11:30 am, 6:30-9:30 pm. Sat, 7:30 pm. markets. Pacific.

KSO
Clarinda, Iowa. 227.1m-1200kc. 500 watts. Berry Seed Co. Announcer, Joe Raynes. Slogan, "Keep Serving Others." Daily ex Sun, 6:30-8 am, 12-1 pm. music talks. Daily ex Sat, Sun, 6:30-9 pm. Sun, 11-12 n. 5-6 pm. Founded Nov. 2, 1925. Central.

KSOO
Sioux Falls, S. D. 209.7m-1430kc. 250 watts. Sioux Falls Broadcast Assn.

KTAB
Oakland, Calif. 280.2m-1070kc. 500 watts. The Associated Broadcasters. Announcer, Lytton Spaulding. Daily ex Sun, 6:45-8 am, 4, 6:45, 7:30. Tues, Wed, Thurs, Fri, 8-10 pm. entertainment. Sun, 9:45 am. 11-7:45 pm. Pacific.

KTAP
San Antonio, Tex. 228.9m-1310kc. 20 watts. Robert B. Bridge. Slogan, "Come to America's Playground." Daily ex Sun. 6:30-8:30 am, 10:30-11:30, 12:30-2 pm, 6:30-8, 9:30-10:30. Mon, silent. Sun, 4-6 pm, 9:30-10:30. Central. Founded Sept. 15, 1927.

KTBI
Los Angeles, Calif. 288.3m-1047kc. 500 watts. Bible Inst. of Los Angeles. Announcer, H. P. Herdman. Daily ex Sun, 8-9 am, 7:15-9. Sun, 10:45 am, 3, 6 pm, 7:15-9:30. Pacific.

KTBR
Portland, Ore. 282.8m-1060kc. 50 watts. M. E. Brown. Daily ex Sun, 6-7 pm, dinner program, time, weather. Sun, Tues, 8-9 pm. Wed, 9-12 mid. Wed, 8-9:30 pm, 9:30-12. Fri, 8-10 pm, 10-12. Sun, 10:30 am, 2-4 pm. 7:30-9. Pacific.

KTHS
Hot Springs, Arkansas. 384.4m-780kc. 1900 watts. The Arlington hotel. Announcer, G. C. Arroux. Slogan, "Kum to Hot Springs." Mon, 12-1 pm. 6:30-11. Tues, Thurs, Sat, 12-1 pm, 8-11. Wed, 7:30-11 pm. Sun, 11-12:30 pm, 8-10:30. Installed Dec. 20, 1924. Central.

KTNT
Muscatine, Iowa. 256.3m-1170kc. 2000 watts. Norman Baker. Slogan, "The Home of the Calliophone and Voice of the Iowa Farm Union." Announcer, Adair Reinmunder. Mon, Tues, Wed, Thurs, Fri, 8-11 pm, Sun, 12 n. 2:30 pm, 8. Central. Founded 1924.

KTSA
San Antonio, Tex. 265.3m-1130kc. 2000 watts. Alamo Broadcasting Co.

KTUE
Houston, Tex. 212.6m-1410kc. 5 watts. Uhalt Electric. Announcer, Bill Arnold. Daily ex Sun. 5:15-6:15. Tues, 8-9 pm. Sat, 8-9:30 pm. Central.

KTW
Seattle, Wash. 394.5m-760kc. 1000 watts. First Presbyterian church. Announcer, J. D. Ross. Slogan, "Hear Ye Hear Ye, the Gospel." Mon, 11-12:30 pm. 3-4:30, 7:30-9:30, church service. Pacific.

KUJ
Seattle, Wash. 199.9m-1500kc. 10 watts. Puget Sound Radio Broadcasting Co. Mon, Wed, Fri, 6-9 pm. Sat, 6-12 mid. Pacific.

KUOA
Fayetteville, Ark. 296.9m-1010kc. 500 watts. University of Arkansas. Sun, Mon, 7-9 pm. Thurs, 7-9 pm. Central.

KUOM
Missoula, Mont. 461.3m-650kc. 500 watts. University of Montana. Mon, Thurs, 8-9:30 pm. Sun, 9:15-10:30 pm. Mountain.

KUSD
Vermillion, S. D. 483.6m-620kc. 250 watts. University of South Dakota. Announcer, Garrett Breckenridge. Slogan, "South Dakota University for South Dakotans." Mon, Fri, 6:30-7:30 pm. Sun, 9-10 pm. Central.

KUT
Austin, Tex. 232.4m-1290kc. 500 watts. University of Texas. Announcer, J. G. Adams. Mon, Wed, 8 pm. Fri, 8 pm. Sun, 11 am. 7:30 pm. Eastern 1925. Central.

KVI
Tacoma, Wash. 234.2m-1280kc. 50 watts. Puget Sound Radio Broadcasting Co. Daily ex Sun, 8-10 am, Tues, Wed, Fri, Sat, 6:15-10 pm. Sun, 11-12:30 am, 2-2:30 pm, 2:30-3, 3:30-4:30, 7:30-9. Pacific.

KVOO
Tulsa, Okla. 348.6m-860kc. 1000 watts. Southwestern Sales Corp. Daily ex Sun, 11 am, markets, 12-1 pm, 2:45 pm, 3-4, 6:20-9. Sat, 2:30 pm, 6-8. Sun, 8:15-12 n. 5-6 pm. 6-9:15. Central.

KVOS
Bellingham, Wash. 209.7m-1430kc. 50 watts. Voice of Seattle.

KWBS
Portland, Ore. 199.9m-1500kc. 15 watts. Schaeffer Radio Co.

KWCR
Cedar Rapids, Iowa. 239.9m-1250kc. 250 watts. Announcer, H. F. Fair. Slogan, "The Voice of Cedar Rapids." Daily ex Sun. 6:30 am, 11:30, 4 pm, 5:30 pm. Mon, Wed, 9:15 pm. Fri, 10 pm. Sun, 11 am, 5:45 pm, 9:30. Central.

KWG
Stockton, Calif. 344.6m-870kc. 50 watts. Portable Wireless Telephone Co. Announcer, George J. Turner. Slogan, "Voice of the San Joaquin Valley." Daily ex Sun, 4-5 pm, news, concert, markets, 5-6 pm, 6-7:30, 8-10, concert. Wed, Thurs, Sat, 10-11 am, dance music. Sun, 7:30-9:30 pm. service; 9:30-10:30, organ. Pacific.

KWJJ
Portland, Ore. 228.9m-1310kc. 50 watts. Wilbur Jermain. Daily ex Sun. 3-4:30 pm, 6-8, Mon, 8-10 pm, 10:30-11:30 am, Tues, Wed, Thurs, 8-10 pm, 10-12. Fri, 8-10 pm, 10-11. Sat, 8-12 mid. Sun, 12-1 pm. Pacific.

KWKC
Kansas City, Mo. 222.1m-1350kc. 100 watts. Willson Duncan Studios. Announcer, Elmer C. Hodges. Slogan, "Keep Watching Kansas City." Tues, Wed, Thurs, Fri, 7 pm, 9. Central.

KWKH
Shreveport, La. 394.5m-760kc. 1000 watts. Henderson Iron Works & Supply Co. Daily ex Sun. Mon, 8:30-12 mid. Central. Founded Jan. 8, 1925.

KWLC
Decorah, Iowa. 247.8m-1210kc. 50 watts. Luther College.

KWSC
Pullman, Wash. 394.5m-760kc. 500 watts. State College of Washington. Announcer, Harvey Wixson. Mon, Wed, Fri, 7:30-9 pm. music, lectures. Pacific.

KWTC
Santa Ana, Calif. 352.7m-850kc. 5 watts. Dr. John Wesley Hancock. Mon, 6:30-7:45 pm. Tues, 6:30-10 pm, Wed, 6:30-7:30 pm. Thurs, 6:30-10 pm, Fri, 6:30-8 pm. Sat, 6:30-9:30 pm. Pacific.

KWUC
Le Mars, Iowa. 243.8m-1230kc. 1500 watts. Western Union College. Announcer, Rex Frolkey. Daily ex Sun, 9:30 am, 11:15, markets; 12:30-1:30 pm, 4-5. Daily ex Thurs, Sun, 7-8 pm. Sat, 10-12 mid. Sun, 4-5 pm. Central. Founded 1922.

KWWG
Brownsville, Texas. 277.6m-1080kc. 500 watts. Brownsville Chamber of Commerce. Slogan, "Kum to the World's Winter Garden." Daily ex Sun, 12 n. 6 pm. Mon, Thurs, 8:30-11:59 pm. Central.

KXA
Seattle, Wash. 348.6m-860kc. 500 watts. American Radio Tel. Co.

KXL
Portland, Ore. 220.4m-1360kc. 50 watts. KXL Broadcasters. Announcer, R. Truitt. Slogan, "The Voice of Portland." Daily 9 am-4 pm; 5-11. Sun, 9 am-9 pm.

KXRO
Aberdeen, Wash. 227.1m-1320kc. 50 watts. KXRO, Inc.

KYA
San Francisco, Calif. 309.1m-970kc. 500 watts. Pacific Broadcasting Corp. Announcer, Edward J. Ludes. Daily ex Sun, 10-12 n. 5:30-7:30, 8-11. Tues, Fri, 10:30 am, diet talk. Pacific. Founded Dec. 18, 1924.

KYW
Chicago, Ill. 526m-570kc. 2500 watts. 5000 after 10 pm. Westinghouse Elec. & Mfg. Co. Announcer, John Clark. Daily ex Sun, 10:55, time; 5:30 pm, baseball; 5:45, markets; 6, bedtime story; 6:30, dinner concert; 7-9, WJZ; 9-10:30, program; 10:30, weather; 10:32, orchestra, Congress Carnival; 11:55, time, weather. Sun, 10:25, time, weather; 1 pm, WJZ; 5:30, reading; 7:30, WJZ; 9:30-10:30, program; 10:30, weather; 10:55, weather, time. Central.

KZIB
Manila, P. I. 249.9m-1200kc. 20 watts. I. Beck. Inc. Daily, 8:30-10:30 pm.

KZM
Oakland, Calif. 245.8m-1200kc. 100 watts. Western Radio Institute (Hotel Oakland). Announcer, Elbert Cowan. Daily ex Sun, 6:30-7:30 pm. Sun, 8-10 pm. Pacific. Founded June 29, 1921.

KZRM
Manila, P. I. 413m-726.1kc. 500 watts. Radio Corp. of Philippines.

NAA
Washington, D. C. 434.5m-690kc. 1000 watts. United States Navy Dept. Daily, 10:05 am, 3:45 pm, 10:05 pm. Daily ex Sun, Huddays, 11:55-12 n. weather; 9:55-10 pm, time. Fri, 7:45-8 pm. Eastern.

WAAD
Cincinnati, Ohio. 267.7m-1120kc. 25 watts. Ohio Mechanics' Institute. Sat, 9:45 pm. Eastern.

WAAF
Chicago, Ill. 389.4m-770kc. 500 watts. Chicago Daily Drivers Journal. Announcer, Carl Ulrich. Daily ex Sun, 8:45 am, 10:50, 11, 12:50 pm. Daily ex Sun, Sat, 4:30, live stock and weather reports. Central. Founded May 22, 1922.

WAAM
Newark, N. J. 348.6m-860kc. 500 watts. I. R. Nelson Company. Announcer, Jack Van Riper. Daily ex Sun, 7-8 am, 11-11:30 am, 4-6. Mon, Wed, Fri, 7-12 am, Tues, Thurs, Sat, 6:30-7:30 pm. Eastern. Experimental call 2NBA 65.18m.

WAAT
Jersey City, N. J. 245.8m-1230kc. 300 watts. Bremer Broadcasting Corp. Announcer, Randolph Conroy. Slogan, "The Voice of the Gateway of the Garden State." Daily ex Sun, 10:30 am, housewife's hour; 6 pm, markets; 6:05, dinner music; 6:40, weather; 6:45, sports; 7, time. Mon, 8-11 pm, Tues, 8-9 pm. Sat, 9 pm. Sun, 9:10-10 am; 5:30 pm, 6:7, 7:30, 8. Eastern. Founded Nov. 20, 1926.

WAAW
Omaha, Neb. 440.2m-680kc. 500 watts. Omaha Grain Exchange. Announcer, James Thompson. Slogan, "Pioneer Market Ticker of the West." Daily ex Sun, 8:30 am, 8:45, 9:15, 9:45, 10:15, 10:45, 11:15, 11:45, 12:15, 1:15, 1:35, 1:40, 8, 8:30. Daily ex Sat, Sun, 1:30-3:30 pm. Daily ex Wed, Sun, 7-9 am. Founded 1921. Central.

WAAT
Richmond Hill, N. Y. 325.9m-920kc. 2500 watts. Atlantic Broadcasting Corp. Daily ex Sun, 11:50-12:50 pm, 1-2. Mon, Wed, Thurs, Fri, 7:30-11 pm. Saturdays, 12:45 pm, 8-9. Eastern.

WABC
Kingston, Pa. 205.4m-1460kc. 250 watts. Markle Broadcasting Corp. Announcer, E. L. Jones. Slogan, "The Voice of Wyoming Valley." Daily ex Sun, 11 pm, 6-7. Sun, 10:30-12, 7:30-9, 9:10-10:30. Eastern.

WABF
Bangor, Me. 389.4m-770kc. 100 watts. First Universalist church. Announcer, Prof. W. J. Creamer. Fr, Sun, 10:30 am, 7:30-9 pm. Eastern. Founded 1923.

WABQ
Philadelphia, Pa. 223.7m-1340kc. 500 watts. Keystone Broadcasting Co. Haverford college. Hotel Seltzer. Slogan, "Market Ticker of the West." Daily ex Sun, 8:30 am, 8:45, 9:15, 9:45, 10:15, 10:45, 11:15, 11:45, 12:15, 1:15, 1:35, 1:40, 8, 8:30. Daily ex Sat, Sun, 1:30-3:30 pm. Daily ex Wed, Sun, 7-9 am. Founded 1921. Central.

WABW
Toledo, Ohio. 247.8m-1210kc. 50 watts. The College of Wooster, Dept. of Physics. Announcer, A. W. Coven.

WABY
Philadelphia, Pa. 247.8m-1210kc. 50 watts. John Magaly. Slogan, "The American Broadcasting Club." Club, "The American Broadcasting Club." Sun, 10 pm, music; 10:30, "Sleep Dodgers' Session." Eastern.

WABZ
New Orleans, La. 247.8m-1210kc. 50 watts. The Coliseum Place Baptist church. Announcer, Charles B. Page. Slogan, "The Station with a Message." Sun, 11-12:15 pm, 7:30-9, church service. Central. Founded January, 1924.

WADC
Akron, Ohio. 296.9m-1010kc. 500 watts. Allen Theater Broadcasting Station. Announcer, George F. Hudson. Daily ex Sun, 11-12 noon, 5:30-6 pm, Mon, 8-11 pm, Fri, 8-11 pm. Tues, 8-11 pm, Thurs, 8-11 pm. Sun, 10:30-11:45 am, 12:30-1:30 pm, 3-5, 9-11 pm. Eastern.

WADF
Detroit, Mich. 230.6m-1300kc. 100 watts. Albert B. Page. Slogan, Announcer, Stanley G. Smith. Slogan, "Gateway to the Great Lakes." Mon, 8-12 mid. Wed, Fri, 8-10 pm. Sat, 12 mid. Sun, 10:30 am, 7:30 pm. Eastern.

WAGM
Royal Oak, Mich. 225.4m-1330kc. 50 watts. Robert L. Miller. Announcer, R. L. Miller. Slogan, "The Little Station with the Big Reputation." Mon, 8-11 pm, Wed, Fri, 8-12 mid. Founded Oct. 3, 1925. Central.

WAIT
Taunton, Mass. 214.2m-1400kc. 100 watts. A. H. Waite & Co., Inc. Off the air until October.

WAJU
Columbus, Ohio. 282.8m-1060kc. 5000 watts. American Insurance Union. Announcer, Dan Bernard. Daily ex Sun, 10:30-11 am, services 11:30-12:30 pm. Daily ex Sun, 3-4 pm, 6-7. Mon, Fri, 7-12 mid. Wed, 8-12 mid. Sun, 10:45-11:45 am, 2-5 pm, 7:15, 9-11. Eastern.

WAIZ
Appleton, Wis. 237.1m-1320kc. 100 watts. Irving Zwick. Inc.

WALK
Willow Grove, Pa. 201.2m-1490kc. 50 watts. Albert A. Walker, portable.

WAMD
St. Paul-Minneapolis, Minn. 225.4m-1330kc. 500 watts. Radisson Radio Corporation. Stanley E. Hubbard. Slogan, "The Call of the North." Daily ex Sun, 10:30 am, musicale; 11, shopping news; 12, weather; 1:20 pm, organ; 5, readers club; 5:30, musical moments; 5:45, news; 5:50, baseball; 5:58, time; 6, What's Doing Tonight; 6:03, fishing reports; 6:05, financial news; 6:15, dinner concert; 7, musicale; 10:45, music; Sun, 5:30 pm, baseball; 5:55, 5:55, What's Doing; 6, dinner concert; 9:45, request program. Central.

WAPI
Auburn, Ala. 325.9m-920kc. 1000 watts. Alabama Polytechnic Institute. Announcer, W. A. Young. Daily ex Sun, 12-1. Tues, Thurs, Fri, 9-10 pm. Installed 1922. Central.

WARS
Brooklyn, N. Y. 227.1m-1320kc. 500 watts. Amateur Radio Specialty Co. Daily ex Sun, 4 pm, 12 mid. Sun, 12:30-3 pm. Eastern.

WASH
Grand Rapids, Mich. 256.3m-1170kc. 250 watts. Baxter Laundries, Inc. Daily ex Sat, Sun, 12:30-1:30 pm, 5:30-6. Thurs, 6-6:30 pm. Daily ex Thurs, Sun, 7-8 pm. Sun, 10-11:30 am, 4-5 pm, 7-8:30. Central. Founded March 13, 1925.

WATT
Boston, Mass. 201.2m-1490kc. 100 watts. Edison E. Illuminating Co.

WBAA
W. Lafayette, Ind. 272.6m-1100kc. 500 watts. Purdue University. Announcer, J. W. Stafford. Daily ex Sun, 9:50 am, stocks, markets, weather. Mon, Fri, 10 pm, special program. Central.

WBAC
Harrisburg, Pa. 299.8m-1000kc. 500 watts. Pennsylvania State Police. Announcer, A. E. Poorman. Daily ex Sun, 10:30 am, 1:30 pm, 4, 7, police reports, fire protection, farm news. Eastern. Founded 1919.

WBAL
Baltimore, Md. 285.5m-1050kc. 5000 watts. Consolidated Gas, Elec. Light & Power Co. Announcer, Stanley W. Barnett. Slogan, "The Station of Good Will." Daily ex Sun, Sat, 3:30-5 pm, 6-11 pm, Sat, 6:30-11 pm. Sun, 6:30-8:15 pm. Eastern. Founded Nov. 2, 1925.

WBEO
Decatur, Ill. 267.7m-1120kc. 100 watts. James Millikin University. University activities. Mon, Wed, 7-8 pm. Central. Founded 1922.

WBEP
Fort Worth, Tex. 499.7m-600kc. 1500 watts. Fort Worth Star-Telegram. Announcer, "The Hired Hand." Daily ex Sun, 8, 9, 10, 11, 12 m, 1 pm, 2, 3, "Port of Miss-in-k Moon." Mon, Tues, Thurs, Fri, Sat, 6-7 pm, 8-9. Mon, Thurs, Fri, 10-12 mid. Sun, 11 pm, church; 9:30-11. Central.

WBAR
Sisilt, Wis. 270.1m-1110kc. 500 watts. Kopp Radio Co. Slogan, "The Station of Northern Wisconsin." Daily ex Sun, Sat, 3:30-5 pm, 6-11 pm, Sat, 6:30-11 pm. Sun, 6:30-8:15 pm. Eastern. Founded Nov. 2, 1925.

WBAW
Nashville, Tenn. 247.8m-1210kc. 100 watts. Waldrum Drug Co. Announcer, Harry Stone. Sun, 7-9 pm. Central.

WBAX
Wilkes-Barre, Pa. 249.9m-1200kc. 100 watts. John H. Stenger, Jr. Slogan, "In Wyoming Valley, Home of the Anthracite." Tues, 6:30-11 pm, Thurs, 9-2 am. Sun, 5-5 pm. Eastern. Founded May, 1922.

WBBC
Brooklyn, N. Y. 227.1m-1320kc. 500 watts. Brooklyn Broadcasting Corp. Mon, 10-11, 12, 10-12, Tues

WBRE
Wilkes-Barre, Pa. 249.9m-1200kc. 100 watts. An-
nouncer, Louis G. Baltimore. Mon, Fri, 12:30-1:15
p.m., 6:30-12. Wed, 12:30-1:15 p.m., 6:30-11. Sun,
9-12 mid. Eastern.

WBRL
Tilton, N. H. 232.4m-1290kc. 500 watts. Booth
Radio Laboratories. Tues, Thurs, Sat, 8 pm. Wed,
8:30 pm. Sun, 10:30 am, 7 pm. services. Eastern.

WBRS
Brooklyn, N. Y. 211.1m-1420kc. 100 watts. North
McMahon Broadcasting Corp. Anouncer, Edward
McMahon. Mon, 8:30-12 mid. 12-2:30 am. Thurs,
8:30-10 pm. Fri, 8:30-12 mid. Eastern.

WBRO
Babson Park, Mass. 384.4m-780kc. 100 watts.
Babson's Statistical organization. Anouncer, Mar-
shall McCarrall. Daily ex Sun. 4:5 pm. 12-1 am.
Eastern. Founded Jan. 1927.

WBT
Charlotte, N. C. 258.5m-1160kc. 500 1000 watts.
7 am-7 pm. C. C. Coddington, Inc. Anouncer,
I. W. Burwell. Daily ex Sun, 12:30 pm. Mon, 2:20
pm. 6:30, W.E.A.F.; 8, Tues, 3:50 pm. basebal. Wed,
1:50 pm. basebal. Thurs, 3:50 pm. 8, 8:30. Fri,
3:50 pm. basebal, 9, Sat, 2:20 pm. Sun, 10:55 am.
service; 8 pm. service; 6:20, W.K.C. Eastern.

WBZ
Springfield, Mass. 333.1m-900kc. 15000 watts.
Westinghouse Elec. & Mfg. Co. Anouncer, Aidan
Redmond. Daily ex Sun, 10:30 am. organ. 10:45
household hints; 11:20, weather; 6:27 pm, basebal. 6,
organ; 6:30-10:30, 10:30, basebal. weather. Sun,
2 pm. W.B.Z.; 7:30, basebal. weather; 7:45, music.
10:50, weather. Installed Sept. 19, 1921. Eastern.

WBZA
Boston, Mass. 333.1m-900kc. 500 watts. Westing-
house Elec. & Mfg. Co. Same programs as WBZ.

WCAC
Mansfield, Conn. 535.4m-560kc. 500 watts. Con-
necticut Agricultural College. Anouncer, Daniel E.
Noble. Slogan, "From the Nutmeg State." Mon,
7:15-8 pm. Sat, 7:30-8:30 pm. Eastern. Founded
June, 1923.

WCAD
Canton, N. Y. 243.8m-1230kc. 500-1000 watts. St.
Lawrence University. Anouncer, Ward C. Priest.
Slogan, "The Voice of the North Country." Daily,
12:30 pm. weather, reports, talks, music, time. Wed,
8 pm. Eastern.

WCAE
Pittsburgh, Pa. 516.9m-580kc. 500 watts. Pitts-
burgh Press. Daily ex Sun, 6:45-8 am. exercises;
8:15, 9:15, 10:15, 12:15, 2:15 pm. 5:15, 1:30, 3:40
pm. news; 2:30 pm. organ; 6, dinner music; 7, popu-
lar music; 5:30, 7:30, Uncle Jay Bee; 8:10, Sun,
6 pm. 7:15-10, W.E.A.F. Eastern.

WCAH
Columbus, Ohio. 234.2m-1280kc. 250 watts. Entre-
kin Elec. Co. Daily ex Sun, 12-1 pm; 6-7. Eastern.

WCAJ
University Place, Nebr. 379.5m-790kc. 500 watts.
Nebraska Wesleyan University. Anouncer, J. C.
Jensen. Daily, 10 am. vocation exercises; 4:30
pm. weather, news. Tues, Fri, 12 n. organ. Tues,
7:30 pm. Bible study; Tues, 8 pm. class; 9 pm.
musical. Sun, 11 am. services; 4 pm. vesper.
Founded Oct., 1921. Central.

WCAL
Northfield, Minn. 236.1m-1270kc. 500 watts. Depa-
rta State School of Mines. Anouncer, Hector
Skifter. Slogan, "The College on the Hill." Daily
ex Sun, Thurs, 9:45 am. Mon, 7 pm; 8:15, Sun,
8:30-9:30 am; 3-4 pm. Central. Founded, 1922.

WCAM
Camden, N. J. 223.7m-1340kc. 500 watts. City of
Camden. Anouncer, Harry E. Ehrhart. Mon,
Wed, Fri, 7:30-10:30 pm. Eastern. Founded Oct.
26, 1926.

WCAO
Baltimore, Md. 384.4m-780kc. 250 watts. Monu-
mental Radio, Inc. Anouncer, Wm. L. Atkinson.
Mon, Wed, Fri, 6-11 pm. Sun, 11 am. service; 3-5.
Columbia; 8, service; 9-11, Columbia chain. Eastern.

WCAT
Rapid City, S. D. 247.8m-1210kc. 100 watts. South
Dakota State School of Mines. Anouncer, J. O.
Kammerman. Daily ex Sun, 9:30 am, 12:30 pm.
weather, reports, Thurs, 7:30 pm. concert. Moun-
tain.

WCAU
Philadelphia, Pa. 260.7m-1150kc. 500 watts. Uni-
versal Broadcasting Co. Anouncer, Stan Lee Broza.
Slogan, "Where Cheer Awaits U." Mon, 5:30-11:30
pm. Tues, 5:11-1:30 pm. Wed, 5:30-12 mid. Thurs,
5:30-12 mid. Fri, 5:30-11 pm. Sat, 6:30-11. Sun,
2-11 pm. Eastern.

WCAX
Burlington, Vt. 254.1m-1180kc. 100 watts. Uni-
versity of Vermont. Slogan, "The Voice of the Green
Mountains." Fri, 7-8 pm. Eastern.

WCAZ
Carthage, Ill. 340.7m-880kc. 500 watts. Carthage
College. Anouncer, Raymond Derks. Daily ex
Sat, Sun, 11:40-12:15 pm. Mon, 7-8 pm. Central.

WCBA
Allentown, Pa. 222.1m-1350kc. 100 watts. Queen
City Radio station. Wed, 8:15-11 pm. Fri, 7:30-
10:30 pm. Sat, 10-11 pm. dance music. Sun, 10 am,
5:30 pm; 7, church service. Eastern.

WCBD
Zion, Ill. 344.6m-870kc. 5000 watts. Wilbur Glenn
Vielva. Anouncer, J. H. DePew. Slogan, "Where
Fathers and Sons Prosper." Tues, Thurs, 8:10-30
pm. concert. Wed, 12:30-1 pm. organ. Thurs, 2:30-
3:45 pm. service. Sun, 9:10-45 am. Bible school;
2:30-6 pm. church services; 8:10-30 pm. Founded
May, 1923. Central.

WCBE
New Orleans, La. 227.1m-1320kc. 5 watts. Uhalt
Brothers Radio Co. Anouncer, Joe Uhalt. Slogan,
"Second Port U. S. A." Daily ex Sun, 11:30-
12:30 pm. Daily, 7:30-8:30 pm. dance, Sun, 12:30-
3 pm. dinner concert; 9, dance music. Central.

WCBM
Baltimore, Md. 384.4m-780kc. 100 watts. Hotel
Chateau. Anouncer, Harry J. Dobe. Mon, Wed,
Fri, 10-12 mid. Sun, 6 pm. Eastern. Founded
March 25, 1923.

WCBR
Providence, R. I. 201.2m-1490kc. 100 watts. Charles
H. Messer. (Portable).

WCBS
Springfield, Ill. 209.7m-1430kc. 250 watts. Harold
L. Dewing. Charles H. Messer. Slogan, "Home
of the Harsham Lighthouse." Mon, 9-11 pm. Tues,
Thurs, Fri, 8:30-10:30 pm. Sun, 10:45-12 n. 12:30-2
pm, 6-7, 7:30-8. Central.

WCBO
Minneapolis-St. Paul, Minn. 405.2m-740kc, 7500,
6 am-6 pm. 5000 watts. Washburn-Crosby Co.
Anouncer, Paul Johnson. Slogan, "Service to the
Northwest." Daily ex Sun, 9:30 am. program for
day; 9:35, news; 9:45, weather; markets; 10:30-
markets; 11:30, markets; 1:30, weather, markets;
3, markets; 4:45, readers' club; 5:15, children's hour;
5:45, livestock. Mon, 7:30, orchestra; 8:30, W.E.A.F.;
9:30, musical; 10, weather. Wed, 6, dinner mu-
sic; 7:30, W.E.A.F.; 10, weather, grain; 11:30, organ.
Thurs, 7:30 pm. W.E.A.F.; 10, weather, markets, Fri,
7, W.E.A.F.; 8, W.E.A.F.; 9:30, music; 10, weather.
10:05, music. Sat, 6:15 pm. music; 7, W.E.A.F.; 10,
weather, dance program. Founded Oct. 1, 1924.
Central.

WCDA
Brooklyn, N. Y. 211.1m-1420kc. 250 watts. Italian
Educational Broadcasting Co.

WCFL
Chicago, Ill. 483.6m-620kc. 15000 watts. Chicago
Labor. Anouncer, Maurice Weiral. Slogan,
"The Voice of Labor." Daily ex Sun, 10-2
p.m., 4-12 mid. Sun, 11-1 pm, 2:30-6:30, 7:30-9:30
pm. Central.

WCGR
Coney Island, N. Y. 218.8m-1370kc. 500 watts.
Charles G. Unger. Daily ex Sun, 8 pm. Wed, Fri,
8 pm. Sun, 11 am. Eastern.

WCLO
Camp Lake, Wis. 227.1m-1320kc. 100 watts. C. E.
W. Moore. Anouncer, Glenn G. Dalton. Slogan,
"The Playground of the Lake Region." Daily ex
Tues, Thurs, 11:30 am, 2:30-5:30, 7-12 mid. Founded
Aug. 4, 1925. Central.

WCLS
Joliet, Ill. 215.7m-1390kc. 150 watts. M. A. Fel-
man. Slogan, "Will County's Largest Store." Tues,
Wed, Thurs, Fri, Sat, 8-11 pm. Sun, 9:30-
12 n. 10-11. Central.

WCMA
Culver, Ind. 258.5m-1160kc. 250 watts. Culver
Military Academy. Anouncer, C. McKinney. Daily
ex Sun, 12 n. public service hour. Mon, 8-
10:30 pm. Wed, 8:10-30 pm. Fri, 8:10-30 pm. Sun,
11-12:30 pm. chapel service. Founded 1925. Central.

WCOA
Pensacola, Fla. 249.9m-1200kc. 500 watts. Muni-
cipal Broadcasting Station. Anouncer, John E. Fre-
del. Slogan, "Wonderful City Advantages." Daily
ex Sun, 10:30 am, 12:30 pm. Mon, Wed, Fri, 8
pm. Mon, Wed, Fri, 10:30-12:30 pm. 8-11. Sun,
12:30 pm. 7-25. Central.

WCOC
Columbus, Miss. 230.6m-1300kc. 250 watts. Crys-
tal Oil Co. Anouncer, Park Balch. Daily 5-6 pm.
Tues, Fri, 8-10 pm. Central. Founded Feb. 26, 1927.

WCOT
Olneyville, R. I. 225.4m-1330kc. 100 watts. Jacob
Conn. Anouncer, Lewis S. Bellem. Fri, Daily and
Sun, 2:30-4 pm. Daily ex Sun, 8-10 pm. Eastern.

WCRW
Chicago, Ill. 223.7m-1340kc. 500 watts. Clinton
R. White. Anouncers, C. R. White, Charles P.
Hutches. Miss Josephine. Slogan, "For Your Ent-
ertainment." Daily ex Sun, 11:30-1 pm. Daily ex
Sun, 7:30 pm, 9:30-10:30. Central.

WCSE
Portland, Me. 483.6m-620kc. 500 watts. Congress
Square hotel. Anouncer, L. J. Hiram. H. C.
Daily ex Sun, 12:30 pm. Mon, 10:30-12:30 pm.
12-12:30 pm. stocks, weather; 2-3, musicale;
7-8, stocks, sports. Mon, 11:45 am. Civilians' club;
9, W.E.A.F. Tues, 8 pm. Grand theater; 9, W.E.A.F.
Wed, 8:30, W.E.A.F. Thurs, 6:30 pm. W.E.A.F. Fri,
7:30 pm. concert; 8, Treasure Hunters. Founded
June, 1925. Eastern.

WCSS
Springfield, Ohio. 256.3m-1170kc. 500 watts. Witen-
berger College. Anouncers, John D. Kuhns. Lester
Crowl. Mon, Wed, Fri, 7-9 pm. Tues, 6:30-
8:30 pm. Sat, 2-4:30 pm. Eastern.

WCWK
Fort Wayne, Ind. 214.2m-1400kc. 250 watts. Ches-
ter W. Keen. Slogan, "The Home Sweet Home
Station." Fri, 7-8 pm. Sat, 8-10 pm. Sun, 11-12
n. 5-5:30 pm, 5:30-6:30, 6:30-7:30 pm. Founded,
1924. Central.

WCWS
Danbury, Conn. 265.3m-1130kc. 100 watts. Dan-
bury Broadcasting Station. Founded Aug. 2, 1926.

WCX
Pontiac, Mich. 440.9m-680kc. 5000 watts. The De-
troit Free Press. Anouncer, C. D. Tomp. Club.
"Red Apple Club." Daily ex Sun, 4 pm. music.
4-15, news, markets, weather; 5:45, Skeezix time.
Eves' big chain. Tues, 10-2 am. club. Eastern.

WCYD
Nashville, Tenn. 225.4m-1330kc. 1000 watts. Dad's
Auto Accessories, Inc. Anouncer, F. E. Exam.
Slogan, "The Athens of the South." Mon, Wed, Fri,
11:45 am. 12:45, 3-4 pm. 9-10, Tues, Fri, 11:45
am. 12:45, 3-4 pm, 7-9 pm, Sun, 3-4:30 pm, 6:30,
Central.

WCDAE
Tampa, Fla. 267.7m-1120kc. 500 watts. Tampa
Daily Times. Anouncer, Bruce Lun. Daily ex
Sun, 11:30-1 pm. 4-10. Sun, 11 am. 12-30 pm, 7:30-
8:30 pm. Eastern. Founded 1921.

WCDF
Kansas City, Mo. 370.2m-810kc, 1000 watts. Kan-
sas City Star. Anouncer, H. Dean Fitzler. Club.
"Night Hawks." 1:15 pm. grain quotations. Daily ex
Sun, 8 am. Bible lesson; 12-1 pm. talks; 3-4, mat-
inee; 6-7, school of the air; 7-10, musicale; 11:45-1,
Nighthawk frolic. Sun, 7:15-9:15 pm. Founded
June 5, 1922. Central.

WDAG
Amarillo, Tex. 263m-1140kc. 250 watts. J. Lau-
rence Martin. Daily ex Sun, Fri, 12:45-1:45 pm.
Weather markets, 1:30-4, 5-5:30, news, 9:30-10:30,
8-9 pm. Sun, 9:45-10:45 am; 7:30-9:30 pm. Central.

WDAH
El Paso, Tex. 234.2m-1280kc. 100 watts. Trinity
Methodist church. Anouncer, Louis Gemoets.
Wed, 7:30-10 pm. Sun, 9:30-12 n. 7:30-9 p.
Founded Spring 1924. Mountain.

WDAY
Fargo, N. D. 361.2m-830kc. 250 watts. 500 watts
6 am-6 pm. Radio Equipment Corporation. An-
nouncer, Kenneth H. Hance. Daily ex Sun, 7-9 am,
news; 10, weather, news; 10:15, chapel service; 11,
markets; 12, music; 1-3, 4, 5-5:30, news, 6, enter-
tainment. Mon, Thurs, 7:30-8:15 pm. Sun, 10:30
am. service; 2, 4-6. Central. Founded May, 1922.

WDBJ
Roanoke, Va. 260.6m-1300kc. 250 watts. Richard-
son-Walsh Elec. Corp. Anouncer, J. W. John-
son. Slogan, "Roanoke Down in Old Virginia."
Daily ex Sun, 12-1 pm. music; 5:30-6:45 pm. mu-
sic, weather, Mon, 8-9 pm. Wed, Sat, 9 pm.
Sun, 7:45 pm. church. Eastern.

WDBO
Orlando, Fla. 288.3m-1040kc. 500-1000 watts 6 am-
6 pm. 500 watts. Orlando Broadcasting Co. An-
nouncer, Harold Daily. Slogan, "The Voice of
Central Florida." Daily ex Sun, 8:10-30 pm. Sun,
10:45 am. 4 pm, 7:30-9. Eastern.

WDEL
Wilmington, Del. 296.9m-1010kc. 100 watts. Wil-
mington Elec. Spec. Co. Anouncer, Harvey Smith.
Slogan. The First Broadcasting Station of the
first city of the First State. Tues, Thurs, Sat,
8-11 pm. Sun, 10-12 mid. Eastern.

WDGY
Minneapolis, Minn. 260.7m-1150kc. 500 watts. Dr.
George Young. Daily 2-5 pm. Mon, Wed, 7-8 pm.
12, Tues, 7-12 mid. Thurs, 7-10 pm, Fri, 7-8
pm, 10-12. Sat, 7-8 pm. Sun, 2-6 pm. Central.
Founded 1923.

WDDO
Chattanooga, Tenn. 245.8m-1220kc. 500 watts.
Chattanooga Radio Co., Inc. Anouncer, Frank
S. Lane. Daily ex Sun, 12-1:15 pm. Tues, Wed, Fri,
6:45-10 pm. Mon, 6-10 pm. Sat, 6:45-
8:30 pm. Sun, 11 am. 6:30 pm. 7:30-9. Sat, 9-10 pm.
Founded 1925. Central.

WDRC
New Haven, Conn. 282.8m-1060kc. 500 watts. Doo-
little Radio Corp. Anouncer, F. M. Doolittle. Daily
ex Sat, Sun, 9:30 am, 5-10 pm. Sun, 11 am. 3:30-5
pm. Eastern.

WDWF
Cranton, R. I. 275.1m-1090kc. 500 watts. Dutee
Radio, Inc. Slogan, "Quality First." Eastern.

WDWM
Asbury Park, N. J. 239.9m-1250kc. 500 watts. Radio
Industries Broadcast Co. Anouncer, Franklin D.
Scott. Daily, 10-12 mid. Eastern. Founded July 1,
1927.

WDZ
Tuscola, Ill. 277.6m-1080kc. 100 watts. James L.
Bush. Anouncer, J. W. Daily ex Sun, 11-1:15,
1:30, 2:45, grain, markets, livestock, markets. Cen-
tral. Founded Mar, 1921.

WEAF
New York, N. Y. 491.5m-610kc. 50,000 watts. Na-
tional Broadcasting Co., Inc. Slogan, "The Voice
to the Millions." Daily ex Sun, 6:45-8 am. 8-8:45,
11-1:15 pm, 4-12 midnight. Sun, 2-10:30 pm. East-
ern.

WEAM
North Plainfield, N. J. 263m-1140kc. 250 watts
Board of North Plainfield, Anouncer, H. W.
Blackford. Slogan, "America's Pioneer Municipal
Broadcasting Station." Fri, 8-12 pm. concert, talks.
Sun, 11-12 noon. Eastern.

WEAN
Providence, R. I. 310m-940kc. 500 watts. The
Shepard Stores. Anouncer, Chester H. Miller.
Slogan, "We Entertain a Nation." Daily ex Sun,
12-1 pm. 4-5, music, reports, weather, concert;
6:30-10:30. Sun, 10:45-11:30 am, 7:30-8:45 pm.
9-11, church service. Eastern.

WEAR
Cleveland, Ohio. 399.8m-750kc. 1000 watts. Wil-
lard Storage Battery Co. Daily ex Sun, 12:30-1:30
pm. Sun, 11-12:30 pm. Eastern.

WEBC
Superior, Wis. Duluth, Minn. 241.8m-1240kc. 250
watts. Head-of-the-Lakes Radio Station. Daily ex
Sun, Mon, 7-8 pm. dinner concert. Tues, 9-11
pm. Uptown theater. Wed, 9-11 pm. musicale;
12-1 am. revue. Thurs, 9-11 pm. musicale, Fri,
9-11 pm. Sat, 10-12 mid. 6 pm. organ; 7-9, or-
chestra. Central.

WEBB
Chicago, Ill. 365.6m-820 kc. 500 watts. Edgewater
Beach Hotel-Herald-Examiner. Anouncer, Robert
Boniel. Slogan, "The Voice of the Great Lakes."
Daily ex Sun, 3-4 pm. music; 5-5:45, children's club.
12-1 am. music. Mon, 7-8 pm. dinner concert. Tues,
9-11 pm. Uptown theater. Wed, 9-11 pm. musicale;
12-1 am. revue. Thurs, 9-11 pm. musicale, Fri,
9-11 pm. Sat, 10-12 mid. 6 pm. organ; 7-9, or-
chestra. Central.

WEBJ
New York, N. Y. 256.3m-1170kc. 500 watts. Third
Avenue Railway Co. Anouncer, H. A. Bruno. Slogan,
"The Red Trolley Station." Wed, 7-11 pm. Fri,
9-11 pm. Eastern.

WEBQ
Harrisburg, Ill. 223.7m-1340kc. 15 watts. Tate
Radio Co. Anouncer, Dr. H. J. Raley. Slogan,
"The Voice from Egypt." Daily ex Sun, 7:15-7:45
pm. Mon, Thurs, 7:30-9:30 pm. Sun, 11-12 n. 2-4
pm. Central. Founded Sept. 1, 1923.

WEBR
Buffalo, N. Y. 241.8m-1240kc. 200 watts. H. H.
Howell. Anouncer, Glenn Pickett. Slogan, "We
Buffalo's Regards." Daily ex Sun, 7:45-
8:30 pm. Mon, Wed, Fri, 8:30-11:30 pm. Sat, 9-11
pm. Sun, 12 n. concert; 8:30 pm. church; 10:15-12
mid. organ. Eastern.

WEBW
Beloit, Wis. 258.5m-1160kc. 500 watts. Beloit
College. Anouncer, Arthur Weimer. Sun, 4:30 pm.
Central.

WEDC
Chicago, Ill. 241.8m-1240kc. 500 watts. Emil Dene-
mark. Broag Station. Daily, 6:27-7:30, 9:30-11:30.
Daily ex Sun, 7:30-9:30 pm. Lewish hour, Fri,
6:30-7:30 pm. Bohemian hour. Central.

WEEL
Boston, Mass. 365.5m-820kc. 500 watts. Edison
Elec. Illuminating Co. Anouncer, Arthur F. Edge.
Slogan, "The Friendly Voice." Daily ex Sun, 6:45
am. exercises; 7:45, Roaring Lyons. Mon, 4 pm,
5:30, 6:30, 10:30, 10:30, Tues, 3 pm, 4, 6:30-10, 10,
9:45, 4 pm, 6:30-10. Thurs, 4 pm, 6:30-10:10,
10. Fri, 4 pm, 6:30-10. Sun, 10-05 am, 7,
news; 7:30, 9:20. Eastern. Founded Sept. 29, 1924.

WEHS
Evanston, Ill. 215.7m-1390kc. 100 watts. Victor
C. Carlson. Daily ex Sun, Mon, 5:45-9 pm. Wed,
Fri, Sat, 10-12 mid. Thurs, 11-12 mid. Sun, 6:30-9
pm. Central.

WEMC
Berrien Springs, Mich. 483.6m-620kc. 1000 watts.
Emanuel Missionary College. Anouncer, Paul N.
Pearce. Slogan, "The Radio Lighthouse." Daily
ex Sat, Sun, 7:30-9 am. Mon, 7-12 mid. Tues,
Thurs, 3-4 pm. Sun, 9-10 am. Central. Founded
April 1, 1923.

WENR
Chicago, Ill. 288.3m-1040kc. 500 watts. Great
Lakes Radio Broadcasting Co. Daily ex Sun, Mon,
11:30 am. Mrs. Peterson, 12-1 pm. concert; 2-5,
popular music; 5-8, dinner concert; 8-9:30, class-
ical; 9:30-12 mid. Mon-12-1 pm. 2-5, 6-7, Sun, 2-4
pm. 6-7, 9:30-11. Central.

WEPS
Gloucester, Mass. 296.9m-1010kc. 100 watts. Mathe-
son Radio Co., Inc.

WEVD
Wnothaven, N. Y. 245.8m-1220kc. 500 watts.
Dew Memorial Radio Fund. Daily ex Sun, Sat,
1-6 pm. Tues, Thurs, Sat, 9-12 mid. Sun, 12:30-4
pm. Eastern.

WEW
St. Louis, Mo. 352.7m-850kc. 1000 watts. St.
Louis University. Anouncer, C. G. Dahm. Daily
ex Sun, 9 am. 10, 2 reports. Tues, Thurs, 6:30
pm. lectures; music. Mon, Wed, Fri, 6:30 pm. U. S.
Army school. Sun, 9:35 am. 11, 2 pm, 5. Founded
April 26, 1921. Central.

WFAA
Dallas, Tex. 499.7m-600kc. 500 watts. Dallas News
and Dallas Journal. Slogan, "Working for All
Allies." Daily, 6:30-7:30 am. exercises; 7:30, 8:30,
9:30, 10:30, 11:30, reports; music; 12:30, 1:30, 2:30,
3:30, 4:30, 5:30, reports, news; 7:8, music, silent
Wed, Mon, Tues, Thurs, Fri, Sat, 9-10 pm. Tues,
Sat, 10-12 mid. Sun, 1:45 pm. 6-7, 8-9, 11-12.
Founded June 26, 1922. Central.

WFAM
St. Cloud, Minn. 252m-1190kc. 10 watts. St. Cloud
Daily Times. Off the air temporarily.

WFBC
Knoxville, Tenn. 234.2m-1280kc. 50 watts. First
Baptist church. Anouncer, St. John Reynolds. Sun,
10:45 am; 7:30 pm, services; 4 pm. sacred music.
Central.

WFBE
Cincinnati, O. 245.8m-1220kc. 250 watts. Hotel
Garfield. Daily ex Sun, 12-1 pm. Mon, 5:30 pm, 9,
11, 12:30. Tues, 5:30 pm, 8:30, 9, 12:30. Wed,
6:30 pm, 9, 10, 11, 12:30. Thurs, 6 pm, 8, 10,
10:30, 11, 12:30. Fri, 5:30 pm, 6:30, Sat, 3-4 pm,
6-8, 9-10, 11, 2:30. Sun, 1-2 pm, 6:30-7:30 pm, 11,
12:30. Central.

WFBG
Altoona, Pa. 280.2m-1070kc. 100 watts. The Win.
F. Gable Co. Anouncer, Roy F. Thompson. Slogan,
"The Original Gateway to the West." Daily ex
Sun, Mon, 11:45 am; 12 n. 3 pm, 6:30, 7:30, 8,
8:30, 10. Sun, 10:45 am. 3:30 pm. 7:30. Eastern.
Founded Aug. 28, 1924.

WFBJ<

WGHP

Mt. Clemens, Mich. 319m-940kc. 750 watts. George Harrison Phisio, Inc. Announcer, Corley W. Kirby. Daily ex Sat. Sun. 11:15 pm. 6:31-11. Sun, 10:30 am. 3-5 pm. 9-11. Eastern.

WGL

New York, N. Y. 293.9m-1020kc. 500 watts. 1000 watts. 7 am-1 pm. Broadcasting Corp. Daily ex Sun, 10-12 n. 2-4 pm. 6 Mon, Wed, Fri, 9-12 mid. Tues, Thurs, Sat, 6-9 pm. Sun, 7-12 mid. Eastern.

WGM

Jeanette, Pa. 208.2m-1440kc. 50 watts. Verne & Elton Spencer. Announcer, Verne Spencer. Slogan, "Voice from Glass City." Mon, Tues, Thurs, Fri, 7:30 pm. Sun, 1:30-4 pm. Eastern.

WGMO

New York, N. Y. 201.2m-1490kc. 100 watts. Atlantic Broadcasting Co. Announcer, Kenneth Fickett. Daily ex Sun, 6:45-8 am. Daily ex Sun, Sat, 12 n. 12:30-1:30. 1 pm. 2:30-4:30. Tues, Thurs, 8-11 pm. Mon, Wed, Fri, 8-12 mid. Sun, 10:45-12 n. 7:45-9 pm. 9:15-10. Eastern. Founded May 21, 1922.

WGN

Elgin, Ill. 305.9m-980kc. 500 watts. Chicago Tribune. Announcers, Bill Hay, Quin Ryan, Frank Dahm, J. R. Tyson, Tommy Coates. Daily ex Sun, 9-10 am. news; 11-11:30. music; 11:30-11:57. house- hold hints; 11:57-12:01. time; 12:30-2:35 pm. music; 2:55. baseball; 5:57-6:01. time; 6:01-6:10. stocks and bonds; 6:10-6:35. Punch and Judy; 6:35-6:50. music; 6:50-7. Almanack. Daily ex Sun, Mon, 8-11 pm. Sun, 12-1 pm. Uncle Wally. 1-2. organ; 2-3. music; 3. baseball; 6:10-6:45. Punch and Judy; 6:45-11:25. music. Central.

WGR

Buffalo, N. Y. 302.8m-990kc. 750 watts. Federal Radio Corp. Announcer, Kenneth Fickett. Daily ex Sun, 6:45-8 am. Daily ex Sun, Sat, 12 n. 12:30-1:30. 1 pm. 2:30-4:30. Tues, Thurs, 8-11 pm. Mon, Wed, Fri, 8-12 mid. Sun, 10:45-12 n. 7:45-9 pm. 9:15-10. Eastern. Founded May 21, 1922.

WGST

Atlanta, Ga. 270.1m-1110kc. 500 watts. Georgia School of Technology. Announcer, Walter W. Merkle. Slogan, "The Southern Technical School with a National Reputation." Mon, 9:30-10:30 pm. Thurs, 7-8 pm. Central. Founded Jan, 1924.

WGWB

Milwaukee, Wis. 218.8m-1370kc. 500 watts. Radiocast Corp. of Wisconsin. Announcer, John Sullivan. Slogan, "Makes Milwaukee Brighter." Daily ex Sun, Sat, 10:30-12:30 pm. Mon, 8:10-30 am. Wed, 8-9 pm. Fri, 9:10-30 pm. Sun, 10-11 am. 6-7 pm. Central.

WGY

Schenectady, N. Y. 379.5m-790kc. 50,000 watts. General Electric Company. Announcer, Kolin Hager. Slogan, "Good Evening to You All." Daily ex Sun, 6:45-8 am. exercises; 8:30. talk; 11:55. time; 12:01. pm. weather; 12:02. produce; 12:06. weather; 2 pm. music; 2:30. orchestra; 5. stocks; 6:30. orchestra. Tues, 6:30-10:30 pm. Wed, 6:30-11 pm. Thurs, 6:30-12:30 pm. Fri, 6:30-11:30 pm. Sat, 6:30-12 mid. Sun, 10 am. 4-6:30 pm. 7:30. WEAF; 8:15. time; 8:15. WEAF; 8:45. WEAF. Sun, 8:15-10. Eastern. Founded, 1922.

WHA

Madison, Wis. 333.1m-900kc. 750 watts. Univ. of Wis. Mon, Wed, Fri, 7:30-9:30 pm. Central. Founded 1919.

WHAD

Milwaukee, Wis. 270.1m-1110kc. 500 watts. Marquette University.

WHAM

Rochester, N. Y. 277.6m-1080kc. 5000 watts. Stromberg-Carlson Tel. Mfg. Co. Announcer, E. E. Chappell. F. W. Reynolds, Donald Clark. Daily ex Sun, 6:30-11 pm. Tues, 2:30-4 pm. Mon, 10:30-12 n. 3:30-5. 6:30-11. Eastern.

WHAP

Carlstadt, N. Y. 236.1m-1270kc. 100 watts. Defenders of Truth Society, Inc. Mon, Thurs, 6-9 pm. 11:30-12:30 pm. Sat, 7-11 pm. Sun, 7:30-9:30 pm. Eastern. Founded May, 1925.

WHAR

Atlantic City, N. J. 272.6m-1100kc. 1000 watts. Seaside Hotel. Announcer, E. Dennison. Pioneer Broadcasting Station of Atlantic City. Daily ex Sun, Wed, 2:15-3:15 pm. 7:45-9. Sun, 10:45 am. 2:15-3:10 pm. 7:30-9. Eastern. Founded, 1922.

WHAS

Louisville, Ky. 461.3m-650kc. 500 watts. Courier-Journal and Louisville Times Co. Daily ex Sun, 3-5 pm. 7-9. Sun, 10 am. service; 2-3. 4:30-5:30. 6:20-8:15. 8:15-9:15. Eastern. Founded July, 1922.

WHAZ

Troy, N. Y. 416.4m-720kc. 500 watts. Rensselaer Polytechnic Inst. Announcer, Rutherford Hayner. Slogan, "Transcontinental and International Broadcasting Station Located at the Oldest College of Science and Engineering in America." Club, R. P. I. students. Mon, 8-12 midnight. concert, educational talks, orchestra. features. Founded June 22. Eastern.

WHB

Kansas City, Mo. 336.9m-890kc. 500 watts. Sweeney Auto & Electrical School. Announcer, John T. Schilling. Slogan, "Heart of America." Daily ex Sun, 8:25 am. 9:25. 10:25. 10:30. 11:20. 11:30. 11:55. market reports; 2-3. ladies' hour. Daily ex Sun, Sat, 12-1:15 pm. 12:30. 1:25. 1:40. stocks. Daily, 7-8 pm. Mon, 8-9 pm. Tues, Thurs, 8-10 pm. Sat, 12:45 pm. 12:30. 1:25. markets, 8-10 pm. Sun, 9:45-10:45 am. service 6:30. 7:15. 7:45. 11:15-11 am. organ. Central. Founded April, 1922.

WHBA

Oil City, Pa. 260.7m-1150kc. 100 watts. Shaffer Music House. Tues, 9-10 pm. Eastern. Founded Nov, 1924.

WHBC

Canton, Ohio. 236.1m-1270kc. 10 watts. Rev. E. P. Graham. Slogan, "Ignorance Is Our Greatest Foe." Mon, 8-8:30 pm. Central.

WHBD

Bellefontaine, Ohio. 222.1m-1350kc. 100 watts. Chamber of Commerce.

WHBF

Rock Island, Ill. 222.1m-1350kc. 100 watts. Bearley Specialty Company. Announcer, C. L. Bearley. Slogan, "Where Historic Blackhawk Fought." Daily ex Sun, 12-2 pm. Mon, Wed, 9-11 pm. Sat, 2-4 pm. 7-9. Central. Founded Feb, 1925.

WHBL

Chicago, Ill. 304m-1470kc. 100 watts. C. L. Carroll. (Portable.) Founded, 1925.

WHBM

Chicago, Ill. 201.2m-1490kc. 100 watts. C. L. Carroll. (Portable.)

WHBN

Gainesville, Fla. 296.9m-1010kc. 10 watts. U. of Florida. Not on air.

WHBP

Johnstown, Pa. 228.9m-1310kc. 250-500 watts. Johnstown Automobile Co. Announcer, J. C. Tully. Slogan, "The Voice of the Friendly City." Daily ex Sun, 1:15 pm. Mon, 11 pm. Thurs, 10 pm. Sat, 10 pm. Eastern.

WHBQ

Memphis, Tenn. 232.4m-1290kc. 100 watts. Broadcasting Station WHBQ, Inc. Announcer, Thomas Thompson. Daily ex Sun, 7-8 pm. Sun, 10:45 am. Central. Founded March, 1925.

WHBU

Anderson, Ind. 220.4m-1360kc. 15 watts. Citizen's Bank.

WHBW

Philadelphia, Pa. 230.4m-1360kc. 100 watts. D. R. Kienzle. Mon, Wed, Sat, Sun, evenings.

WHBY

West De Pere, Wis. 249.9m-1200kc. 50 watts. St. Norbert's College. Green Day-De Pere Broadcasting Station. Daily, 6:30 pm. weather, markets, Wed, 8-9 pm. Sat, 5-6 pm. Fri, 7-8 pm. Sun, 10-11 am. service. Central. Founded Jan, 1925.

WHDI

Minneapolis, Minn. 245.8m-1220kc. 500 watts. Wm. Hood Dunwoody Industrial Institute. Announcer, M. R. Haas. Slogan, "Northwest Leading Trade School." Mon, 8-9 pm. Wed, 8:30 pm. Fri, 9-10 pm. Daily ex Sun, 6:57-9:30 am. time. Central. Founded May 22, 1922.

WHEC

Rochester, N. Y. 254.1m-1180kc. 500 watts. Hickson Electric Company, Inc. Slogan, "The Magazine of the Air." Announcer, Elmer L. Wheeler. Daily ex Sun, 12-3 pm. 6:30-10. Sun, 10:30-12 n. 7:30-10 pm. Eastern.

WHFC

Chicago, Ill. 215.7m-1390kc. 200 watts. Triangle Broadcasters. Daily ex Mon, 8-12 mid. Central. Eastern.

WHK

Cleveland, Ohio. 265.3m-1130kc. 500 watts. 1,000 watts. 6 am-6 pm. Radio Air Service Corp. Slogan, "Cleveland's Pioneer Broadcasting Station." Daily, 12 n-1 pm. music; 3:30. housekeepers' chat; 5:30. 9-10. 11-12. Sat, 12 n. 6. 8-9. 9-12 mid. Sun, 10 am. 5 pm. 5:15. 6. 7:30. 8:15-9:30. Eastern.

WHN

New York, N. Y. 394.5m-760kc. 500 watts. Loew's State Broadcasting Station. Announcers, N. T. G. Edward B. Husling, J. Lewis Reid. Slogan, "The Voice of the Great White Way." Daily ex Sun, 1:10-6 pm. 6:12-9:10. Sun, 9-11 am. 12:30-3 pm. 5-7:30. 5:45-12. Eastern. Founded March, 1922.

WHO

Des Moines, Ia. 535.4m-560kc. 5000 watts. Bankers Life Co. Announcer, N. Dean Cole. Daily ex Sun, 8-9 am. 10, 10:30-12 n. 12:15-1:15. 2:15-4:30. 6:30-12. Sun, 11 am. 2:5 pm. 6:30-9:30. Central. Eastern.

WHPP

New York, N. Y. 206.8m-1450kc. 10 watts. Bronx Broadcasting Co.

WHT

Deerfield, Ill. 416.4m-720kc. 5000 watts. Radiophone Broadcasting Corp. Announcer, Pat Barnes. Slogan, "Write Home Tonight." Daily and Sun, 10 am-2:30 pm. Daily and Sun ex Mon, 8:30-10 pm. Central. Founded April 25, 1925.

WIAD

Philadelphia, Pa. 288.3m-1040kc. 100 watts. Howard R. Miller. Slogan, "The Voice from the Birthplace of Liberty." Tues, Thurs, Fri, 6-12 mid. Eastern. Founded June, 1922.

WIAS

Ottumwa, Ia. 322.4m-930kc. 100 watts. Poling Electric Co. Announcer, Frank R. Ori. Daily ex Sun, Tues, 12-1 pm. 8-9. Central.

WIBA

Madison, Wis. 239.9m-1250kc. 100 watts. The Capital Times Strand theater. Announcer, Kenneth F. Schmitt. Slogan, "Four Lakes City." Mon, 7-11 pm. Wed, 8-10 pm. Fri, 6:15-7 pm. Sat, 7-8 pm. Sun, 12-1 pm. Central. Founded June, 1924.

WIBG

Elkins Park, Pa. 440.9m-680kc. 50 watts. St. Paul's Protestant Episcopal church. Announcer, W. L. Roy. Announcer, LeRoy Stremela. Slogan, "Better Home Station." Daily ex Sun, 12:30-1:30 pm. Mon, 8-10 pm. Sat, 4-5 pm. Sun, 10-11:30 am. 3:30-4:45 pm. 7:30-9:30 pm. Founded May, 1925. Central.

WJBI

Red Bank, N. J. 263m-1140kc. 250 watts. Robert S. Johnson.

WJBK

Ypsilanti, Mich. 220.4m-1360kc. 15 watts. Ernest Goodwin. Announcer, H. T. Augustus. Mon, 9-11 pm. Thurs, 10-12 mid. Sat, 11-12 mid. Eastern.

WJBL

Decatur, Ill. 212.6m-1410kc. 250 watts. William Gushard Dry Goods Co. Announcer, W. H. Wiley. Mon, 10:30-11:30 pm. Wed, 9-11 pm. Sat, 9-11:30 pm. Sun, 10:45-12:15 pm. Central. Founded Sept, 24, 1925.

WJBO

New Orleans, La. 263m-1140kc. 100 watts. Valdemar Jensen. Founded 1922.

WJBT

Chicago, Ill. 389.3m-770kc. 500-5000 watts. J. S. Boyd, Inc. Announcer, Holley Griffin. Daily ex Sun, Mon, 11:05 am. 3 pm. 5 pm. 11:05 am, 11:30 am. 4. Tues, Wed, Fri, Sat, 11 pm. Thurs, 12 mid. Sun, 10:30-12n. 2:30-12 mid. Central.

WJBU

Lewisburg, Pa. 214.2m-1400kc. 100 watts. Bucknell University. Announcer, A. B. Lauderdale. Slogan, "In the Heart of the Keystone State." Thurs, 8-9 pm. Eastern.

WJBW

New Orleans, La. 238m-1260kc. 30 watts. C. Carlson, Jr. Tues, Fri, 7-8 pm. Sun, 9-10 pm.

WJBY

Gadsden, Ala. 234.2m-1280kc. 50 watts. Electric Construction Co. Mon, Wed, Fri, 8-9 pm. Central. Founded Aug 11, 1926.

WJBZ

Chicago Heights, Ill. 208.2m-1440kc. 100 watts. Roland G. Palmer. Announcer, Anthony Coppotelli. Mon, Wed, Fri, 8-10 pm. Central.

WJJD

Mooseheart, Ill. 365.6m-820kc. 1000 watts. Loyal Order of Moose station. Palmer House, Herald Examiner. Announcer, Gene Kouse. Slogan, "The Call of the Moose." Daily ex Sun, 10 am. news; 10:30. organ; 11-12 n. Prudence Penny; 12. music; 4 pm. piano recitals; 4:45. Palmer house salists; 5:45. music; 6. symphony; 6:15. talk. Daily ex Sun, Mon, 8 pm. Tues, Fri, 11-11 am. Wed, Thurs, 11-12 mid. Sat, 9-10 pm. 12-2 am. Sun, 7:30-10:30 am. service; 1:30-2 pm. funerals; 3-4. Bible classes; 9. studio program; 10. news. Central.

WJKS

Gary, Ind. 232.9m-1290kc. 500 watts. Thomas J. Johnson. 232.9m-1290kc. 500 watts. Thomas J. Johnson. 232.9m-1290kc. 500 watts. Thomas J. Johnson.

WJPW

Ashtabula, Ohio. 208.2m-1440kc. 30 watts. J. P. Wilson. Mon, Wed, Fri, 7:45 pm. 8:30-11. Sun, 10:30-12 n. 7:30-8:30. Central.

WJR

Pontiac, Mich. 440.9m-680kc. 5000 watts. 8x A O. 32 F. The Richards-Bakland Co. Slogan, "The Great West Station." Announcers, Leo Fitzpatrick, John F. Parr. Daily ex Sun, 12:45-2 pm. 6-12 mid. Mon, Wed, Fri, 10 am, 11. Sun, 10 am. service; 2-3 pm. service; 6-10:30 pm. Eastern. Founded August, 1925.

WJZ

Bound Brook, N. J. 454.3m-660kc. 30,000 watts. R. C. A. Managed by National Broadcasting Co. Announcers, Milton J. Cross, Marley Sherris. Normal Concert. Curt Peterson. Daily ex Sat, Sun, 12:40 pm. 4:30-12. Sat, 12:45-4 pm. 4:30-5:30. 6-12. Sun, 1:40-4:15. Eastern.

WKAQ

San Juan, Porto Rico. 340.7m-880kc. 500 watts. Radio Corporation of Porto Rico. Announcer, Joaquin Aguistoy. Slogan, "The Island of Enchantment. Where the World's Best Coffee Grows." Wed, 8-10 pm. International.

WJAD

Waco, Tex. 333.1m-900kc. 500 watts. Hotel Raleigh. Mon, Tues, Thurs, 6:30-7:30 pm. Mon, Tues, Thurs, Fri, 8:30-10 pm. 1st and 3rd Wed, 8:30-9:30 pm. Central.

WJAG

Norfolk, Nebr. 285.5m-1050kc. 250-500 watts. Norfolk Daily News. Announcer, Karl Stefan. Slogan, "The World's Greatest Country Daily, and Home of Printer's Devil." Daily ex Sun, 12:15 pm; Wed, Sat, 6:30-7:30 pm. orchestra. Sun, 3 pm. Central.

WJAK

Kokomo, Ind. 234.2m-1280kc. 50 watts. Kokomo Tribune. Daily ex Sun, 11:45 am. chapel. Mon, 7:30 pm. music. Wed, Thurs, 5:30 pm. concert. Fri, 7:30 pm. Founded Sept, 1921. Central.

WJAM

Cedar Rapids, Iowa. 239.9m-1250kc. 250 watts. D. M. Perham. Daily ex Sun, 9 am. 9:40. 12:30. 1:20. markets. Mon, Wed, Fri, 7-9 pm. Tues, Thurs, Sat, 10 am. Central. Founded July 29, 1922.

WJAR

Providence, R. I. 374.8m-800kc. 500 watts. "The Outlet Co. Announcer, J. A. Reilly. Slogan, "The Southern Gateway of New England." Daily ex Sun, 10:55 pm. weather, reports, music. Mon, Wed, Fri, 10 am. household hints. Mon, Wed, Fri, 10:30-10:55 pm. Tues, Thurs, 7:30-10:30 pm. Fri, 8-10:30 pm. Sat, 8-9 pm. Sun, 7:20-10:15 pm. Eastern.

WJAS

Pittsburgh, Pa. 270.1m-1110kc. 500 watts. Pittsburgh Radio Supply House. Pickering's Studio. Announcer, Howdy Clark. Slogan, "World's Jolliest Acrobatic Station." Daily ex Sun, 10:30 am-2 pm. 9-11. Tues, Thurs, Sat, 10:30 am-2 pm. 8-11. Sun, 11 am-2 pm. 3-4. 9-10. Eastern.

WJAX

Jacksonville, Fla. 336.9m-890kc. 1000 watts. City of Jacksonville. Daily ex Sun, 11:55-12:05 pm. Daily ex Sun, Wed, 7:30-11 pm. Sun, 11 am, 6:30-7:30 pm. 8-9. 10-11. Eastern. Founded Nov. 26, 1925.

WJAY

Cleveland, Ohio. 227.1m-1320kc. 500 watts. Cleveland Radio Broadcasting Corp. Announcer, Johnny Acaris. Station. Daily ex Sun, 10:30 am-2 pm. 9-11 am. 12. organ; 1. 6-12 mid. Tues, Thurs, 10:30 am. service; 6:30 pm. 7, 11 pm, 11. time. Eastern.

WJAZ

Mt. Prospect, Ill. 263m-1140kc. 5000 watts. Zenith Radio Corp. Announcer, George G. Smith. Daily ex Sun, Mon, Thurs, 7-8 pm. 9-11. Thurs, 9-12 mid. Sun, 10-12 pm. Founded 1922. Central.

WJBA

Joliet, Ill. 322.4m-930kc. 50 watts. D. H. Lentz, Jr. Tues, Thurs, Fri, Sat, 7-12 mid. Central.

WJBB

Sarasota, Fla. 338m-1260kc. 250 watts. Financial Journal.

WJBC

La Salle, Ill. 227.1m-1320kc. 100 watts. Hummer Furniture Co. Announcer, LeRoy Stremela. Slogan, "Better Home Station." Daily ex Sun, 12:30-1:30 pm. Mon, 8-10 pm. Sat, 4-5 pm. Sun, 10-11:30 am. 3:30-4:45 pm. 7:30-9:30 pm. Founded May, 1925. Central.

WJBI

Red Bank, N. J. 263m-1140kc. 250 watts. Robert S. Johnson.

WJBL

Ypsilanti, Mich. 220.4m-1360kc. 15 watts. Ernest Goodwin. Announcer, H. T. Augustus. Mon, 9-11 pm. Thurs, 10-12 mid. Sat, 11-12 mid. Eastern.

WJBO

New Orleans, La. 263m-1140kc. 100 watts. Valdemar Jensen. Founded 1922.

WJBT

Chicago, Ill. 389.3m-770kc. 500-5000 watts. J. S. Boyd, Inc. Announcer, Holley Griffin. Daily ex Sun, Mon, 11:05 am. 3 pm. 5 pm. 11:05 am, 11:30 am. 4. Tues, Wed, Fri, Sat, 11 pm. Thurs, 12 mid. Sun, 10:30-12n. 2:30-12 mid. Central.

WJBU

Lewisburg, Pa. 214.2m-1400kc. 100 watts. Bucknell University. Announcer, A. B. Lauderdale. Slogan, "In the Heart of the Keystone State." Thurs, 8-9 pm. Eastern.

WJBW

New Orleans, La. 238m-1260kc. 30 watts. C. Carlson, Jr. Tues, Fri, 7-8 pm. Sun, 9-10 pm.

WJBY

Gadsden, Ala. 234.2m-1280kc. 50 watts. Electric Construction Co. Mon, Wed, Fri, 8-9 pm. Central. Founded Aug 11, 1926.

WLBI

Wenona, Ill. 238m-1260kc. 250 watts. Wenona Legion Broadcasters, Inc. Mon. 7-12 mid. Wed. Fri. 7-9 pm. Sun. 9 am. Central.

WLBL

Stevens Point, Wis. 333.1m-900kc. 1000 watts. 2000 watts. 6 am-6 pm. Wisconsin Dept. of Markets; Slogan, "Wisconsin, Land of Beautiful Lakes." Daily ex Sun. 8 am, 9, 10, 11, 12 n. weather, markets. 11 pm. news. Thurs, Sat. 8-10 pm. Central.

WLBM

Cambridge, Mass. 230.6m-1300kc. 50 watts. Browning Drake Corporation.

WLBN

Chicago, Ill. 204m-1470kc. 100 watts. William Everett Hiler (Portable). Daily ex Sun. 12-1 pm, 5-9-11. Central.

WLBO

Galesburg, Ill. 217.3m-1380kc. 100 watts. Frederick A. Trebb, Jr. Tues, Thurs, Sat. 9-10 pm. Central. Founded Jan. 16, 1927.

WLBO

Atwood, Ill. 202.6m-1480kc. 25 watts. E. Dale Trout.

WLBR

Rockford, Ill. 322.4m-930kc. 15 watts. Rockford Broadcasting Corp.

WLBT

Crown Point, Ind. 322.4m-930kc. 50 watts. Harold Wendell.

WLBY

Mansfield, Ohio. 206.8m-1450kc. 50 watts. Mansfield Broadcasting Association. Announcer, Ray Davis. Mon. 6-7 pm, 9-11 pm. Wed. 9-11 pm, 9-10-12 mid. Sun. 10:30-12 n. Central.

WLBY

Oil City, Pa. 293.9m-1020kc. 500 watts. Petroleum Telephone Co. Daily ex Sun. 12:15-1:15 pm. Mon. 12-1:30 pm. Mon. 9-30-11 pm. Thurs. 10-11:30 am. Sun. 3:30-5 pm. Eastern.

WLBY

Long Island, N. Y. 204m-1470kc. 250 watts. John N. Brady.

WLBY

Iron Mountain, Mich. 209.7m-1430kc. 90 watts. Airmore Electric. Daily and Sun. 12-1 pm. Central.

WLBY

Foxcroft, Me. 208.2m-1440kc. 250 watts. Thompson, L. Guernsey. Irregular schedule.

WLBY

Ithaca, N. Y. 247.8m-1210kc. 50 watts. Lutheran Assn. of Ithaca. Announcer, Robert F. Schuetz. Slogan, "The Church at the Gate of the Campus." Sun. 10:45 am, 7:45 pm. Eastern.

WLBY

Lexington, Mass. 215.7m-1390kc. 5 watts. J. Smith Dodge, Carl S. Wheeler. Daily ex Sat. Sun. 8:30-10:30 pm. Sat. 11 pm. Sun. 8:30-10:30 pm. Eastern. Founded Oct. 1, 1926.

WLBY

Elgin, Ill. 305.9m-980kc. 15000 watts. Liberty Magazine. Announcers, Bill Hay, Art Smith. Daily ex Sun. 10:30-11 am. 11:30-11:57, 12:01-12:40 pm. 7-12:30. Sun. 5:15-6. Central.

WLBY

Philadelphia, Pa. 405.2m-740kc. 500 watts. Lit Bros. Mon. Wed. Fri. 12-2 pm. music, 2-3, 4-30 music, 7-10 stories, 7:30-mid. Tues, Thurs. 11 am. Tues, Thurs, Sat. 12n, 2 pm, 4:30, 5:30, 7:30. Eastern.

WLBY

Chicago, Ill. 344.6m-870kc. 5000 watts. Sears, Roebuck & Co. Slogan, "World's Largest Store." Daily ex Sun. 9-1:30 pm, half hour markets; 12-1 pm farm program; 2-30-3:30, homemakers hour. Wed. Fri. 4:30-12 mid. Sat. 4:30-1 am. Tues, Thurs. 4:30-8 pm. Sun. 10:45-12:15 pm. U. of C. services; 12:15-1:30 pm. concert; 1:30-2:30, S. S. singing, 6-8. Little Brown church. Central.

WLBY

Providence, R. I. 275.1m-1090kc. 500 watts. Lincoln Studios Inc. Mon. 6:45 pm. Tues. 6:30 am. Wed. 7 pm, 9. Thurs. 6:30. Fri. 7 pm. Sat. 6:30 pm. Sun. 6:30 pm. Eastern.

WLBY

Brooklyn, N. Y. 256.3m-1170kc. 250 watts. Voice of America, Inc. of Brooklyn, Inc. Mon. 10 am. 5-6 pm. 9-11. Tues, Wed, Thurs. 4-7 pm. 9-12. Fri. 5-7 pm. 11-1 am. Sat. 4-6 pm. 9-12 mid. Sun. 1-2 pm. 5-6. 9-11. Eastern.

WLBY

Chicago, Ill. 483.6m-620kc. 100 watts. Lane Technical High School. Mon. 9-10 am, 2-4 pm, 6-7. Tues, Wed, Thurs. Fri. 9-10 am, 2-4 pm. Central.

WLBY

Harrison, Ohio. 428.3m-700kc. 5000 watts. 52m-576kc. 250 watts. The Crosley Radio Corp. Announcer, Fred Smith. Daily ex Sat. Sun. 8 am. exercises; 10, woman's hour; 11:15, markets; 11:55, time; 12n, weather, music; 1-30, Thurs, 2:30-3, music; 3-30, markets; 6-50, markets; 7-12 mid. Sat. 10 am, woman's hour; 11:15, markets; 11:55, time, 12n, weather; 12:05, music; 12:45, markets; 2:30-3:30, 6-50, markets; 7-12, Sun. 9:30 am, 11, 3 pm, organ; 6:30-11, Alternate Sun. 5:30 pm, chain. Eastern. Founded 1919.

WLBY

New York, N. Y. 370.2m-810kc. 1000 watts. The New York League. Announcer, Joseph A. Bier. Slogan, "For God and Country."

WLBY

Cazenovia, N. Y. 225.4m-1330kc. 500 watts. C. B. Meredith. Announcer, C. R. Jones. Thurs, 12 n. farm program; 8 pm, popular studio. Founded 1922. Eastern.

WLBY

South Dartmouth, Mass. 428.3m-700kc. 500 watts. Round Hills Radio Corp. Not operating.

WLBY

Buffalo, N. Y. 545.1m-550kc. 750 watts. WMAK Studios, Inc. Announcer, William Fay. Daily ex Sun. 11 am, menu period; 12n, news; 12:15, music. Daily ex Sun. 6:15 pm, 7-12. Sun. 10:25 am, 2:30, 3:5, 9-11.

WLBY

Washington, D. C. 241.8m-1240kc. 250 watts. M. A. Leese Radio Co. Daily 6:30 pm. Eastern.

WLBY

Columbus, Ohio. 234.2m-1280kc. 50 watts. First Baptist church. Announcer, John Bohannon. Sun. 10:30-12 n. 7:30-9 pm. Eastern.

WLBY

Chicago, Ill. 447.5m-670kc. 1000 watts. The Chicago Daily News. Announcer, Harry Geise. Daily ex Sun. 6:30-11 am, 12 n-3 pm, 4-7, 8-10. Sun. 8-12 n. 7 pm, 9-10. Daily ex Sun. Sat. 12:10-12:25 pm, farm. Central.

WLBY

St. Louis, Mo. 247.8m-1210kc. 1000 watts. Kings-Sixway Presbyterian church. Slogan, "May Every By-Way Hear Kingshighway." Sun. 11 am, 8 pm. Central.

WMAZ

Nacon, Ga. 270.1m-1110kc. 500 watts. Mercer University. Announcer, E. K. Carrill. Tues, Wed, Thurs, Fri. 8:15 pm. Eastern.

WMBB

Newport, R. I. 204m-1470kc. 100 watts. LeRoy Webb. Not operating.

WMBB

Homewood, Ill. 252m-1190kc. 5000 watts. American Bond & Mortgage Co.-Trionon. Announcer, Hugh Aspinwall. Slogan, "World's Most Beautiful City." Daily ex Sun. Mon. 6-10:30 pm. Sun. 3-6 pm. 10-10:30. Central.

WMBB

Detroit, Mich. 243.8m-1230kc. 100 watts. Michigan Broadcasting Co. Announcer, Gordon Higham. Daily ex Sun, 6-10 pm. Eastern.

WMBD

Peoria Heights, Ill. 205.4m-1460kc. 250 watts. Peoria Heights Radio Laboratory. Daily ex Thurs. music. Sun. service.

WMBE

St. Paul, Minn. 208.2m-1440kc. 10 watts. Dr. C. S. Stevens. Mon, Fri. 10-12 n. Wed. 8-10 pm. Sat. 9-11 pm. Central.

WMBF

Miami Beach, Fla. 384.4m-780kc. 500 watts. Fleetwood. Daily, 7-8 pm; 7:30-9. Eastern. Founded 1924.

WMBG

Richmond, Va. 220.4m-1360kc. 15 watts. Havens and Martin. Slogan, "The Daylight Station." Announcer, W. H. Wood. Daily ex Sun. 2-3 pm. 6-10. Eastern.

WMBH

Joplin, Mo. 204m-1470kc. 100 watts. Edwin Dudley Aber. Announcers, M. E. Jones, E. H. Aber. Slogan, "Where Memories Bring Happiness." Mon, Tues, Wed, Thurs, 12:15-1 pm, 5:30-7:30, 8:30-10:30. Fri. 12:30-1:15 pm, 5:30-7:30. Sat. 12:30-1:15 pm, 5:30-7:30, 8:30-10:30. Sun. 10:50-12 n., 6, 7:30. Central.

WMBI

Chicago, Ill. 263m-1140kc. 500 watts. Moody Bible Institute. Slogan, "The West Point of Christian Service." Announcer, Wendell Loveless. Daily ex Sun. 7-7:40 am, 10:30-11:30, 12:30-1:30 pm, 3:30-4:30. Tues, Wed, Fri. Sat. 8-9 pm. Thurs, 7-9 pm. Sun. 11 am. 7:45 pm. Central. Founded July 28, 1926.

WMBJ

Monessen, Pa. 232.4m-1290kc. 50 watts. Star theater. Fri. 9:45-11 pm. Eastern.

WMBL

Lakeland, Fla. 228.9m-1310kc. 50 watts. Benford's Radio studios. Daily ex Sun. 10:30-1:30 pm. 7:30-9, 9-10, 10-11. Sun. 11-12 n., 7:30-8:30. Eastern.

WMBM

Memphis, Tenn. 209.7m-1430kc. 10 watts. Seventh Day Adventist Church.

WMBN

Auburn, N. Y. 220.4m-1360kc. 100 watts. Radio Laboratories.

WMBQ

Brooklyn, N. Y. 204m-1470kc. 100 watts. Paul J. Golhofer.

WMBR

Tampa, Fla. 252m-1190kc. 100 watts. F. J. Reynolds. Daily ex Sun. 1-2 pm, 2-3, 7-8, 8-9, 10-11. Eastern.

WMBW

Youngstown, Ohio. 214.2m-1400kc. 50 watts. Youngstown Broadcasting Co., Inc. Founded Jan. 1, 1927.

WMC

Memphis, Tenn. 516.9m-580kc. 500 watts. The Commercial Appeal. Announcer, Francis S. Cham. Slogan, "Station WMC." Memphis. S. "Down in Dixie." Club, "Midnight Frolic." Daily ex Sun. 9:45 am, 12 n, 2:30 pm, weather, markets, music. Daily, 8 pm program; Tues, 11 pm, Midnight Frolic. Sun. 11 am, church service. Founded Jan. 20, 1923. Central.

WMCB

Hoboken, N. J. 370.2m-810kc. 500 watts. Hotel Alicia. Announcer, Snedden Weir. Slogan, "Where the Searchlight Flashes and the White Way Begins." Daily ex Sun. Sat. 10:30 am, 1 pm, 2:45, 5, 6-1 am. Sat. 10:30-1 pm, 6-1 am. Sun. 10 am. Eastern.

WMCB

Boston, Mass. 211.1m-1420kc. 50 watts. Massachusetts Educational Soc. Mon. Thurs. 8:10-30 pm. Sun. 10:45-11 n., 7:45-9:30. Eastern. Founded Aug. 1, 1927.

WMCB

Lapeer, Mich. 234.2m-1280kc. 30 watts. First Methodist Protestant Church. Daily ex Sat. 12-1 pm. Daily ex Sat. Thurs. 7:30-10 pm. Daily ex Sat. 4-5 pm. Sun. 10:30-12 n, 12-1 pm. 4:5-5:30, 7:30-10. Central. Founded Dec. 6, 1926.

WMCB

Jamaica, N. Y. 206.8m-1450kc. 10 watts. Peter I. Prinz. Tues, Thurs. 8-11:30 pm. Sat. 12-2:30 am. Sun. 12-2:30 pm, 9-11:30. Eastern.

WMCB

Boston, Mass. 461.3m-650kc. 500 watts. The Shepard Stores. Announcers, John J. Fanning, Hoyt Hadfield, E. Lewis Dunham, Joseph Lopez. Daily ex Sun. 7:45 am-12 mid. Sun. 10:45 am-5 pm; 7:30-11. Eastern. Founded July 31, 1922.

WMCB

Norman, Okla. 239.9m-1250kc. 500 watts. University of Oklahoma. Mon, Wed, Thurs. 7:15-9:45 pm. Tues, Fri. 12:15-1 pm. Sat. 2-5 pm. Central.

WMCB

Omaha, Nebr. 258.5m-1160kc. 250 watts. R. J. Rockwell. Announcer, Ronald J. Rockwell. Slogan, "Pioneer Station of Omaha." Fri. Sat. 7-9 pm, 9-11 pm. Central. Founded 1921.

WMCB

Philadelphia, Pa. 288.3m-1040kc. 100 watts. Lenig Bros. Co. Slogan, "We Never Are Tired." Wed. 6:50 pm. Sat. 8 pm. Sun. 6:50 pm. Eastern.

WMCB

Yankton, S. D. 302.8m-990kc. 500 watts 6 am-6 pm. 250 watts after 6 pm. Gurney Seed & Nursery Co. Daily and Sun. 11 am-10 pm. Sun. 11-12 n. 2-5 pm. Central. Founded Aug. 22, 1927.

WMCB

Forest Park, Ill. 208.2m-1440kc. 200 watts. Michael T. Pafferty. Irregular hours.

WMCB

Endicott, N. Y. 206.8m-1450kc. 50 watts. Hewitt-Wood Radio Co. Irregular schedule.

WNBH

New Bedford, Mass. 260.7m-1150kc. 250 watts. New Bedford Hotel. Announcer, I. Vermilya. Mon. 6-10:30 pm. Tues, Thurs. 7-8 pm. Wed. 6-10 pm. Fri. 6-10:30 pm. Sun. 11-12:15 pm, 7:30-9 pm. Eastern.

WNBK

Knoxville, Tenn. 206.8m-1450kc. 50 watts. Lonsdale Baptist Church. Sun. 8-15 am, 10:45, 5-6 pm, 7-9. Central.

WNBK

Bloomington, Ill. 199.9m-1500kc. 15 watts. Gray, Trimble and Smith Elec. Co. Sun. 2-4 pm. Mon. 8-12 mid. Central.

WNBK

Washington, Pa. 211.1m-1420kc. 15 watts. John Browne Speas. Daily ex Sun. 2-4 pm, 9-11 pm. Sun. 11 am, 7 pm, services. Eastern.

WNBK

Rochester, N. Y. 202.6m-1480kc. 15 watts. Gordon P. Brown.

WNBK

Memphis, Tenn. 228.9m-1310kc. 20 watts. Popular Radio Shop. Daily ex Sun. 6:30 pm. Sun. 2:30 pm. Central.

WNBK

Springfield, Vt. 241.8m-1240kc. 10 watts. WNBX Broadcasters.

WNBK

Saranac Lake, 232.4m-1290kc. 10 watts. WNBZ Broadcasters.

WNBK

Newark, N. J. 280.2m-1070kc. 500 watts. Herman Luhnisky. Announcer, W. A. Bingenheimer. Slogan, "The Voice of Newark." Tues, Wed, Fri. Sat. Sun. 6-6:30 pm, 8:30-12 midnight, dance music. Eastern.

WNBK

Knoxville, Tenn. 265.3m-1130kc. 1000 watts. Peoples Telephone & Telegraph Co. Mon. Wed. 7-10 pm. Fri. 7-11 pm. Tues. 9-9:30 pm. Central.

WNBK

Greensboro, N. C. 223.7m-1340kc. 500 watts. Wayne M. Nelson. Founded Mar. 24, 1926.

WNBK

New York, N. Y. 526m-570kc. 500 watts. New York Municipal Radio station. Announcer, Christie R. Bohnsack. Slogan, "Municipal Broadcasting Station of The City of New York." Daily, 7-10 pm. Eastern.

WNBK

San Antonio, Texas. 319m-940kc. 5000 watts. Southern Equip. Co. (Evening News-Express). Announcer, J. G. Cummings. Slogan, "The Winter Playground of America Where the Sunshine Spends the Winter." Daily ex Sun, 10 am, weather reports, news; 12:15 pm, 3, 4, 6:15. Tues, Thurs, Fri. 8:30-9:30 pm. Fri. 9:30-10:30 pm. Sun. 11 am, 7:45 pm. Central. Founded summer 1922.

WNBK

Lawrenceville, Tenn. 285.5m-1050kc. 250 watts. James D. Vaughan. Announcer, James D. Vaughan. Sun. 7-7:30-8:30 pm. Central.

WNBK

Trenton, N. J. 239.9m-1250kc. 500 watts. F. J. Wolf. Slogan, "Trenton Makes the World Takes." Daily ex Sun. 12:15-1:15 pm. Daily ex Sun. Sat. 6-7 pm. Wed. 7:30-9 pm. Fri. 7:30-8:30 pm. Sun. 7:30-9 pm. Eastern. Founded March 2, 1923.

WNBK

Ohio. 204m-1470kc. 10 watts. Karl Smith. (Portable.)

WNBK

Union City, Tenn. 205.4m-1460kc.

WNBK

Charleston, W. Va. 267.7m-1120kc. 50 watts. Charleston Radio Broadcasting Corp.

WNBK

Davenport, Iowa. 374.8m-800kc. 5000 watts. The Palmer School of Chiropractic. Slogan, "Where the West Begins and in the State Where the Tall Corn Grows." Daily ex Sun, 7 am. Happy hour; 9:45-11:15, 1:15-1:57 pm, time; 2 markets. 3. Aunt Jane. 5:45, chimes, 6, news; 7, program. Wed. Fri. 10-11. W.E.A.F., 4, music. Mon. 7:30 pm. W.E.A.F., 8:30. W.E.A.F., 9:30, program. Tues. 8 pm. W.E.A.F., 9, bridge. Wed. 7:30, W.E.A.F., 8; W.E.A.F., 9:30, talk. Thurs. 7:30-10. W.E.A.F., Fri. 7-9. W.E.A.F., 9-10, music. Sat. 7 pm. WJZ, 7:30, program. Sun. 11 am, 1-5:30 pm. W.E.A.F., 7, service. 8:15, W.E.A.F.; 9:15 music. Central. Founded May 1922.

WNBK

Jamestown, N. Y. 223.7m-1340kc. 25 watts. A. E. Neroton. Announcer, Roy W. Fox. Slogan, "We're on Chautauqua Lake." Mon. 9-9:15, 9:15-12 midnight. Thurs. 7-8 pm. Sun. 10:30 am. 7:30-9. Eastern.

WNBK

Paterson, N. J. 293.9m-1020kc. 1000 watts. O'Dea Temple of Music. Slogan, "A Voice from the Silk City." Daily ex Sun. 9-10 am, 12-2 pm, 5:30-9 pm. Tues. 4:30-6 pm, 9-11. Wed. 5:30-9 pm, 11-12. Thurs. 4:30-6 pm, 9-12. Fri. 5:30-9 pm, 11-12. Sat. 4:30-6 pm, 9-12. Sun. 9 am, 7 pm. Founded April 13, 1925. Eastern.

WNBK

Ames, Iowa. 265.3m-1130kc. 2500-5000 watts. Iowa State College. Announcer, A. G. Woolfries. Daily ex Sun. 7 am, 7:30, 8:45, 9:30, 10, 10:30, 12:10, 12:15 pm, 12:30, 12:40, 12:45, 1 pm, 1:30, 9:30. Mon. 7:30 pm. 7:45, 8, Thurs. 7:30, 7:45, 8. Sun. 10:45 am. 7:30 pm. Founded April, 1922. Central.

WNBK

Homeowood, Ill. 252m-1190kc. 5000 watts. Karzas-Chicago Beach Hotel. Announcer, Hugh Aspinwall.

WRW Reading, Pa. 238m-1260kc. 100 watts. Avenue Radio & Elec. Shop. Slogan, "The Schuylkill Valley Echo." Announcer, C. M. Chafey. Tues, 9-11 pm. Thurs, 10-12 pm. Sun, 11 am, 1:30-2:30 pm, 3-4. Eastern. Founded June 5, 1923.

WRX Philadelphia, Pa. 212.6m-1410kc. 250 watts. Berachah Church, Inc. Tues, Thurs, 7:30-9:30 pm. Sun, 11:15-12:15 pm, 4-5. Eastern.

WRBC Valparaiso, Ind. 238m-1260kc. 250 watts. Immanuel Lutheran Church. Announcer, Gerhard Schuttes. Slogan, "World Released by Christ." Mon, 7:30 pm. Sun, 7:30 pm, church service. Central. Founded March, 1924.

WRC Washington, D. C. 468.5m-640kc. 500 watts. Radio Corp. of America. Announcer, John B. Daniel. Slogan, "The Voice of the Capitol." Daily ex Sun, 6:45 am-1 pm, WEAF; 1-2. organ; 5-11 pm. Sun, 11 am-9:30 pm. Eastern.

WRCV Norfolk, Va. 209.7m-1430kc. 100 watts. Radio Corporation of Virginia. Slogan, "The Voice of the Business District." Mon, Tues, Thurs, Fri, 7-8 pm. Sun, 10:30-12:15 pm, 7:15-8:45. Eastern.

WREC Memphis, Tenn. 254.1m-1180kc. 50 watts. WREC Inc. Daily ex Sun, 8-9 pm. Sun, 4:5-5:30 pm. Central.

WREN Lawrence, Kan. 254.1m-1180kc. 750 watts. Jenny Wren. Daily ex Sun, Mon, 9-10 pm. Mon, 8-9 pm. Sun, 8:30-11 am, 9-10:30 pm. Central.

WRFS Quincy, Mass. 217.3m-1380kc. 50 watts. Harry Leonard Sawyer. Tues, Wed, Thurs, Fri, 8-11 pm. Eastern.

WRHF Washington, D. C. 322.4m-930kc. 150 watts. Washington Radio Hospital fund. Daily ex Sun, 10-12 n. 6-7. Founded 1924. Eastern.

WRHM Minneapolis, Minn. 260.7m-1150kc. 1000 watts. Rosedale Hospital, Inc. Announcer, Troy S. Miller. Daily ex Sun, 9-10:30 am, 5:45-6 pm, 6-7. Mon, Wed, Fri, 8-10 pm. Thurs, 10-12 mid. Sat, 6-11 pm. Sun, 2-6 pm, 6-12 mid. Central.

WRK Hamilton, Ohio. 205.4m-1460kc. 100 watts. WRK Broadcasters. Daily ex Sun, 1:30-2:30 pm; 7:30-10:30. Eastern. Founded 1919.

WRM Urbana, Ill. 272.6m-1100kc. 500-1000 watts. Univ. of Ill. Announcer, John Bayles. Daily ex Sun, 5-6 pm. Tues, 7-8 pm, musical. Sun, 4 pm, organ. Central.

WRMU New York, N. Y. 201.2m-1490kc. 100 watts. Atlantic Broadcasting Corp.

WRNY Coystesville, N. J. 309.1m-970kc. 500 watts. Experimenter Pub. Co. Daily ex Sun, 11-1 pm, 2:30-4. 7-11 pm. Sun, 11 am, 1-6:30 pm. Eastern. Founded June 12, 1925.

WRPI Terre Haute, Ind. 208.2m-1440kc. 100 watts. Rose Polytechnic Institute Broadcasting Assn.

WRR Dallas, Tex. 461.3m-650kc. 500 watts. City of Dallas. Announcer, John Thorwald. Slogan, "City of Achievements." Daily ex Wed, 11:30-12:30 pm. 6-7. Sun, 11-12 n. 7:30-9 pm. 9:30-10:30. Central.

WRRS Racine, Wis. 322.4m-930kc. 50 watts. Racine Broadcasting Co. Announcer, F. G. Leavenworth. Daily ex Sun, Sat, 6:30-7 pm. Mon, Wed, Fri, 12-1 pm, organ. 7-10:30 pm. Central. Founded Dec. 1, 1926.

WRSC Chelsea, Mass. 211.1m-1420kc. 100 watts. William S. Pote.

WRST Bay Shore, N. Y. 211.1m-1420kc. 250 watts. Radiotele Mfg. Co., Inc. Slogan, "Bay Shore, the Garden Spot of Long Island." Daily ex Sun, 5:45-6:30 pm. 7-11. Sun, 10-12 m, 8-11. Eastern.

WRVA Richmond, Va. 254.1m-1180kc. 1000 watts. Larus & Bro. Co., Inc. Slogan, "Carry Me Back to Old Virginia." Announcer, J. Robert Headles. Daily ex Sat, Sun, 12-1:30 pm, Mon, Wed, Thurs, Fri, 7-12 mid. Sun, 11-12 n. Sun, 11-12 n., 8-9. Eastern.

WSAI Mason, Ohio. 361.2m-830kc. 5000 watts. United States Playing Card Co. Daily and Sun, 7-12 mid. Fri, 8-9 pm. Eastern.

WSAJ Grove City, Pa. 223.7m-1340kc. 250 watts. Grove City College. William L. Hartman activities. Irregular schedule. Founded April 1920.

WSAN Allentown, Pa. 222.1m-1350kc. 100 watts. Allentown Call Pub. Co. Announcer, Charles Waip. Tues, Thurs, 8:15 pm. Eastern.

WSAR Fall River, Mass. 252m-1190kc. 100 watts. Doughty & Welch Elec. Co., Inc. Announcer, Barton G. Albert. Daily 12-1 pm, 5:30-6:30. Founded Jan, 1923. Eastern.

WSAX Chicago, Ill. 204m-1470kc. 100 watts. Zenith Radio Corp.

WSAZ Huntington, W. Va. 241.8m-1240kc. 100 watts. McKellar Elec. Co. Announcer, F. B. Smith. Daily ex Sun, 12-4 pm, 6-10. Sun, 10-12:30 pm, 3-4, 6-10. Eastern. Founded Feb., 1927.

WSB Atlanta, Ga. 475.9m-630kc. 1000 watts. Atlanta Journal. Announcer, Lambdin Kay. Slogan, "The Voice of the South." Daily ex Sun, 10 am, home-owners half hour, 12-1 pm, music, weather, 1. farm service; 2:30, reports; 8:9, concert; 10:45-12, concert. Mon, 5:30 pm, WJZ. Tues, 7 pm, WEAF. Wed, 6:15 pm, health talk; 7, WJZ. Sat, 6 pm, S. S. lesson. Sun, 9:30 am, 10:54, 5 pm, 6:15. WEAF; 8:15. music. Central.

WSBC Chicago, Ill. 232.4m-1290kc. 500 watts. World Battery Co. Daily ex Sun, Mon, Thurs, 6:30-8 pm. Daily ex Mon, 9-11 am, Sat, 2-4 am. Sun, 5-7 pm. Thurs, 6-7 pm. Central.

WSBF St. Louis, Mo. 258.5m-1160kc. 250 watts. WSBF Broadcasters.

WSBT South Bend, Ind. 238m-1260kc. 500 watts. South Bend Tribune. Announcer, C. G. Livengood. Mon, 8-10 pm, 12-1:30 pm. Wed, Fri, 8-10 pm. Founded 1922. Central.

WSDA New York, N. Y. 227.1m-1320kc. 250 watts. City Temple. Thurs, 7:45-9:30 pm. Sat, 10:45-11 pm. Sun, 7:30-9:30 pm. Eastern.

WSEA Virginia Beach, Va. 263m-1140kc. 500 watts. Virginia Beach Broadcasting Co. Announcer, George L. Sutherland. Slogan, "The Voice of Tidewater Virginia." Daily ex Sun, 11-1 pm, 1-3, 6:15-7:10 pm, 7-8, 8-11 pm, 11. Sun, 9:30 am, 4-5 pm, 7-9. Eastern.

WSIX Springfield, Tenn. 212.6m-1410kc. 150 watts. 638 Tire and Vulc. Co. Announcer, George H. Lawrence. Daily ex Sun, 12:30-1:30 pm, 7-9. Sun, 11 am. Central. Founded Jan, 7, 1927.

WSKC Ilay City, Mich. 272.6m-1100kc. 250 watts. World's Star Knitting Co. Announcer, S. F. Northcott. Slogan, "Where the Summer Trail Begins." Daily ex Sun, 12-1 pm, Hardy hour of music. Tues, Thurs, Sat, 9-11 pm. Sat, 12-2 am. Sun, 11 am. Eastern.

WSM Nashville, Tenn. 340.7m-880kc. 5000 watts. National Life and Accident Insurance Company. Announcer, George Hay. Daily ex Sun, Sat, 11:45 am, 1-1:30 pm, 1-1:30 pm, 6:15-11 pm. Tues, Wed, 7-11 pm. Thurs, 6:00-11 pm. Sat, 8-11 pm. Sun, 4:30-5:30 pm, 6:20-7:15, 8:15-9:15. Founded Oct. 5, 1925. Central.

WSMB New Orleans, La. 322.4m-930kc. 500 watts. Saenger Theaters, Inc., and The Maison Blanche. Co. Daily ex Sun, 12:30-1:30 pm, 6-7 pm. Mon, Wed, Thurs, Sat, 8:30-10:30 pm. Founded April 21, 1925. Central.

WSMK Dayton, Ohio. 296.9m-1010kc. 200 watts. S. M. Krohn, Jr. Slogan, "The Home of Aviation." Daily ex Sun, Thurs, 12-1 pm, 6-7, 8-10. Sat, 12-3 am. Sun, 10:45-12 n, 7:30-9 pm. Central.

WSOE Milwaukee, Wis. 270.1m-1110kc. 250 watts. School of Engineering of Milwaukee. Managed by Wisconsin News. Slogan, "In the Land of the Sky-blue Waters." Daily ex Sun, Sat, 1:30 pm, request number 2-15, newspaper features; 2:30, orchestra; 5:15, Peter Rabbit; 6:15, organ; 8, dance music; Mon, Fri, 10 pm. Sun, 3:30 pm. Bible class; 7:30, service. Central. Founded Sept. 21, 1922.

WSRO Middletown, Ohio. 384.4m-780kc. 100 watts. Radio Co. Announcer, Harry W. Fahrlander. Slogan, "We Sell Radio Only." Tues, Fri, 10:30-11 am, 8-10 pm. Sun, 2-4 pm. Central.

WSRH Boston, Mass. 288.3m-1040kc. 100 watts. Tremont Temple Baptist church. Announcer, Raymond B. Meader. Fri, 7:30-9 pm. Sun, 10 am, 6:30 pm. Eastern. Founded June 8, 1924.

WSUI Iowa City, Iowa. 475.9m-630kc. 500 watts. Univ. of Iowa. Announcer, Carl Menzer. Daily ex Sun, 9 am, 10:30. Daily ex Sat, Sun, 12:25 pm, 5 pm, Mon, 7 pm, 9, 11. Wed, 7 pm. Mon, 11:15 pm, 4. Sat, 7:30 pm. Sun, 9 pm. Founded Feb. 12, 1924. Central.

WSVS Buffalo, N. Y. 204m-1470kc. 50 watts. Seneca Vocational School. David Warnhoff, announcer. Slogan, "Watch Seneca Vocational School." Wed, Fri, 8 pm. Eastern. Founded Nov. 9, 1925.

WSYR Syracuse, N. Y. 225.4m-1330kc. 500 watts. Clive B. Meredith. Slogan, "Voice of Central New York." Daily ex Sun, Thurs, 6:20-10:30 pm. Eastern. Founded 1922.

WTAD Quincy, Ill. 236.1m-1270kc. 250 watts. 500 watts. 6 am-7 pm. Illinois Stock Medicine Broadcasting Corporation. Slogan, "The Voice of Agriculture." Daily ex Sun, 11:30-12:30 pm. Central. Founded Dec. 29, 1926.

WTAG Worcester, Mass. 516.9m-580kc. 500 watts. Worcester Telegram Gazette. Announcer, Chester Gaylord. Slogan, "The Voice from the Heart of the Commonwealth." Daily ex Sun, Sat, 10:30 am, 12:30, 12:35, 1 pm, 7, 7:30, 8, 8:30, 9, 10, 11. Sat, 12:30, 1 pm. Sun, 3, 4, 5:30, 7:20-9:16 pm. Eastern.

WTAL Toledo, Ohio. 280.2m-1070kc. 100 watts. The Toledo Broadcasting Co. Announcer, Karl Beinke. Slogan, "The Gateway to the Sea." Daily, 8 pm. Sat, 9 pm. Sun, 10:45 pm. Eastern.

WTAM Cleveland, Ohio. 399.8m-750kc. 3500 watts. 5000 watts. 6 am-6 pm. Ward Storage Battery Co. Announcer, R. B. Humphrey. Slogan, "The Voice From the Storage Battery." Daily ex Sun, 6-12 mid. Sun, 11 am, 6, 7, 8, 9, 10 pm. Founded Sept. 26, 1923. Eastern.

WTAQ Eau Claire, Wis. 254.1m-1180kc. 500 watts. Gillette Rubber Co. Announcer, C. S. Vart. Garden. Slogan, "The Voice of the Wilderness." Mon, 12:15 pm, weather, news, markets; 6, 6:30, 7:30, 10. Tues, 12 n, 6 pm, 9. Wed, 12:15 pm, 6-6:30. Thurs, 12:15 pm, 6, 9, 10. Fri, 12 n, 6, 8, 9. Sat, 12:15 pm. Sun, 11 am. Central. Founded Oct. 12, 1922.

WTAR WSUF Norfolk, Va. 236.1m-1270kc. 500 watts. Reliance Electric Co. Announcer, J. K. Iohannim. Slogan, "Down in Old Virginia." Daily ex Sun, 6:30 pm, weather, markets, news, Tues, 8-9 pm, music. Eastern.

WTAS Chicago, Ill. 275.1m-1090kc. 3500 watts. Illinois Broadcasting Co.

WTAW College Station, Tex. 483.6m-620kc. 500 watts. Agricultural and Mechanical College of Texas. Daily ex Sun, Sat, 12-10 pm. Wed, Fri, 7 pm. Founded 1922. Central.

WTAX Streator, Ill. 322.4m-930kc. 50 watts. Williams Hardware Co. Radio Division. Announcer, N. B. Williams. Slogan, "Tajpa Kevga Nails." Mon, 8-10:30 pm. Thurs, 9-11 pm. Central.

WTAZ Richmond, Va. 220.4m-1360kc. 15 watts. W. Reynolds, Jr., and T. J. McQuire.

WTFW Washington, D. C. 204m-1470kc. 50 watts. Independent Pub. Co.

WTFI Toocoa, Ga. 209.7m-1430kc. 250 watts. Toocoa Falls Institute. Tues, Thurs, 7-8 pm. Sun, 9-10 pm. Eastern.

WTIC Hartford, Conn. 535.4m-560kc. 500 watts. The Travelers Insurance Company. Slogan, "The Insurance City." Daily ex Sun, 6:30-11 pm. Sun, 4:30-7:30 pm. Founded Feb, 10, 1924. Eastern.

WTMJ Milwaukee, Wis. 293.9m-1020kc. 1000 watts. Milwaukee Journal. Announcers, Fred Jeske, Larry Teich. Slogan, "Voice of Wisconsin, Land of Lakes." Mon, Tues, Wed, Thurs, Fri, 10-12 pm, 3-12 pm. Sat, 10-12 pm, 3-11. Sun, 11-9:45 pm. Central.

WTRL Midland Park, N. J. 206.8m-1450kc. 15 watts. Technical Radio Laboratory. Tues, 7-9 pm. Fri, 7-8 pm. Sun, 2-4 pm. Eastern.

WWAE Chicago, Ill. 227.1m-1320kc. 500 watts. Dr. George F. Courier. Daily ex Sun, Mon, 7-9 pm. Central.

WWJ Detroit, Mich. 352.7m-850kc. 1000 watts. The Detroit News. Announcer, E. L. Tyson, F. P. Wallace. Mon, Wed, Fri, 7:10 am, exercises; 9:30-10, household hints; 10:30-10:35, weather; 11:55-12, time; 12:05-12:45 pm, music; 1, organ; 3, music. Daily ex Sat, Sun, 6-8 pm, Mon, 8:30 pm, WEAF; 9, WEAF. Tues, 8, WEAF. Wed, 8 pm, music; 8:30, WEAF; 9:30, WEAF. Thurs, 8 pm, WEAF; Fri, 8 pm, WEAF; 9, WEAF. Sun, 11 am, WEAF; 10, WEAF. Sun, 11 am, 7:30 pm, WEAF; 9:15, WEAF. Sat, 9-11 pm, variety program. Eastern. Founded Aug. 1920.

WWL New Orleans, La. 275.1m-1090kc. 100 watts. Loyola Univ. Announcer, O. L. Abell. Sat, 7:30-8:30 pm. Central. Founded March 31, 1922.

WWNC Asheville, N. C. 296.9m-1010kc. 1000 watts. Asheville Chamber of Commerce. Announcer, J. Dale Stentz. Daily ex Sun, 1 pm, 2, 7-8. Mon, 8-12 mid. Thurs, 8:10-45 pm. Sun, 11 am-4 pm, 7:30 pm. Eastern.

WWRL Woodside, N. Y. 267.7m-1120kc. 100 watts. W. H. Reuman.

WWVA Wheeling, W. Va. 336.9m-890kc. 250 watts. John C. Stroebel, Jr. Daily ex Sun, 6:45 am, 7:45, 11, 2 pm, 6. Mon, 7-11 pm. Sat, 11-1 am. Sun, 11 am, 1-4 pm. Eastern. Founded Dec. 6, 1926.

Canada

CFAC Calgary, Alta., Can. 434.5m-690kc. 500 watts. Calgary Herald. Announcer, Fred Carleton. Daily ex Sun, 1:15 pm, weather, markets, news; 3:30-4:30 pm; 9:30-10:30. Tues, 6-7 pm. Wed, 3:30-4:30 pm; 7:45-8:45. Thurs, 9 pm. 9:30-10:30, 12. Fri, 3:30-4:30 pm; 8:30. Sun, 11 am, 7 pm, service.

CFCA Toronto, Ont. Can. 356.9m-840kc. 500 watts. Toronto Star. Announcer, Gordon W. McClain. Daily ex Sun, 12 n, 5:45, 6:30, weather, stocks. Mon, 6:30-8 pm, Wed, 6:30-12 mid. Thurs, 6:30-9 pm, 10:30-12 mid. Sat, 6:30-10 pm. Sun, 11 am, 7 pm, 8:15. Eastern. Founded March, 1922.

CFCF Montreal, P. Q., Can. 410.7m-730kc. 1650 watts. Canadian Marconi Co. Announcer, C. Walter Darling. Daily ex Sun, 12:45-1:40 pm, stocks, music. Mon, Fri, 7:30 pm, bedtime stories; 7:30-8:30, music; 9-10, 10:30-11:30, orchestra. Wed, 7-8 pm, orchestra. Eastern.

CFCH Iroquois Falls, Ont. 499.7m-600kc. 250 watts. Abitibi Paper and Paper Co., Ltd.

CFCN Calgary, Alta., Can. 434.5m-690kc. 1800 watts. W. W. Grant, Ltd. Slogan, "Voice of the Prairies." Tues, 9-10 pm. Wed, 9-10 pm, 11-12. Thurs, 7:45-8:45 pm. Fri, 9-10 pm. Sun, 11 am, 7:15 pm, services, 7 pm. Mountain.

CFCQ Vancouver, B. C. 410.7m-730kc. 10 watts. Sport-Shops Radio Co.

CFCT Victoria, B. C., Can. 329.5m-910kc. 500 watts. The Deaville Station. Slogan, "The Mecca of Tourists." Daily ex Sun, 9:30-10:30 am, 12:30-1 pm. Every second Thurs, 10:30 pm, 12 mid, Night Birds, Mon, 6:30-7:30 pm. Sun, 11 am, 7:30 pm. Pacific. On air, since 1924.

CFCY Charlottetown, P. E. I. 312.3m-960kc. 100 watts. Island Radio Co. Wed, Thurs, 7-8 pm. Sun, 11 am. pm.

CFGC Brantford, Ont., Can. 296.9m-1010kc. 50 watts. The Brant Radio Supply Co., Ltd.

CFJC Kamloops, B. C. 267.7m-1120kc. 15 watts. N. S. Dalgleish and Sons, Weller and Weller. Mon, Fri, 5:30-6:30 pm. Wed, 8 pm. Pacific.

CFLE Prescott, Ont. 296.9m-1010kc. 50 watts. Radio Association of Prescott.

CFMC Kingston, Ont., Can. 267.7m-1120kc. 20 watts. Monarch Battery Mfg. Co., Ltd.

CFNB Fredericton, N. B. 247.8m-1210kc. 25 watts. James S. Neill & Sons, Ltd.

CFQC Saskatoon, Sask., Can. 329.5m-910kc. 500 watts. The Electric Shop, Ltd. Announcer, Grant Stevenson. Slogan, "The Hub City of the West Where No Northern Hard Wheat Grows." Daily ex Sun, 9-10 am, 1:15-2 pm, markets, reports, music. Mon, 6 pm, Wed, 7:30-10 pm. Thurs, Fri, 7:30-8:30 pm. Wed, 8:10 pm. Fri, 9-11:30 pm, dance program. Sun, 11 am, 7 pm, church service. Mountain.

CFRB Township of King, York County, Ont. 291.1m-1030kc. 1000 watts. Standard Radio Mfg. Corp., Ltd.

CFRC Kingston, Ont., Can. 267.7m-1120kc. 500 watts. Queen's University. Inc. Oct, 1923.

CFYC Vancouver, B. C. 410.7m-730kc. 500 watts. International Bible Students' Assn.

CHCS Hamilton, Ont., Can. 340.7m-880kc. 10 watts. Hamilton Spectator.

CHCY King Edward Park, Edmonton, Alta. 516.9m-580kc. 250 watts. International Bible Students' Association. Tues, Thurs, Sat, 8:10-10 pm. Sun, 10-11 am, 3-4 pm, 9:15-10:30. Mountain. Founded May 11, 1926.

CHIC Toronto, Can. 356.9m-840kc. 500 watts. Northern Electric Company, Ltd. Announcer, R. W. Lowman. Mon, 8-9 pm, 11-1 am. Sat, 10-11 am, 8-9 pm, 10-11 pm. Sun, 5-6 pm. Eastern.

CHMA Edmonton, Alta. 516.9m-580kc. 250 watts. Christian & Missionary Alliance. Sun, 11 am, 1:15 pm, 2-3, 5-5:30, 5:45, 10:30. Sat, 6 pm. Mountain.

CHML Mount Hamilton, Ont., Can. 340.7m-880kc. 50 watts. Maple Leaf Radio Co., Ltd.

CHNC Toronto, Can. 356.9m-840kc. 500 watts. Toronto Radio Research society.

CHNS Halifax, N. S. 322.4m-930kc. 100 watts. Northern Elec. Co., Ltd. Sun, Mon, Wed, evening program. Atlantic. Founded May 12, 1926.

CHPC Vancouver, B. C. 410.7m-730kc. 1000 watts. Central Presbyterian Church.

CHRC Quebec, Que. 340.7m-880kc. 5 watts. E. Fontaine.

CHSC Unity, Sask. 267.7m-1120kc. 50 watts. H. N. Stovin. Radio Sales. Tues, Thurs, Fri, 7:30-9 pm. Sun, 7:30-8:45 pm.

CHUC Saskatoon, Sask., Can. 329.5m-910kc. 250 watts. International Bible Students' association. Announcer, C. Roberts. Tues, 7:30-10 pm. Thurs, 8:30-10 pm. Fri, 9-10 pm. Sun, 12:45-2:15 pm. 8:30-10 pm.

CHUC Regina, Sask., Can. 312.3m-960kc. 15 watts. R. H. Williams & Sons, Ltd. Daily ex Sun, 12-1 pm, 5-6. Wed, Sat, 8-10 pm. Mountain.

CHWCK Chilliwack, B. C., Can. 247.8m-1210kc. 5 watts. Chilliwack Broadcasting Co., Ltd.

CHYC Montreal, Que., Can. 411m-730kc. 750 watts. North-eastern Co., Ltd. Announcer, N. S. Richards. Wed, 6-12:30 am. Sun, 11 am, 7 pm. CNRM programs occasionally. Eastern.

CJBC Toronto, Ont. 291.1m-1030kc. 500 watts. Baptist Church.

CJBR Regina, Sask. 312.3m-960kc. 500 watts. Saskatchewan Co-operative Wheat Producers, Ltd. Thurs, 7:30-9 pm.

CJCA Edmonton, Alta., Can. 516.9m-580kc. 500 watts. Edmonton Journal, Ltd. Announcer, R. A. Rice. Slogan, "The Sunniest Spot in Sunny Alberta." Daily ex Sun, 12:30 am, markets, news; 7:15 pm, children's program; Wed, Sat, 12:30 pm, 2 mid. Messages to North. Daily ex Sun, 11 am, music; 10:55, 11 am, Wed, 8:30 pm, bridge; 9-11, 11-12. Fri, 8-10:30 pm. Sat, 8-12 mid. Sun, 11 am, 7:15 pm. Mountain.

CJCI Calgary, Alta. 434.5m-690kc. 250 watts. Radio Service & Repair Shop.

CJCR Red Deer, Alta., Can. 356.9m-840kc. 1000 watts. The North American Collieries, Ltd.

CJGC London, Ont., Can. 329.5m-910kc. 500 watts. London Free Press. Daily ex Sun, 1-2 pm, stocks, markets. Tues, Wed, Thurs, Fri, 7-9 pm. Fri, 1-12 midnight. Sun, 11 am, 2-3 pm, 7, church services. Eastern.

CJGX Yorkton, Sask. 475.9m-630kc. 500 watts. The Winnipeg Grain Exchange. Daily ex Sun, 11:30 am, 11:30, grain; 1:45 pm. Tues, Fri, 8:30-10 pm. Central.

CJOR Sea Island, B. C. 291.1m-1030kc. 50 watts. G. C. Chandler.

CJRM Moose Jaw, Sask. 296.9m-1010kc. 500 watts. James Keith & Sons, Ltd. Daily ex Sun, 8:30-10:15 am, 10:55-2:30 pm, weather, markets. Mon, Wed, Fri, 6:30 pm. Sat, 10-12 mid. Sun, 9:30 am, 1:30 pm. Mountain.

CJSC Toronto, Can. 356.9m-840kc. 500 watts. The Evening Telegram.

CJWC Saskatoon, Sask., Can. 329.5m-910kc. 250 watts. Wheaton Elec. Co. Announcer, M. Howe. Daily ex Sun, 11:45-1 pm. Mon, 7 pm. Tues, Wed, Thurs, Sat, 6-7 pm. Sun, 3:45-5 pm. Founded Sept. 28, 1925.

CJYC Toronto, Can. 291.1m-1030kc. 500 watts. Universal Radio of Canada, Ltd. Mon, 6-12 mid. Tues, 10-12 pm. Wed, Sat, 6-8 pm. Fri, 10-12 mid.

CKAC Montreal, Que., Can. 410.7m-730kc. 1200 watts. La Presse. Announcer, Jacques Cartier. Mon, Wed, Fri, 1:45 pm, orchestra. Daily ex Sat, 4 pm, weather, markets, stocks, reports. Tues, Sat, 7 pm, safety talks; 10:30, dance. Sun, 2:45 pm. Capitol theater, 4:30, first three Thurs of month. CKAC. Last Thurs, Frontenac Breweries studio. Eastern.</

An Evening at Home With the Listener

IN CENTRAL TIME

IN EASTERN TIME

Call	Met.	Kc.	Watts	Saturday	Sunday	Monday	Tuesday	Wed.	Thursday	Friday	Call	Location	Met.	Kc.	Watts	Saturday	Sunday	Monday	Tuesday	Wed.	Thursday	Friday		
CFCA	356.9	840	500	Silent	7:00-7:15	6:15-8:15	Silent	7:00-11:45	6:25-9:30	Silent	CFCA	Toronto	356.9	840	500	Silent	8:00-10:15	7:15-9:15	Silent	8:00-12:45	7:25-10:30	Silent		
CJRM	296.9	1010	500	11:30-12:30	7:30-10:00	7:30-10:00	Silent	7:30-10:00	8:30-10:30	Silent	CJRM	Toronto	296.9	1010	500	12:30-1:30	8:00-12:00	8:30-11:00	Silent	8:30-11:00	7:25-10:30	Silent		
CKAC	410.7	730	7500	6:00-7:00	7:00-8:00	7:00-8:00	Silent	7:00-8:00	8:30-10:30	Silent	CKAC	Montreal	410.7	730	7500	8:15-1:00	3:45-6:45	Silent	8:15-12:30	Silent	9:30-10:30	Silent		
CKCF	356.9	840	5000	6:00-7:00	7:00-8:00	7:00-8:00	Silent	7:00-8:00	8:30-10:30	Silent	CKCF	Toronto	356.9	840	5000	8:15-1:00	3:45-6:45	Silent	8:15-12:30	Silent	9:30-10:30	Silent		
CKNC	356.9	840	500	6:00-7:00	7:00-8:00	7:00-8:00	Silent	7:00-8:00	8:30-10:30	Silent	CKNC	Toronto	356.9	840	500	8:15-1:00	3:45-6:45	Silent	8:15-12:30	Silent	9:30-10:30	Silent		
CKY	384.4	780	500	7:30-10:30	6:00-9:00	7:30-11:00	Silent	8:00-11:00	9:00-12:00	Silent	CKY	Shenandoah	384.4	780	500	8:30-11:30	7:00-10:00	8:30-12:00	Silent	9:00-1:00	8:30-10:00	Silent		
CNRO	431.5	690	500	Silent	9:30-11:00	Silent	9:30-11:00	9:30-11:30	9:30-10:30	Silent	CNRO	Ottawa	431.5	690	500	8:30-11:30	7:00-10:00	8:30-12:00	Silent	9:00-1:00	8:30-10:00	Silent		
CYH	400	750	500	9:00-10:00	9:00-10:00	9:00-10:00	9:00-10:00	9:00-10:00	9:00-10:00	Silent	CYH	Monterey	400	750	500	10:00-11:00	10:30-12:00	Silent	10:00-11:00	10:00-11:00	10:00-11:00	10:00-11:00	10:00-11:00	
CVL	400	750	500	9:00-10:00	9:00-10:00	9:00-10:00	9:00-10:00	9:00-10:00	9:00-10:00	Silent	CVL	Mexico City	400	750	500	10:00-11:00	10:30-12:00	Silent	10:00-11:00	10:00-11:00	10:00-11:00	10:00-11:00	10:00-11:00	
KDKA	315.6	950	2000	6:00-9:00	10:00-10:15	5:00-9:00	5:00-9:00	5:00-9:00	5:00-9:00	Silent	KDKA	Pittsburgh	315.6	950	2000	7:00-10:00	2:00-11:15	6:00-10:00	6:00-10:00	6:00-10:00	6:00-10:00	6:00-10:00	6:00-10:00	6:00-10:00
KFAB	309.1	970	5000	5:30-10:00	9:00-10:00	5:30-10:15	5:30-10:00	5:30-10:00	5:30-10:00	Silent	KFAB	Lincoln	309.1	970	5000	6:30-11:00	10:00-11:00	6:30-11:15	6:30-11:15	6:30-11:15	6:30-11:15	6:30-11:15	6:30-11:15	6:30-11:15
KFDM	483.6	620	500	Silent	8:00-9:00	8:00-9:00	Silent	8:00-9:00	8:00-9:00	Silent	KFDM	Lincoln	483.6	620	500	6:30-11:00	10:00-10:30	Silent	9:00-11:00	9:00-11:00	9:00-11:00	9:00-11:00	9:00-11:00	
KFH	245.8	1220	500	7:30-8:30	7:00-8:00	7:30-8:30	7:30-8:30	7:30-8:30	7:30-8:30	Silent	KFH	Wichita	245.8	1220	500	8:30-9:30	8:00-9:00	8:30-9:30	8:30-9:30	8:30-9:30	8:30-9:30	8:30-9:30	8:30-9:30	
KFJF	468.5	500	5000	8:15-2:00	8:15-2:00	8:15-2:00	8:15-2:00	8:15-2:00	8:15-2:00	Silent	KFJF	Los Angeles	468.5	500	5000	9:15-3:00	9:30-2:00	9:15-2:00	9:15-2:00	9:15-2:00	9:15-2:00	9:15-2:00	9:15-2:00	
KFJF	272.2	1100	750	7:15-2:00	1:30-9:00	7:15-8:30	7:15-8:30	7:15-8:30	7:15-8:30	Silent	KFJF	Oklahoma City	272.2	1100	750	6:00-8:00	7:00-8:00	6:00-8:00	6:00-8:00	6:00-8:00	6:00-8:00	6:00-8:00		
KFNH	461.3	650	2000	5:00-7:00	6:00-7:00	5:00-7:00	5:00-7:00	5:00-7:00	5:00-7:00	Silent	KFNH	Seattle	461.3	650	2000	6:00-8:00	7:00-8:00	6:00-8:00	6:00-8:00	6:00-8:00	6:00-8:00			
KFOA	447.5	670	1000	8:00-12:00	8:30-11:00	8:00-2:00	8:00-2:00	8:00-2:00	8:00-2:00	Silent	KFOA	Long Beach	447.5	670	1000	9:00-3:00	9:00-3:00	9:00-3:00	9:00-3:00	9:00-3:00	9:00-3:00			
KFON	241.1	740	500	8:00-11:00	8:00-11:00	8:00-11:00	8:00-11:00	8:00-11:00	8:00-11:00	Silent	KFON	San Francisco	241.1	740	500	9:00-3:00	9:00-3:00	9:00-3:00	9:00-3:00	9:00-3:00	9:00-3:00			
KFRU	454	660	1000	7:30-2:00	7:00-12:30	6:30-2:00	6:30-2:00	6:30-2:00	6:30-2:00	Silent	KFRU	San Francisco	454	660	1000	9:00-3:00	9:00-3:00	9:00-3:00	9:00-3:00	9:00-3:00	9:00-3:00			
KFRU	249.9	1200	500	Silent	9:00-11:00	6:15-7:15	6:15-7:15	6:15-7:15	6:15-7:15	Silent	KFRU	San Francisco	249.9	1200	500	9:00-3:00	9:00-3:00	9:00-3:00	9:00-3:00	9:00-3:00	9:00-3:00			
KFSD	440.9	680	500	6:00-12:00	2:00-9:00	6:00-9:00	6:00-9:00	6:00-9:00	6:00-9:00	Silent	KFSD	San Diego	440.9	680	500	7:00-1:00	3:00-10:00	7:00-10:00	7:00-10:00	7:00-10:00	7:00-10:00			
KFUO	545.1	520	500	7:15-8:15	9:15-10:15	8:00-9:00	8:00-9:00	8:00-9:00	8:00-9:00	Silent	KFUO	St. Louis	545.1	520	500	8:15-9:15	10:15-11:15	9:00-10:00	9:00-10:00	9:00-10:00	9:00-10:00			
KFVH	234.2	1280	1000	6:45-12:00	7:00-10:30	7:00-12:00	7:00-12:00	7:00-12:00	7:00-12:00	Silent	KFVH	Hollywood	234.2	1280	1000	7:45-1:00	8:00-11:30	8:00-1:00	8:00-1:00	8:00-1:00	8:00-1:00			
KGWA	361.2	830	500	8:00-9:00	8:00-9:00	8:00-9:00	8:00-9:00	8:00-9:00	8:00-9:00	Silent	KGWA	San Francisco	361.2	830	500	9:00-3:00	11:30-2:00	9:00-3:00	9:00-3:00	9:00-3:00	9:00-3:00			
KGA	267.1	1120	500	9:50-11:30	9:50-11:30	9:50-11:30	9:50-11:30	9:50-11:30	9:50-11:30	Silent	KGA	Spokane	267.1	1120	500	9:00-3:00	10:50-2:00	9:00-3:00	9:00-3:00	9:00-3:00	9:00-3:00			
KGB	260.7	1150	2000	Silent	9:50-11:30	8:00-11:00	8:00-11:00	8:00-11:00	8:00-11:00	Silent	KGB	Oakland	260.7	1150	2000	11:00-3:00	9:30-12:00	9:00-12:00	9:00-12:00	9:00-12:00	9:00-12:00			
KGO	384.4	780	500	10:00-2:00	8:30-11:20	8:00-11:20	8:00-11:20	8:00-11:20	8:00-11:20	Silent	KGO	Portland	384.4	780	500	9:00-3:00	10:00-2:00	9:00-3:00	9:00-3:00	9:00-3:00	9:00-3:00			
KGW	491.5	610	500	8:00-11:00	8:00-11:00	8:00-11:00	8:00-11:00	8:00-11:00	8:00-11:00	Silent	KGW	Los Angeles	491.5	610	500	11:00-1:00	10:00-1:00	11:00-1:00	11:00-1:00	11:00-1:00	11:00-1:00			
KHJ	416.4	900	500	8:00-12:00	9:00-12:00	Silent	10:00-1:00	10:00-1:00	10:00-1:00	Silent	KHJ	Seattle	416.4	900	500	11:00-1:00	10:00-1:00	11:00-1:00	11:00-1:00	11:00-1:00	11:00-1:00			
KIAF	421	709	500	Silent	9:00-10:00	9:00-10:00	Silent	9:00-10:00	9:00-10:00	Silent	KIAF	Seattle	421	709	500	9:00-3:00	10:45-1:45	9:00-3:00	9:00-3:00	9:00-3:00	9:00-3:00			
KJR	348.6	860	2500	8:00-2:00	9:00-12:45	8:00-2:00	8:00-2:00	8:00-2:00	8:00-2:00	Silent	KJR	Seattle	348.6	860	2500	9:00-3:00	10:45-1:45	9:00-3:00	9:00-3:00	9:00-3:00	9:00-3:00			
KLDS	270.1	1110	1500	Silent	9:15-10:15	8:00-9:00	8:00-9:00	8:00-9:00	8:00-9:00	Silent	KLDS	Independence	270.1	1110	1500	9:00-3:00	10:15-11:15	9:00-3:00	9:00-3:00	9:00-3:00	9:00-3:00			
KLX	508.2	950	500	Silent	9:00-10:30	8:30-12:00	8:30-12:00	8:30-12:00	8:30-12:00	Silent	KLX	Shenandoah	508.2	950	500	10:00-11:30	Silent	10:00-11:30	10:00-11:30	10:00-11:30	10:00-11:30			
KMA	394.5	760	1000	9:00-10:30	9:00-10:30	8:00-9:00	8:00-9:00	8:00-9:00	8:00-9:00	Silent	KMA	Clay Center	394.5	760	1000	9:00-10:30	9:45-10:45	9:00-10:30	9:00-10:30	9:00-10:30	9:00-10:30			
KMX	285.1	850	500	9:00-10:00	8:00-9:45	8:00-9:00	8:00-9:00	8:00-9:00	8:00-9:00	Silent	KMX	St. Louis	285.1	850	500	9:00-10:30	9:15-10:45	9:00-10:30	9:00-10:30	9:00-10:30	9:00-10:30			
KNOX	299.8	1000	5000	6:00-1:00	6:00-1:00	6:00-1:00	6:00-1:00	6:00-1:00	6:00-1:00	Silent	KNOX	St. Louis	299.8	1000	5000	10:00-3:00	9:15-1:00	9:45-3:00	9:45-3:00	9:45-3:00	9:45-3:00			
KNX	336.9	920	500	9:00-2:00	8:45-12:00	9:00-1:00	9:00-1:00	9:00-1:00	9:00-1:00	Silent	KNX	Denver	336.9	920	500	9:00-3:00	8:30-10:45	8:30-12:00	8:30-12:00	8:30-12:00	8:30-12:00			
KOA	325.9	920	5000	Silent	7:00-12:00	6:00-12:00	6:00-12:00	6:00-12:00	6:00-12:00	Silent	KOA	Council Bluffs	325.9	920	5000	9:00-3:00	12:00-1:00	7:00-1:00	7:00-1:00	7:00-1:00	7:00-1:00			
KOL	277.6	1080	2000	Silent	1:00-12:00	10:00-12:00	10:00-12:00	10:00-12:00	10:00-12:00	Silent	KOL	Portland	277.6	1080	2000	10:00-11:00	9:30-1:00	9:00-1:00	9:00-1:00	9:00-1:00	9:00-1:00			
KOM	319	940	1000	9:15-10:00	8:00-12:00	8:00-12:00	8:00-12:00	8:00-12:00	8:00-12:00	Silent	KOM	Seattle	319	940	1000	9:00-3:00	10:00-1:00	9:00-3:00	9:00-3:00	9:00-3:00	9:00-3:00			
KPO	422.3	710	1000	8:00-2:00	8:00-12:00	8:00-2:00	8:00-2:00	8:00-2:00	8:00-2:00	Silent	KPO	San Francisco	422.3	710	1000	9:00-3:00	9:00-1:00	9:00-3:00	9:00-3:00	9:00-3:00	9:00-3:00			
KPRC	293.9	1020	500	7:30-12:00	7:00-10:30	7:30-9:30	7:30-9:30	7:30-9:30	7:30-9:30	Silent	KPRC	Houston	293.9	1020	500	11:00-12:00	9:00-10:00	11:00-12:15	11:00-12:15	11:00-12:15	11:00-12:15			
KPSN	315.6	950	1000	10:00-11:00	8:00-9:00																			

STATE AND CITY INDEX

Alabama City Call Meters Kc. Watts Auburn WAPL 352.3 1,000 250 Birmingham WBRC 243.8 1,230 250

Arizona Flagstaff KFXY 205.4 1,460 25 Phoenix KFAD 272.6 1,100 125

Arkansas Blytheville KLCN 285.5 1,050 50 Fayetteville KUOA 286.9 1,010 50

California Avalon KFOW 289.8 1,000 250 Berkeley KRE 256.3 1,170 100

Colorado Colo. Spgs. KFUM 282.8 1,060 1,000 Denver KFEI 227.1 1,320 100

Connecticut Bridgeport WICC 265.3 1,130 50 Danbury WICW 285.4 1,130 100

Delaware Wilmington WDEL 296.9 1,010 100 District of Columbia Washington WJAF 241.8 1,240 250

Florida Gainesville WHBN 296.9 1,010 10 Clearwater WFLA 508.2 590 50

Georgia Atlanta WGST 270.1 1,110 500 Macon WMAZ 270.1 1,110 500

Idaho Boise KFAD 285.5 1,050 2,000 Kelloeg KFXY 232.4 1,290 150

Illinois Atwood WLBQ 202.6 1,480 25 Batavia WWORD 416.2 720 5,000

Illinois (Continued) City Call Meters Kc. Watts Carle WSKC 344.6 870 5,000

Indiana Anderson WHBU 220.4 1,360 15 Brookville WKBY 217.3 1,380 100

Iowa Ames WOI 265.3 1,130 2,500 Boone KFQO 209.7 1,430 10

Kansas Concordia KGCN 208.1 1,440 50 Independence KFVC 225.4 1,330 50

Kentucky Hopkinsville WFIW 280.2 1,070 500 Louisville WHAS 461.3 650 500

Louisiana Cedar Grove KGCH 212.6 1,410 50 New Orleans WABZ 247.8 1,210 50

Maine Bangor WABI 389.4 770 100 Portland WCSH 483.6 620 100

Maryland Baltimore WBAL 285.5 1,050 5,000 WCBM 384.4 780 100

Massachusetts Babson Park WBSO 384.4 780 100 Boston WBES 461.3 650 100

Minnesota Hailcock KGFB 223.7 1,340 50 Minneapolis KFGE 215.7 1,390 10

Mississippi Columbus WCOG 230.6 1,300 250 Utica WQBC 215.7 1,390 100

Missouri Central City KFVS 223.7 1,340 50 Cartersville KFPV 285.4 1,140 50

Montana Hardin KGPH 263 1,140 50 Havre KFBB 275.1 1,090 50

Nebraska Central City KGES 204 1,470 10 Clay Center KMMJ 285.4 1,140 750

New Hampshire Laconia WKAV 223.7 1,340 50 Manchester WCOM 238 1,260 100

New Jersey Asbury Park WDWB 239.9 1,250 500 Atlantic City WHAR 272.6 1,100 1,000

New York Astoria WGBS 348.6 860 500 Auburn WMOB 220.4 1,360 100

North Carolina Asheville WNNC 286.9 1,010 1,000 Charlotte WBT 255.5 1,160 1,000

North Dakota Aneta KGFN 198.9 1,500 500 Bismarck KFVR 249.9 2,000 250

Ohio Akron WADC 296.9 1,010 500 WFCJ 252 1,190 250

Oklahoma Alva KGFJ 205.4 1,460 25 Chickasha KOCW 252 1,190 250

Oregon Astoria KFJI 249.9 1,420 15 Corvallis KOCV 201.2 1,490 50

Pennsylvania Allentown WCBA 222.1 1,350 100 Altoona WFBG 280.2 1,070 100

Rhode Island Cranston WDWL 275.1 1,090 500 Newport WMBR 201 1,470 100

South Carolina Charleston WBBY 499.7 600 75 South Dakota Brookings KFDF 440.3 650 500

Tennessee Chattanooga WDDO 245.8 1,220 500 Knoxville WFBG 234.2 1,280 50

Texas Amarillo KGRS 243.8 1,230 150 Austin KUT 232.4 1,290 500

State and City Index Continued

Texas (Continued)			
City	Call	Meters	Kc. Watts
Dallas	WFAA	497.7	600 500
Dallas	WRR	461.3	650 500
Dallas	KFPL	275.1	1,090 15
El Paso	WDAI	234.2	1,280 100
Fort Worth	KFJZ	249.9	1,200 50
Fort Worth	KFQB	333.1	900 1,000
Galveston	WBAP	499.7	600 1,500
Galveston	KGIX	270.1	1,110 100
Galveston	KFUL	258.5	1,160 500
Greenville	KFFM	230.6	1,300 14
Harlingen	KHMC	236.1	1,270 100
Houston	KFVI	238	1,260 250
Houston	KPRC	293.9	1,020 500
Houston	KTUE	212.6	1,410 5
San Angelo	KGFI	220.4	1,360 15
San Antonio	KGCI	220.4	1,360 15
San Antonio	KGDR	202.6	1,480 15
San Antonio	KGRC	220.4	1,360 50
San Antonio	KTAP	228.9	1,310 20
San Antonio	KTSA	265.3	1,130 2,000
Waco	WOAI	319	940 5,000
Waco	WJAD	333.1	900 500

Utah			
City	Call	Meters	Kc. Watts
Orden	KFUR	225.4	1,330 500
Salt Lake C.	KDYL	258.5	1,160 100
Salt Lake C.	KFIT	499.7	600 50
Salt Lake C.	KSL	302.6	990 1,000

Vermont			
City	Call	Meters	Kc. Watts
Burlington	WCAX	254.1	1,180 100
Springfield	WBX	220.4	1,240 10

Virginia			
City	Call	Meters	Kc. Watts
Arlington	NAA	434.5	690 1,000
Norfolk	WBW	236.1	1,270 50
Norfolk	WRCV	209.7	1,430 100
Norfolk	WTAR	236.1	1,270 500
Petersburg	WLBG	214.2	1,400 100
Richmond	WBBL	247.8	1,210 100
Richmond	WBWG	220.4	1,360 15
Richmond	WRVA	254.1	1,180 1,000
Richmond	WTAT	220.4	1,360 15
Roanoke	WDBJ	230.6	1,300 50
Va. Beach	WSEA	263	1,140 500

Washington			
City	Call	Meters	Kc. Watts
Aberdeen	KXRO	227.1	1,320 50
Bellingham	WVW	209.7	1,430 50

Washington (Continued)			
City	Call	Meters	Kc. Watts
Everett	KFBL	223.7	1,340 50
Lacey	KCY	243.8	1,230 50
Pullman	KWSC	394.5	760 500
Seattle	KFOW	217.3	1,380 100
Seattle	KXA	348.6	860 500
Seattle	KJR	348.6	860 2,500
Seattle	KGGL	202.6	1,480 100
Seattle	KGJL	230.6	1,300 50
Seattle	KKP	265.3	1,153 15
Seattle	KOMO	305.9	980 1,000
Seattle	KPCB	230.6	1,300 50
Seattle	KRSC	211.1	1,420 50
Seattle	KTW	394.5	760 1,000
Seattle	KUJ	199.9	1,500 10
Spokane	KXA	348.6	860 500
Spokane	KFIO	245.8	1,220 100
Spokane	KFPY	245.8	1,220 250
Spokane	KGA	260.7	1,150 2,000
Spokane	KHJ	270.2	810 1,000
Tacoma	KVI	234.2	1,280 50
Tacoma	KMO	254.1	1,180 250
Walla Walla	KOWW	299.9	1,000 500

West Virginia			
City	Call	Meters	Kc. Watts
Charleston	WOBU	267.7	1,120 50
Huntington	WSAZ	241.8	1,240 100
Wheeling	WVVA	336.9	890 250

Wisconsin			
City	Call	Meters	Kc. Watts
Appleton	WAIZ	227.1	1,320 100
Beloit	WEBW	258.5	1,160 500
Camp Lake	WCLC	227.1	1,320 100
Eau Claire	WTAO	254.1	1,180 500
Fond du Lac	KFIZ	267.7	1,120 100
Kenosha	WKDR	322.4	930 15
La Crosse	WFBH	220.4	1,360 500
Madison	WHA	333.1	900 750
Madison	WIBA	239.9	1,250 100
Manitowoc	WOMT	222.1	1,350 100
Milwaukee	WGBB	218.6	1,370 500
Milwaukee	WHD	270.1	1,110 500
Milwaukee	WSOE	270.1	1,110 500
Milwaukee	WTMJ	293.9	1,020 1,000
Pequot	WBCB	241.8	1,240 250
Racine	WRRS	322.4	930 50
Sisht	WBAR	270.1	1,110 500
Stevens Point	WLBL	302.8	990 1,000
Superior	WIBC	241.8	1,240 250
W. De Pere	WHBY	249.9	1,200 50

Wyoming			
City	Call	Meters	Kc. Watts
Laramie	KFBU	428.3	700 500

Alaska			
City	Call	Meters	Kc. Watts
Anchorage	KFQD	344.6	870 100
Juneau	KFIU	225.4	1,330 10
Ketchikan	KGBU	228.9	1,310 500

Hawaii			
City	Call	Meters	Kc. Watts
Honolulu	KGHB	227.1	1,320 25

Philippines			
City	Call	Meters	Kc. Watts
Manila	KZIB	249.9	1,200 20
Manila	KZRM	413	726.1 500
Manila	KZRQ	400	750 500

Porto Rico			
City	Call	Meters	Kc. Watts
San Juan	WKAQ	340.7	880 500

Canada			
City	Call	Meters	Kc. Watts
Bowmanville	CKCW	312.3	960 5,000
Calgary	CFAC	434.5	690 750
Calgary	CFCA	434.5	690 1,800
Calgary	CJJC	434.5	690 250
Calgary	CNRC	434.5	690 500
Charlottetown	CFCY	312.3	960 100
Charlottetown	CFRC	247.8	1,210 5
Edmonton	CHMA	516.9	580 250
Edmonton	CJCA	516.9	580 500
Edmonton	CNRA	516.9	580 500
Edmonton	CHCY	516.9	580 250
Fredericton	CFNB	247.8	1,210 25
Halifax	CFRC	247.8	1,210 15
Hamilton	CHCS	460.7	880 10
Hamilton	CKOC	340.7	880 100
Iroquois Falls	CFCH	499.7	600 250
Kamloops	CFJC	267.7	1,120 15
King	CFRB	291.1	1,030 1,000
King	CICQ	410.7	730 10
Kingston	CFMC	267.7	1,120 20
London	CFRC	247.8	1,210 5
London	CJGC	329.5	910 500
Midland	CKPR	267.7	1,120 50
Moncton	CNRA	322.4	930 500
Montreal	CFJC	410.7	730 1,650
Montreal	CHYC	410.7	730 750
Montreal	CKAC	410.7	730 1,200
Montreal	CNRM	410.7	730 1,000

Canada (Continued)			
City	Call	Meters	Kc. Watts
Moose Jaw	CJRM	290.7	1,010 50
Burnaby	CFYC	410.7	730 500
Ottawa	CKCO	434.5	690 100
Ottawa	CNRO	434.5	690 500
Prescott	CFCL	296.9	1,010 50
Prescott	CKPC	247.8	1,210 7 1/2
Quebec	CHRC	340.7	880 5
Quebec	CKGI	340.7	880 22 1/2
Quebec	CKCV	340.7	880 50
Quebec	CNRO	340.7	880 50
Red Deer	CKLC	356.9	840 1,000
Regina	CHWC	312.3	960 15
Regina	CJBR	312.3	960 500
Regina	CKCK	312.3	960 500
Regina	CNRR	312.3	960 500
Saskatoon	CFCC	329.5	910 250
Saskatoon	CHUC	329.5	910 250
Saskatoon	CJWC	329.5	910 500
Saskatoon	CNRS	329.5	910 500
Scarboro	CJYC	291.1	1,030 500
Scarboro	CKCK	291.1	1,030 500
Sea Island	CJOR	291.1	1,030 50
St. Hyacinthe	CKSH	312.3	960 50
Summerside	CHGS	267.7	1,120 25
Toronto	CFCA	356.9	840 500
Toronto	CHIC	356.9	840 500
Toronto	CHBC	291.1	1,030 500
Toronto	CJSC	356.9	840 500
Toronto	CJYC	291.1	1,030 500
Toronto	CKCL	356.9	840 500
Toronto	CJBC	291.1	1,030 500
Toronto	CKNC	356.9	840 500
Toronto	CKSM	291.1	1,030 1,000
Toronto	CNRT	356.9	840 500
Unity	CHSC	267.7	1,120 50
Vancouver	CFQO	410.7	730 10
Vancouver	CHPC	410.7	730 1,000
Vancouver	CKCD	410.7	730 1,000
Vancouver	CKCY	410.7	730 500
Vancouver	CKWV	410.7	730 50
Vancouver	CNVR	291.1	1,030 500
Victoria	CFCT	329.5	910 500
Winnipeg	CKY	384.4	780 500
Winnipeg	CNRW	384.4	780 500
Yorkton	CJGX	475.9	630 500

Canada (Continued from Page 49)

CKCV			
City	Call	Meters	Kc. Watts
Quebec, P. Q.	340.7m-880kc.	50 watts.	G. A. Vandry.

CKCX			
City	Call	Meters	Kc. Watts
Toronto, Ont.	291.1m-1030kc.	500 watts.	International Bible Students' Assn. Tues, Fri, 8-10 pm. Sun, 9:30-11 am, 1:30-3 pm, 8:15-9:15, 10:15-11:15, Eastern.

CKFC			
City	Call	Meters	Kc. Watts
Vancouver, B. C., Can.	410.7m-730kc.	50 watts.	United Churches of Canada.

CKGW			
City	Call	Meters	Kc. Watts
Bowmanville, Ont., Can.	312.3m-960kc.	5,000 watts.	Canadian Broadcasting Corp.

CKLC			
City	Call	Meters	Kc. Watts
Fed Deer, Alta.	356.9m-840kc.	1,000 watts.	Alberta Pacific Grain Co. Ltd.

CKMC			
City	Call	Meters	Kc. Watts
Culbalt, Ont.	247.8m-1210kc.	5 watts.	R. L. MacAdam.

CKNC			
City	Call	Meters	Kc. Watts
Toronto, Ont., Can.	356.9m-840kc.	500 watts.	Canadian National Carbon Co., Ltd. Announcer. Ed. J. Stafford. Mon, Thurs, 9 pm. Eastern. Founded May 2, 1924.

CKOC			
City	Call	Meters	Kc. Watts
Hamilton, Ont., Can.	340.7m-880kc.	100 watts.	Wentworth Radio Supply Co., Ltd. Announcer, I. Moore. Slogan, "The Voice of Hamilton." Mon, Wed, Fri, Sat, 12:15 m. Tues, Thurs, 6-8 pm. 11-12 mid. Wed, 4-30 pm. stocks. Mon, Wed, Fri, 1 pm. Eastern.

CKPC			
City	Call	Meters	Kc. Watts
Freston, Ont.	247.8m-1210kc.	7 1/2 watts.	Wallace Riss. Mon, Fri, 8-11 pm. Sun, 11-12:30 pm, 3-4:30.

CKPR			
City	Call	Meters	Kc. Watts
Milland, Ont.	267.7m-1120kc.	50 watts.	E. O. Swan.

CKSH			
City	Call	Meters	Kc. Watts
St. Hyacinthe, P. Q.	312.3m-960kc.	50 watts.	City of St. Hyacinthe.

CKSM			
City	Call	Meters	Kc. Watts
Toronto, Ont.	291.1m-1030kc.	1,000 watts.	St. Michael's Cathedral.

CKUA			
City	Call	Meters	Kc. Watts
Edmonton, Alta.	516.9m-580kc.	500 watts.	U. of Alberta.

CKWX			
City	Call	Meters	Kc. Watts
Vancouver, B. C.	410.7m-730kc.	50 watts.	Sparks Company, Announcer, H. W. Paulson. Daily ex Sun, 11-12 m. 4:30-5:30 pm, 6-7:30. Wed, 9:30-12 mid. Thurs, 11-12 mid. Fri, 9-10:30 pm. Sat, 11:30 am. Pacific.

CKY			
City	Call	Meters	Kc. Watts
Winnipeg, Man., Can.	384.4m-780kc.	500 watts.	Manitoba Tel. System, Announcer, F. E. Rutland. Slogan, "Manitoba's Own Station." Daily ex Sun, 10:50-11 am, 12:1-45 pm, 3-4:30, 8:30, 9. Wed, Sat, 9-11 pm. CNRW. Central.

CNRA			
City	Call	Meters	Kc. Watts
Moncton, N. B., Can.	322.4m-930kc.	500 watts.	Canadian National Railways, Announcer, W. V. George. Slogan, "Voice of the Maritimes." Daily ex Sun, 2:30-4 pm. Tues, Fri, 9 pm. Atlantic. started Nov. 8, 1924.

CNRC			
City	Call	Meters	Kc. Watts
Calgary, Alta., Can.	434.5m-690kc.	500 watts.	Canadian National Railways. Mon, Thurs, 9:30-10:30 pm. Mountain.

CNRE			
City	Call	Meters	Kc. Watts
Edmonton, Alta., Can.	516.9m-580kc.	500 watts.	Canadian National Railways. Mon, 10:30-12 mid. Fri, 10:30-12 mid. Mountain.

CNRM			
City	Call	Meters	Kc. Watts
Montreal, Que., Can.			

Official Wave Lengths Table

Wave length	Frequency (kilocycles)	Power (watts)	Call signal	Location	Wave length	Frequency (kilocycles)	Power (watts)	Call signal	Location	Wave length	Frequency (kilocycles)	Power (watts)	Call signal	Location	Wave length	Frequency (kilocycles)	Power (watts)	Call signal	Location					
199.9	1,500			15 KGFN Aneta, N. D. 250 KGW Seattle, Wash. 15 KWBS Portland, Ore. 15 WKBE L'd'n, Mich. 100 WBNK N. Y., N. Y. 100 WBMS N. Y., N. Y. 100 WBI N. Y., N. Y. 15 WNBL B'm'g't'n, Ill. 250 WRAH Chicago, Ill. 100 WRRL Woodside, N. Y.	215.7	1,390			10 KFDZ Mnpls., Minn. 50 KFXJ Edgew'r. Colo. 50 KCCB Okla., C. Okla. 100 KGER Lynn B. 50 KCFG Okla., C. Okla. 250 KRLA Los Anr., Cal. 5 WLEX Lex'ton, Mass. 150 WCLS Joliet, Ill. 100 WEHS Evanston, Ill. 200 WHFC Chicago, Ill. 150 WKBI Chicago, Ill. 250 WOKO Pskt., N. Y. 250 WPEP Waukegan, Ill. 100 WQAA P'k'sbr'g, Pa. 100 WQBC Utica, Miss.	234.2	1,290	1,000		1,000 KFUO St. Louis, Mo. 1,000 KFVE St. Louis, Mo. 500 KFRR Tucson, Ariz. 200 KVI Tacoma, Wash. 250 WCAH Columbus, O. 100 WDAH El Paso, Tex. 50 WFCB K'v'le, Tenn. 50 WJAK Kokomo, Ind. 50 WJBY Gadsden, Ala. 50 WMAN Columbus, O. 250 WMBB Lemoyne, Pa. 30 WMPCLapeer, Mich.	254.1	1,180			50 KFHA Gun's'n, Colo. 500 KFKU L'wrence, Kan. 15 KGDA Dell Dap. S.D. 200 KGFX Pierre, S. D. 250 KMO Tacoma, Wash. 100 WCAH B'ington, Va. 500 WHEC Roch'r., N. Y. 50 WREC M'phis, Tenn. 150 WBYO Okla. City, Okla. 100 WNAT Phila., Pa. 100 WWSH Wayne, Mass.	288.3	1,040			100 KGBX St. Joseph, Mo. 500 KTBI L. Anr., Calif. 250 WBCN Chicago, Ill. 500 WBET Medford, Mass. 500 WDBO Orlando, Fla. 500 WENR Chicago, Ill. 100 WIAD Phila., Pa. 150 WKY Okla. City, Okla. 100 WNAT Phila., Pa. 100 WWSH Wayne, Mass.
201.2	1,490			50 KGEH Eugene, Ore. 250 KGEY Denver, Colo. 50 WALK Will. C., Pa. 100 WATT Boston, Mass. 100 WCBR Prv'de., R. I. 100 WKMU N. Y., N. Y. 100 WWHM Chicago, Ill. 100 WBIJ Chicago, Ill. 100 WIBM Chicago, Ill. 100 WKBC Chicago, Ill. 100 WRMU N. Y., N. Y.	217.3	1,380			100 KFOR Lincoln, Nebr. 100 KPOW Seattle, Wash. 10 KGDH Stockton, C. 20 WIBU Poyette, Wis. 100 WKBS Galesburg, Ill. 100 WKBY Br'k'v., Ind. 500 WKBW Buffalo, N. Y. 100 WLBO Galesburg, Ill. 100 WRES Quincy, Mass.	236.1	1,270	250		250 KFDX Shr'v'port, La. 500 KFMX N'field, Minn. 500 KFWM Ok'nd, Calif. 100 KHMC Har'gen, Tex. 50 WBBW Norfolk, Va. 500 WBNY N. Y., N. Y. 500 WCBY N'field, Minn. 250 WGBF S'ville, Ind. 1,000 WHBP Carlsbad, Ind. 10 WHBC Canton, Ohio. 500 WMSG N. Y'k, N. Y. 250 WTDQ Quincy, Ill. 500 WTRR Norfolk, Va.	256.3	1,170			50 KFUS Oakland, Calif. 100 KRE Berkeley, Calif. 2,000 KINT Muscatine, Ia. 250 WASH C. Rap., Mich. 500 WLBW Oil City, Pa. 500 WCOO Paterson, N.J. 500 WEBJ N. Y., N. Y. 250 WLTH Br'klyn, N. Y.	293.9	1,020			250 KCCH Wayne, Neb. 100 KQW S. Jose, Calif. 100 KGDW Hmb'd., Neb. 500 KPRC Houston, Tex. 1,000 WGL New Y'k, N. Y. 500 WLBW Oil City, Pa. 1,000 WDMA Paterson, N.J. 1,000 WTTJ Milw., Wis.
202.6	1,480			100 KCBS Seattle, Wash. 50 KCBY Columbus, Neb. 10 KGBJ Cresco, Ia. 15 KGBR San Ant., Tex. 50 KGBL Minn., Minn. 15 WLBQ Atwood, Ill. 15 WNBQ R'ch'str, N. Y. 50 WPSW Phila., Pa.	218.8	1,370			100 KCFW F. Mrgn., C. 500 WCGU Coney Is., N.Y. 500 WCGW Milw., Wis. 100 WKBC B'nham, Ala. 500 WKBO Jsy, C., N. J. 500 WKBO N. Y., N. Y.	238	1,260	50		50 KFVI Houston, Tex. 150 WIBX Utica, N. Y. 250 WJBB Sarasota, Fla. 30 WJBY N. O'f'ns, La. 250 WLBI E. W'n'a, Ill. 100 WRAY Reading, Pa. 250 WRBC V'p'raiso, Ind. 250 WSBT So. Bend, Ind.	260.7	1,150	2,000		2,000 KGA Spokane, Wash. 500 WCAU Phila., Pa. 500 WDCY Minn., Minn. 1,000 WBAO Oil City, Pa. 500 WNBH N. B. Mass. 500 WOOD C. Rap., Mich. 1,000 WRHM M'phis, Minn.	298.9	1,010			10 KGFV Ravenna, Neb. 500 KQW S. Jose, Calif. 500 KLZ Denver, Colo. 500 KJJA F'ette'le, Ark. 500 WADC Akron, O. 100 WDFL M'inton Del. 100 WEPS Clou'er, Mass. 10 WIDB G'n'v'le, Fla. 100 WRAV V'l. S'g's., O. 750 WMSB New O., La. 200 WSMX Dayton, O. 1,000 WWNC Ashe'le, N.C.
204	1,470			15 KFXD Jerome, Idaho. 10 KGES Cen. City, Neb. 100 KGF Tre. Hts., Ind. 100 KGGM Ing'ld., Calif. 100 WBBZ Chicago, Ill. 100 WHBL Chicago, Ill. 250 WBSB Ypsil., Mich. 100 WIBW Chicago, Ill. 250 WKEN Kenmore, N.Y. 50 WLBK L. C., N. Y. 100 WMBR Newport, R.I. 100 WMBH Joplin, Mo. 100 WMBQ Br'klyn, N. Y. 100 WBOB Ohio (Port.). 100 WSAX Chicago, Ill. 50 WSVS Buffalo, N. Y. 50 WFFF Wash., D. C.	220.4	1,360			15 KCCI San Ant., Tex. 15 KCFI S. Angelo, Tex. 50 KGRC San Ant., Tex. 50 KJBS San Fran., Cal. 50 KRAC Shreve'p't., La. 50 KXL Portland, Ore. 15 WHBU Anders'n, Ind. 100 WHBW Phila., Pa. 150 WJBY Ypsil., Mich. 500 WJBL La C'r., Wis. 15 WMBG Richmond, Va. 100 WMBQ Auburn, N. Y. 15 WTAZ Richmond, Va.	239.9	1,250	2,500		2,500 KEX Portland, Ore. 100 KCGU Mandan, N. D. 100 WBBY P'key, Mich. 250 WCR Cedar R., Ia. 500 WDWK Ash. P., N. J. 100 WIBA Madison, Wis. 250 WIAM Cedar R., Ia. 500 WNDN Norman, Okla. 500 WQAX Trenton, N. J.	263	1,140	50		50 KFPW Car'ville, Mo. 500 KGF Los A., Calif. 10 KGEK Yuma, Colo. 50 KGFH Claridon, Ind. 250 WDAC Amarillo, Tex. 250 WEAM N. Plind., N.J. 5,000 WJAZ Mt. Prosp., Ill. 500 WJBI Red Band, N. J. 100 WJBO N. Orleans, La. 500 WMBI Chicago, Ill. 500 WSEA Va. B'ch., Va.	299.8	1,000	250		250 KFWO Avalon, Calif. 5,000 KMOX St. Louis, Mo. 500 KOWW WallaWalla, W.
205.4	1,460			25 KFXV Flagstaff, Ariz. 100 KCFE Alva, Okla. 100 KGEQ Grand Is., Neb. 250 WABF Kingston, Pa. 15 WKBL Monroe, Mich. 250 WMBD Peoria, Ill. 15 WOBT Peoria, Ill. 100 WRK Hamilton, O.	223.7	1,340			50 KFBL Ev'r't, Wash. 50 KFVS C. Girard, Mo. 50 KFZR Ok. City, Ok. 10 KGFJ Pueblo, Colo. 10 KGFH Iowa City, Ia. 250 KGFH La Cres., Cal. 50 KGFK Hallowd, Mich. 250 KGBH Honolulu, Ia. 250 KMIC Ing'ld., Ind. 500 WABO Phila., Pa. 500 WACM Camden, N. J. 500 WCRW Chicago, Ill. 15 WBEQ H'ris'g's, Ill. 500 WFKB Chicago, Ill. 50 WKAV Lacombe, N.H. 500 WNRG Cranston, N. C. 25 WOCL Jmstn., N. Y. 500 WPCB Chicago, Ill. 250 WSAJ Grove Cy., Pa.	241.8	1,240	1,500		1,500 KFKB Milford, Kan. 100 KFON L. Beach, Cal. 250 WEBC Superior, Wis. 200 WEBR Buffalo, N. Y. 100 WFCI Pawtucket, R.I. 500 WGES Chicago, Ill. 250 WMAL Wash., D. C. 100 WBAF Tampa, Fla. 100 WSAZ H't'n, W. Va.	265.3	1,130	15		15 KKP Seattle, Wash. 2,000 KTSB Sant Ant., Tex. 100 WBES To'm'a P., Md. 100 WCWS Shreve'p't., Conn. 1,000 WHK Cleveland, O. 500 WICC Sport H., Conn. 2,500 WNOX K'ville, Tenn. 1,000 WOI Ames, Ia.	315.6	950	50,000		50,000 KDKA Pitts'g, Pa. 1,000 KFSN, Pasad'a, Calif.
206.8	1,450			15 KGDY Oldham, S. D. 100 KCGF Picher, Okla. 50 KCTI San Fr., Calif. 100 KLTJ Portland, Ore. 10 WHPP N. Y., N. Y. 50 WLBV Mansfield, O. 100 WMRJ Jamaica, N. Y. 50 WNBK Endicot, N.Y. 50 WNBK Kn'x'v', Tenn. 15 WTRL Midl. P., N. J.	222.1	1,350			100 KFWC Pomona, Cal. 50 KGFL Raton, N. M. 100 KWKC Kans. C., Mo. 100 WCEA Allent'wn, Pa. 100 WHBD Bellefontne, O. 100 WHBF Rock Is., Ill. 100 WOMB M'ntwoc., Wis. 100 WSAN Allent'wn, Pa.	243.8	1,230	125		125 KFCB Phoenix, Ariz. 100 KCXC Vida, Mont. 150 KGRS Amarillo, Tex. 50 KGY Lacey, Wash. 250 KSCD S'io C., Ia. 1,500 KWUC LaMars, Ia. 250 WBRK B'm'ham Ala. 500 WCAD Canton, N. Y. 100 WBRB Balt'm're, Md. 100 WMBC Detroit, Mich.	267.7	1,120	100		100 KFIZ F. du Lac, Wis. 100 KFVL Rockford, Ill. 500 KFWL S. Fran., Calif. 1,000 KSEA Shreve'p't., La. 500 KSDJ S'io C., Ia. 250 WAAM Newark, N. J. 100 WBAO Decatur, Ill. 250 WCCP Newark, N. J. 500 WDAE Tampa, Fla. 30 WLPAL Louisville, Ky. 250 WNJ Newark, N. J. 50 WOBV, Chl'stn, W. Va.	309.1	970	500		500 KYA S. Fran., Calif. 250 WABC N. Y., N. Y. 500 WCAJ Lincoln, Nebr. 500 WOBQ N. Y., N. Y.
208.2	1,440			250 KFVD Venice, Calif. 100 KGFJ Los Ang., Calif. 50 KGCN C'nc rdia, Kan. 15 KGR Br'k'v., S. D. 100 WGM Jeanette, Pa. 100 WJBG Chgo. Hts., Ill. 30 WJPW Ashbula, O. 250 WLBZ Dv., Fx'r., Me. 10 WMBE S. Paul, Minn. 200 WNB A For. Pk., Ill. 100 WRAF Norfolc, Va. 100 WRPI Tre. Hts., Ind.	225.4	1,330			10 KFJU Juneau, Alaska. 15 KFZC Kirksville, Mo. 500 KFZR Grand, Ia. 50 KFVG Ind'pce., Kan. 15 KGEN El Centro, Cal. 50 WAGM Ryl. O., Mich. 500 WAMD Manassas, Minn. 250 WCAO Baltimore, Md. 10 WCBM Baltimore, Md. 100 WCOT Olivie., R. I. 100 WLAJ Nashv'le, Tenn. 500 WMAC Cazen., N. Y. 500 WSYR Syracuse, N.Y.	245.8	1,220	500		500 KFH Wichita, Kan. 100 KFIO Spokane, Wash. 250 KFUJ Spokane, Wash. 250 KLS Oakland, Cal. 100 KZM Oakland, Calif. 300 WAAT J. City, N. J. 500 WDDJ C'v'le, Tenn. 250 WEDV W'd'n, N. Y. 250 WFBE Cincinnati, O. 400 WGBF Fr'port, N. Y. 500 WHD1 M'p'lis, Minn. 500 WKRC Cincinnati, Ohio. 500 WLB M'p'lis, Minn.	270.1	1,110	100		100 KFLX G'veston, Tex. 600 KGU Honolulu, T. H. 1,500 KIDS Ind'p'ce, Mo. 1,500 WABC K. C., Mo. 500 KOAC Corvallis, Ore. 500 KQV Pittsburg, Pa. 500 WGST Atlanta, Ga. 500 WHD M'p'lis, Wis. 500 WIAS P't't'burgh, Pa. 500 WMAZ Macon, Ga. 250 WSOE M'w'kee, Wis.	319	940	5,000		5,000 KFAB Lincoln, Nebr. 5,000 KOIL Con. Bluffs, Ia. 1,000 KOIN Portland, Ore.
209.7	1,430			10 KFQC Boone, Ia. 15 KCHC Slayton, Minn. 250 KSQO Sa. Falla, S. D. 50 KVOS B'ingham, Ill. 250 WCBP Spr'g'd., O. 50 WLBK Muncie, Ind. 50 WLBK Kans. C., Mo. 50 WLBV Iron Mt., Mich. 10 WMBE Boston, Tenn. 500 WOKT Rch'str., N. Y. 100 WPRC H'r'ab's, Pa. 250 WRCV Norfolk, Va. 100 WRFI Toconca, Ga.	227.1	1,320			100 KFUP Denver, Colo. 50 KCEU Lwr. L., Cal. 25 KGBH Honolulu 500 KSO Clarinda, Ia. 50 KXRO Aberdeen, Wa. 500 WARS Br'k'n, N. Y. 500 WBBC Br'k'n, N. Y. 50 WBEA E. W'n'a, Ill. 100 WCLD Camp L., Wis. 250 WFJC Akron, O. 100 WIAZ Appleton, Wis. 500 WJBY Clarinda, Mo. 100 WJBC LaSalle, Ill. 250 WSDA N. Y., N. Y. 500 WWAE Chicago, Ill.	247.8	1,210	100		100 KFBC S. Diego, Calif. 250 KFEL Denver, Colo. 100 KFBI Marshall't'n, Ia. 100 KFOA St. Louis, Mo. 10 KGC Decatur, Ia. 250 KOW Denver, Colo. 50 KWC Decatur, Ia. 50 WABW Wooster, O. 50 WABY Phila., Pa. 50 WABZ N. O'f'ns, La. 100 WBAW N'ville, Tenn. 100 WBBL Richmond, Va. 100 WCAT R. City, S. D. 10 WCEA Cambridge, O. 100 WFBZ Galesburg, Ill. 50 WFKD Phila., Pa. 1,000 WIOD Miami B., Fla. 50 WJBA Joliet, Ill. 15 WKDR Kenosha, Wis. 15 WLBK Belvidere, Ill. 50 WLBT Crown Pt., Ill. 1,000 WMAV St. Louis, Mo. 50 WRAM Galesburg, Ill. 50 WRRS Racine, Wis. 50 WTXA Streator, Ill.	272.6	1,100	500		500 KFAD Phoenix, Ariz. 750 KFBI Okla. City, Okla. 100 KSMR S. Maria, Cal. 500 WBAW W. Laf., Ind. 100 WFBZ Coatesv., Minn. 100 WFFF Flint, Mich. 1,000 WHAR Atl. City, N. J. 5,000 WPC Atl. City, N. J. 250 WSKC Bay C'y, Mich.	325.9	920	2,500		2,500 KOA Denver, Colo. 500 KPCH Fr'y C'y, N. J. 500 WRNY N. York, N.Y.
211.1	1,420			50 KFCS S. Barb., Cal. 15 KFYO B'k'ridge, Tex. 15 KGFN Yuba C., Cal. 100 KPNP Muscatine, Ia. 50 KRSC Seattle, Wash. 500 WBMH Detroit, Mich. 100 WBRB Br'klyn, N. Y. 250 WCD A Brooklyn, N.Y. 50 WNES Boston, Mass. 15 WNBQ Wash., Pa. 100 WRSC Chelsea, Mass. 250 WRST Bay Sh., N. Y.	228.9	1,310			250 KELW Burbank, Cal. 500 KBU K'ch'k'n, Alas. 50 KPPC Pasadena, Cal. 20 KTAP San Ant., Tex. 50 KWJJ Portland, Ore. 250 WHPB Johnston, Pa. 100 WKBE Wb'str., Mass. 50 WMBL Lakel'd, Fla. 20 WNBK M'phis, Tenn. 2,000 WOWO Ft. Ve., Ind.	249.9	1,200	15		15 KFJH Astoria, Ore. 50 KFJZ Ft. Worth, Tex. 100 KFQU H. City, Calif. 500 KFRU Columbia, Mo. 50 KFUT S. C'ia, Minn. 250 KFVR Bism'k, N. D. 50 KMED Medford, Ore. 20 KZIB Manila, P. I. 100 WKAC W. Barre, Pa. 75 WBBY Charl'tn, S.C. 100 WBRW W. Barre, Pa. 50 WCAZ Decatur, Ill. 50 WCOA Pensacola, Fla. 50 WHBYW dePer'e, Va. 50 WBRV Steubenv'le, O.	277.6	1,080	500		500 KWVG B'ville, Tex. 750 WGHF Detroit, Mich. 100 WDTZ Tuscola, Ill. 15 WCBW Memphis, Tenn. 5,000 WHAM Roch'r, N. Y. 250 WNAH Yankton, S. D.	336.1	1,270	100		100 WSRO Middletown, O.
212.8	1,410			10 KFHL Oskaloosa, Ia. 100 KGBZ York, Nebr. 250 KGBW Shreve'p't., La. 10 KGFJ Mitchell, S. D. 50 KGGH C. Grove, La. 5 KTUE Houston, Tex. 250 WJBL Decatur, Ill. 50 WKBP B'tle C., Mich. 250 WRAX Phila., Pa. 150 WSIX Spr'g'd., Tenn.	230.6	1,300			15 KDLR D.'s Lk., N. D. 1,000 KFEQ St. Jos., Mo. 15 KFFM Gr'n'le, Tex. 50 KPCB Seattle, Wash. 100 WAFD Detroit, Mich. 250 WCCY C'v'le, Miss. 250 WDBJ Roanoke, Va. 250 WJBJ Scranton, Pa. 15 WCBZ M'nt'p'ry, Ala. 50 WLBK Cambrg, Mass. 250 WQAN Scranton, Pa.	252	1,190	250		250 KOCW C'k'sha, Okla. 500 RFLA Los A., Calif. 10 WFLAM S. C'ia, Minn. 15 WCAL Lancaster, Pa. 250 WKBF Ind'p's, Ind. 50 WKBT N. O'f'ns, La. 100 WKAC Lancaster, Pa. 5,000 WMBB Homewood, Ill. 100 WMBR Tampa, Fla. 5,000 WKBC Chicago, Ill. 100 WSAR Fall R., Mass.	280.2	1,070	500		500 KTAB Oak'd, Calif. 100 WFBC Altoona, Pa. 500 WFIW H'pk'ville, Ky. 100 WTAL Toledo, O.	346.6	860	2,500		2,500 KJR Seattle, Wash. 1,000 KVOO Tulsa, Okla. 500 KXA Seattle, Wash. 500 WCBN N. Y., N. Y. 500 WIP Philadelphia, Pa.
214.2	1,400			50 KFEC Portland, Ore. 50 KFIF Portland, Ore. 500 KFWF Seattle, Mo. 15 KFJM Prescott, Ariz. 10 WAIT Taun'tn, Mass. 250 WCWK F. Wayne, Ind. 100 WJBU Lewis'rg, Pa. 50 WBNB Yng'st'wn, O. 100 WLBG Peters'g, Va. 50 WMBW Yng'st'n, O.	232.4	1,290			10 KFEY Kelloeg, Idaho 100 KFJY E. Ogd'n, Ia. 250 KFPR Los A., Calif. 100 KFQR Sioux City, Ia. 100 KFQZ H'ly'g'd, Calif. 500 WBBT Tilton, N. H. 100 WHBO M'phis, Tenn. 800 WJKS Gary, Ind. 50 WLBH F'nd's, N. Y. 50 WMBJ Monessen, Pa. 10 WNPZ S'n. L., N. Y. 500 WSBC Chicago, Ill.	252	1,180	2,000		2,000 KFAU Boise, Idaho 250 KFOY St. Paul, Minn. 500 WBTZ Port'v'le, Ark. 250 KMBJ Clay C., Neb. 5,000 WBAJ Bal'more, Md. 250 WJAC Norfolk, Neb. 500 WKAR E. Lan., Mich. 250 WQAN L'burg, Tenn.	352.7	850	1,000		1,000 WEW St. Louis, Mo. 1,000 WWJ Detroit, Mich.					
215.7	1,390			100 KFCR S. Barb., Cal. 15 KFYO B'k'ridge, Tex. 15 KGFN Yuba C., Cal. 100 KPNP Muscatine, Ia. 50 KRSC Seattle, Wash. 500 WBMH Detroit, Mich. 100 WBRB Br'klyn, N. Y. 250 WCD A Brooklyn, N.Y. 50 WNES Boston, Mass. 15 WNBQ Wash., Pa. 100 WRSC Chelsea, Mass. 250 WRST Bay Sh., N. Y.	233.2	1,280			10 KFEY Kelloeg, Idaho 100 KFJY E. Ogd'n, Ia. 250 KFPR Los A., Calif. 100 KFQR Sioux City, Ia. 100 KFQZ H'ly'g'd, Calif. 500 WBBT Tilton, N. H. 100 WHBO M'phis, Tenn. 800 WJKS Gary, Ind. 50 WLBH F'nd's, N. Y. 50 WMBJ Monessen, Pa. 10 WNPZ S'n. L., N. Y. 500 WSBC Chicago, Ill.	252	1,190	2,000		2,000 KFAU Boise, Idaho 250 KFOY St. Paul, Minn. 500 WBTZ Port'v'le, Ark. 250 KMBJ Clay C., Neb. 5,000 WBAJ Bal'more, Md. 250 WJAC Norfolk, Neb. 500 WKAR E. Lan., Mich. 250 WQAN L'burg, Tenn.	374.8	800	500		500 KNRC Sa. Mon., Cal. 5,000 WOC Davenport, Ia.					
215.7	1,390			100 KFCR S. Barb., Cal. 15 KFYO B'k'ridge, Tex. 15 KGFN Yuba C., Cal. 100 KPNP Muscatine, Ia. 50 KRSC Seattle, Wash. 500 WBMH Detroit, Mich. 100 WBRB Br'klyn, N. Y. 250 WCD A Brooklyn, N.Y. 50 WNES Boston, Mass. 15 WNBQ Wash., Pa. 100 WRSC Chelsea, Mass. 250 WRST Bay Sh., N. Y.	233.2	1,280			10 KFEY Kelloeg, Idaho 100 KFJY E. Ogd'n, Ia. 250 KFPR Los A., Calif. 100 KFQR Sioux City, Ia. 100 KFQZ H'ly'g'd, Calif. 500 WBBT Tilton, N. H. 100 WHBO M'phis, Tenn. 800 WJKS Gary, Ind. 50 WLBH F'nd's, N. Y. 50 WMBJ Monessen, Pa. 10 WNPZ S'n. L., N. Y. 500 WSBC Chicago, Ill.	252	1,190	2,000		2,000 KFAU Boise, Idaho 250 KFOY St. Paul, Minn. 500 WBTZ Port'v'le, Ark. 250 KMBJ Clay C., Neb. 5,000 WBAJ Bal'more, Md. 250 WJAC Norfolk, Neb. 500 WKAR E. Lan., Mich. 250 WQAN L'burg, Tenn.	374.8	800	500		500 KNRC Sa. Mon., Cal. 5,000 WOC Davenport, Ia.					
215.7	1,390			100 KFCR S. Barb., Cal. 15 KFYO B'k'ridge, Tex. 15 KGFN Yuba C., Cal. 100 KPNP Muscatine, Ia. 50 KRSC Seattle, Wash. 500 WBMH Detroit, Mich. 100 WBRB Br'klyn, N. Y. 250 WCD A Brooklyn, N.Y. 50 WNES Boston, Mass. 15 WNBQ Wash., Pa. 100 WRSC Chelsea, Mass. 250 WRST Bay Sh., N. Y.	233.2	1,280			10 KFEY Kelloeg, Idaho 100 KFJY E. Ogd'n, Ia. 250 KFPR Los A., Calif. 100 KFQR Sioux City, Ia. 100 KFQZ H'ly'g'd, Calif. 500 WBBT Tilton, N. H. 100 WHBO M'phis, Tenn. 800 WJKS Gary, Ind. 50 WLBH F'nd's, N. Y. 50 WMBJ Monessen, Pa. 10 WNPZ S'n. L., N. Y. 500 WSBC Chicago, Ill.	252	1,190	2,000		2,000 KFAU Boise, Idaho 250 KFOY St. Paul, Minn. 500 WBTZ Port'v'le, Ark. 250 KMBJ Clay C., Neb. 5,000 WBAJ Bal'more, Md. 250 WJAC Norfolk, Neb. 500 WKAR E. Lan., Mich. 250 WQAN L'burg, Tenn.	374.8	800	500		500 KNRC Sa. Mon., Cal. 5,000 WOC Davenport, Ia.					

Wave length	Frequency (kilocycles)	Power (watts)	Call signal	Location	Wave length	Frequency (kilocycles)	Power (watts)	Call signal	Location	Wave length	Frequency (kilocycles)	Power (watts)	Call signal	Location	Wave length	Frequency (kilocycles)	Power (watts)	Call signal	Location
384.4	780	5,000	KGO Oakland, Calif.	405.2	740	5,000	WCO Mn.-S. P.Mi.	440.9	680	500	KFSD S. Diego, Cal.	468.5	640	5,000	KFI Los Angeles, Cal.	516.9	580	500	WMC Memphis, Tenn.
		1,000	KTHS Ht. Spgs., Ark.			500	WFI Phila., Pa.			500	WAAW Omaha, Neb.			500	WRC W'ashing'n, D.C.			500	WFCG Wrcstr., Mass.
		100	WBSO Bbsn.Pk., Mass.			500	WLIT Phila., Pa.			5,000	WBG Elk's Pk., Pa.			500	WSB Atlanta, Ga.			250	WVVA W'igs, W.Va.
		500	WMBF Mt. Bch., Fla.											500	WSUI Iowa City, Ia.				
389.4	770	500	WAAF Chicago, Ill.	413	726	500	KZRM Manila, P. I.	447.5	670	1,000	KFOA Seat., Wash.	483.6	620	500	KFBU Larmer, Wyo.	526	570	2,500	KFKX Chicago, Ill.
		100	WABI Seattle, Wash.							1,000	WMAZ Chicago, Ill.			250	KFDM Beauf't, Tex.			500	KMTR Los Ang's, Cal.
		5,000	WBBM Chicago, Ill.	416	720	500	WGN Chicago, Ill.			250	KUSD Vermillion, S.D.			1,500	WCFL Chicago, Ill.			2,500	KYW Chicago, Ill.
		500	WJBT Chicago, Ill.			1,500	WLIB Chicago, Ill.			1,000	WEMC Br'n S., Mich.			500	WJAR P'vid'ce, R. I.			500	WNVC N. Y., N. Y.
394.4	780	750	WQAM Miami, Fla.	416.4	720	500	KHJ Los Ang., Calif.	454.3	660	1,000	KFRC S. Fran., Cal.	491.5	610	1,000	KGW Portland, Ore.	535.4	600	100	KFBK Sacram'to, Cal.
						5,000	WORD Batavia, Ill.			30,000	WJZ Bound Br'k.N.J.			50,000	WEAF N. Y., N. Y.			500	WHO Des Moines, Ia.
394.5	760	1,000	KMA Shenandoah, Ia.	422.3	710	1,000	KPO San Fran., Cal.	461.3	650	2,000	KFNF Shenand'h, Ia.	499.7	600	1,500	WBAP Ft. Worth, Tx.	545.1	550	500	KFDY Br'ks, S. D.
		5,000	KOB St. Col., N. M.			2,000	WOR Newark, N. J.			500	KRLD Dallas, Tex.			500	KLX Oakland, Cal.			200	KFKA Greeley, Colo.
		1,000	KTW Seattle, Wash.	428.3	700	5,000	WLW Harrison, O.			500	KUOM Missula, Mont.			500	WFLA-WSUN Clearwater, Fla.			500	KSD St. Louis, Mo.
		1,000	KWKH Shrevep't, La.			500	WMAF S.Dtmh., Mass.			500	WBIS Boston, Mass.			750	WFLA-WSUN Clearwater, Fla.			500	WDAY Fargo, N. D.
		500	KWSC Pull'm'n, W'h.	434.5	690	1,000	NAA Radio, Va.			500	WCAE Pittsb'gh, Pa.			1,000	WOW Omaha, Neb.			500	WFAA Dallas, Tex.
		500	WHN N. York, N. Y.							500	WAC Boston, Mass.							750	WMAK Lockport, N. Y.
		500	WOP P. City's, N. J.							500	WRR Dallas, Tex.							5,000	WQAI San Ant., Tex.
399.8	750	1,000	WEAR Cl'vd., O.															500	WPTF Raleigh, N. C.
		3,500	WTAM Cl'vd., O.																

CLASSIFIED ADVERTISEMENTS

HOW about that new set you want to buy? What are you going to do with the old one? A Radio Digest classified advertisement will sell it for you. Rates are twenty cents a word for each insertion. Five per cent discount for four insertions, 15 per cent discount for six insertions, 25 per cent discount for twelve insertions. Name and address are counted. Two initials count one word. Cash must accompany order. Minimum of ten words. Objectionable and misleading advertisements not accepted.

Business Opportunities

LAND FREE if planted to bananas. Bananas bear a full crop the second year. \$5.00 monthly will plant five acres, which should pay \$1,500 profit annually. Reliable Companies will cultivate and market your bananas for 13. Bananas ripen every day and you get your check every 90 days. For particulars address Jantha Plantation Co. Empire Building, Block 978, Pittsburgh, Pa.

Employment

Agents

Send name, address on postcard. Free introductory copy Salesology Magazine; contains 1000 money making opportunities offered by big reliable firms; no obligation. Salesology Magazine, Desk B279, 500 No. Dearborn St., Chicago.

Male Help

DO YOU DRIVE A CAR? U. S. Government Chauffeur-Carrier jobs will pay you \$141 to \$175 a month. "How to Qualify," mailed Free. Write, Instruction Bureau, 206, St. Louis, Mo.

MEN; get Forest Ranger job; \$125-\$200 monthly and home furnished; permanent, hunt, fish, trap. For details, write Norton, 362 McMan Building, Denver, Colo.

Earn \$25 weekly, spare time, writing for newspapers, magazines. Experience unnecessary. Details FREE. Press Syndicate, 1269, St. Louis, Mo.

Men qualify for forest ranger position; start \$125 month; cabin and vacation; patrol the forests; protect the game. Write Mokane, M-50, Denver, Colorado.

Salesmen

Strange Battery Compound charges discharged batteries instantly. Eliminates rentals. Gives new life and pep. Big Profits. Gallon free. Mickman Co., St. Paul, Minn.

Maps

New Radio Maps. We are now able to supply our readers with new radio maps, showing location of stations, list of all stations by call letters. Come folded in cover, but may be used for pasting on cardboard. Size 28x34". Send 25 cents stamps or coin to Shopping Service, Radio Digest, 510 N. Dearborn St., Chicago, Ill.

Miscellaneous

The new and improved Proof of Reception Cards are the most practical and convenient proof of reception of those distant stations. Contains spaces for complete reception record, dial settings, call letters, stamps and signature of announcer. Handy size, 3x5 inches, 150 for \$1 or send 25 cents (stamps or coin) for sample package. Shopping Service, Radio Digest, 510 N. Dearborn St., Chicago Ill.

Motorcycles

USED MOTORCYCLES. All models. Easy payments. Price catalog. Western Motorcycle Co., 901 E. 15th, Kansas City, Mo.

Music

MUSIC composed to words. Lowest prices. Art Melody Co., Art Theater Bldg., Kansas City, Kans.

Patent Attorneys

PATENTS. Booklet free. Highest references. Best results. WATSON E. COLEMAN, Patent Lawyer, 724 Ninth St., N. W., Washington, D. C.

Patents

INVENTIONS COMMERCIALIZED. Patented or unpatented. Write Adam Fisher Manufacturing Company, 555 Enright, St. Louis, Missouri.

Radio

DIRECT FACTORY SALE

Wholesale prices. Tremendous savings. Selling direct to you. Here are some of our many items: 30 Henry Choke, 100 M. A., \$2.15; 10 Henry Choke, 400 M. A., \$5.48. Power Transformers for all kinds of Eliminators and for all types of A. C. Tubes, at Special Low Prices. EVERY ITEM FULLY GUARANTEED. Promptly shipped, upon receipt of order. Send for free illustrated catalog today. Todd Electric Co., Inc. (Manufacturers), 36 West 20th Street, Dept C, New York City.

Change your phonograph into a loud speaker with the Fultone Unit for only \$2 C. O. D., or postpaid if cash accompanies order. Bronstein's Pharmacy, 4600 Lincoln Ave., Chicago.

AMUSEMENT at home; any boy can attach our special microphone in one minute and listen to any country. It's not attached to your set. Price \$7.00. HOME-SIDE RADIO CO., 233 Scott, San Francisco.

600 MILE RADIO, \$2.95 postpaid. Needs no tubes, batteries or electrical current. Over 300,000 homes have them. Postcard brings free pictures. National Radio Sales Co., Fuller Bldg., Wichita, Kans.

We have an oversupply of the famous Fultone loud speakers which we are disposing of at only \$4.95 C. O. D., or postpaid if cash accompanies the order. Bronstein's Pharmacy, 4600 Lincoln Ave., Chicago.

15 Watt Broadcasting Outfit for sale, complete. Pillar of Fire, 1845 Champa Street, Denver, Colorado.

Radio Books

Press and public concede it to be the best ever produced. "Radio Theory and Operating" by Mary Texanna Loomis, member Institute of Radio Engineers, Lecturer on Radio, Loomis Radio College. 886 pages, 700 illustrations. Used in all Government and private radio schools and many universities and technical high schools. Comprehensive, up to date, the standard on radio, third edition, revised. Price \$3.50 postage paid. At book dealers or order direct from Loomis Publishing Company, Dept. K, Washington, D. C.

Radio Log

New 1928 RADIO ATLAS and STATION LOG ready, 32 pages. Lists of nearly 800 stations by call letters and wave lengths with ample logging space. Stations listed also by states, cities and provinces. Four double page maps—special distance finding map; Radio map of the U. S.; Radio map of Canada; Radio map of the world. Maps and data of American Relay League, Federal Radio Commission and Radio zones. Wave length conversion table for kilocycles and meters; comparative time chart in principal cities; international call assignments. Send 35 cents (stamps or coin) to Shopping Service, Radio Digest, 510 N. Dearborn Street, Chicago, Ill.

LOG-CHART your radio set by the latest way—only a MERIE DOT locates each station. Absolutely no writing. Only 25c. In Radio Laboratories, 505 Madison Square Building, Chicago, Illinois.

Stamps

RADIO STATION stamps bought, sold and exchanged. Chas. A. Philidus, 510 East 120th St., New York, N. Y.

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DOUBLES POWER AND DISTANCE

Marvelous newly-invented ground gives 100% improved reception. Doubles power and distance. Stops leakage. Reduces static. Stops jangling even in midsummer. Amazing results, users say. Satisfaction guaranteed. Proven absolutely essential to clear, powerful distance reception. Draws and holds moisture indefinitely. Highly sensitive to radio energy. **SEND NO MONEY**—To introduce, we offer to those who act at once, regular \$5.00 size for only \$2.95. Send name today and pay \$2.95 with order and save postage. **FREE**—Full description of Ground Hog on request. Send today. **DEALERS.** Write for Attractive Proposition and Prices. Yale Specialty Supply Co., 3889 Main St., Kansas City, Mo.

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No man or woman can escape the harmful effects of tobacco. Don't try to banish unaided the hold tobacco has upon you. Join the thousands of inveterate tobacco users that have found it easy to quit with the aid of the Keeley Treatment.

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MAGNIFICENT TONE~SUPER SELECTIVE~POWERFUL DISTANCE GETTER

All Electric or Battery Set! **Big Discounts to User-Agents**

MIRACO Users Say

Reports from users everywhere leave little for us to add. These are only a few of the many in our files and which we receive daily. Send coupon for plenty of additional proof and testimony of nearby users.

CLEARER THAN A \$450.00 SET
Before I bought your set I tried out and heard quite a number of different makes sets and I believe I can truthfully say that I never yet have heard a set with such wonderful tone and clearness as the Miraco. I never thought that a set could be as clear and reproduce tones and voices as the Miraco. Saturday I listened to a \$450.00 set and it can't even come near your set for clearness and volume. I have logged some very distant stations on the Unitune and although people won't hardly believe me, the first week I had KFI Los Angeles on two nights in succession on a 30-ft. temporary inside aerial.—FRANK A. OLDENBURG, Milwaukee, Wis.

SHARPLY SEPARATES STATIONS
The Unitune brings in stations very clearly and with a selectivity that is amazing when you take in consideration the mass of stations on the air at the same time. I have heard three and four stations that were on almost same wavelengths at the same time and was able to tune out one after the other without the least interference.—W. L. BROBACK, San Francisco, Calif.

EXPERIENCED FAN PRAISES SET
Miraco is the most wonderful radio I have ever seen. I have had experience with many popular makes of radios, also have built a number of them myself but in tone quality it is far superior to all. For sensitivity I can say it is one like a super-heterodyne.—R. D. WHITE, Proctor, W. Va.

HAS POWER TO SPARE
"Well Pleased" with Miraco would be putting it mildly. Haven't heard anything to equal it regarding price. With temporary aerial tuned in WEAF then WIOD Florida felt sure this must be WJZ the pet station of this locality. Stations all coming in clear with wonderful tone and tremendous volume. Seldom have more than half of volume turned on. A local agent insisted he could prove his set superior but, to his surprise and astonishment my family and neighbors and the agent himself admitted his \$165 set had to step out of the way for Miraco.—H. W. HOEPFL, Perkiomenville, Pa.

America's big, old, reliable Radio Corporation* (8th successful year) **guarantees** in its big, powerful, latest 6, 7 and 8 tube Miraco sets "the finest, most enjoyable performance obtainable in high grade radios." Unless 30 days' use in your home fully satisfies you a Miraco is unbeatable at any price for beautiful, clear cathedral tone, razor-edge selectivity, powerful distance reception, easy operation, etc.—**don't buy it! Your verdict final. Save or make lots of money on sets and equipment write for testimony of nearby users and Amazing Special Factory Offer.**

Miraco's work equally fine on "AC" electric house current or with batteries. Take your choice. Many thousands of Miraco users—who bought after thorough comparisons—enjoy programs Coast

to Coast, Canada to Mexico, loud and clear—with the magnificent cathedral tone quality of costliest sets. Don't confuse Miraco's with cheap, "squawky" radios, Miraco's have finest parts, latest approved shielding, metal chassis, etc.—as used in many \$200 sets.

Deal Direct with Big Factory
Your Miraco reaches you completely assembled, rigidly tested, fully guaranteed. Easy to connect and operate. **30 days' trial free.** 3 year guarantee if you buy. You take no risk, you insure satisfaction, you enjoy rock-bottom money-saving prices by dealing direct with one of radio's oldest, most successful builders of fine sets. 8th successful year in the radio manufacturing business.



7 tube one dial METAL SHIELDED CHASSIS \$49⁷⁵ RETAIL LIST

MIRACO "Powerplus" sets—both in 8 and 7 tube models—have magnificently beautiful, clear cathedral tone quality. Turn one dial for stations everywhere. Ultra-selective. Miraco multi-stage distance amplification gives "power-plus" on far-off stations. Latest all-metal shielded chassis. Illuminated dial. Fully guaranteed. **Try one free for 30 days!** Choice of beautiful cabinets.

Dealers Write! **USE! REPORTS PROVE THAT**



MIRACO Radio gets em Coast to Coast

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Free! Wholesale Price Offer to User-Agents, Bank Reference, testimony of nearby Miraco users—all the proof you want—sent with catalog.

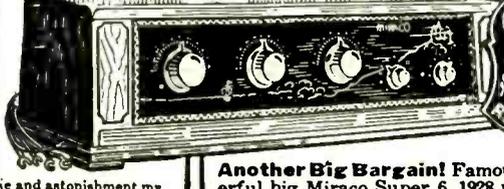
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"A" "B" and "C" power, direct from light socket, with out batteries! Write for Midwest prices and discounts. Midwest Units are highest grade—lasting dependable, quiet in operation, fully guaranteed.



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 Complete

New Improved 1928 Model

NOW you may say good-bye to "B" battery troubles forever. This wonderful new Perfect "B" Eliminator makes them entirely unnecessary—just a needless expense and bother. The "Perfect" has rendered B batteries obsolete in thousands of homes and it will give you radio enjoyment such as you have never known before. The "Perfect" costs less than a set of cells and it ends plate current troubles completely. It's by far the lowest priced Eliminator on the market, yet it does the work of similar devices costing two to five times as much.



Completely Equipped and Assembled— Nothing Else to Buy

No "extras" of any kind to buy. The amazingly low price—\$4.95—covers everything. No "bulbs" to break or wear out. No moving parts. A solidly built, permanent addition to your set, all ready to plug in on any lighting socket.

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Thousands of enthusiastic users all over the country testify to the quality of "Perfect" Eliminators. And our absolute Money-Back Guarantee makes you the sole judge. If, for any reason, you are not satisfied, simply return your Eliminator in good condition within ten days after you receive it and we will refund your money.

10 DAYS TRIAL
Send Your Order Now!

Pin a dollar to the coupon and mail it to us today. The postman will deliver your "Perfect" Eliminator within a few days. Pay him the balance due (\$3.95 plus a few cents postage). Plug in the Eliminator and use it for ten days. If not more than satisfied with results, return it and get your money back. Act NOW and get double enjoyment from your set.

Operates Perfectly on Any Set

This wonderful new invention, using a special filter circuit, developed after months of experimenting, gives a uniform and constant flow of power that you cannot get from batteries. Can be plugged into any lighting socket and is adapted for any kind of set up to seven tubes.

Works perfectly on ordinary house current, either alternating or direct. Gives power up to 90 volts, using the full wave of the power supply.

Hooked Up in 60 Seconds

No mechanical knowledge necessary to connect the "Perfect" Eliminator. Hook it up just as your old batteries were connected. And then sit back and get the greatest radio thrill you've had in years. Nothing to do but enjoy the music. No "frying" noises caused by run-down cells. Sharper tuning—more power because of the steady, powerful flow of current through the tubes.

Needs No Attention

Once hooked up it works automatically. Just attach it and forget it. Milliamperes supply twice as great as any other Eliminator. Only our direct sale method, cutting out the retailers' and jobbers' profits, makes possible the amazingly low price—\$4.95, complete.

Don't put up with battery troubles another day. Send at once for YOUR "Perfect" Eliminator and realize the genuine pleasure that comes only through absence of battery bother. This new improved 1928 model "Perfect" Eliminator is one of the big sensations in the radio field.

PROOF!*

"We did not know what a good set we had until we hooked up your Eliminator. It is indeed a 'Perfect' instrument."
 —, Louisville, Ky.

"All my friends are asking about my 'Perfect.' It makes my set work better than batteries ever did."
 —, St. Louis, Mo.

"I was doubtful about an Eliminator at your astonishingly low price. But you certainly do deliver the goods. I congratulate you on the quality of the device and wish you success."
 —, New York, N. Y.

*Names of writers on request.

135 - VOLT \$7.95
"B" Battery Eliminator

For those who prefer greater volume. Is provided with 135-volt tap for last stage of audio frequency amplification. Completely equipped.

Price, only \$7.95. Send \$1.00 with coupon, pay postman \$6.95 plus few cents postage when delivered.

Perfect Eliminator Co.
N-24, National Theatre Building Cincinnati, Ohio

Reference: Pearl Market Bank, Cincinnati

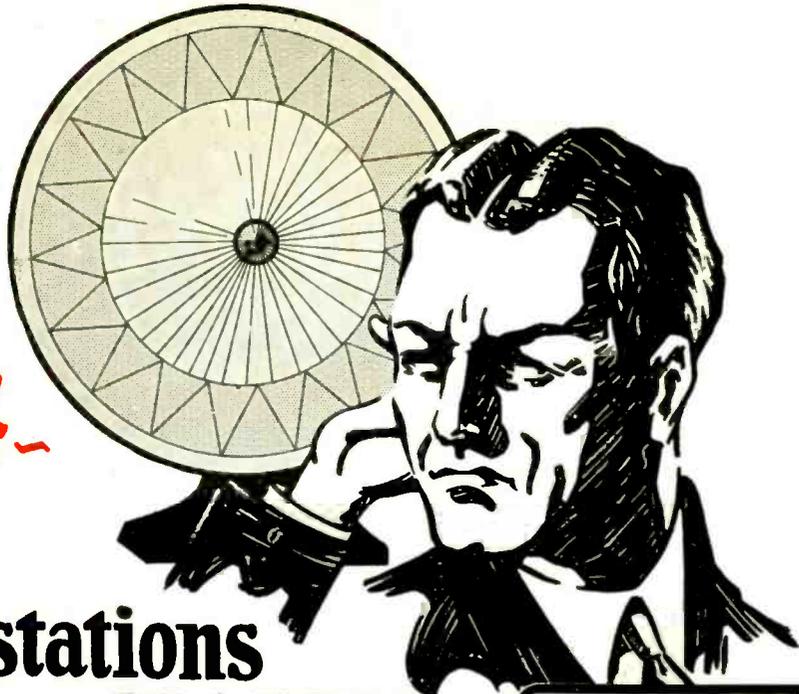
SEND ONLY \$1.00 NOW

Perfect Eliminator Co.
N-24, National Theatre Bldg.
Cincinnati, Ohio

- I enclose \$1.00. Please send new improved 1928 model "Perfect" Eliminator to me C. O. D. for balance (\$3.95 plus a few cents postage) on your Guarantee as stated above.
- I enclose \$1.00. Please send new model 135-volt "Perfect" Eliminator to me C. O. D. for balance (\$6.95 plus a few cents postage). I will pay postman on delivery.

Name.....
 Address.....
 Town..... State.....

You won't
have to do
THIS~

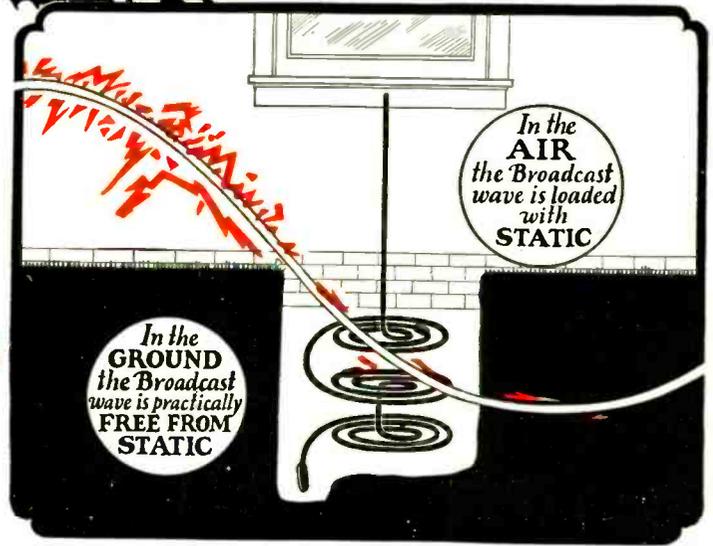


DISTANT stations come in PLAINLY over a SUBANTENNA

There are three prime factors in the equation of radio reception. The broadcasting station—the medium from which the broadcast wave is received—and the receiving set. Practically speaking, two of these factors are always constant. The broadcasting station sends out a uniformly strong wave night after night throughout the year. And your set is just as capable on Wednesday night as it is on Tuesday night. But, the air—the medium out of which you pick the broadcast wave—changes. It changes hourly. It is never the same. How then, can you expect, so long as you take your radio music and song out of the air—to be able to receive distant stations enjoyably? How then, can you avoid having to get right up close to the speaker in a vain effort to hear the fading, mushy call letters of the far off broadcaster?

Take Your Reception Out of the Ground

The same radio wave which you have always picked out of the air with an "aerial," also travels through the ground. But the condition of the ground does not change hourly as does the air. Hence, the ground is almost static-free regardless of what is happening in the air; and, practically speaking, the wave broadcast from some distant point reaches you equally as strong one night as it does the next—and clearly. Therefore, when you receive from the ground your radio equation has all its three prime factors equal and constant. And you can sit back in your easy chair, away from your speaker, and hear the call letters of distant stations plainly enunciated! Leading research engineers have long recognized the advantages of receiving from the ground. But, until the advent of SUBANTENNA, no device was available by which the broadcast wave could



be taken out of the ground. Now, however, it is here—endorsed by Radio News, Popular Radio, Radio Age, Radio Digest and other testing laboratories—tried and proved by thousands of fans—and available at a price that every set owner can afford to pay. Easily and quickly installed. Never needs attention.

FREE TRIAL

Prove Any Cloverleaf Product Before You Buy It

What we claim for SUBANTENNA, this new device actually does. And we let you prove it before you buy. Make this test. Install a SUBANTENNA. Leave your old up-in-the-air aerial up. Tune in a distant station on the old aerial. Then switch to SUBANTENNA. If SUBANTENNA doesn't give you real, enjoyable clarity on stations that are just a jumble of static and noise with the old aerial, and if SUBANTENNA doesn't give you greater usable distance and bigger volume on far away stations, this test won't cost you a single cent. You are to be the sole judge. SUBANTENNA **must** make good—on your set. Mail the coupon now for full particulars of this liberal free trial guarantee offer. Also use coupon to obtain further information about the Cloverleaf "Lifetime" B Eliminator and the Cloverleaf Automatic "A" & "B" Control. Mail the coupon now—today.

CLOVERLEAF "Lifetime" B-Eliminator

A new, better, advanced type "B" unit at a new, lower price than any other unit of equal capability. 180 volt output. Supplies fixed voltages of 22-45-90-135 and 180 volts for power tube from permanent, non-adjustable taps. Absolutely no hum. No "motor boating." Will run any standard set. The true "lifetime" eliminator, because built of the finest quality materials that money can buy. Neatly enclosed in maroon crackle finished steel case. Guaranteed for 2 years. Test it FREE. Prove its superiority. Mail coupon for full details, and for particulars of FREE TRIAL GUARANTEE OFFER.



2
Year
Guarantee

and CLOVERLEAF Automatic "A" & "B" Control

Localizes the control of "A" battery, trickle charger and "B" Eliminator in the switch on your set. Installed in a minute. Never needs attention. Cannot get out of order. When you turn your set "off," the Cloverleaf Control automatically turns the tubes off, the "B" Eliminator off, and the trickle charger on. When the set switch is turned "on," the Cloverleaf Control automatically turns the trickle charger off, lights your tubes, and turns the "B" Eliminator "on." Try it at our risk. Check coupon and mail at once for full details.



For Christmas

Cloverleaf products make anybody's radio set a far more enjoyable thing to own. Therefore, they make excellent Christmas gifts—the kind that cause their giver to be long remembered.

CLOVERLEAF MFG. CO.
2713-M CANAL ST., CHICAGO, ILL.

CLIP AND MAIL NOW

Cloverleaf Mfg. Co.,
2713-M Canal St.,
Chicago, Illinois.

Send full particulars of FREE TRIAL Guarantee Offer on

SUBANTENNA

CLOVERLEAF Lifetime "B"

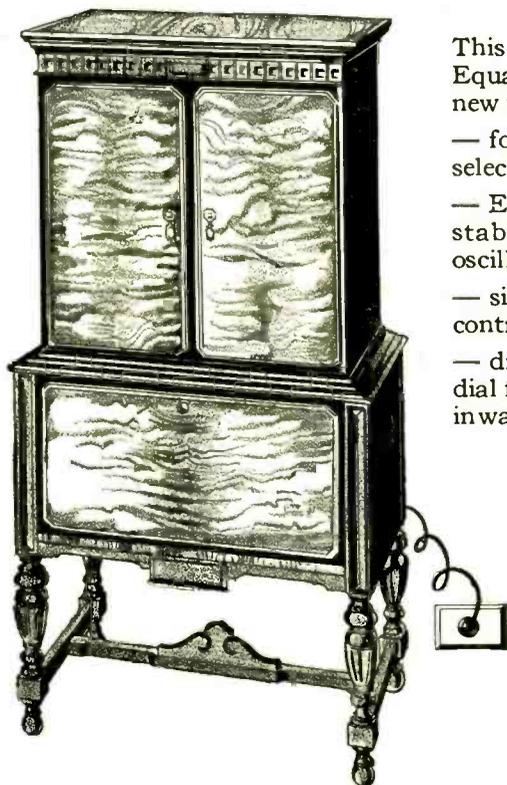
CLOVERLEAF "A" & "B" CONTROL.

(WRITE NAME AND ADDRESS PLAINLY IN MARGIN BELOW)

no { acids
trouble
batteries
water
excuses
makeshifts

THE
ELECTRIC
RADIO

The cabinet of model G-5, illustrated here, is without a doubt one of the finest that ever housed a radio set. It is panelled entirely of the most carefully selected genuine burl Walnut. Contains a large cone-speaker of great volume and superb tone. Truly a masterpiece of the cabinet makers art.



This all electric Freshman Equaphase embodies many new features—

- four tuned circuits for selectivity.
- Equaphase system of stabilization prevents all oscillations.
- single drive— just one-control.
- drum type illuminated dial for beauty — calibrated in wavelengths for efficiency.

*Always Ready—
Always Right*

*Your light
socket supplies
all the power.*

\$250 Complete
Ready to Operate

A Freshman development—licensed under patents;
RCA—General Electric Co.—Westinghouse
Electric & Mfg. Co. and American Tel. & Tel. Co.

FRESHMAN
EQUAPHASE

Sold on Convenient Terms

by Authorized Freshman Dealers Only

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