

FIRST 1929 EDITION

JAN. - FEB.

# RADIO IN DEX

*"THE TUNING BOOK"*



"Gee! I Guess I've got London."

RADEX shows the frequency to which set is tuned as dials are turned, gives exact location of dials for any station in America and identifies programs received without announcement. For any dial and any set.

# Use Your RADEX Properly

AND it will add tremendously to your pleasure and success in tuning your radio set. RADEX is so simple a child can use it and yet we find that many people are not using it properly. If you will follow these simple directions, RADEX will do for you the following things:

Show you the wave length and frequency to which your set is tuned whenever you place your dials.

Tell you where to set your dials for any station in America, even those you have never received.

Identify programs received the instant you hear them without waiting for announcements.

All stations in America are listed in RADEX in three tables:

- 1st By Frequencies
- 2nd By Call Letters
- 3rd By States and Cities

The Index by Frequencies is the one to be used; the other two are merely supplementary.

Let us assume you have just bought your first RADEX. Proceed as follows:

Tune in some station — any station that comes in. Tune it sharply, turning down your rheostats (volume control) until we find the marks on your dials at which it comes in most clearly and with greatest volume.

Let us assume that the station we are hearing is WEAF in New York. First we must ascertain the frequency for this station. Look it up under WEAF in the Index by Call Letters or under New York in the Index by States and Cities. In either of these indexes we find that the frequency of WEAF is 660. Now we turn to 660 kilocycles in the Index by Frequencies and Dial Numbers. Here we find that WEAF is one of the two stations which have been assigned the 660 keys, frequency by the Federal Radio Commission. We also find that it has a power of 50,000 watts, that it is located in New York City and is owned by the National Broadcasting Co., Inc.

## INDEX BY FREQUENCIES AND DIAL NUMBERS

### 590 kilocycles 508.2 meters

KHO	1000	Spokane, Wash.
WCAJ	500	Lincoln, Nebr.
WEFJ	500	Boston, Mass.
WJFK	1000	Yonkers, N. Y.
WENSJ	1000	Berrie Springs, Mich.

### 76 74

Louis Warner, Inc.
Nebraska Wesleyan University
Edison Elec. Manufacturing Co.
Woodmen of the World
Edmund Macdonald College

### 600 kilocycles 499.7 meters

CICH	250	Fremont, Pa., Ont.
K-FSU	500	Lakeland, Fla.
K-FSU	500	San Diego, Calif.
WCSO	250	Haltwhistle, Md.
WFLW	250	Wheat, Va.
WJAN	500	Lafayetteburg, Tenn.
WKEC	500	Norwich, Conn.
WTEC	250	Hartford, Conn.

### 75 73

Amfitt Power & Paper Co.
Albany N. Y. Finance
Albion Radio Corp.
Argonne National Radio Co., Inc.
First Building
Vaughan School of Music
W.F.C., Inc.
Travelers Insurance Co.

### 610 kilocycles 491.5 meters

KFRG	1000	San Francisco, Calif.
WJAF	1000	Kansas City, Mo.
WEAN	500	Philadelphia, Pa.
WJF	500	Philadelphia, Pa.
WFO	1000	Kansas City, Mo.

### 74 72

Union, Inc.
Kansas City Star Co.
Keystone Broadcasting Co., Inc.
Clyde Bros., Inc.
State School of Christianity

### 620 kilocycles 483.6 meters

KJAD	500	Phoenix, Ariz.
KJVA	1000	Durham, Ore.
WJAF	500	Tampa, Fla.
WJOD	1000	St. Louis, Mo.
WJFJ	500	Youngstown, Ohio
WJFJ	1000	St. Louis, Mo.

### 73 71

Electrical Equipment Co.
Gregorian Publishing Co.
Tampa Caching Co.
Hollis College, Ill.
Thompson L. Guernsey
Midwest Journal

### 630 kilocycles 475.9 meters

CJCT	500	Victoria, B. C.
CJCA	500	Yonkers, N. Y.
WJAF	500	Montreal, P. Q.
GRK	250	Blacksburg, Va.
WJFJ	500	St. Louis, Mo.
WJFJ	500	Yonkers, N. Y.
WJAF	500	Washington, D. C.
WJFJ	500	Jefferson City, Mo.

### 72 70

Victoria Broadcasting Ass'n.
Winnipeg Grain Exchange
Canadian National Railway
Castroville Elks
Stephen's College
Kingsville on the Air, Inc.
M. A. Lester Co.
State Marketing Bureau

### 640 kilocycles 468.5 meters

KFI	1000	Los Angeles, Calif.
WJAF	1000	Columbus, Ohio

### 71 69

Fairle C. Anthony, Inc.
American Insurance Union

### 650 kilocycles 461.3 meters

WSM	1000	Nashville, Tenn.
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### 70 68

National Life & Accident Ins. Co.
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### 660 kilocycles 454.3 meters

WJAF	500	Honolulu, Terr.
WEAF	50000	New York City

### 69 67

Omaha Grain Exchange
National Broadcasting Co., Inc.

### 670 kilocycles 447.5 meters

WMAO	1000	Chicago, Ill.
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### 68 66

Chicago Daily News, Inc.
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### 680 kilocycles 440.9 meters

KFO	1000	San Francisco, Cal.
WTFJ	1000	Raleigh, N. C.

### 67 65

Hale Brook & The Citizens
Durham Life Insurance Co.

In the blanks for dial numbers opposite 660 kilocycles (which is the wave length of 461.3 meters) enter the dial readings of your set. It is immaterial whether your set has one, two or three dials. Use as many of the three spaces provided as you need. The set used in the illustration had two dials. In this case we entered the dial readings for 660 kilocycles as 69-67.

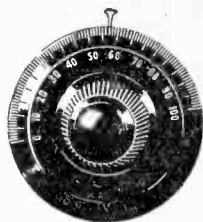
Let us now tune in some other station. We repeat the same procedure in tuning and find that we are hearing, let us say, WOS at Jefferson City. Proceed as before in ascertaining the frequency of WOS. This we find to be 630 keys. We turn to 630 in the Index by Frequencies and enter our dial readings for this band which on the set we are using was 72-70.

We have now found that the dial numbers for 630 keys, are 72-70 and the dial numbers for 660 keys, are 69-67. If we now will set our dials for 70-68 it is obvious we will have our set tuned for 650 keys. We listen carefully and if they are on the air and within range of our set we will tune in WSM of Nashville at this point. We then enter the dial readings for WSM opposite 650 keys. Now it is clear that if we reset our dials at

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# RADIO INDEX



F. C. BUTLER, Editor

FIFTH YEAR

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# THE QUESTION BOX

Conducted by Julian McBarron, Associate I. R. E.  
Technical Editor of RADEX

**W**HAT is the cause and what remedy can you suggest for the condition commonly known as motor boating?

This condition is due to insufficient bypass capacity in the power units. In general this can be corrected by proper capacity bypass condensers. Generally speaking, factory-built power units will not motor boat on standard sets using transformer coupled audio amplifiers. Such that do, should be returned to the manufacturer or his distributor.

We have noticed that many stations, particularly distant ones, seem to come and go. What remedy is there for this?

This condition is probably that which is known as fading and as yet no remedy has been found. It is a condition on which scientists still disagree as to cause, however, if local stations seem to fade out and then come back with good volume, the trouble, if an A. C. set, is probably in the detector tube; if a battery set, it is more than likely due to defective A supply.

Can I rebuild my cone speaker into a dynamic power speaker?

Yes, most of the parts in your speaker may be used in the construction of a dynamic speaker. It would be far better, however, from a standpoint of economy and efficiency, to purchase one of the many standard makes now on the market. You no doubt could obtain some allowance for your old speaker if it is in good condition.

I have a B eliminator which is rated to deliver 135 volts. I am told that the 171 type power tube gives better results than the 112 type power tube but the former requires

a plate voltage of 180 volts. Can I change my eliminator so as to get the higher voltage necessary?

If your eliminator is a factory built unit, an alteration in it is almost out of question, however, if it is not and the power transformer in it has sufficient capacity, a change in the resistors used may be made to give the desired plate voltage. It is suggested that this work be done by someone who is thoroughly familiar with it.

Our radio has been making an awful whistling noise for about a week as though someone is tuning in. What is the cause of this?

In the event that you are using one of the new electric sets, this condition might be caused by a number of different defects. In general, a bad tube, broken down condenser or resistor or broken gridleak. If however, it is a battery set, run down batteries would account for such a whistling noise providing the set itself is all right.

What is the cause of reception from my set fluctuating in its volume and tone?

If it is an A. C. set this is no doubt due to a defect in the power supply of the set. If a battery set, it will probably be found to be due to the A battery or A eliminator if one is used. It is assumed that the aerial and ground have been properly installed and connected. In some remote cases this fluctuation may be due to fluctuating line voltage but this condition is rare.

Can insulated wire be used for an outside aerial?

Yes, practically any wire may be used for an aerial, whether insulated or not.

*(Continued on page 62)*

# When Your Set Goes Wrong

## Where to Look for Trouble

By E. R. HAAN

WE asked Mr. Haan to write this article especially for those persons who knew very little about Radio, and to use common words with the fewest possible technical terms. He has succeeded beyond our hopes. The article covers the entire field of common troubles and constitutes an education in Radio in simple, understandable language. Those who did not receive the first installment may secure a copy of the December RADEX by sending 10c to the publishers.—Editor's Note.

### "MICROPHONIC" TUBES

If you are annoyed by a howl, which increases in intensity and rises in pitch, you may be troubled by a "microphonic," a noise caused by mechanical vibration transmitted to a tube, where, by producing tiny fluctuations in the capacity, the vibration is changed into electrical impulses, which are passed through the following tubes and amplified. Microphonic action can usually be traced to the detector, especially if it is a "hard" tube. There are several methods of eliminating the trouble. You may do so by merely mounting the radio set and the loudspeaker on a sponge-rubber cushion; by providing a cushion type of socket for the socket of the offending tube; by substituting a soft  $\frac{1}{4}$  amp. detector, which is sometimes also advantageous in other respects. The vibration causing the trouble can seldom if ever be eliminated entirely, especially if the vibration has external sources. It has sometimes been found that a loudspeaker facing the receiver will produce enough vibration in the air to cause a microphonic and by turning the speaker around or removing

it farther from the set, the trouble will stop. Loudspeakers built in consoles often give rise to this kind of trouble, and it is then necessary to loosen them and suspend them in a semi-indirect fashion, with a sponge-rubber cushion underneath, and strips of inner tube passed over it to hold it in place securely. If you are in doubt as to which tube in your set is microphonic, put the set in operation until the howl begins and then grasp each tube firmly, holding it for just a moment; when the howl ceases as you are holding one of the tubes, the offending one has been located. The small, dry-cell tubes are especially apt to be microphonic.

### LOOSE CONTACTS AND POOR JOINTS

Crackling noises and intermittent reception is often caused by loose nuts and screws on sockets and other instruments, poorly-soldered connections and the like. Be sure that every connection is mechanically tight, being sure that there is no soldering flux there to act as an insulating film, which will prevent clear reception and will decrease audibility. You can expect trouble from cold-soldered joints because they are, as a rule, not mechanically or electrically perfect. Resolder them carefully so that they will appear smooth and clean.

### AERIAL TROUBLES

After the tubes and sockets have been gone over thoroughly, it may be advisable to take a look at the aerial and ground installation, for it often occurs that trouble arises here. However, first disconnect the aerial and the ground

*(Continued on page 10)*

# The Housewife and Her Radio

By MARION BROWNFIELD

AS I thanked my hostess, who is a charming homemaker, for a lovely bouquet of sweet peas, she replied, "Those are my radio sweet peas!" Enquiringly, I looked at her. "Raised by following explicit directions from the radio every Thursday afternoon from three to four o'clock!" She laughed. "I planted them just when the 'garden man' said. I only used ten cent store seeds. But I got results because I had expert advice — from start to finish — And I save my mending each week for that hour!"

So that's how one housewife does "two things at once." That's really the secret of radio's popularity for many and a valuable one for the housewife. It permits her to perform the necessary tasks, and yet "get" all sorts of things from the outside world. She can be a home woman, now, more than ever, and yet keep abreast of current affairs in every phase of modern existence without the trouble of "dressing up" or leaving the children.

When the fad first swept the world, and the United States particularly, the enthusiasm for the novelty was akin to our first motoring and movies. Late hours were indulged in to "get London." Soon sets were junked, or run down batteries neglected. Since, there have been improvements both in efficiency and appearance. Programs are continually striving to justify their right "on the air." People have ceased to boast and now have settled down to make radios as serviceable as telephones.

Of course the housewife enjoys "Radio Recipes" and all the very informative talks that are given on home making. But of still greater value are the recreative possibilities of radio for the housewife. She may find new interest

in life and keep from growing stale and old simply through the change of thoughts and ideas that radio can bring her. And there are so many household tasks that can be done — have to be done more or less mechanically — while she "tunes in" and forgets that during her married life, she has peeled enough potatoes to feed an army!

## TRAVELING BY PROXY

Does she fairly "ache" to travel? Has her own humdrum environment "got on her nerves"? She doesn't have to pay a fee, as does the German hausfrau "to get away." Without paying a tax of fifty cents a month, she has the privilege of "listening" to all sorts of thrilling travel talks! Or, she may go to the theatre, without standing in line for a ticket, or enduring bad air. Plays, jokes, pianologues and all sorts of clever professional acts are numerous on radio programs. It's not necessary to live in a large city to hear "good things," for the radio fan is only limited by the range of her set and an amplifier to hear it while she goes from room to room.

To begin her day, most every housewife thinks of breakfast. But the radio offers her setting up exercises that a number of clever women who run both homes and professions value greatly for the vim necessary for a "double life!" All the way from station WGY — Schenectady, New York, to station KHJ Los Angeles health advice is enthusiastically carried out by college girls and masculine radio fans. So the alert housewife should not allow herself to slump, for she isn't fagged before the day begins! And if she is, "all-over" exercise may be just what she needs.

One housewife has recently announced that the large short story prize

she won was due to radio. Just by chance she listened in on an address by Louis Joseph Vance, writer of popular mystery stories, and it revived an early ambition sufficiently to make it come true plus her housework and her duties to her children. This housewife now says her loudspeaker wears a halo 'round it!

#### LEARNING OTHER LANGUAGES

Not every housewife has the creative impulse, but merely the desire to educate herself. As a man has learned French fluently through the courtesy of WNYC, why not any ambitious housewife (with an eye or an ear to travel later!). Surely this method beats night school for saving time and energy to say nothing of carfare or gasoline.

Book talks are another both pleasant and educative diversion for the housewife and a suggestion for "listening in" when ironing or sewing. There is no way a mother can be more helpful with the children's education than to be abreast, if not a step ahead, of current literature.

Even politics, which many a radio fan detests as cheerfully as "advertising," is really a first hand way of getting newspaper headlines. To read between the lines is considered the most intelligent way of reading a newspaper. And once acquainted with the personalities involved in public issues, "politics" slowly become comprehensible and a vital interest of that important unit of the world — The Home. A housewife who expects to vote, can do no better than to listen to all sides of a question, beforehand.

#### DOING CHORES TO MUSIC

Of course most housewives have their favorite magazine for learning the latest and best ways of dressing, eating and home furnishing. But one "radio housewife" says she reads her pet periodical

evenings to radio music. "Actually," she says, "I read more than I ever did before, because I enjoy this combination so much." Of course the variety of radio music recommends it to all tastes. One housewife who couldn't convince her husband that symphony concerts were not a "high brow extravagance"—even though he had never listened to any — converted him by simply tuning in on some first class ones while he read the evening paper. He admits his loss and the family now enjoy "music while eating," as well. It's a subtle housewife indeed, who changes a peevish breakfast atmosphere to a cheerful one enthusiastic for the day ahead — by turning a dial. For the tired blue housewife, herself, nothing is better than music. The "wings of song" truly make a backache a forgotten thing. It can even induce a nap for the high strung, who can't relax sufficiently for day-time sleep. And some mothers put baby to sleep just this way — by radio music. When the weather's dull, or cleaning the silver tedious, or worse, jazz may be just the thing. Some housewives forget they're dusting when there is rhythm to do it with.

But still others find rest in church services because of the uplift of music. One housewife in the country shares her radio with neighbors who come from miles around because there is no church in their isolated neighborhood. Many another housewife too near to the "madding crowd" has interested her careless family in "recreation for the soul" by radio religious services with their intriguingly peaceful musical programs.

#### HOLDING THE FAMILY

Keeping the family at home is the homemaker's highest aim. That's the reason she often slaves to make it clean and inviting. But to make herself up-to-date, alive, and above all, cheerful, is equally important, if she is to be more

than a convenient nonentity, as she ages. Radio therefore gives her an easily grasped opportunity to be well informed on practically every subject. Styles, budgets, investments, art, science, psychology are only part of the variety she needs — the less she leaves home.

An expensive outfit is not necessary to make her a happy radio fan. As one farm housewife told the writer, "The other side of the continent is always trying to get our nearest big station, so I feel contented with the limitations of our set." If one can get a variety of information and entertainment, is it really more beneficial because it is broadcast 5000 miles away, instead of fifty? The real charm of radio is the unexpected! It's what puts romance in everyday life. So this is the reason that the housewife, who hasn't time to look up programs ahead, is just as lucky as anyone else. With a twist of the dial she can have a delightful surprise — almost as fairy-like as peeping into someone else's home far away. A period of experimenting and tinkering to get the best results, may have to be endured. Vibration in the household caused by footsteps, bric a brac, or even lighting fixtures may have to be "run down." But when they are perfectly adjusted, there is the added satisfaction of being in tune with the whole world. To many, it brings home the added conviction

"If radio's slim fingers  
Can pluck a melody  
From night and toss it over  
A continent or sea;  
Why should mortals wonder  
If God hears prayer?"

---

*If you have one of the fine  
new sets, you will appreciate  
the attractiveness of our  
leatherette covers.*

## MORE CALL LETTERS

IT seems strange that the Radio Commission has had to issue special orders requiring broadcasting stations to announce their call letters at least every fifteen minutes. These stations are very largely owned by firms that have gone to the great expense of equipping and maintaining them for the value of the advertising they get out of them. It is odd that the owners will permit their announcers to go an hour at a time without giving the name of the station in view of the fact that this is their return for their investment. Is it modesty? Alas, no. No radio announcer has ever been accused of that. On the contrary it is probably ego. The announcer thinks of himself so highly that he assumes everybody in the country just must know instinctively who he is.

We like the method of announcing used by the Columbia chain. The New York announcer says: "This is coming to you over the Columbia Broadcasting System—" and the local announcer comes in without a second's break—"and through WHK of Cleveland."

Even in sermons it is a very simple matter for the speaker to bring in the call of the station without in the least interrupting his thought. He merely needs to bear his invisible audience in mind as well as his present one and say something like this occasionally—"just as this word is reaching out to the great audience of XYZ." By all means let there be a little ingenuity on the part of announcers and speakers and see if we can't have the call letters a little oftener. One can't enjoy even a good sermon if his mind is wondering who the dickens the speaker is.



# The Little Red Schoolhouse

## *Now Taps the Radio Waves*

By WILLIAM M. NOLAN

"The modern school, in availing itself of up-to-date methods of education, is quick to appreciate the importance of radio," was the finding of Oscar Getz, vice-president of the Steinite Radio Corporation, during a recent trip which included practically every large city in the United States.

"Noticeable changes have taken place and noticeable instances can be found in schools which are installing sets in their auditoriums and in their class rooms, with the view to providing students with a first-class knowledge of current events. The present year, in particular, offers the student a fine opportunity to acquire a thorough understanding of what 'politics' means to him and to his country, and to hear for himself the opinions of the various candidates. Furthermore, educators realize that the programs of great artists have an immense educational and cultural value, which fills an important place in the child's training.

"Many stations are now broadcasting regular programs which are particularly adapted to the requirements of the school room. Small town schools especially, can utilize radio with great benefit," said Mr. Getz. "Practically every educational advantage offered by the big city can be brought right into their class rooms. Students enjoy learning by radio — it takes the grind out of studying — and they remember what they learn. I expect to see the time, soon — when radio will be as indispensable as the blackboard in every school room. The moderate priced, trouble free electric sets now available will go far toward making this possible.

"The increased power of the modern electric radio set," concluded Mr. Getz,

"makes it no longer necessary to install expensive public address systems to supply each room with speakers, as it is now practical to operate a series of speakers from one set."

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### RADIO IN SCHOOL

Every possible means of securing radios is being resorted to by schools throughout the country for the especial purpose of listening to Walter Damrosch's RCA Educational Hour for school children. Thousands of letters received by Mr. Damrosch reveal that radio equipment is being borrowed from private homes for school use, bought by individual teachers out of their own savings, loaned by public-spirited business men, and even manufactured by pupils in order that these Friday morning musical programs given by the dean of American conductors may be heard.

In scores of cities Parent-Teachers' Associations are supplying local schools with sets. Radio dealers are cooperating by loaning some of their finest instruments. In certain schools where there seems to be no way of getting the essential equipment installed, whole classes are being taken to the home of some pupil whose family possesses one.

In Menominee, Wis., a group of mothers presented a radio to St. Joseph's School so that all the pupils might listen. Public School No. 21 in Staten Island equipped itself through the ingenuity of one of its eighth grade boys, Melvin Hadfield, who made a remarkably successful set. At another Staten Island school, the prin-

*(Continued on page 14)*

## RADIO FOR BURGLARS

WE have known radio sets that would keep even friends away but here is an idea for using one to fool the light-fingered gentry who are ambling about our suburbs in pursuance of their profession. The scheme is from the Cleveland Plain Dealer and it ought to work.

A new plan to outwit burglars, brought about by a wave of house-pilfering in residential sections of the city and its suburbs, is being told across the bridge tables and over the teacups these days by matrons who have adopted the device.

My dear, do you know that when we went home from the party at the B——'s we found burglars had been in the house," Mrs. A will say innocently, trumping her partner's trick.

"Oh, but haven't you learned the trick we've discovered to fool burglars out in Rocky Beach?" Mrs. C will reply.

"My no, what is it?"

"Why the radio," comes the answer.

The explanation is simple. When Mr. and Mrs. A leave for the bridge party at the B——'s they tune in their radio. snap on the reading lamp nearby and depart, assured the trick will outwit the burglar.

And it's not spoiling the trick by revealing it, for Mr. Burglar can never be certain.

## Amateur Station List

The annual list of Amateur Radio Stations of the United States, edition June 30, 1928, promulgated by the Radio Division, is now available for distribution, the Department of Commerce stated November 22.

This list contains the call signals, names and addresses of the operators of 16,928 amateur stations in the country. It also contains a list of experimental and technical training school

stations, as well as a list of the new abbreviations to be used in radio communication as required by the International Radiotelegraph Convention, Washington, 1927.

Anyone desiring this complete list of all amateur stations in the United States may secure it by sending twenty-five cents (money order not stamps) to the Government Printing Office, Washington, D. C.



## LETTERS IN OUR MAIL BOX

FROM time to time we receive letters from our friends asking why we do not use a heavy paper in RADEX that will take ink. In publishing RADEX we had to choose between a publication on fine paper at a larger price or on ordinary book-paper at a lesser price. We chose the latter, believing that most radio users would prefer a book more frequently that was always correct than one published once a year that would be badly out-of-date before the next one appeared.

Then, too, many stations do not keep to their exact frequency and we find that our first logging is an incorrect one and must be changed in the light of the later loggings of other and more dependable stations. This makes an erasure necessary. Some one has said that an optimist is one who fills out his crossword puzzles in ink. So we might add that the optimist's brother is one who fills out his RADEX with a fountain pen.

Henry G. Field of 126 Green Street, Chicago, writes in to ask why we do not publish RADEX as a loose-leaf book, supplying new sheets from time to time. This question is asked us often. Let us assume that the Radio Commission changes a certain station from one frequency to another. This makes changes on two different pages in the Index by Frequencies, on one page in the Index by Call Letters and on one page in the Index by States and Cities. In other words, a single change would require four new sheets. There is scarcely a month in which the Commission does not make from fifty to a hundred changes. The result is that if we published in loose-leaf form, we would have to send out each month practically an entirely new book.

\* \* \* \*

V. C. Olsen of Lackawanna, N. Y., writes to suggest that if we would give spaces for dial readings in our Index by States and Cities in addition to those in the other two indexes "RADEX would be absolutely the last word in radio logs and nothing would be left wanting." In the RADEX on our own set we do not use even the spaces in the Index by Call Letters. We feel that the spaces in the Index by Frequencies are the only ones that need ever be used although we do include them in the Index by Call Letters for those who want them. We are explaining our reasons at greater length on the inside page of the front cover in this and subsequent issues.

Elmer Norden, 3029 North 72nd Court, Chicago, Ill. writes:

"I was so impressed with your RADEX for completeness and accuracy and also for the good information given that I have fifteen friends who want the current issue" and he sends us orders for them all. Good words are always welcome but it is letters like this that help us pay printer's bills.

\* \* \* \*

Here is one more letter from Chicago — from A. W. Meyerson, B. S., 4046 N. Keystone Avenue. "Yesterday I bought for the first time a RADEX and I am just delighted with it. It is very convenient, the articles are understandable and interesting. Thanks!" And thanks to you, Mr. Meyerson.

\* \* \* \*

From Carl L. McLain, 402 West George Street, Arcanum, Ohio: "Please send me the very newest copy of RADEX. One cannot have complete radio enjoyment without it, so hurry my copy along."

\* \* \* \*

From Jasper C. Weaver, P. O. Box 36, Elnora, Indiana: "Am enclosing check for renewal of my subscription to RADEX. We've found it to be the best of all radio logs. Have been able to pick up several stations we've never been able to find before we got RADEX."

\* \* \* \*

And N. K. B. Patch, 63 Barker Street, Buffalo, N. Y., writes: "The recent order of the Radio Commission changing all wave lengths makes it very confusing without a RADEX. Please send me one at once."

\* \* \* \*

Last for this month is a letter from the proprietor of The Music Room, State College, Pa. "For a long time we have been looking for a real radio book — one that really had something in it and I have found it — RADEX! We would like to have the sale of this book in State College."

## IF SET GOES WRONG

(Continued from page 3)

wires from the set, while it is in operation. If the trouble continues when these wires are disconnected it is, most likely, in the set, but if the trouble ceases, you may find the cause in the aerial and ground installations. See that the aerial is strung tightly so that it will not sag on the roof, or against anything connected with the ground. A grounded aerial may cause total inaudibility. Insulators, which are provided at both ends, should be kept clean and free from soot. The lead-in wire must be soldered to the aerial. Merely twisting it around the latter is not sufficient, even if it is covered with a layer of tape. An unsoldered lead-in wire, will, sooner or later, make a faulty connection, which results in decreased signal strength, or perhaps fragmentary reception. The same precautions that are taken to prevent the aerial from grounding must also be observed in the lead-in installation. Aerials, which are too long have a tendency to make the set tune broad and pick up extraneous disturbances, including static. Aerials, which are too short greatly limit the possibility of distant reception and therefore you should be sure that the length of your aerial suits the design of your set. If you are bothered with broad tuning, insert a small fixed condenser between the aerial and the set, if shortening the aerial does not remedy the trouble. Interference from parallel power lines and other aerials is a common cause of trouble and the remedy consists in changing the position of the aerial so that it will be at right angles to the interfering lines.

### TESTING THE LIGHTNING ARRESTOR

A defective lightning arrestor may also ground the aerial and this device should be inspected occasionally, mak-

ing sure that no soot or other substance has lodged in the gap, and that the metal parts have not become loose, which may result in their touching each other. Lightning arrestors can be tested with a pair of headphones and a C-battery, connected in series. When the free ends are touched to both terminals of the lightning arrestor no click should be heard. If there is a click, the device is short-circuited in some way. A broken lead-in wire sometimes prevents reception. Examine it carefully, especially at points where it is apt to be twisted or bent, as under window sills. It is better of course, to use flat, insulated copper strips, which are made for this purpose.

### GROUND CONNECTIONS

A good ground is essential. A rod driven into damp earth, or a connection to the cold-water system, is usually sufficient and even a radiator connection will provide a suitable ground. Connections must of course, be mechanically and electrically secure, and an insulating film of paint or rust may cause very poor reception, if any at all.

### LOOP TROUBLES

Loops are being used more and more. Their efficiency depends on their design and the material used in their construction. One mistake often made is to substitute a loop for an outside aerial, regardless of whether or not the set is designed for such a change. In most cases an aerial-designed set will not work on a loop and vice versa. Pancake style loops seem to be more directional and sharper than box-type loops, while greater pickup is claimed for the latter. Avoid loops that have adjustable shapes for this inconstancy makes it impossible for you to keep a good log of stations. Whistles and uncontrollable oscillations are sometimes caused by having the loop too close to the receiver, as it induces

currents into the coils and picks up other currents from the coils. Keep the loop at least four feet away from the receiver to avoid this trouble. Some loops have a high resistance and are poor for pickup. This trouble may be caused by the use of too fine a grade of wire in their construction or by poorly soldered joints at the terminals. A loop having heavy, stranded, insulated wire, and wound on bakelite arms is the most efficient. If you have a loop that connects to the set by means of cord-tip or midget jacks, be sure that there is always good contact between the cord tips and the jacks. Rub them with sandpaper or emery cloth occasionally to prevent a film of corrosion, which will cut down the strength of the intercepted signals.

#### DEFECTIVE PLATE CIRCUITS

If trouble persists after the aerial has been examined and put in good condition, you must trace it in the receiver itself. Here you should start by checking up the plate circuits. These are the wires connected to the P. terminals on the transformers and tubes, and to the output jacks; in fact, all lines carrying a B-positive current and also all instruments carrying this current. Faulty plate circuits are responsible for a large percentage of radio troubles and complete inaudibility is sometimes the result. To detect and locate this trouble, turn the tubes up to their normal operating condition. When the loudspeaker plug is inserted into the horn jack a distinct click should be heard, which shows that the plate circuit of the last audio tube is functioning. In case no click can be heard, part or all of the trouble may be found here. You may find a defect in the loudspeaker or the last tube; there may be a break in the wiring; the plug may be at fault; the jack may be making improper contact or the phone cords may be broken.

If a faint click is heard the trouble may be found ahead of the last audio stage, and it is then a good idea to test the detector-plate voltage, and touch the disconnected and to the terminal to which it was attached. A spark should be seen and a click heard in the loudspeaker every time this is done, indicating that the plate circuit is functioning properly. Of course, the first spark may merely have been caused by a discharge of electricity, which has collected on the wires and instruments, and therefore it should be repeated several times. In case you see a spark but hear no click, you will undoubtedly find the trouble in the first audio stage, where you may discover a broken-down transformer, a defective jack, or a loose or broken connection. The same procedure is followed to test the r. f. stages.

#### FAULTY GRID CIRCUITS

Usually a click will be heard in the loudspeaker if you touch the grid and negative filament posts of the sockets with the moistened index finger and thumb. This shows that the grid circuits are in good condition. This method of testing is begun with the last audio tube and then each tube before it is tested in the same way. When no click occurs you have, most likely, found the trouble — an open circuit. In making these tests only faint clicks can be expected from the r. f. tubes, if your set has a grid condenser, as is usually the case. Faulty grid action is often caused by cold-soldered joints. In one case the cause of a steady whistle was traced to a cold-soldered joint on the grid condenser. Broken windings in coils or transformers can also cause faulty grid action. There is danger in impedance circuits that a plate current may get on the grid side of the transformer, especially if the grid condenser happens to be short-circuited and the result may then be one or more blown

tubes. Coils having moisture in their insulation may permit the leakage of grid currents, and this trouble is likely to occur if the receiver is kept in a damp place.

#### WRONG GRID-LEAK VALUES

If the grid leak is defective and if its value is too high or too low, trouble will result. Always be sure that you are using the correct value as recommended by the designer or manufacturer of your set. Also, if you change detector tubes, be sure to get the correct value of grid leak for the new one. A howl, varying slightly in pitch as the dials are rotated, a constant clicking, or a high-pitched squeal may result if the grid leak has too high a resistance. Complete inactivity of the detector may also result. When your signals hang over a certain point on the dial where they are brought in, you may be experiencing an "oscillation hang-over" due to a grid leak of too low resistance. Variable grid leaks cannot always be depended on as their resistance value often changes.

#### TRANSFORMER FAULTS

When your set has a poor tone quality and does not reproduce high and low notes properly you can blame either the loudspeaker or the a. f. transformers. The best transformers have a uniformity of amplification over a range of from 50 to 5000 cycles per second. So if you wish better tone quality and good reproduction of both low and high tones, use good transformers, a good loudspeaker and power tubes in the audio stages. Transformer distortion is usually recognized by a peculiar lagging effect of one note into the next. Often the tone quality can be improved considerably by shunting a small fixed condenser across the grid and plate posts. Mutual induction of non-shielded transformers may also cause distortion. To

remedy this place them at right angles to each other as far apart as practicable, or substitute new ones of the shielded type. Another cause of distortion is the use of transformers having too high a ratio. Never use two audio transformers having a 5 or 6 to 1 ratio. The use of 3 to 1 ratio transformers is customary and satisfactory, although some manufacturers use a 5 or 6 to 1 in the first stage and a 2 to 1 ratio in the second stage. The most common trouble experienced with transformers is burned-out windings, and it is then best to replace them. Such open-circuits can readily be detected by hooking a voltmeter and a C-battery in series, and holding the free ends to the B+ and P terminals, and then to the F- and G terminals. In both cases there should be a slight deflection of the voltmeter needle, and if this is not the case you have found the open circuit. Short circuits in transformers are uncommon, but nevertheless, possible. Such trouble can usually be found in one of the internal connections may, due to loosening and shifting of the terminal, happen to touch the metal shell.

#### VARIABLE CONDENSER TROUBLES

Variable condenser plates often become bent accidentally or, if they are improperly adjusted, they may soon get out of alignment, which sometimes causes them to touch each other. This results in rasping noises, intermittent signals or complete inaudibility. So look over your condensers and see that the rotors do not touch the stators at any point while the dials are rotated. Fastening a condenser to the panel too tightly and also bolting it to the sub-panel may cause such distortion. A good method of testing variable condensers is to use a pair of headphones with a C-battery in series. Hold the free tips on the stator and rotor

terminals of the condenser to be tested. Clicking noises indicate short circuits, provided the tips are held securely and immovably. Sometimes a hair-like burr on one plate will drag on an adjacent plate and cause rasping, crackling sounds. Such burrs are often so small that they can hardly be seen. Run the blade of a small penknife over the edges of the plates and this will remedy the trouble. The plates of variable condenser are dust catchers, so take a pipe cleaner and wipe them off occasionally. Improper relation between the condenser and the dial often exists. A broadcasting station of approximately 550 meters wave-length should be brought in when the rotor plates are nearly all between the stator plates, and then the dial should read nearly its maximum. Adjust the dial on the condenser so that this will be the case.

#### FIXED CONDENSERS

The only troubles experienced with fixed condensers is that they are sometimes short-circuited or punctured. If a faulty condenser is suspected, remove it from the set and test it with a headset and C-battery. The condenser is first discharged by shorting across its terminals and then the test can be made. If no click is heard it may be in good condition. The condenser is then charged, which is done by holding the leads from a C-battery to its terminals, being careful not to touch the terminals or bare parts of the wires with the fingers, as this will discharge the condenser. Wait a few moments and test the condenser with the phones, leaving the C-battery out of the circuit. A faint click, or the entire absence of a click, indicates a faulty insulation through which a charge gradually dissipates.

#### RESISTANCE DEVICES

Little trouble is ordinarily experienced with rheostats, potentiometers

and other variable resistance units, and if trouble does develop, it is usually of a mechanical nature, and can readily be remedied. Sliders should always make a smooth, easy contact, and corrosion on the resistance wire, which causes the slider to scrape, should be removed with an oil-dampened cloth. See Fig. 10. The terminals of course, must be kept tight. Never substitute another resistance device without being certain that it has the same value as the original one to be replaced. The same holds true of ballasts, which are fixed resistances used instead of rheostats. A ballast may be used for one, two, three or four tubes, and its current-carrying capacity is in each case different. Resistors used in resistance-coupled a. f. sets sometimes become defective, especially those subjected to the plate voltages. In resistance-coupled sets, r. f. oscillations can be blocked from the audio stages by increasing the resistance in the plate line of the detector.

#### MISCELLANEOUS TROUBLES

Nearly every radio owner can tell if his switch is functioning properly or not, and whether his jack is making good contact. Crackling noises will result if the contacts of these instruments are at fault. Although many manufactured sets are well designed, there are some that have disregarded fundamental rules of construction, such as long plate and grid leads, the proximity of the B-battery leads to the grid condenser, etc., which causes whistling and howling. The home builder should also prevent bad practice of this kind.

#### LOUDSPEAKERS

Headphones and loudspeakers must also be taken care of for their sensitiveness can easily be impaired. Violent jarring tends to demagnetize the magnets, may injure the windings and distort the diaphragm. Demagnetization

may also result from running the current through the windings the wrong way. Some speakers have a screw for adjusting the diaphragm. After it is once adjusted do not meddle with it constantly, or allow others to do so.

If the phone or loudspeaker ceases to operate test it for an open circuit, which may be found in the fine wire that connects the magnet windings to the terminal. Rattling noises in the loudspeaker may be caused by too much current, which causes the diaphragm to vibrate against the poles of the magnet, or the adjustment screw may be set too tight. In some cases a hard object may have accidentally gotten into the horn and settled on the diaphragm. Distortion is often caused by improperly designed sound chambers of horns, or by the material used in their construction. Metal horn bells have a tendency to give a metallic sound.

#### UNCONTROLLABLE TROUBLES

Every radio fan is annoyed by static disturbances, especially during the warmer months. Crashing and crackling is sometimes evident, but at other times there seems to be a complete silence and distant reception is out of the question. Fading is also due to electrical disturbances in the atmosphere between the receiver and the station tuned in, and cannot be remedied. Humming, buzzing or regular crackling sounds are often caused by electrical machinery and household appliances in the neighborhood, but if an electric motor is causing the trouble, it can be remedied, in most cases, by simply shunting a fixed condenser across the brushes. Steel buildings have a blanketting effect on loop sets, and the only cure for this trouble is to install an outside aerial, if the set can be operated on one. Reradiation and interference from other receiving sets in your neighborhood may be to blame for occasional whistling

and howling, which comes and goes while you are listening in to a station. Superheterodyne receivers using an outside aerial are serious offenders of this kind.

## RADIO IN SCHOOL

*(Continued from page 7)*

cial herself purchased a radio so that the children might listen in.

One of the teachers of the Garfield School in St. Joseph, Mo., brought her own set to the school. In Passaic, N. J., a radio dealer supplied a set. Another school raised money by having a chocolate sale.

One fourth grade boy writes Mr. Damrosch that "we went over to Dorothy Foster's house. Her mother has a radio. All of us children sat in her living-room and heard you. Afterward Dorothy's mother gave us each an apple."

"I live in what I call a 'hick town' because our schools aren't modern. No radio! When I read you were going to give a concert Friday morning I broke one of the ten commandments and became envious. I did not want to go to school in the morning because I didn't want to miss your concert. But one of our local radio dealers loaned the school a radio. That was seventh heaven."

Another characteristic letter came from Calvin Mooers who is in the third grade of the Logan School in Minneapolis. He writes: "We went over to our teacher's house to hear your concert. We sat on the floor. Your program was our music lesson. We wish we could hear your music every day. There was no part of the program we did not like. The girls like the rain drops but the boys like the march best of all."

Surely school boards everywhere should devise ways and means of equipping their rooms with this new agency of education.



# THE BELLS OF ST. ANNE

## *Radio Comes to the North Woods*

By BRENDICE P. LITTLE

Jean Dupre leaned on his axe helve and scowled into the white landscape. Six weeks ago — long weeks — he had come into the North Country for the first time. He had come with Tim Flynn to guard the big game preserve and, they strongly suspected, other and more valuable riches which lay beyond. No one was to pass without their knowledge. Each day they arose with the dawn and plowed off on their snow shoes into the white distance, one to the east and the other to the west. Late in the afternoon they returned through the silence to the cold and lonely cabin and supper.

Immediately then Tim Flynn became very busy — not with the supper but with the numerous bits of copper and wire which he had so laboriously “packed” into the North Country with him. As long as a ray of light remained he would twist and wind and fumble with the bits of metal, and then by the glow of the fire he would go on reading from the English book and then again fall furiously to work with the pieces of metal. Sometimes he swore softly to himself but never did he prove himself the gay companion that Jean Dupre had been told to expect in the redheaded Irishman. The friends and neighbors back in Beaupre had said “you will have a fine time with Flynn; he has always a joke and fun,” but now he did not laugh nor joke. The supper Jean got himself; the wood for the stove he cut with little assistance. And at night when he said, “Now, we will have a little smoke and a game before we go to sleep,” Flynn merely threw out his hand and said, “Wait, in just a minute.” And

the minutes dragged away into hour after hour until Jean fell asleep in his bunk. It was the same when there was wood to be cut. Always “Wait, just a minute,” until the cabin became unbearably cold and Jean brought out the axe and fell to work himself.

Day after day it had been just the same. Jean came out of the cold silence of the east or the west to the deadly monotony of the cold, the silence of the dismal cabin and the silent man until garrulous Jean Dupre could stand it no longer. Only once since the early days when he had helped to wind spools had there been any change. Then, he had come in late to find Flynn spreading a web of wire over the cabin roof. Jean did not like it. Already, too many spells had been cast around the cabin in the North Country. Jean had made the sign of the cross quickly. One man had already lost his tongue and stared with wild eyes into the distance when he was not mumbling and muttering over pieces of metal.

The last few days had been worse, if that could be, for the sudden fall of snow had made the North Country impassable for any human being. The little cabin lay buried in the soft whiteness. It was not necessary for them to travel away to the east and the west until the light snow had grown hard enough to bear their weight so they huddled together in the hot cabin except when Jean brought more wood for their fire.

A week of this with only mutterings and mumbblings from Flynn had become unbearable to Jean. When Tim pushed his work aside to eat of the food Jean

prepared, he sat reading from the little book and still mumbling, sometimes making strange marks and crosses on the margin of the book. Jean did not like it; strange tales had he always heard of the men who went into the cold white North Country; sane and likeable as other men when they left and queer and wild and even crazy when they came out in the spring. And sometimes they never came out at all. Strange tales. He shuddered and scowled into the white distance. He longed unspeakably for the gay and free winter days and nights in Beaupre — the laughter, the dances, the outdoor sports among friends. He lifted the axe blade and tested it against his flat thumb. "If it has to be," he muttered and shrugged his shoulders, only to start with the significance of the muttered words. He, too, had begun to mumble to himself — the first sign. Carefully he carried the wood and the axe into the cabin and carefully he placed the axe beside the stove where the supper preparations were going on.

Tim had been busy all day with strange things clamped over his head, twisting and pulling at the pieces of wood and metal on the rough table. He did not stop to partake of the supper Jean put before him, but pushed the plate aside without a word. Once he had jumped to his feet shouting, "There it is — no, not this time," and fell to twisting and turning more furiously than ever.

Jean dared not sleep so he sat with bowed head watching under his lowered brows the man at the table, the glistening axe blade within the reach of his arm. The hour grew late for the cabin in the North Woods; the air was hot and breathless with close living, but still the men sat. Finally, Jean worn with other sleepless nights and the thing he feared, dozed.

He awoke with a start. Tim had crept up on him and clamped the infernal things upon his own head. There he could see the crazed man standing grinning as only the insane grin. The clamps jerking and popping in his ears. He reached for the axe and drew back to swing at the astonished Tim, but the blade stopped in mid air.

"By Gar," Jean gasped, "The Bells of St. Anne," and sank back onto his stool in astonishment. "I hear voices; I hear them sing," and gazed beatifically at Flynn.

The crisis of a strange tale from the North Country had passed.

## A Radio Hold-Up

Frisco, the actor, he of cigar and derby, was in Cleveland the other day with this one: After making the rounds of night clubs he came back dog-tired to his room at Hotel Statler, which has a radio in every room. Frisco was dead to the world in ten seconds. The next event in his life was a command, "Hands up." He jumped out of bed. "This must be Chicago," he murmured. The same voice said, "Bend over! Now! One! Two! One! Two!" He had forgotten to turn the switch on the radio and this was the daily dozen.

**E**VERY day or two we receive a letter beginning like this: "A friend of mine called my attention to RADEX and I want to get a copy for my own set."

*Why not be a good friend to your friends and tell them about RADEX?*

# The Short Wave Stations

For the information of those who are exploring the short-wave field, the following list of stations known to be broadcasting between 26.3 and 109.0 meters, is given. The definite wave length used by each station cannot be given as the experiments are being carried on at different frequencies. These frequencies are too high for the ordinary receiver and special instruments must be built

in order to receive these stations. Most of the programs in this field are the same as those in the broadcast bands merely being duplicated at high frequencies in order that they may carry farther and reach distant lands. The stations are designated by the initial letter X with a numeral preceding which indicates the radio district in which the station is located.

Call	Station	Owner	City and State	Meters	Watts
1 XAA	WRAH	Stanley N. Read	Providence, R. I.		7.5
1 XAE	WBZ	Westinghouse Elec. & Mfg. Co.	Springfield, Mass.	70.0	
1 XAF	WEEL	Edison Elec. Illuminating Co.	Boston, Mass.		
1 XAG		Edison Elec. Illuminating Co.	Boston, Mass.		
1 XY	WBRL	Booth Radio Laboratories	Tilton, N. H.	105-109	250
2 XA	WRMU	Yacht "MU-1" Grebe Co.	New York		
2 XAC	WGY	General Electric Co.	Schenectady, N. Y.		
2 XAD	WGY	General Electric Co.	Schenectady, N. Y.		
2 XAE	WGY	General Electric Co.	Schenectady, N. Y.		
2 XAF	WGY	General Electric Co.	Schenectady, N. Y.	32.7	
2 XAG	WGY	General Electric Co.	Schenectady, N. Y.		
2 XAH	WGY	General Electric Co.	Schenectady, N. Y.		
2 XAK	WGY	General Electric Co.	Schenectady, N. Y.		
2 XAL	WRNY	Experimenter Pub. Co.	New York	30.91	500
2 XAO		Atlantic Broadcasting Co.	New York	105.9	100
2 XAQ	WOR	L. Bamberger Co.	Newark, N. J.	65.4	50
2 XAW	WGY	General Electric Co.	Schenectady, N. Y.		
2 XBA	WAAM	WAAM, Inc.	Newark, N. J.	65.18	50
2 XBH		Chas. G. Ungar	Coney Island, N. Y.	54.02	150
2 XE	WABC	Atlantic Broadcasting Co.	Richmond Hill, N. Y.	21.1	50
2 XZ		National Broadcasting Co.	Bellmore, L. I.	49.15	50000
3 XK		C. Francis Jenkins Labs.	Washington, D. C.		
3 XL		Radio Corp. of America.	Bound Brook, N. J.	59.96	30000
3 XN		Bell Telephone Laboratory	Whippany, N. J.		
4 XE		William Justice Lee	Winter Park, Fla.	200.	250
6 XA	KNX	Los Angeles Express	Los Angeles, Calif.	107.1	100
6 XAF	KNRC	Clarence B. Juneau	Santa Monica, Calif.	108.2	100
6 XAI	KGGM	Los Angeles Radio Club	Los Angeles, Calif.	66.04	50
6 XAK	KFWH	F. W. Morse	Chico, Calif.	108.2	50
6 XAL	KFOZ	L. E. Taft	Hollywood, Calif.	66.04	50
6 XAN	KRLO	Freeman Lang	Los Angeles, Calif.	105.9	250
6 XAR	KJBS	J. Brunton & Sons.	San Francisco, Calif.	32.	50
6 XAU	KHJ	Times-Mirror Co.	Los Angeles, Calif.	104.1	50
6 XAZ		Nelson Radio Co.	San Diego, Calif.	106.	50
6 XBA	KFSG	Air-Fan Radio Corp.	Los Angeles, Calif.	108.2	250
6 XBE	KFBC	W. K. Azbill	San Diego, Calif.		
6 XBH	KFQV	W. E. Riker	Holy City, Calif.	31-106	50
6 XBR	KFWB	Warner Bros. Picture Studios	Los Angeles, Calif.	40-105	50
6 XBX	KFVD	McWhinnie Elec. Co.	Venice, Calif.	105.	50
7 XAB	KFPY	Symons Investment Co.	Spokane, Wash.	105.9	
7 XAO	KWJJ	Wilbur Jerman, Inc.	Portland, Ore.	53-54	100
7 XC	KJR	Northwest Radio Service	Seattle, Wash.		
7 XO		Northwest Radio Service	Seattle, Wash.		
8 XAC	WHAM	Stromberg-Carlson Tel. Mfg. Co.	Rochester, N. Y.		
8 XAL	WLW	Crosley Radio Corp.	Cincinnati, Ohio	32.05	500
8 XAO	WJR	WJR, Inc.	Detroit, Mich.	52.	75
8 XF	WHK	Radio Air Service Corp.	Cleveland, Ohio	66.04	500
8 XJ	WEAO	Ohio State University	Columbus, Ohio	54.02	250
8 XK	KDKA	Westinghouse Elec. & Mfg. Co.	Pittsburgh, Pa.	62.5	40000
8 XP	KDKA	Westinghouse Elec. & Mfg. Co.	Pittsburgh, Pa.	10-150	500
9 XAB	WNAL	R. J. Rockwell	Omaha, Nebr.	105.	50
9 XU	KOIL	Mona Motor Oil Co.	Council Bluffs, Ia.	61.06	500

## PRINCIPAL FOREIGN STATIONS

Call Letters	Location	Wave Length	Call Letters	Location	Wave Length
AGC	Nauen, Germany	17.2	JB	Johannesburg, S. Africa	32.0
PCLL	Kootwijk, Holland	18.0	PCLL	Kootwijk, Holland	32.0
WOWO	Fort Wayne	22.8	3LO	Melbourne, Australia	32.0
5SW	Chelmsford, England	24.0	2XAI	Newark	43.0
2XAB	New York	24.0	WJSV	Mt. Vernon, Va	56.0
2FC	Sydney, Australia	28.5	AJG	Nauen, Germany	56.7
2ME	Sydney, Australia	28.5	GC	Paris, France	60.0
PCJJ	Hilversum, Holland	30.2	CJRX	Winnipeg Manitoba	25.6

## INDEX BY FREQUENCIES AND DIAL NUMBERS

### NOTICE OF COPYRIGHT

The method of logging by wave-lengths or frequencies was devised by The Radex Press in 1924 and has been copyrighted and recopyrighted each year since that time. The arrangement of stations in groups by frequencies or wave-lengths with dial readings in connection therewith is fully covered by our copyright and all infringers will be vigorously prosecuted.

### 550 kilocycles 545.1 meters

CYY	100	Merida, Mexico
KFDY	500	Brookings, S. D.
KFJM	500	Grand Forks, N. D.
KFUO	500	St. Louis, Mo.
KFYR	500	Bismarck, N. D.
KSD	500	St. Louis, Mo.
KTAB	500	Oakland, Calif.
WEAN	250	Providence, R. I.
WEAO	750	Columbus, Ohio
WGR	1000	Buffalo, N. Y.
WKRC	500	Cincinnati, Ohio

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Socialist Party  
S. D. State College  
University of North Dakota  
Concordia Theological Seminary  
Hoskins-Meyer  
Pultzer Publishing Co.  
Associated Broadcasters  
The Shepard Stores  
Ohio State University  
Federal Radio Corp.  
Kodel Radio Corp.

### 560 kilocycles 535.4 meters

KFDM	500	Beaumont, Texas
KFEQ	2500	St. Joseph, Mo.
KLZ	1000	Denver, Colo.
KOAC	1000	Corvallis, Ore.
WFI	500	Philadelphia, Pa.
WLIT	500	Philadelphia, Pa.
WMBF	500	Miami Beach, Fla.
WNOX	1000	Knoxville, Tenn.
WOI	3500	Ames, Iowa

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Magnolia Petroleum Co.  
Scroggin & Co. Bank  
Reynolds Radio Co., Inc.  
State Agricultural College  
Strawbridge & Clothier  
Lit Brothers  
Fleetwood Hotel Corp.  
Sterchl Bros.  
Iowa State College

### 570 kilocycles 526.0 meters

KGKO	250	Wichita Falls, Tex.
KMTR	1000	Hollywood, Calif.
KPLA	1000	Los Angeles, Calif.
KUOM	500	Missoula, Mont.
KXA	500	Seattle, Wash.
WHA	750	Madison, Wis.
WIBO	1000	Chicago, Ill.
WKBN	500	Youngstown, Ohio
WMAC	250	Cazenovia, N. Y.
WMCA	500	New York City
WNAX	500	Yankton, S. Dak.
WNYC	500	New York City
WPCC	500	Chicago, Ill.
WSMK	200	Dayton, Ohio
WSYR	250	Syracuse, N. Y.
WYNC	1000	Asheville, N. C.

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Wichita Falls Brdcastg. Co.  
KMTR Radio Corp.  
Pacific Development Radio Co.  
University of Montana  
American Radio Tel. Co.  
University of Wisconsin  
Nelson Bros. Bond & Mtg. Co.  
W. P. Williamson, Jr.  
Clive B. Meredith  
Greeley Square Hotel Co.  
Dakota Radio Apparatus Co.  
Dept. of Plants & Structures  
North Shore Congregational Church  
Stanley M. Krohn, Jr.  
Clive B. Meredith  
Chamber of Commerce

### 580 kilocycles 516.9 meters

CFCL	500	Toronto, Ont.
CHMA	250	Edmonton, Alta.
CHNC	500	Toronto, Ont.
CJBC	500	Toronto, Ont.
CJCA	500	Edmonton, Alta.
CJSC	500	Toronto, Ont.
CKCL	500	Toronto, Ont.
CKNC	500	Toronto, Ont.
CKUA	500	Edmonton, Alta.
KNRE	500	Edmonton, Alta.
KGFX	200	Pierre, S. D.
KSAC	500	Manhattan, Kans.
WKAQ	500	San Juan, P. R.
WOBU	250	Charleston, W. Va.
WSAZ	250	Huntington, W. Va.
WSUI	500	Iowa City, Iowa
WTAG	250	Worcester, Mass.

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Dominion Battery Co., Ltd.  
Christian and Missionary Alliance  
Radio Research Society  
Jarvis Street Baptist Church  
The Edmonton Journal  
The Evening Telegram  
The Dominion Battery Co.  
Canadian National Carbon Co.  
University of Alberta  
Canadian National Railways  
Dana McNeill  
State Agricultural College  
Radio Corp. of Porto Rico  
Charleston Radio Brdcastg. Co.  
McKellar Electric Co.  
University of Iowa  
Telegram Publishing Co.

INDEX BY FREQUENCIES AND DIAL NUMBERS

590 kilocycles 508.2 meters

KHQ	1000	Spokane, Wash.
WCAJ	500	Lincoln, Nebr.
WEI	500	Boston, Mass.
WOW	1000	Omaha, Nebr.
WEMC	1000	Berrien Springs, Mich.

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Louis Wasmer, Inc.  
Nebraska Wesleyan University  
Edison Elec. Illuminating Co.  
Woodmen of the World  
Emmanuel Missionary College

600 kilocycles 499.7 meters

CFCH	250	Iroquois Falls, Ont.
KFBU	500	Laramie, Wyo.
KFSD	500	San Diego, Calif.
WCAO	250	Baltimore, Md.
WEBW	350	Beloit, Wis.
WOAN	500	Lawrenceburg, Tenn.
WREC	500	Memphis, Tenn.
WTIC	250	Hartford, Conn.

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Abitibi Power & Paper Co.  
Bishop N. S. Thomas  
Airfan Radio Corp.  
Monumental Radio Co., Inc.  
Beloit College  
Vaughan School of Music  
WREC, Inc.  
Travelers Insurance Co.

610 kilocycles 491.5 meters

KFRC	1000	San Francisco, Calif.
WDAF	1000	Kansas City, Mo.
WFAK	500	Philadelphia, Pa.
WIP	500	Philadelphia, Pa.
WOO	1000	Kansas City, Mo.

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Don Lee, Inc.  
Kansas City Star Co.  
Keystone Broadcasting Co., Inc.  
Gimbel Bros., Inc.  
Unity School of Christianity

620 kilocycles 483.6 meters

KFAD	500	Phoenix, Ariz.
KGW	1000	Portland, Ore.
WDAE	1000	Tampa, Fla.
WDBO	1000	Orlando, Fla.
WLBZ	250	Dover-Foxcroft, Me.
WTMJ	1000	Milwaukee, Wis.

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Electrical Equipment Co.  
Oregonian Publishing Co.  
Tampa Publishing Co.  
Rollins College, Inc.  
Thompson L. Guernsey  
Milwaukee Journal

630 kilocycles 475.9 meters

CFCT	500	Victoria, B. C.
CJGX	500	Yorkton, Sask.
CNRA	500	Moncton, N. B.
CYR	250	Mazatlan, Mex.
KFRU	500	Columbia, Mo.
WGBF	500	Evansville, Ind.
WMAL	250	Washington, D. C.
WOS	500	Jefferson City, Mo.

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Victoria Broadcasting Ass'n.  
Winnipeg Grain Exchange  
Canadian National Railways  
Castulo Llamas  
Stephens College  
Evansville on the Air, Inc.  
M. A. Leese Co.  
State Marketing Bureau

640 kilocycles 468.5 meters

KFI	5000	Los Angeles, Calif.
WAIU	5000	Columbus, Ohio

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Earle C. Anthony, Inc.  
American Insurance Union

650 kilocycles 461.3 meters

WSM	5000	Nashville, Tenn.
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National Life & Accident Ins. Co.

660 kilocycles 454.3 meters

WAAW	500	Omaha, Nebr.
WEAF	50000	New York City

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Omaha Grain Exchange  
National Broadcasting Co., Inc.

670 kilocycles 447.5 meters

WMAQ	5000	Chicago, Ill.
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Chicago Daily News, Inc.

680 kilocycles 440.9 meters

KPO	5000	San Francisco, Cal.
WPTF	5000	Raleigh, N. C.

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Hale Bros. & The Chronicle  
Durham Life Insurance Co.

## INDEX BY FREQUENCIES AND DIAL NUMBERS

### 690 kilocycles 434.5 meters

CFAC	500	Calgary, Alta.
CFCN	1800	Calgary, Alta.
CHCA	250	Calgary, Alta.
CJ CJ	250	Calgary, Alta.
CKCO	100	Ottawa, Ont.
CNRC	500	Calgary, Alta.
CNRO	500	Ottawa, Ont.
NAA	1000	Arlington, Va.

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The Calgary Herald  
W. W. Grant, Ltd.  
Alverton Publishing Co., Ltd.  
Radio Service & Repair Shop  
Dr. G. M. Geldert  
Canadian National Railways  
Canadian National Railways  
U. S. Navy

### 700 kilocycles 428.3 meters

KFVD	250	Culver City, Calif.
WLW	50000	Cincinnati, Ohio

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W. J. & C. I. McWhinnie  
Crosley Radio Corp.

### 710 kilocycles 422.3 meters

CYO	100	Mexico City
WOR	5000	Newark, N. J.

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M. Y. Zetina  
L. Bamberger & Co.

### 720 kilocycles 416.4 meters

WGN	25000	Chicago, Ill.
WLIB	25000	Chicago, Ill.

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Chicago Tribune  
Liberty Weekly, Inc.

### 730 kilocycles 410.7 meters

CFCF	1650	Montreal, Que.
CHLS	50	Vancouver, B. C.
CHYC	750	Montreal, Que.
CKAC	1200	Montreal, Que.
CKCD	50	Vancouver, B. C.
CKFC	50	Vancouver, B. C.
CKMO	50	Vancouver, B. C.
CKWX	100	Vancouver, B. C.
CNRM	1650	Montreal, Que.

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Canadian Marconi Co.  
W. G. Hassell  
Northern Electric Co.  
La Presse Publishing Co.  
Vancouver Daily Province  
United Church of Canada  
Spratt-Shaw Radio Co.  
A. Holstead & Wm. Hanlon  
Canadian National Railways

### 740 kilocycles 405.2 meters

KMMJ	1000	Clay Center, Neb.
WSB	10000	Atlanta, Ga.

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The M. M. Johnson Co.  
Atlanta Journal Co.

### 750 kilocycles 399.8 meters

CYJ	2000	Mexico City
CYL	500	Mexico City
PWX	500	Havana, Cuba
WCX	5000	Detroit, Mich.
WJR	5000	Detroit, Mich.

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R. Ascarraga  
Cuban Telephone Co.  
Detroit Free Press  
WJR, Inc.

### 760 kilocycles 394.5 meters

WEW	1000	St. Louis, Mo.
WJZ	30000	New York City

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St. Louis University  
Radio Corp. of America, Inc.

### 770 kilocycles 389.4 meters

KFAB	5000	Lincoln, Nebr.
WBMB	25000	Chicago, Ill.

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Nebr. Buick Automobile Co.  
Atlas Investment Co.

### 780 kilocycles 384.4 meters

GKY	5000	Winnipeg, Manitoba
CNRW	500	Winnipeg, Man.
KELW	500	Burbank, Calif.
KTM	500	Santa Monica, Calif.
WBSO	100	Wellesley Hills, Mass.
WMC	500	Memphis, Tenn.
WFOR	500	Norfolk, Va.
WSEA	500	Portsmouth, Va.
WTAR	500	Norfolk, Va.

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Manitoba Telephone System  
Canadian National Railways  
Earl L. White  
Pickwick Brdcastg. Corp.  
Babson's Statistical Organization.  
Memphis Commercial-Appeal  
Reliance Electric Co.  
Virginia Beach Brdcastg. Co.  
Reliance Electric Co., Inc.

INDEX BY FREQUENCIES AND DIAL NUMBERS

790 kilocycles 379.5 meters

KGO 10000 Oakland, Calif.  
WGY 50000 Schenectady, N. Y.

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General Electric Co.  
General Electric Co.

800 kilocycles 374.8 meters

CYH 100 Mexico City  
KTHS 5000 Hot Springs, Ark.  
WBAP 50000 Fort Worth, Tex.  
WSAI 5000 Cincinnati, Ohio

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C. de Tarnava  
Chamber of Commerce  
Carter Publications, Inc.  
Crosley Radio Corp., Lessee

810 kilocycles 370.2 meters

WCCO 15000 Minneapolis-St. Paul  
WPCH 500 Jersey City, N. J.

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Washburn-Crosby Co.  
Concourse Radio Corp.

820 kilocycles 365.6 meters

WHAS 10000 Louisville, Ky.

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Courier-Journal & Times

830 kilocycles 361.2 meters

HHK 1000 Port au Prince, Haiti  
KOA 12500 Denver, Colo.  
WJHO 1000 Gloucester, Mass.

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Republic of Haiti  
General Electric Co.  
Matheson Radio Co., Inc.

840 kilocycles 356.9 meters

CFCA 500 Toronto, Ont.  
CHCT 1000 Red Deer, Alta.  
CJBC 1000 Toronto, Ont.  
CKLC 1000 Red Deer, Alta.  
CKOW 500 Toronto, Ont.  
CNRT 500 Toronto, Ont.

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Star Publishing & Ptg. Co.  
C. F. Tull & Ardern, Ltd.  
Jarvis Street Baptist Church  
Alberta Pacific Grain Co.  
Nestle's Food Co.  
Canadian National Railways

850 kilocycles 352.7 meters

KFOZ 1000 Hollywood, Calif.  
KWKH 20000 Shreveport, La.  
WWL 5000 New Orleans, La.

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Taft Radio & Brdcstg. Co.  
W. K. Henderson  
Loyola University

860 kilocycles 348.6 meters

CZE 500 Mexico City  
WABC 5000 New York City  
WBOQ 5000 New York City  
20K 100 Havana, Cuba  
7SR 500 Elia, Cuba

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Department of Education  
Atlantic Broadcasting Corp.  
Atlantic Broadcasting Corp.  
Merio G. Velez  
Salvador Rionda

870 kilocycles 344.6 meters

WENR 5000 Chicago, Ill.  
WLS 5000 Chicago, Ill.

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Great Lakes Brdcstg. Co.  
The Prairie Farmer

880 kilocycles 340.7 meters

CHCS 10 Hamilton, Ont.  
CHML 50 Hamilton, Ont.  
CHRC 5 Quebec, Que.  
CKCI 22.5 Quebec, Que.  
CKCV 50 Quebec, Que.  
CKOC 100 Hamilton, Ont.  
CNRO 50 Quebec, Que.  
KFKA 500 Greeley, Colo.  
KLX 500 Oakland, Calif.  
KPOF 500 Denver, Colo.  
WCOG 500 Columbus, Miss.  
WGBI 250 Scranton, Pa.  
WQAN 250 Scranton, Pa.  
6KW 100 Tuinucu, Cuba

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The Hamilton Spectator  
Maple Leaf Radio Co.  
E. Fontaine  
LeSotell  
G. A. Vandry  
Wentworth Radio Supply Co.  
Canadian National Railways  
State Teachers College  
Tribune Publishing Co.  
Pillar of Fire, Inc.  
Crystal Oil Co.  
Scranton Broadcasters, Inc.  
Scranton Times  
Frank H. Jones

INDEX BY FREQUENCIES AND DIAL NUMBERS

890 kilocycles 336.9 meters

CFBO	50	St. John, N. B.
CYC	50	Vera Cruz, Mex.
KFNF	500	Shenandoah, Iowa
KGJF	250	Little Rock, Ark.
KUSD	500	Vermillion, S. D.
WGST	250	Atlanta, Ga.
WILL	250	Urbana, Ill.
WJAR	250	Providence, R. I.
WMAZ	250	Macon, Ga.
WMMN	250	Fairmont, W. Va.

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C. A. Munro, Ltd.  
M. A. Fernandez  
Henry Field Seed Co.  
Church of the Nazarene  
University of South Dakota  
Georgia School of Technology  
University of Illinois  
The Outlet Co.  
Mercer University  
Holt Rowe Novelty Co.

900 kilocycles 333.1 meters

KGBU	500	Ketchikan, Alaska
KHJ	1000	Los Angeles, Cal.
KSEI	250	Pocatello, Idaho
WFBL	750	Syracuse, N. Y.
WFLA	1000	Clearwater, Fla.
WKY	1000	Oklahoma City
WLBL	2000	Stevens Pt., Wis.
WMAK	750	Buffalo, N. Y.
WSUN	1000	St. Petersburg, Fla.

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Alaska Radio & Service Co.  
Don Lee, Inc.  
KSEI Broadcasting Assn.  
The Onondaga Co., Inc.  
Chamber of Commerce  
WKY Radiophone Co.  
Wisconsin Dept. of Markets  
WMAK Brdcstg. Station, Inc.  
Chamber of Commerce

910 kilocycles 329.6 meters

CFQC	500	Saskatoon, Sask.
CJGC	500	London, Ont.
CJHS	250	Saskatoon, Sask.
CNRS	500	Saskatoon, Sask.

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The Electric Shop  
Free Press Ptg. Co.  
Radio Service, Ltd.  
Canadian National Railways

920 kilocycles 325.9 meters

CYX	500	Mexico City
KOMO	1000	Seattle, Wash.
KPRC	1000	Houston, Texas
WAAF	500	Chicago, Ill.
WWJ	1000	Detroit, Mich.

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El Excelstor  
Fisher's Blend Station  
Houston Printing Co.  
Drovers Journal Publishing Co.  
The Detroit News

930 kilocycles 322.4 meters

CHNS	500	Halifax, N. S.
CYO	100	Tampico, Mex.
KFWI	500	San Francisco, Calif.
KFWM	500	Oakland, Calif.
KGBZ	500	York, Nebr.
KMA	500	Shenandoah, Iowa
WBRC	500	Birmingham, Ala.
WDBJ	250	Roanoke, Va.
WIBG	50	Elkins Park, Pa.

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Northern Elec. Co.-Halifax Herald  
Cipriano Sagaon S. en C.  
Radio Entertainments, Inc.  
Oakland Educational Society  
George R. Miller  
May Seed & Nursery Co.  
Birmingham Broadcasting Co.  
Richardson-Wayland Elec. Corp.  
St. Pauls P. E. Church

940 kilocycles 319.0 meters

KFEL	250	Denver, Colo.
KFXF	250	Denver, Colo.
KGU	500	Honolulu, Hawaii
KOIN	1000	Portland, Ore.
WCSS	500	Portland, Maine
WFIW	1000	Hopkinsville, Ky.

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Eugene P. O'Fallon, Inc.  
Pikes Peak Brdcstg. Co.  
Marion A. Mulrony  
KOIN, Inc.  
Congress Square Hotel Co.  
The Acme Mills, Inc.

950 kilocycles 315.6 meters

KFWB	1000	Los Angeles, Calif.
KGHL	500	Billings, Mont.
KLDS	500	Independence, Mo.
KMBC	500	Independence, Mo.
KPSN	1000	Pasadena, Calif.
WHB	500	Kansas City, Mo.
WRC	500	Washington, D. C.
2RK	20	Havana, Cuba

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Warner Bros. Broadcasting Corp.  
Northwestern Auto Supply Co.  
Church of Latter Day Saints  
Midland Broadcasting Co.  
Pasadena Star-News  
Sweeney Automobile School  
Radio Corp. of America  
Raoul Karman



INDEX BY FREQUENCIES AND DIAL NUMBERS

960 kilocycles 312.3 meters

CFCY 100 Charlottetown, P. E. I.  
 CFRB 1000 Twp. of King, Ont.  
 CHCK 30 Charlottetown, P. E. I.  
 CHWC 500 Regina, Sask.  
 CJBC 5000 Toronto, Ont.  
 CJBR 500 Regina, Sask.  
 CKCK 500 Regina, Sask.  
 CKGW 5000 Bowmanville, Ont.  
 CNRR 500 Regina, Sask.  
 CYU 100 Puebla, Mex.  
 CZF 250 Chihuahua, Mex.

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The Island Radio Co.  
 Standard Radio Mfg. Corp.  
 W. E. Burke  
 R. H. Williams & Sons  
 Jarvis St. Baptist Church  
 Cooperative Wheat Producers  
 Leader Pub. Co.  
 Gooderham & Worts  
 Canadian Nat'l. Railways  
 A. del P. Zaonz  
 State of Chihuahua

970 kilocycles 309.1 meters

KJR 5000 Seattle Wash.  
 WCFL 50000 Chicago, Ill.

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Northwest Radio Service Co.  
 Chicago Federation of Labor

980 kilocycles 305.9 meters

KDKA 50000 Pittsburgh, Pa.

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Westinghouse Elec. & Mfg. Co.

990 kilocycles 302.8 meters

WBZ 15000 Springfield, Mass.  
 WBZA 500 Boston, Mass.

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Westinghouse Elec. & Mfg. Co.  
 Westinghouse Elec. & Mfg. Co.

1000 kilocycles 299.8 meters

CYA 500 Mexico City  
 KGFH 250 Glendale, Calif.  
 WHO 5000 Des Moines, Iowa  
 WOC 5000 Davenport, Iowa

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E. R. Gomes  
 Frederick Robinson  
 Bankers Life Co.  
 Palmer School of Chiropractic

1010 kilocycles 296.9 meters

CFLC 50 Prescott, Ont.  
 CJRM 500 Moose Jaw, Sask.  
 CJRW 500 Fleming, Sask.  
 CKCR 50 Brantford, Ont.  
 CKSH 50 St. Hyacinthe, Que.  
 KGGF 500 Picher, Okla.  
 KQW 500 San Jose, Calif.  
 WBN 250 New York City  
 WJBB 250 Sarasota, Fla.  
 WNAD 500 Norman, Okla.  
 WPAP 250 Cliffside, N. J.  
 WQAO 250 Cliffside, N. J.  
 WRNY 250 New York City

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Radio Association  
 Jas. Richardson & Sons  
 Jas. Richardson & Sons, Ltd.  
 John Patterson  
 City of St. Hyacinthe  
 D. L. Connell, M. D.  
 First Baptist Church  
 George Schubel  
 Chamber of Commerce  
 University of Oklahoma  
 Pallsades Amusement Park  
 Calvary Baptist Church  
 Experimenter Publishing Co.

1020 kilocycles 293.9 meters

KFKX 5000 Chicago, Ill.  
 KYW 5000 Chicago, Ill.

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Westinghouse Elec. & Mfg. Co.  
 Westinghouse Elec. & Mfg. Co.

1030 kilocycles 291.1 meters

CJOR 50 Sea Island, B. C.  
 CNRV 500 Vancouver, B. C.

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G. C. Chandler  
 Canadian Nat'l Railways

1040 kilocycles 288.3 meters

KRLD 10000 Dallas, Texas  
 WFAA 5000 Dallas, Texas  
 WKAR 500 East Lansing, Mich.  
 WKEN 1000 Buffalo, N. Y.

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KRLD, Inc.  
 Dallas Morning News  
 Michigan Agricultural College  
 Radio Station WKEN, Inc.

1050 kilocycles 285.5 meters

KNX 5000 Hollywood, Calif.  
 WFBM 25000 Indianapolis, Ind.  
 2MG 20 Havana, Cuba

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Western Broadcast Co.  
 Indianapolis Power & Light Co.  
 M. y G. Salas

INDEX BY FREQUENCIES AND DIAL NUMBERS

1060 kilocycles 282.8 meters

KWJJ 500 Portland, Ore.  
 WBAL 5000 Baltimore, Md.  
 WJAG 500 Norfolk, Nebr.  
 WTIC 5000 Hartford, Conn.

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Wilbur Jerman  
 Consolidated Gas, Elec. & Pwr. Co.  
 Norfolk Daily News  
 Travelers Insurance Co.

1070 kilocycles 280.2 meters

WAAT 300 Jersey City, N. J.  
 WCAZ 100 Carthage, Ill.  
 WDZ 100 Tuscola, Ill.  
 WEAR 1000 Cleveland, Ohio  
 WTAM 3500 Cleveland, Ohio

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Bremer Broadcasting Corp.  
 Carthage College  
 James L. Bush  
 WTAM and WEAR, Inc.  
 WTAM and WEAR, Inc.

1080 kilocycles 277.6 meters

WBT 10000 Charlotte, N. C.  
 WCBF 5000 Zion, Ill.  
 WMBI 5000 Chicago, Ill.

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C. C. Coddington  
 Wilbur Glenn Voliva  
 Moody Bible Institute

1090 kilocycles 275.1 meters

CYB 500 Mexico City  
 KMOX 5000 St. Louis, Mo.  
 ZUF 10 Havana, Cuba

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J. J. Reynosa  
 Voice of St. Louis  
 Benito V. Ferro

1100 kilocycles 272.6 meters

KJBS 100 San Francisco, Cal.  
 WLWI 5000 New York City  
 WPG 5000 Atlantic City, N. J.

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Julius Brunton & Sons Co.  
 Missionary Society of St. Paul  
 Municipality of Atlantic City

1110 kilocycles 270.1 meters

KSOO 1000 Sioux Falls, S. D.  
 WRVA 5000 Richmond, Va.  
 2TW 20 Havana, Cuba

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Sioux Falls Broadcast Assn.  
 Larus & Bros. Co., Inc.  
 Roberto E. Ramirez

1120 kilocycles 267.7 meters

CFJC 15 Kamloops, B. C.  
 CFMC 20 Kingston, Ont.  
 CFRC 500 Kingston, Ont.  
 CHGS 25 Summerside, P. E. I.  
 CJOC 50 Lethbridge, Alta.  
 CKPR 50 Midland, Ont.  
 KFSG 500 Los Angeles, Cal.  
 KMIC 500 Inglewood, Calif.  
 KRSC 50 Seattle, Wash.  
 KUT 500 Austin, Texas  
 WCOA 500 Pensacola, Fla.  
 WHAD 250 Milwaukee, Wis.  
 WISN 250 Milwaukee, Wis.  
 WTAW 500 College Station, Texas

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N. S. Dalgleish & Sons  
 Monarch Battery Co.  
 Queen's University  
 R. T. Holman, Ltd.  
 J. E. Palmer  
 E. O. Swan  
 Echo Park Evang. Assn.  
 James R. Fouch  
 Radio Sales Corp.  
 University of Texas  
 City of Pensacola  
 Marquette University  
 Evening Wisconsin Co.  
 Agricultural & Mech. College

1130 kilocycles 265.3 meters

CYF 100 Oaxaca, Mex.  
 KFKB 5000 Milford, Kansas  
 KSL 5000 Salt Lake City  
 WOV 1000 New York City

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F. Zonillo  
 Dr. J. R. Brinkley  
 Radio Service Corp. of Utah  
 International Brdcstg. Corp.

1140 kilocycles 263.0 meters

KVOO 5000 Tulsa, Okla.  
 WAPI 5000 Birmingham, Ala.

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Southwestern Sales Corp.  
 Alabama Polytechnic Institute

1150 kilocycles 260.7 meters

KGDM 10 Stockton, Calif.  
 WHAM 5000 Rochester, N. Y.  
 6BY 200 Cienfuegos, Cuba

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E. F. Peffer  
 Stromberg-Carlson Tel. Mfg. Co.  
 Jose Ganduxe

## INDEX BY FREQUENCIES AND DIAL NUMBERS

### 1160 kilocycles 258.5 meters

WOWO 1000 Ft. Wayne, Ind.  
 WWVA 5000 Wheeling, W. Va.

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Main Auto Supply Co.  
 West Virginia Brdcastg. Corp.

### 1170 kilocycles 256.3 meters

KTNT 5000 Muscatine, Iowa  
 WCAU 5000 Philadelphia, Pa.  
 20L 100 Havana, Cuba

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Norman Baker  
 Universal Broadcasting Co.  
 Oscar C. Orta

### 1180 kilocycles 254.1 meters

KEX 5000 Portland, Ore.  
 KOB 10000 State College, N. M.  
 WGBS 500 New York City  
 WJJD 20000 Mooseheart, Ill.

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Western Broadcasting Co.  
 College of Agriculture  
 General Broadcasting System  
 Loyal Order of Moose

### 1190 kilocycles 252.0 meters

WICC 500 Bridgeport, Conn.  
 WOAI 5000 San Antonio, Texas

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Bridgeport Broadcasting Station  
 Southern Equipment Co.

### 1200 kilocycles 249.9 meters

KFHA 50 Gunnison, Colo.  
 KFJB 100 Marshalltown, Iowa  
 KFJK 50 Kirksville, Mo.  
 KFVK 100 Ontario, Calif.  
 KFVF 100 St. Louis, Mo.  
 KGCU 100 Mandan, N. Dak.  
 KGDE 50 Barrett, Minn.  
 KGDY 15 Oldham, S. Dak.  
 KGEK 50 Yuma, Colo.  
 KGEW 100 Fort Morgan, Colo.  
 KGFK 50 Hallock, Minn.  
 KGY 50 Lacey, Wash.  
 KMJ 100 Fresno, Calif.  
 KPCC 50 Pasadena, Calif.  
 KSMR 100 Santa Maria, Calif.  
 KVOS 100 Bellingham, Wash.  
 KWG 100 Stockton, Calif.  
 KXO 100 El Centro, Calif.  
 WABI 100 Bangor, Maine  
 WABZ 100 New Orleans, La.  
 WBBW 100 Norfolk, Va.  
 WBBY 75 Charleston, S. C.  
 WBBZ 100 Ponca City, Okla.  
 WCAT 100 Rapid City, S. Dak.  
 WCAX 100 Burlington, Vt.  
 WCLO 100 Kenosha, Wis.  
 WEPS 100 Gloucester, Mass.  
 WFBC 50 Knoxville, Tenn.  
 WFBE 100 Cincinnati, Ohio  
 WHBC 10 Canton, Ohio  
 WHBY 100 West De Pere, Wis.  
 WIBX 100 Utica, N. Y.  
 WJBC 100 La Salle, Ill.  
 WJBL 100 Decatur, Ill.  
 WJBW 30 New Orleans, La.  
 WKBE 100 Webster, Mass.  
 WKJC 100 Lancaster, Pa.  
 WLAP 30 Louisville, Ky.  
 WLBG 100 Petersburg, Va.  
 WMAV 100 St. Louis, Mo.  
 WMT 100 Waterloo, Iowa  
 WNBO 15 Washington, Pa.  
 WNBW 5 Carbondale, Pa.  
 WNBX 10 Springfield, Vt.  
 WPRC 100 Harrisburg, Pa.  
 WOBJ 65 Clarksburg, W. Va.  
 WRAF 100 La Porte, Ind.  
 WRAL 50 Columbus, Ga.  
 WWAE 100 Hammond, Ind.  
 2BB 15 Havana, Cuba

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Western College of Colorado  
 Marshall Electric Co.  
 State Teachers College  
 James R. Fouch  
 St. Louis Truth Center, Inc.  
 Mandan Radio Association  
 Jaren Drug Co.  
 J. Albert Loesch  
 Beehler Elec. Equipment Co.  
 City of Fort Morgan  
 Kittson County Enterprise  
 St. Martin's College  
 The Fresno Bee  
 Pasadena Presbyterian Church  
 Santa Maria Valley R. R. Co.  
 L. Kessler  
 Portable Wireles Tel. Co.  
 E. R. Irely and F. M. Bowles  
 First Universalist Church  
 Coliseum Place Baptist Church  
 Ruffner Junior High School  
 Washington Light Infantry  
 C. L. Carrell  
 State School of Mines  
 University of Vermont  
 C. E. Whitmore  
 Matheson Radio Co., Inc.  
 First Baptist Church  
 Park View Hotel  
 St. John's Catholic Church  
 St. Norbert's College  
 WIBX, Inc.  
 Hummer Furniture Co.  
 Wm. Cushman Dry Goods Co.  
 Charles C. Carlson, Jr.  
 K. & B. Electric Co.  
 Kirk Johnson & Co.  
 American Brdcastg. Corp. of Ky.  
 Robert Allen Gamble  
 Kingshighway Pres. Church  
 Waterloo Broadcasting Co.  
 John Brownlee Spriggs  
 Home Cut Glass & China Co.  
 First Congregational Church  
 Wilson Printing & Radio Co.  
 John Raikes  
 The Radio Club, Inc.  
 R. E. Martin  
 Hammond-Calumet Brdcastg. Co.  
 Bernardo Barrie

INDEX BY FREQUENCIES AND DIAL NUMBERS

1210 kilocycles 247.8 meters

CFCO	25	Chatham, Ont.
CFNB	50	Frederickton, N. B.
CHWK	5	Chilliwack, B. C.
CKMC	5	Cobalt, Ont.
CKPC	25	Preston, Ont.
KDLR	100	Devils Lake, N. D.
KFDX	100	Shreveport, La.
KFEY	10	Kellogg, Idaho
KFOR	100	Lincoln, Nebr.
KFVS	100	Cape Girardeau, Mo.
KGCR	100	Brookings, S. D.
KGDP	10	Pueblo, Colo.
KPCB	100	Seattle, Wash.
KPO	100	Seattle, Wash.
KWEA	100	Shreveport, La.
WBAX	100	Wilkes-Barre, Pa.
WCBS	100	Springfield, Ill.
WCOH	100	Greenville, N. Y.
WCRW	100	Chicago, Ill.
WDWF	100	Cranston, R. I.
WEBE	100	Cambridge, Ohio
WEBQ	50	Harrisburg, Ill.
WEDC	100	Chicago, Ill.
WGBB	100	Freeport, N. Y.
WGCM	100	Gulfport, Miss.
WHBF	100	Rock Island, Ill.
WHBU	100	Anderson, Ind.
WIBA	100	Madison, Wis.
WINR	100	Bay Shore, N. Y.
WJBI	100	Red Bank, N. J.
WJBU	100	Lewisburg, Pa.
WJBY	50	Gadsden, Ala.
WLBV	100	Mansfield, Ohio
WLCI	50	Ithaca, N. Y.
WLSI	100	Cranston, R. I.
WMAN	50	Columbus, Ohio
WMBC	100	Richmond, Va.
WMBR	100	Tampa, Fla.
WOCL	25	Jamestown, N. Y.
WOMT	100	Manitowoc, Wis.
WPAW	100	Pawtucket, R. I.
WRBO	100	Greenville, Miss.
WRBU	100	Gastonia, N. C.
WSBC	100	Chicago, Ill.
WSIX	100	Springfield, Tenn.
WTAX	50	Streator, Ill.
WTAZ	15	Richmond, Va.

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Western Ontario "Better Radio" club  
 James S. Neill & Sons  
 Chilliwack Brdcastg. Co., Ltd.  
 R. L. MacAdam  
 Wallace Russ  
 Radio Electric Co.  
 First Baptist Church  
 Union High School  
 Howard A. Shuman  
 Hirsch Battery & Radio Co.  
 Gutler's Radio Brdcastg. Service  
 Boy Scouts of America  
 Pacific Coast Biscuit Co.  
 Archie Taft & Louis Wasmer  
 William E. Antony  
 John H. Stenger, Jr.  
 H. L. Dewing & Chas. Messter  
 Westchester Brdcastg. Corp.  
 Clinton R. White  
 Dutee W. Flint  
 Roy W. Waller  
 Tate Radio Co.  
 Emil Denmark, Inc.  
 Harry H. Carman  
 Gulf Coast Music Co.  
 Beardsley Specialty Co.  
 Citizens Bank  
 Capital Times-Strand Theatre  
 Radiolot Mfg. Co., Inc.  
 Robert S. Johnson  
 Bucknell University  
 Electric Construction Co.  
 Mansfield Broadcasting Assn.  
 Lutheran Assn. of Ithaca  
 The Lincoln Studios, Inc.  
 W. E. Heskitt  
 Havens & Martin, Inc.  
 F. J. Reynolds  
 A. E. Newton  
 Mikadow Theatre  
 Shartenburg & Robinson  
 J. Pat Scully  
 A. J. Kirby Music Co.  
 World Battery Co., Inc.  
 638 Tire & Vulcanizing Co.  
 Williams Hardware Co.  
 W. Reynolds & T. J. McGuire

1220 kilocycles 245.8 meters

KFKU	1000	Lawrence, Kans.
WCAD	500	Canton, N. Y.
WCAE	500	Pittsburgh, Pa.
WREN	1000	Lawrence, Kans.

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University of Kansas  
 St. Lawrence University  
 Kaufman & Baer Co.  
 Jenny Wren Co.

1230 kilocycles 243.8 meters

KFIO	100	Spokane, Wash.
KFOD	100	Anchorage, Alaska
KYA	1000	San Francisco, Cal.
WBIS	500	Boston, Mass.
WCWK	500	Ft. Wayne, Ind.
WFBM	500	Indianapolis, Ind.
WNAC	500	Boston, Mass.
WPSC	500	State College, Pa.
WSBT	500	South Bend, Ind.

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North Central High School  
 Anchorage Radio Club  
 Pacific Broadcasting Corp.  
 The Shepard Stores  
 Chester W. Keen  
 Indianapolis Power & Light Co.  
 The Shepard Stores  
 Pennsylvania State College  
 South Bend Tribune

1240 kilocycles 241.8 meters

KFOB	1000	Ft. Worth, Texas
WGHP	750	Detroit, Mich.
WIOD	1000	Miami Beach, Fla.
WJAD	1000	Waco, Texas
WQAM	750	Miami, Fla.
WRBC	500	Valparaiso, Ind.

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W. B. Fishburn, Inc.  
 American Brdcastg. Corp.  
 Isle of Dreams Brdcastg. Co.  
 Frank P. Jackson  
 Electrical Equipment Co.  
 Immanuel Lutheran Church

## INDEX BY FREQUENCIES AND DIAL NUMBERS

### 1250 kilocycles 239.9 meters

KEJK	500	Los Angeles, Cal.
KFMX	1000	Northfield, Minn.
KFON	1000	Long Beach, Cal.
KIDO	1000	Boise, Idaho
KXL	500	Portland, Ore.
WAAM	500	Newark, N. J.
WCAL	1000	Northfield, Minn.
WGCP	250	Newark, N. J.
WGMS	1000	St. Paul-Minneapolis
WLB	1000	Minneapolis, Minn.
WODA	1000	Paterson, N. J.
WRHM	1000	Minneapolis, Minn.

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R. S. MacMillan  
 Carleton College  
 Nichols & Warlimer, Inc.  
 Boise Brdcstg. Station  
 KXL Broadcasters  
 WAAM, Inc.  
 St. Olaf College  
 May Radio Broadcast Corp.  
 Washburn-Crosby Co.  
 University of Minnesota  
 Richard E. O'Dea  
 Rosedale Hospital Co., Inc.

### 1260 kilocycles 238.0 meters

KOIL	1000	Council Bluffs, Iowa
KRGV	500	Harlingen, Texas
KWWG	500	Brownsville, Texas
WJAX	1000	Jacksonville, Fla.
WLBW	500	Oil City, Pa.

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Mona Motor Oil Co.  
 Harlingen Music Co.  
 Chamber of Commerce  
 City of Jacksonville  
 Petroleum Telephone Co.

### 1270 kilocycles 236.1 meters

KFUM	1000	Colorado Spgs., Colo.
KGCA	50	Decorah, Iowa
KOL	1000	Seattle, Wash.
KTW	1000	Seattle, Wash.
KWLC	50	Decorah, Iowa
WASH	250	Grand Rapids, Mich.
WDSU	1000	New Orleans, La.
WEAI	500	Ithaca, N. Y.
WFBR	250	Baltimore, Md.
WOOD	500	Grand Rapids, Mich.

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W. D. Corley  
 Charles W. Greenley  
 Rhodes Department Store  
 First Presbyterian Church  
 Luther College  
 Baxter Laundries, Inc.  
 Joseph H. Uhalt  
 Cornell University  
 Baltimore Radio Show  
 Walter B. Stiles, Inc.

### 1280 kilocycles 234.2 meters

WCAM	500	Camden, N. J.
WCAP	500	Asbury Park, N. J.
WDAY	1000	Fargo, N. Dak.
WDOD	1000	Chattanooga, Tenn.
WEBC	1000	Superior, Wis.
WOAX	500	Trenton, N. J.
WRR	500	Dallas, Texas
2LR	50	Havana, Cuba

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City of Camden  
 Radio Industries Broadcast Co.  
 WDAY, Inc.  
 Chattanooga Radio Co., Inc.  
 Head of Lakes Brdcstg. Co.  
 Franklyn J. Wolf  
 City of Dallas  
 Jose Lara

### 1290 kilocycles 232.4 meters

KDYL	1000	Salt Lake City
KFUL	500	Galveston, Texas
KLCN	50	Blytheville, Ark.
KTSA	1000	San Antonio, Texas
WJAS	1000	Pittsburgh, Pa.
WNBZ	10	Saranac Lake, N. Y.

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Intermountain Brdcstg. Corp.  
 Will H. Ford  
 C. L. Lintzrnich  
 Lone Star Broadcast Co.  
 Pittsburgh Radio Supply House  
 Smith & Mace

### 1300 kilocycles 230.6 meters

KFH	1000	Wichita, Kansas
KFJR	500	Portland, Ore.
KGFE	1000	Los Angeles, Calif.
KTBI	1000	Los Angeles, Calif.
KTBR	500	Portland, Ore.
WBRR	1000	Rossville, N. Y.
WEVD	500	Woodhaven, N. Y.
WHAP	1000	New York City
WHAZ	500	Troy, N. Y.
WIBW	1000	Topeka, Kansas

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Hotel Lassen  
 Ashley C. Dixon & Son  
 Trinity Methodist Church  
 Bible Institute of Los Angeles  
 M. E. Brown  
 Peoples Pulpit Association  
 Eugene V. Debs Memorial Fund  
 Defenders of Truth Society, Inc.  
 Rensselaer Polytechnic Institute  
 C. L. Carrell

INDEX BY FREQUENCIES AND DIAL NUMBERS

1310 kilocycles 228.9 meters

KFBK	100	Sacramento, Calif.
KFCB	100	Phoenix, Ariz.
KFGO	100	Boone, Iowa
KFIU	10	Juneau, Alaska
KFJY	100	Ft. Dodge, Iowa
KFFL	15	Dublin, Texas
KFFM	15	Greenville, Texas
KFUP	100	Denver, Colo.
KFXJ	50	Edgewater, Colo.
KFXR	100	Oklahoma City
KGEZ	100	KallsPELL, Mont.
KGFI	100	San Angelo, Texas
KGGH	50	Cedar Grove, La.
KGHG	50	McGeehee, Ark.
KRMD	50	Shreveport, La.
KWCR	100	Cedar Rapids, Iowa
WABY	50	Philadelphia, Pa.
WAGM	50	Royal Oak, Mich.
WBMH	100	Detroit, Mich.
WBOW	100	Terre Haute, Ind.
WBRE	100	Wilkes-Barre, Pa.
WCLS	100	Joliet, Ill.
WDAH	100	El Paso, Texas
WEBR	100	Buffalo, N. Y.
WEHS	100	Evanston, Ill.
WFBG	100	Altoona, Pa.
WFDF	100	Flint, Mich.
WFKD	50	Philadelphia, Pa.
WGAL	15	Lancaster, Pa.
WGH	100	Newport News, Va.
WBHP	100	Johans town, Pa.
WHFC	100	Chicago, Ill.
WIBU	100	Poynette, Wis.
WJAK	50	Kokomo, Ind.
WKAV	100	Laconia, N. H.
WKBB	100	Joliet, Ill.
WKBC	10	Birmingham, Ala.
WKBI	50	Chicago, Ill.
WKBS	100	Galesburg, Ill.
WLBC	50	Muncie, Ind.
WLBO	100	Galesburg, Ill.
WMBL	100	Lakeland, Fla.
WNAT	100	Philadelphia, Pa.
WNBH	100	New Bedford, Mass.
WNBJ	50	Knoxville, Tenn.
WOBT	15	Union City, Tenn.
WOL	150	Washington, D. C.
WRAW	100	Reading, Pa.
WRBI	20	Tifton, Ga.
WRBW	100	Columbia, S. C.
WRK	100	Hamilton, Ohio
WSAJ	100	Grove City, Pa.
WSMD	100	Salisbury, Md.
WTHS	100	Atlanta, Ga.

Kimball-Upson Co.  
 Nielson Radio Supply Co.  
 Boone Biblical College  
 Alaska Elec. Light & Power Co.  
 C. S. Tunwall  
 C. C. Baxter  
 The New Furniture Co.  
 Fitzsimmons General Hospital  
 R. G. Howell  
 Exchange Ave. Baptist Church  
 Flathead Broadcasting Assn.  
 San Angelo Broadcasting Co.  
 Bates Radio & Electric Co.  
 Chas. W. McCollum  
 Robert M. Dean  
 H. E. Paar  
 John Magaldi, Jr.  
 Robert L. Miller  
 Brauns's Music House  
 Banks of Wabash Brdctg. Assn.  
 Louis G. Baltimore  
 WCLS, Inc.  
 Trinity Methodist Church  
 H. H. Howell  
 Victor C. Carlson  
 Wm. F. Gable Co.  
 Frank D. Fallain  
 Foulkrod Radio Engineering Co.  
 Lancaster Electric Supply Co.  
 Virginia Brdctg. Co., Inc.  
 Johnstown Automobile Co.  
 Goodson & Wilson, Inc.  
 William C. Forrest  
 J. A. Kautz-Kokomo Tribune  
 Laconia Radio Club  
 Sanders Bros.  
 H. I. Ansley  
 Fred L. Schoenwolf  
 Permil N. Nelson  
 Donald A. Burton  
 Fred A. Trebbe, Jr.  
 Benford's Radio Studios  
 Lennig Bros. Co.  
 New Bedford Broadcasting Co.  
 Lonsdale Baptist Church  
 Titstworth's Radio & Music Shop  
 American Broadcasting Co.  
 Avenue Radio & Electric Shop  
 Kent's Furniture & Music Store  
 Paul S. Pearce  
 S. W. Doron & J. C. Slade  
 Grove City College  
 Tom F. Little  
 Technical High School

1320 kilocycles 227.1 meters

KGHB	250	Honolulu, Hawaii
KGHF	250	Pueblo, Colo.
KGIO	250	Idaho Falls, Ida.
KGIQ	250	Twin Falls, Ida.
WADC	1000	Akron, Ohio
WSMB	750	New Orleans, La.

Radio Sales Co.  
 C. P. Ritchie & J. E. Finch  
 Jack W. Duckworth, Jr.  
 Stanley M. Soule  
 Allen T. Simmons  
 Saenger Theatre & Maison Blanche

1330 kilocycles 225.4 meters

CYM	1500	Torreón, Mexico
KSCJ	1000	Sloux City, Iowa
WCAC	500	Storrs, Conn.
WDRG	500	New Haven, Conn.
WTAQ	1000	Eau Claire, Wisc.

Perkins Bros. Co.  
 Conn. Agricultural College  
 Doolittle Radio Corp.  
 Gillette Rubber Co.

1340 kilocycles 223.7 meters

KFPW	50	Siloam Springs, Ark.
KMO	500	Tacoma, Wash.
KVI	1000	Tacoma, Wash.
WSPD	500	Toledo, Ohio

Rev. Lannie W. Stewart  
 KMO, Inc.  
 Puget Sound Brdctg. Co.  
 Toledo Broadcasting Co.

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1350 kilocycles 222.1 meters

KWK	1000	St. Louis, Mo.
WBNY	250	New York City
WCDA	250	Brooklyn, N. Y.
WKQB	250	New York City
WMSG	250	New York City

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Greater St. Louis Brdcastg. Corp.  
Baruchrome Corp.  
Italian Educ. Brdcastg. Co.  
Standard Cahill Co., Inc.  
Madison Square Garden

1360 kilocycles 220.4 meters

KFBB	250	Havre, Mont.
KGB	250	San Diego, Calif.
KGIR	250	Butte, Mont.
WBET	500	Boston, Mass.
WGES	500	Chicago, Ill.
WJKS	500	Gary, Ind.
WMAF	500	S. Dartmouth, Mass.
WQBC	300	Utica, Miss

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F. A. BATTERY Co.  
Pickwick Brdcastg. Corp.  
Symons Broadcasting Co.  
Boston Transcript Co.  
Oak Leaves Broadcasting Corp.  
Johnson-Kennedy Radio Corp.  
Round Hills Radio Corp.  
Chamber of Commerce

1370 kilocycles 218.7 meters

KFBL	50	Everett, Wash.
KFEC	100	Portland, Ore.
KFJI	50	Astoria, Ore.
KFJZ	100	Ft. Worth, Texas
KFLX	100	Galveston, Texas
KFUR	50	Ogden, Utah
KGAR	100	Tucson, Ariz.
KGBX	100	St. Joseph, Mo.
KGCB	100	Enid, Okla.
KGCI	100	San Antonio, Texas
KGDA	15	Dell Rapids, S. D.
KGER	100	Long Beach, Cal.
KGFG	100	Oklahoma City
KGFL	50	Raton, N. M.
KGGM	100	Albuquerque, N. M.
KGKL	100	San Angelo, Texas
KGRC	100	San Antonio, Texas
KKP	15	Seattle, Wash.
KOH	100	Reno, Nevada
KOOS	50	Marshfield, Ore.
KRE	100	Berkeley, Calif.
KVL	100	Seattle, Wash.
KWKC	100	Kansas City, Mo.
KZM	100	Hayward, Calif.
WBBL	100	Richmond, Va.
WCBM	100	Baltimore, Md.
WEAM	100	Plainfield, N. J.
WELK	100	Philadelphia, Pa.
WFBJ	100	Collegeville, Minn.
WHBD	100	Bellefontaine, Ohio
WHBO	100	Memphis, Tenn.
WHDF	100	Calumet, Mich.
WIBM	100	Jackson, Mich.
WJBK	50	Ypsilanti, Mich.
WJBO	100	New Orleans, La.
WMBO	100	Auburn, N. Y.
WRAK	50	Erie, Pa.
WRBT	50	Wilmington, N. C.
WRJN	100	Racine, Wis.
WSVS	50	Buffalo, N. Y.

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Leese Bros.  
Meler & Frank Co.  
George Kincaid  
Henry C. Allison  
George Roy Clough  
Peery Building Co.  
Citizens Publishing Co.  
Foster-Hall Tire Co.  
Wallace Radio Institute  
Liberto Radio Sales  
Home Auto Co.  
C. Merwin Dobyns  
Faith Tabernacle Assn.  
Lamond A. Hubbard  
Jay Peters  
KGKL, Inc., Oper. by Ragdale Auto Co.  
Eugene Roth  
City of Seattle  
Jay Peters  
H. H. Hanseth  
First Congregational Church  
Arthur C. Dailey  
Wilson Duncan Brdcastg. Co.  
Leon P. Tenney  
Grace Covenant Presbyterian Church  
Hotel Chateau  
W. J. Butterfield  
Howard R. Miller  
St. John's University  
First Presbyterian Church  
Broadcasting Station WHBQ, Inc.  
Chas. C. MacLeod  
C. L. Carrell  
Ernest F. Goodwin  
Valdemar Jensen  
Radio Service Laboratories  
C. R. Cummins  
Wilmington Radio Association  
Racine Broadcasting Corp.  
Seneca Vocational School

1380 kilocycles 217.3 meters

KQV	500	Pittsburgh, Pa.
KSO	1000	Clarinda, Iowa
WCSO	500	Springfield, Ohio
WKBH	1000	La Crosse, Wisc.

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Doubleday-Hill Electric Co.  
Berry Seed Co.  
Wittenberg College  
Callaway Music Co.

1390 kilocycles 215.7 meters

KFPY	500	Spokane, Wash.
KLRA	1000	Little Rock, Ark.
KOW	500	Denver, Colo.
KUOA	1000	Fayetteville, Ark.
KWSC	500	Pullman, Wash.
WDGY	500	Minneapolis, Minn.
WHDI	500	Minneapolis, Minn.
WHK	1000	Cleveland, Ohio

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Symons Investment Co.  
Arkansas Broadcasting Co.  
Associated Industries, Inc.  
University of Arkansas  
State College of Washington  
Dr. George W. Young  
Wm. Hood Dunwoody Indus. Institute  
Radio Air Service Corp.

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1400 kilocycles 214.2 meters

WBAA 500 Lafayette, Ind.  
 WBBC 250 Brooklyn, N. Y.  
 WCGU 500 Coney Island, N. Y.  
 WCMA 500 Culver, Ind.  
 WKBF 500 Indianapolis, Ind.  
 WLTH 500 Brooklyn, N. Y.  
 WSGH 500 Brooklyn, N. Y.


Purdue University  
 Brooklyn Broadcasting Corp.  
 U. S. Broadcasting Corp.  
 Culver Military Academy  
 Noble Butler Watson  
 The Voice of Brooklyn, Inc.  
 Amateur Radio Specialty Co.

1410 kilocycles 212.6 meters

KFLV 500 Rockford, Ill.  
 KGRS 1000 Amarillo, Tex.  
 WDAG 1000 Amarillo, Texas  
 WDEL 500 Wilmington, Del.  
 WHBL 500 Sheboygan, Wis.  
 WSKC 500 Bay City, Mich.


A. T. Frykman  
 Gish Radio Service  
 J. Laurence Martin  
 WDEL, Inc.  
 Press Pub. Co. & C. L. Carrell  
 World's Star Knitting Co.

1420 kilocycles 211.1 meters

KFIF 50 Portland, Ore.  
 KFIZ 100 Fond du Lac, Wis.  
 KPOU 100 Holy City, Calif.  
 KPQW 100 Seattle, Wash.  
 KFXD 50 Jerome, Idaho  
 KFXV 100 Flagstaff, Ariz.  
 KPYO 100 Breckenridge, Tex.  
 KGCN 50 Concordia, Kansas  
 KGCX 10 Vida, Mont.  
 KGFF 100 Alva, Okla.  
 KGFJ 100 Los Angeles, Calif.  
 KGRW 50 Ravenna, Nebr.  
 KGHD 50 Missoula, Mont.  
 KGIW 100 Trinidad, Colo.  
 KGKX 15 Sandpoint, Idaho  
 KCTT 50 San Francisco, Cal.  
 KICK 100 Red Oak, Iowa  
 KMED 50 Medford, Ore.  
 KOCW 50 Chickasha, Okla.  
 KORE 100 Eugene, Ore.  
 KTAP 100 San Antonio, Tex.  
 KTUE 5 Houston, Texas  
 KXRO 75 Aberdeen, Wash.  
 WAAD 25 Cincinnati, Ohio  
 WEDH 30 Erie, Pa.  
 WHPP 10 New York City  
 WIAS 10 Ottumwa, Iowa  
 WIBR 50 Steubenville, Ohio  
 WIL 100 St. Louis, Mo.  
 WKBP 50 Battle Creek, Mich.  
 WKBT 50 New Orleans, La.  
 WLBF 100 Kansas City, Mo.  
 WLBH 30 Farmingdale, N. Y.  
 WLFX 100 Lexington, Mass.  
 WMBC 100 Detroit, Mich.  
 WMBH 100 Joplin, Mo.  
 WMRJ 10 Jamaica, N. Y.  
 WQBZ 60 Weirton, W. Va.  
 WSRO 100 Middletown, Ohio  
 WSSH 100 Boston, Mass.  
 WTBO 50 Cumberland, Md.


Benson Polytechnic Institute  
 Commonwealth-Reporter  
 W. E. Riker  
 KFOW, Inc.  
 Service Radio Co.  
 Mary M. Costigan  
 Kirksey Bros. Battery & Elec. Co.  
 Concordia Broadcasting Co.  
 First State Bank  
 Earl E. Hampshire  
 Ben S. McGlashan  
 Otto F. Sothman  
 Elmore-Nash Broadcasting Corp.  
 Trinidad Creamery Co., Inc.  
 C. E. Twiss  
 Glad Tidings Temple  
 Atlantic Automobile Co.  
 W. J. Virgin  
 College for Women  
 Eugene Broadcasting Station  
 Robert B. Bridge  
 Uhalt Electric  
 KXRO, Inc.  
 Ohio Mechanics Institute  
 Erie Dispatch-Herald  
 Bronx Broadcasting Co.  
 Poling Electric Co.  
 Thurman A. Owings  
 WIL Broadcasting Corp.  
 Enquirer-News Co.  
 First Baptist Church  
 Everett L. Dillard  
 Joseph J. Lombardi  
 Lexington Air Station  
 Michigan Broadcasting Co., Inc.  
 Edwin Dudley Aber  
 Peter J. Prinz  
 J. H. Thompson  
 Harry W. Fahrlander  
 Tremont Temple Baptist Church  
 Cumberland Electric Co.

1430 kilocycles 209.7 meters

WBAK 500 Harrisburg, Pa.  
 WBRL 500 Tilton, N. H.  
 WCAH 250 Columbus, Ohio  
 WGBC 500 Memphis, Tenn.  
 WMBS 500 Lemoyne, Pa.  
 WNBR 500 Memphis, Tenn.


Penna. State Police  
 Booth Radio Laboratories  
 Commercial Radio Service Co.  
 First Baptist Church  
 Mack's Battery Co.  
 John Ulrich

1440 kilocycles 208.2 meters

KLS 250 Oakland, Calif.  
 WABF 250 Kingston, Pa.  
 WABO 500 Rochester, N. Y.  
 WHEC 500 Rochester, N. Y.


Warner Bros.  
 Markle Broadcasting Corp.  
 Lake Ave. Baptist Church  
 Hickson Electric Co.



## INDEX BY FREQUENCIES AND DIAL NUMBERS

**WMBD** 500 Peoria Heights, Ill.  
**WNRC** 500 Greensboro, N. C.  
**WOKO** 500 Peekskill, N. Y.  
**WRAX** 250 Philadelphia, Pa.  
**WTAD** 500 Quincy, Ill.

Peoria Heights Radio Laboratory  
 Wayne M. Nelson  
 Harold E. Smith  
 Berachah Church, Inc.  
 Ills. Stock Medicine Brdcstg. Corp.

### 1450 kilocycles 206.8 meters

**KSBA** 1000 Shreveport, La.  
**WBMS** 250 Union City, N. J.  
**WFJC** 500 Akron, Ohio  
**WIBS** 250 Elizabeth, N. J.  
**WJAY** 500 Cleveland, Ohio  
**WKBO** 250 Jersey City, N. J.  
**WNJ** 250 Newark, N. J.  
**WSAR** 250 Fall River, Mass.  
**WTFI** 500 Toccoa, Ga.

W. G. Patterson  
 WBMS Broadcasting Corp.  
 W. F. Jones Broadcast, Inc.  
 New Jersey Broadcasting Corp.  
 Cleveland Radio Brdcstg. Corp.  
 Camith Corp.  
 Radio Investment Co.  
 Doughty & Welch Electric Co.  
 Toccoa Falls Institute

### 1460 kilocycles 205.4 meters

**KSTP** 1000 St. Paul, Minn.  
**WJSV** 1000 Washington, D. C.

National Battery Brdcstg. Co.  
 Independent Publishing Co.

### 1470 kilocycles 204.0 meters

**KFJF** 5000 Oklahoma City  
**KGA** 5000 Spokane, Wash.  
**WKBW** 5000 Buffalo, N. Y.  
**WRUF** 5000 Gainesville, Fla.

National Radio Mfg. Co.  
 Northwest Radio Service Co.  
 Churchill Evangelistic Assn.  
 University of Florida

### 1480 kilocycles 202.6 meters

**WJAZ** 5000 Chicago, Ill.  
**WORD** 5000 Batavia, Ill.  
**WHT** 5000 Chicago, Ill.

Zenith Radio Corp.  
 People's Pulpit Association  
 Radiophone Brdcstg. Corp.

### 1490 kilocycles 201.2 meters

**WBAW** 5000 Nashville, Tenn.  
**WLAC** 5000 Nashville, Tenn.  
**WFBL** 1000 Syracuse, N. Y.

Waldrum Drug Co.  
 Life & Casualty Insurance Co.  
 The Onondaga Co.

### 1500 kilocycles 199.9 meters

**KFCR** 100 Santa Barbara, Cal.  
**KGDR** 100 San Antonio, Tex.  
**KGKB** 100 Goldthwaite, Tex.  
**KGHI** 100 Little Rock, Ark.  
**KGHX** 50 Richmond, Texas  
**KPJM** 100 Prescott, Ariz.  
**KUJ** 10 Longview, Wash.  
**KWBS** 15 Portland, Ore.  
**KWTC** 100 Santa Ana, Calif.  
**WAFD** 100 Detroit, Mich.  
**WALK** 50 Willow Grove, Pa.  
**WCBA** 100 Allentown, Pa.  
**WCLB** 100 Brooklyn, N. Y.  
**WHBW** 100 Philadelphia, Pa.  
**WIBZ** 15 Montgomery, Ala.  
**WKBV** 100 Brookville, Ind.  
**WKBZ** 50 Ludington, Mich.  
**WLBX** 100 Long Island City, N. Y.  
**WLOE** 100 Chelsea, Mass.  
**WMBA** 100 Newport, R. I.  
**WMBJ** 100 Wilkinsburg, Pa.  
**WMBM** 10 Memphis, Tenn.  
**WMBQ** 100 Brooklyn, N. Y.  
**WMES** 50 Boston, Mass.  
**WMPC** 30 Lapeer, Mich.  
**WNBF** 50 Endicott, N. Y.  
**WNBO** 15 Rochester, N. Y.  
**WOO** 100 Philadelphia, Pa.  
**WPSW** 50 Philadelphia, Pa.  
**WRBJ** 10 Hattiesburg, Miss.  
**WSAN** 100 Allentown, Pa.  
**WTBO** 100 Wilmington, Del.  
**WWRL** 100 Woodside, N. Y.

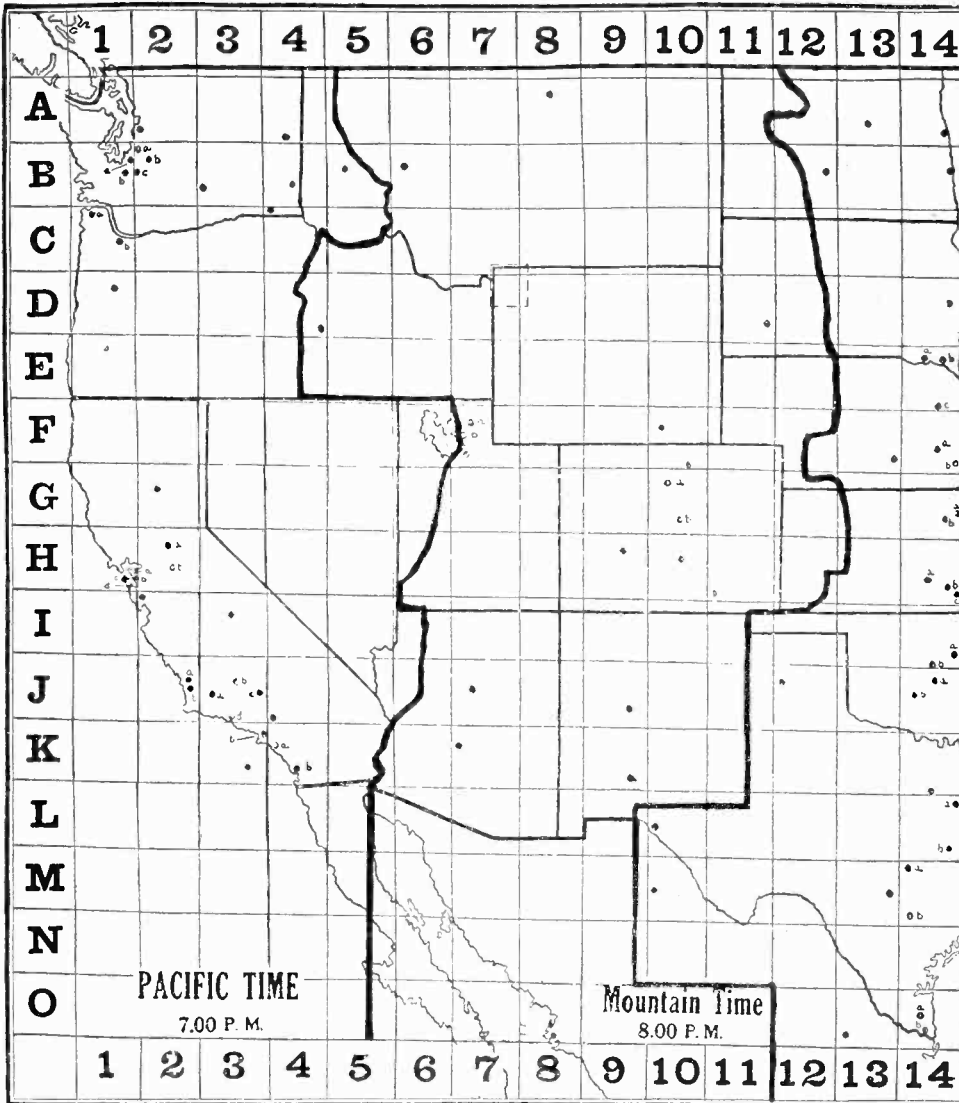
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FROM TO	Albuquerque, N. Mex.	Atlanta, Ga.	Baltimore, Md.	Boston, Mass.	Brownsville, Tex.	Buffalo, N. Y.	Chicago, Ill.	Cincinnati, Ohio	Cleveland, Ohio	Denver, Colo.	Des Moines, Iowa	Detroit, Mich.	El Paso, Tex.	Fargo, N. Dak.	Fort Worth, Tex.	Galveston, Tex.	Hastings, Nebr.	Hot Springs, Ark.	Houghton, Mich.	Jacksonville, Fla.	Kansas City, Mo.	Los Angeles, Calif.	Louisville, Ky.	
Albuquerque, N. Mex.	----	1273	1670	774	1967	838	1577	1126	1048	1417	332	833	1360	228	966	541	803	598	773	1252	1492	717	663	1147
Atlanta, Ga.	1273	----	575	1830	938	1960	695	583	368	550	1208	738	595	1293	1112	1202	686	901	498	947	286	675	1935	31
Baltimore, Md.	1670	575	----	2055	358	1525	273	603	423	305	1505	913	398	1750	1143	1239	1245	1154	964	808	682	962	2313	49
Boise, Idaho	774	1830	2055	----	2266	1610	1872	1453	1863	1754	637	1155	1671	969	975	1263	1538	934	1384	1307	2098	1158	663	162
Boston, Mass.	1967	933	358	2266	----	1881	398	849	737	550	1766	1159	613	2367	1304	1574	1598	1415	1302	922	1015	1250	2590	82
Brownsville, Tex.	838	960	1525	1610	1081	----	1575	1234	1184	1402	1047	1102	1398	683	1645	471	287	1013	650	1543	1025	923	1370	119
Buffalo, N. Y.	1577	695	273	1872	398	1575	----	454	392	175	1369	762	218	1690	923	1221	1269	1019	956	567	800	662	2195	8
Chicago, Ill.	1126	583	603	1453	849	1234	454	----	249	307	918	310	236	1249	571	820	954	565	585	667	661	413	1741	3
Cincinnati, Ohio	1248	368	423	1663	737	1102	392	243	----	218	1189	509	234	1333	818	839	897	742	569	589	628	541	1892	9
Cleveland, Ohio	1417	550	305	1754	550	1402	175	307	218	----	1223	617	94	1521	839	1043	1116	871	727	518	768	700	2044	10
Denver, Colo.	332	1208	1505	637	1766	1047	1368	918	1090	1223	----	607	1153	554	642	643	925	353	749	970	1428	555	828	14
Des Moines, Iowa	833	738	913	1175	1161	1027	762	310	509	617	607	----	545	980	397	640	851	256	488	458	1024	180	1433	20
Detroit, Mich.	1260	595	398	1671	613	1398	218	236	234	94	1142	545	----	1475	745	1018	1111	800	761	427	832	643	1976	31
El Paso, Tex.	228	1293	1750	969	2067	682	1690	1249	1333	1521	554	980	1475	----	1161	543	723	757	802	1422	1481	836	702	125
Fargo, N. Dak.	968	1112	1163	975	1304	2445	923	571	818	838	642	337	745	1161	----	973	1218	440	875	933	1400	548	1426	61
Fort Worth, Tex.	561	750	1239	1262	1574	471	1221	820	839	1046	643	640	1018	543	973	----	283	544	273	1093	943	450	1212	75
Galveston, Tex.	603	688	1045	1538	1598	287	1299	954	897	1116	925	851	1111	723	1218	283	----	608	375	1277	799	677	1423	80
Hastings, Nebr.	588	901	1154	934	1415	1013	1019	566	742	871	353	256	800	757	440	544	808	----	513	666	1178	276	1177	69
Hot Springs, Ark.	773	498	964	1384	1302	500	956	585	569	787	749	408	761	802	875	273	375	513	----	901	728	326	1437	48
Houghton, Mich.	1252	947	808	1367	922	1243	560	367	589	518	970	458	427	1422	393	1093	1277	666	501	----	1216	633	1787	63
Jacksonville, Fla.	1492	206	602	2098	1015	1053	860	861	628	768	1468	1024	832	1481	1400	943	799	1178	728	1216	----	952	2153	99
Kansas City, Mo.	717	675	952	1158	1250	823	862	413	541	700	555	180	643	836	548	460	677	226	326	633	952	----	1352	48
Los Angeles, Calif.	683	1935	2313	663	2590	1370	2195	1741	1892	2044	828	1433	1976	702	1426	1122	1423	1177	1437	1767	2153	1352	----	1828
Louisville, Ky.	1174	317	498	1623	823	1093	483	268	92	309	1075	477	615	1253	818	751	807	693	480	626	595	480	1625	71
Memphis, Tenn.	938	335	792	1858	1133	777	802	481	410	627	878	485	421	878	822	448	492	591	176	930	591	678	1672	71
Miami, Fla.	1710	610	958	2368	1258	1100	1184	1190	957	1088	1732	1338	1156	1662	1721	1150	941	1668	983	1545	328	1247	2355	92
Minneapolis, Minn.	880	905	948	1140	1125	1335	733	356	603	632	699	235	542	1156	219	670	1087	399	722	272	1192	143	1522	60
Missoula, Mont.	895	1790	1347	258	2124	1705	1740	1348	1578	1640	670	1074	1552	1115	819	1312	1595	891	1385	1208	2070	1117	910	155
Nashville, Tenn.	1117	218	597	1631	941	532	626	394	239	456	1018	523	468	1169	900	663	666	697	370	787	502	472	1777	15
New Orleans, La.	1030	427	1001	1713	1359	956	1087	831	700	922	1079	825	398	986	1221	470	288	870	658	1160	151	678	1675	62
New York, N. Y.	1810	747	170	2153	188	1695	291	711	566	404	1628	1023	483	1902	1213	1398	1415	1275	1125	649	838	1097	2446	65
Newark, N. J.	1696	507	167	2137	467	1465	435	696	474	429	1562	983	523	1755	1250	1226	1195	1216	955	946	548	1009	2352	52
Oklahoma, Okla.	518	753	1173	1133	1490	659	1117	683	755	946	503	469	905	578	795	188	456	357	260	926	998	893	1182	67
Omaha, Nebr.	718	815	1026	1044	1280	1061	863	432	602	738	485	122	666	875	390	590	828	135	490	547	1098	165	1312	57
Philadelphia, Pa.	1748	663	90	2113	267	1614	278	664	501	243	575	972	443	1834	1186	1324	1335	1222	1051	827	758	1037	2388	58
Phoenix, Ariz.	330	1592	2002	733	2295	1023	1904	1451	1578	1745	585	1154	1685	347	1225	1858	1035	901	1094	1550	1800	1045	357	191
Pittsburgh, Pa.	1198	520	194	1863	478	1424	178	411	258	115	1320	748	208	1592	952	1097	1140	967	825	630	703	784	2135	34
Portland, Me.	2015	1022	446	2282	100	1961	438	892	802	603	1803	1397	657	2126	1313	1642	1678	1454	1371	924	1113	1300	2631	89
Portland, Oreg.	1107	2172	2367	349	2553	1944	2167	1765	1897	2063	985	1479	1975	1286	1246	1612	1685	1271	1733	1638	2442	1397	823	165
Richmond, Va.	1628	470	128	2060	471	1628	375	618	399	353	1498	905	445	1695	1190	1170	1154	1142	897	870	953	937	2283	45
St. Louis, Mo.	938	467	731	1339	1036	975	662	259	308	490	793	270	452	1033	658	568	697	455	325	591	755	238	1585	34
Salt Lake City, Utah	483	1560	1858	292	2099	1317	1701	1860	1450	1567	372	952	1490	609	865	977	1249	708	1116	1242	1840	922	577	140
San Francisco, Calif.	893	2133	2451	516	2696	1675	2298	1855	2037	2163	546	1547	2087	953	1447	1454	1693	1297	1648	1833	2375	1500	345	196
Schenectady, N. Y.	1823	340	278	2120	150	1770	249	703	605	408	1618	1012	467	1930	1157	1445	1487	1267	1175	776	960	1107	2445	62
Seattle, Wash.	1178	2180	2441	405	2048	2015	2130	1743	1743	2035	1020	1470	1945	1977	1206	1658	1938	1288	1759	1588	2450	1505	956	162
Shreveport, La.	764	548	1064	1433	1410	500	1160	723	658	904	799	624	981	752	1001	209	233	615	321	543	733	326	1420	59
Spokane, Wash.	1028	1950	2110	290	2279	1832	1900	1514	1746	1680	827	1243	1715	1238	974	1470	1753	1061	1552	1360	2339	1286	939	172
Springfield, Mass.	1889	663	282	2196	79	1685	325	774	659	473	1602	1085	540	1990	1240	1495	1524	1340	1324	860	957	1173	2515	94
Vermillion, S. Dak.	742	917	1083	973	1314	1151	915	479	694	785	448	187	705	920	264	689	938	167	605	510	1203	280	1291	66
Washington, D. C.	1548	542	33	2045	392	1493	290	594	403	303	1490	895	397	1726	1141	1210	1214	1139	936	613	647	943	2295	

# N STATUTE MILES

Memphis, Tenn.	710	980	895	1117	1030	1610	1694	518	718	1748	330	1458	2015	1107	1628	938	483	893	1623	1178	764	1026	1889	747	1648	
Miami, Fla.	610	905	1790	238	427	747	507	753	815	463	1592	520	1022	2172	470	467	1580	2183	860	2180	548	1960	863	917	542	
Minneapolis, Minn.	2368	1160	252	1631	1713	2153	2137	1138	1044	2113	733	1863	2202	349	2060	1389	292	516	2120	405	1433	290	2190	973	2045	
Missoula, Mont.	1258	1125	2124	941	1359	1888	467	1490	1280	786	2295	478	100	2553	671	1036	2099	2696	150	2508	1410	2279	79	1314	392	
Nashville, Tenn.	777	1100	1335	1706	952	536	1695	1455	659	1061	1615	1023	1424	1961	1944	1428	975	1317	1675	1770	2015	510	1858	1805	1161	1493
New Orleans, La.	802	1184	733	1740	626	1007	2691	2451	1117	883	378	1904	178	438	2167	375	662	1701	2398	249	2130	1080	1900	325	916	290
New York, N. Y.	461	1190	356	1348	394	831	711	696	689	432	664	1451	411	892	1765	618	259	1260	1855	702	1743	725	1514	774	479	594
Portland, Me.	410	957	603	1578	239	708	568	474	755	620	501	1578	258	802	1987	399	308	1450	2037	605	1974	688	1746	659	694	403
Portland, Oreg.	627	1080	633	1640	456	922	404	429	946	738	343	1575	115	603	2063	353	490	1567	2163	408	2025	904	1804	473	785	303
Richmond, Va.	878	1732	699	670	1018	1079	1628	1562	503	481	1875	585	1320	1803	985	1488	793	372	946	1618	1020	799	827	1684	468	1490
St. Louis, Mo.	485	1338	235	1074	523	825	1023	983	469	122	972	1154	718	1197	1479	905	270	952	1547	1012	1470	624	1243	1093	187	895
Salt Lake City, Utah	621	1156	542	1552	648	938	483	522	905	666	644	1685	208	657	1975	445	452	2490	2087	467	1945	891	1715	540	705	397
San Francisco, Calif.	976	1662	1126	1115	1169	966	1902	1755	578	875	1634	347	1592	2126	1286	1695	1033	689	993	1930	1373	752	1238	1890	920	1726
Schenectady, N. Y.	882	1721	219	819	100	1221	1213	1258	786	390	1186	1225	952	1313	1248	1160	658	865	1447	1157	2026	1002	976	1240	284	1141
Seattle, Wash.	448	1150	870	1312	643	470	1398	1226	168	590	374	958	1097	1642	1612	1170	568	977	1454	1445	1658	209	1470	1455	898	1210
Shreveport, La.	492	941	1087	1595	666	288	1415	1195	456	828	1385	1065	1140	1678	1885	1154	697	1249	1693	1487	1388	233	1753	1534	936	1214
Spokane, Wash.	591	1468	399	891	697	870	1275	1216	357	135	1222	901	967	1454	1271	1142	455	708	1297	1287	1928	615	1061	1340	607	1139
Springfield, Mass.	176	983	722	1365	370	358	1125	955	260	490	1051	1094	625	1371	1731	892	325	1116	1648	1175	1759	142	1552	1824	605	936
Terrillton, S. Dak.	830	1545	272	1028	760	1187	849	948	926	547	867	1550	630	924	1638	870	591	1242	1823	776	1588	1033	1360	860	510	813
Washington, D.C.	591	328	1192	2070	502	511	838	548	968	1028	758	1800	703	1113	2442	953	755	2640	2375	960	2450	733	2239	957	1203	647
	370	1247	413	1117	472	678	1097	1009	293	165	1037	1045	784	1300	1397	937	238	922	1500	1107	1505	326	1286	1173	280	943
	1602	2355	1522	910	1777	1675	3446	2352	1182	1312	2388	365	2135	2631	825	2283	1585	577	345	2445	956	1420	939	2515	1291	2295
	319	923	695	1550	153	628	950	5528	675	579	580	1513	345	692	1953	457	242	1400	1983	695	1945	598	1720	745	663	473
	878	700	1483	1913	593	358	953	778	422	529	878	1364	650	1205	1852	722	242	1250	1800	1010	1867	719	1652	1055	642	763
	878	700	1483	1913	593	358	953	778	422	529	878	1364	650	1205	1852	722	242	1250	1800	1010	1867	719	1652	1055	642	763
	878	700	1483	1913	593	358	953	778	422	529	878	1364	650	1205	1852	722	242	1250	1800	1010	1867	719	1652	1055	642	763
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	878	700	1483	1913	593	358	953	778	422	529	878	1364	650	1205	1852	722	242	1250	1800	1010	1867	719	1652	1055	642	763
	878	700	1483	1913	593	358	953	778	422	529	878	1364	650	1205	1852	722	242	1250	1800	1010	1867	719	1652	1055	642	763
	878	700	1483	1913	593	358	953	778	422	529	878	1364	650	1205	1852	722	242	1250	1800	1010	1867	719	1652	1055	642	763
	878	700	1483	1913	593	358	953	778	422	529	878	1364	650	1205	1852	722	242	1250	1800	1010	1867	719	1652	1055	642	763
	878	700	1483	1913	593	358	953	778	422	529	878	1364	650	1205	1852	722	242	1250	1800	1010	1867	719	1652	1055	642	763
	878	700	1483	1913	593	358	953	778	422	529	878	1364	650	1205	1852	722	242	1250	1800	1010	1867	719	1652	1055	642	763
	878	700	1483	1913	593	358	953	778	422	529	878	1364	650	1205	1852	722	242	1250	1800	1010	1867	719	1652	1055	642	763
	878	700	1483	1913	593	358	953	778	422	529	878	1364	650	1205	1852	722	242	1250	1800	1010	1867	719	1652	1055	642	763
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	878	700	1483	1913	593	358	953	778	422	529	878	1364	650	1205	1852	722	242	1250	1800	1010	1867	719	1652	1055	642	763
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	878	700	1483	1913	593	358	953	778	422	529	878	1364	650	1205	1852	722	242	1250	1800	1010	1867	719	1652	1055	642	763
	878	700	1483	1913	593	358	953	778	422	529	878	1364	650	1205	1852	722	242	1250	1800	1010	1867	719	1652	1055	642	763
	878	700	1483	1913	593	358	953	778	422	529	878	1364	650	1205	1852	722	242	1250	1800	1010	1867	719	1652	1055	642	763
	878	700	1483	1913	593	358	953	778	422	529	878	1364														



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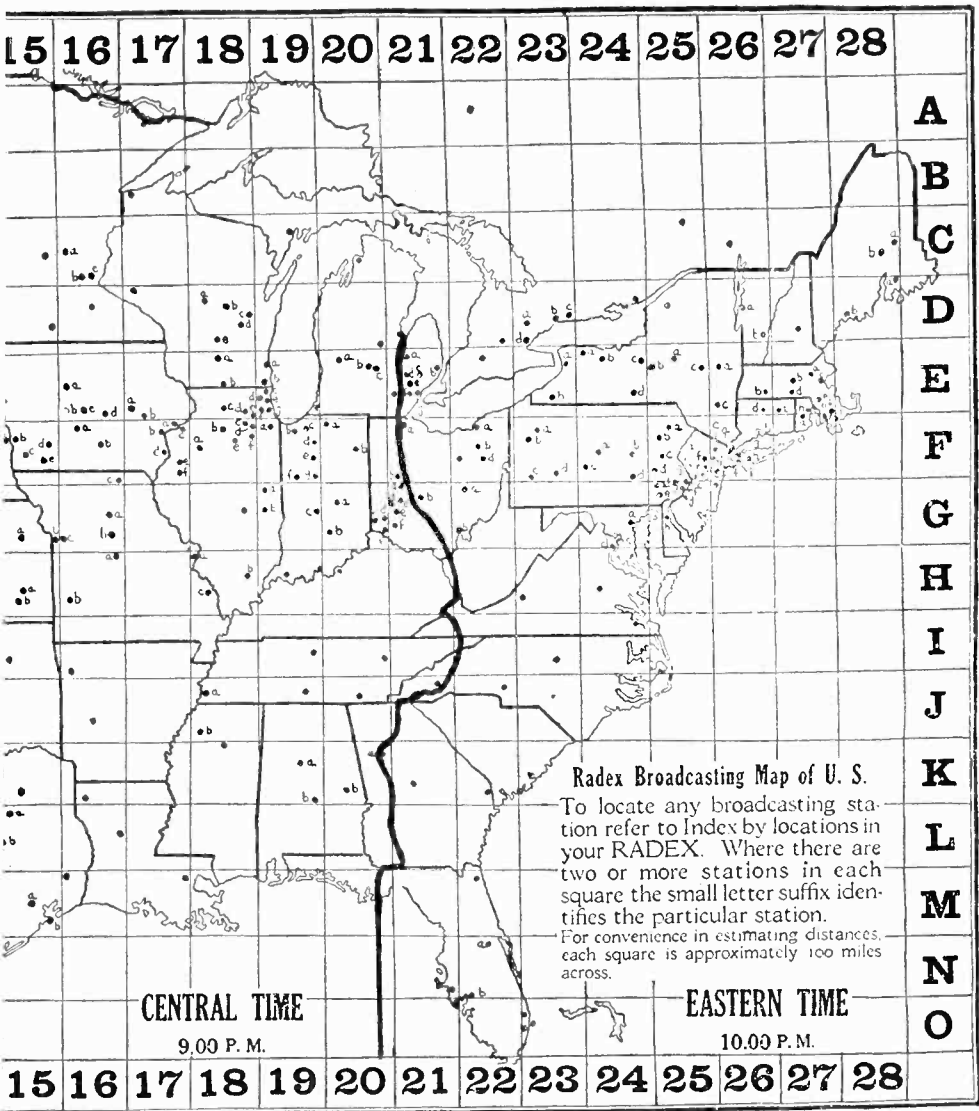
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<b>CFCO</b> 1210				<b>CJHS</b> 910			
Chatham, Ont.				Saskatoon, Sask.			
<b>CFCT</b> 630				<b>CJOC</b> 1120			
Victoria, B. C.				Lethbridge, Alta.			
<b>CFCY</b> 960				<b>CJOR</b> 1030			
Charlottetown, P.E.I.				Sea Island, B. C.			
<b>CFJC</b> 1120				<b>CJRM</b> 1010			
Kamloops, B. C.				Moose Jaw, Sask.			
<b>CFLC</b> 1010				<b>CJRW</b> 1010			
Prescott, Ont.				Fleming, Sask.			
<b>CFMC</b> 1120				<b>CJSC</b> 580			
Kingston, Ont.				Toronto, Ont.			
<b>CFNB</b> 1210				<b>CKAC</b> 730			
Fredericton, N. B.				Montreal, Que.			
<b>CFQC</b> 910				<b>CKCD</b> 730			
Saskatoon, Sask.				Vancouver, B. C.			
<b>CFRB</b> 960				<b>CKCI</b> 880			
Twp. of King, Ont.				Quebec, Que.			
<b>CFRC</b> 1120				<b>CKCK</b> 960			
Kingston, Ont.				Regina, Sask.			
<b>CHCA</b> 690				<b>CKCL</b> 580			
Calgary, Alta.				Toronto, Ont.			
<b>CHCK</b> 960				<b>CKCO</b> 690			
Charlottetown, P.E.I.				Ottawa, Ont.			
<b>CHCS</b> 880				<b>CKCR</b> 1010			
Hamilton, Ont.				Brantford, Ont.			
<b>CHCT</b> 840				<b>CKCV</b> 880			
Red Deer, Alta.				Quebec, Que.			
<b>CHGS</b> 1120				<b>CKFC</b> 730			
Summerside, P. E. I.				Vancouver, B. C.			
<b>CHLS</b> 730				<b>CKGW</b> 960			
Vancouver, B. C.				Bowmanville, Ont.			
<b>CHMA</b> 580				<b>CKLC</b> 840			
Edmonton, Alta.				Red Deer, Alta.			
<b>CHML</b> 880				<b>CKMC</b> 1210			
Hamilton, Ont.				Cobalt, Ont.			
<b>CHNC</b> 580				<b>CKMO</b> 730			
Toronto, Ont.				Vancouver, B. C.			
<b>CHNS</b> 930				<b>CKNC</b> 580			
Halifax, N. S.				Toronto, Ont.			
<b>CHRC</b> 880				<b>CKOC</b> 880			
Quebec, Que.				Hamilton, Ont.			
<b>CHWC</b> 960				<b>CKOW</b> 840			
Regina, Sask.				Toronto, Ont.			
<b>CHWK</b> 1210				<b>CKPC</b> 1210			
Chilliwack, B. C.				Preston, Ont.			

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CKPR	1120				CZE	860			
Midland, Ont.					Mexico City				
CKSH	1010				CZF	970			
St. Hyacinthe, Que.					Chihuahua, Mex.				
CKUA	580				HHK	830			
Edmonton, Alta.					Port au Prince, Haiti				
CKWX	730				KDKA	980			
Vancouver, B. C.					Pittsburgh, Pa.				
CKY	780				KDLR	1210			
Winnipeg, Man.					Devils Lake, N. D.				
CNRA	630				KDYL	1290			
Moncton, N. B.					Salt Lake City				
CNRC	690				KEJK	1250			
Calgary, Alta.					Los Angeles, Calif.				
CNRE	580				KELW	780			
Edmonton, Alta.					Burbank, Calif.				
CNRM	730				KEX	1180			
Montreal, Que.					Portland, Ore.				
CNRO	690				KFAB	770			
Ottawa, Ont.					Lincoln, Nebr.				
CNRQ	880				KFAD	620			
Quebec, Que.					Phoenix, Ariz.				
CNRR	960				KFBB	1360			
Regina, Sask.					Havre, Mont.				
CNRS	910				KFBK	1310			
Saskatoon, Sask.					Sacramento, Calif.				
CNRT	840				KFBL	1370			
Toronto, Ont.					Everett, Wash.				
CNRV	1030				KFBU	600			
Vancouver, B. C.					Laramie, Wyo.				
CNRW	780				KFCB	1310			
Winnipeg, Man.					Phoenix, Ariz.				
CYA	1000				KFCR	1500			
Mexico City					Santa Barbara, Calif.				
CYB	1090				KFDM	560			
Mexico City					Beaumont, Texas				
CYC	890				KFDX	1210			
Vera Cruz, Mex.					Shreveport, La.				
CYF	1130				KFDY	550			
Oaxaca, Mex.					Brookings, S. D.				
CYH	800				KFEC	1370			
Mexico City					Portland, Ore.				
CYJ	750				KFEL	940			
Mexico City					Denver, Colo.				
CYL	750				KFEQ	560			
Mexico City					St. Joseph, Mo.				
CYM	1330				KFEY	1210			
Torreon, Mex.					Kellogg, Idaho				
CYO	710				KFGQ	1310			
Mexico City					Boone, Iowa				
CYQ	930				KFH	1300			
Tampico, Mex.					Wichita, Kansas				
CYR	630				KFHA	1200			
Mazatlan, Mex.					Gunnison, Colo.				
CYU	960				KFI	640			
Puebla, Mex.					Los Angeles, Calif.				
CYX	920				KFIF	1420			
Mexico City					Portland, Ore.				
CYY	550								
Merida, Mex.									

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KFIO	1230				KFQZ	850			
Spokane, Wash.					Hollywood, Calif.				
KFIU	1310				KFRC	610			
Juneau, Alaska					San Francisco, Cal.				
KFIZ	1420				KFRU	630			
Fond du Lac, Wis.					Columbia, Mo.				
KFJB	1200				KFSD	600			
Marshalltown, Iowa					San Diego, Calif.				
KFJF	1470				KFSG	1120			
Oklahoma City					Los Angeles, Calif.				
KFJI	1370				KFUL	1290			
Astoria, Ore.					Galveston, Texas				
KFJM	550				KFUM	1270			
Grand Forks, N. D.					Colorado Spgs., Colo.				
KFJR	1300				KFUO	550			
Portland, Ore.					St. Louis, Mo.				
KFJY	1310				KFUP	1310			
Fort Dodge, Iowa					Denver, Colo.				
KFJZ	1370				KFUR	1370			
Ft. Worth, Texas					Ogden, Utah				
KFKA	880				KFVD	700			
Greeley, Colo.					Culver City, Calif.				
KFKB	1130				KFVS	1210			
Milford, Kansas					Cape Girardeau, Mo.				
KFKU	1220				KFWB	950			
Lawrence, Kans.					Los Angeles, Calif.				
KFKX	1020				KFWC	1200			
Chicago, Ill.					Ontario, Cal.				
KFKZ	1200				KFWF	1200			
Kirksville, Mo.					St. Louis, Mo.				
KFLV	1410				KFWI	930			
Rockford, Ill.					San Francisco, Calif.				
KFLX	1370				KFWM	930			
Galveston, Texas					Oakland, Calif.				
KFMX	1250				KFXD	1420			
Northfield, Minn.					Jerome, Idaho				
KFNF	890				KFXF	940			
Shenandoah, Iowa					Denver, Colo.				
KFON	1250				KFXJ	1310			
Long Beach, Calif.					Edgewater, Colo.				
KFOR	1210				KFXR	1310			
Lincoln, Nebr.					Oklahoma City				
KFPL	1310				KFXY	1420			
Dublin, Texas					Flagstaff, Ariz.				
KFPM	1310				KFYO	1420			
Greenville, Texas					Breckenridge, Texas				
KFPW	1340				KFYR	550			
Siloam Spgs., Ark.					Bismarck, N. Dak.				
KFPY	1390				KGA	1470			
Spokane, Wash.					Spokane, Wash.				
KFOB	1240				KGAR	1370			
Ft. Worth, Texas					Tucson, Ariz.				
KFOD	1230				KGB	1360			
Anchorage, Alaska					San Diego, Calif.				
KFOU	1420				KGBU	900			
Holy City, Calif.					Ketchikan, Alaska				
KFQW	1420				KGBX	1370			
Seattle, Wash.					St. Joseph, Mo.				



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KGBZ	930				KGGH	1310			
York, Nebr.					Cedar Grove, La.				
KGCA	1270				KGGM	1370			
Decorah, Iowa					Albuquerque, N. M.				
KGCB	1370				KGHB	1320			
Oklahoma City					Honolulu, Hawaii				
KGCI	1370				KGHD	1420			
San Antonio, Texas					Missoula, Mont.				
KGCN	1420				KGHF	1320			
Concordia, Kans.					Pueblo, Colo.				
KGCR	1210				KGHG	1310			
Brookings, S. Dak.					McGehee, Ark.				
KGCU	1200				KGHI	1500			
Mandan, N. Dak.					Little Rock, Ark.				
KGCX	1420				KGHL	950			
Vida, Mont.					Billings, Mont.				
KGDA	1370				KGHX	1500			
Dell Rapids, S. D.					Richmond, Texas				
KGDE	1200				KGIO	1320			
Barrett, Minn.					Idaho Falls, Ida.				
KGDM	1150				KGIQ	1320			
Stockton, Calif.					Twin Falls, Ida.				
KGDP	1210				KGIR	1360			
Pueblo, Colo.					Butte, Mont.				
KGDR	1500				KGIW	1420			
San Antonio, Texas					Trinidad, Colo.				
KGDY	1200				KGJF	890			
Oldham, S. Dak.					Little Rock, Ark.				
KGEF	1300				KGKB	1500			
Los Angeles, Calif.					Goldthwaite, Texas				
KGEK	1200				KGKL	1370			
Yuma, Colo.					San Angelo, Texas				
KGER	1370				KGKO	570			
Long Beach, Calif.					Wichita Falls, Texas				
KGEW	1200				KGKX	1420			
Fort Morgan, Colo.					Sandpoint, Idaho				
KGEZ	1310				KGO	790			
Kalispell, Mont.					Oakland, Calif.				
KGFF	1420				KGRC	1370			
Alva, Okla.					San Antonio, Texas				
KGFG	1370				KGRS	1410			
Oklahoma City					Amarillo, Texas				
KGFH	1000				KGTT	1420			
Glendale, Calif.					San Francisco, Calif.				
KGFI	1310				KGU	940			
San Angelo, Texas					Honolulu, Hawaii				
KGFJ	1420				KGW	620			
Los Angeles, Calif.					Portland, Ore.				
KGFK	1200				KGY	1200			
Hallock, Minn.					Lacey, Wash.				
KGFL	1370				KHJ	900			
Raton, N. M.					Los Angeles, Calif.				
KGFW	1420				KHQ	590			
Ravenna, Nebr.					Spokane, Wash.				
KGFX	580				KICK	1420			
Pierre, S. Dak.					Red Oak, Iowa				
KGGF	1010				KIDO	1250			
Picher, Okla.					Boise, Idaho				

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KJBS	1100				KOW	1390			
San Francisco, Calif.					Denver, Colo.				
KJR	970				KPCB	1210			
Seattle, Wash.					Seattle, Wash.				
KKP	1370				KPJM	1500			
Seattle, Wash.					Prescott, Ariz.				
KLCN	1290				KPLA	570			
Blytheville, Ark.					Los Angeles, Calif.				
KLDS	950				KPO	680			
Independence, Mo.					San Francisco, Calif.				
KLRA	1390				KPOF	880			
Little Rock, Ark.					Denver, Colo.				
KLS	1440				KPPC	1200			
Oakland, Calif.					Pasadena, Calif.				
KLX	880				KPQ	1210			
Oakland, Calif.					Seattle, Wash.				
KLZ	560				KPRC	920			
Denver, Colo.					Houston, Texas				
KMA	930				KPSN	950			
Shenandoah, Iowa					Pasadena, Calif.				
KMBC	950				KQV	1380			
Independence, Mo.					Pittsburgh, Pa.				
KMED	1420				KQW	1010			
Medford, Ore.					San Jose, Calif.				
KMIC	1120				KRE	1370			
Inglewood, Calif.					Berkeley, Calif.				
KMJ	1200				KRGV	1260			
Fresno, Calif.					Harlingen, Texas				
KMMJ	740				KRLD	1040			
Clay Center, Nebr.					Dallas, Texas				
KMO	1340				KRMD	1310			
Tacoma, Wash.					Shreveport, La.				
KMOX	1090				KRSC	1120			
St. Louis, Mo.					Seattle, Wash.				
KMTR	570				KSAC	580			
Hollywood, Calif.					Manhattan, Kans.				
KNX	1050				KSBA	1450			
Los Angeles, Calif.					Shreveport, La.				
KOA	830				KSCJ	1330			
Denver, Colo.					Sioux City, Iowa				
KOAC	560				KSD	550			
Corvallis, Ore.					St. Louis, Mo.				
KOB	1180				KSEI	900			
State College, N. M.					Pocatello, Idaho				
KOCW	1420				KSL	1130			
Chickasha, Okla.					Salt Lake City				
KOH	1370				KSMR	1200			
Reno, Nevada					Santa Maria, Calif.				
KOIL	1260				KSO	1380			
Council Bluffs, Iowa					Clarinda, Iowa				
KOIN	940				KSOO	1110			
Portland, Ore.					Sioux Falls, S. Dak.				
KOL	1270				KSTP	1460			
Seattle, Wash.					St. Paul, Minn.				
KOMO	920				KTAB	1280			
Seattle, Wash.					Oakland, Calif.				
KOOS	1370				KTAP	1420			
Marshfield, Ore.					San Antonio, Texas				
KORE	1420				KTBI	1300			
Eugene, Ore.					Los Angeles, Calif.				

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KTBR	1300					KXO	1200				
Portland, Ore.						El Centro, Cal.					
KTHS	800					KXRO	1420				
Hot Springs, Ark.						Aberdeen, Wash.					
KTIM	780					KYA	1230				
Santa Monica, Cal.						San Francisco, Calif.					
KTNT	1170					KYW	1020				
Muscatine, Iowa						Chicago, Ill.					
KTSA	1290					KZM	1370				
San Antonio, Texas						Hayward, Calif.					
KTUE	1420					NAA	690				
Houston, Texas						Arlington, Va.					
KTW	1270					PWX	750				
Seattle, Wash.						Havana, Cuba					
KUJ	1500					WAAD	1420				
Longview, Wash.						Cincinnati, Ohio					
KUOA	1390					WAAF	920				
Fayetteville, Ark.						Chicago, Ill.					
KUOM	570					WAAM	1250				
Missoula, Mont.						Newark, N. J.					
KUSD	890					WAAT	1070				
Vermillion, S. Dak.						Jersey City, N. J.					
KUT	1120					WAAW	660				
Austin, Texas						Omaha, Nebr.					
KVI	1340					WABC	860				
Tacoma, Wash.						New York City					
KVL	1370					WABF	1440				
Seattle, Wash.						Kingston, Pa.					
KVOO	1140					WABI	1200				
Tulsa, Okla.						Bangor, Maine					
KVOS	1200					WABO	1440				
Bellingham, Wash.						Rochester, N. Y.					
KWBS	1500					WABY	1310				
Portland, Ore.						Philadelphia, Pa.					
KWCR	1310					WABZ	1200				
Cedar Rapids, Iowa						New Orleans, La.					
KWEA	1210					WADC	1320				
Shreveport, La.						Akron, Ohio					
KWG	1200					WAFD	1500				
Stockton, Calif.						Detroit, Mich.					
KWJJ	1060					WAGM	1310				
Portland, Ore.						Royal Oak, Mich.					
KWK	1350					WAIU	640				
St. Louis, Mo.						Columbus, Ohio					
KWKC	1370					WALK	1500				
Kansas City, Mo.						Willow Grove, Pa.					
KWKH	850					WAPI	1140				
Shreveport, La.						Birmingham, Ala.					
KWLC	1270					WASH	1270				
Decorah, Iowa						Grand Rapids, Mich.					
KWSC	1390					WBAA	1400				
Pullman, Wash.						Lafayette, Ind.					
KWTC	1500					WBAK	1430				
Santa Ana, Calif.						Harrisburg, Pa.					
KWWG	1260					WBAL	1060				
Brownsville, Texas						Baltimore, Md.					
KXA	570					WBAP	800				
Seattle, Wash.						Fort Worth, Texas					
KXL	1250					WBAW	1490				
Portland, Ore.						Nashville, Tenn.					

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WBAX	1210				WCAP	1280			
Wilkes-Barre, Pa.					Asbury Park, N. J.				
WBBC	1400				WCAT	1200			
Brooklyn, N. Y.					Rapid City, S. D.				
WBBL	1370				WCAU	1170			
Richmond, Va.					Philadelphia, Pa.				
WBBM	770				WCAX	1200			
Chicago, Ill.					Burlington, Vt.				
WBBR	1300				WCAZ	1070			
Rossville, N. Y.					Carthage, Ill.				
WBBW	1200				WCBA	1500			
Norfolk, Va.					Allentown, Pa.				
WBBY	1200				WCBD	1080			
Charleston, S. C.					Zion, Ill.				
WBBZ	1200				WCBM	1370			
Ponca City, Okla.					Baltimore, Md.				
WBET	1360				WCBS	1210			
Boston, Mass.					Springfield, Ill.				
WBIS	1230				WCCO	810			
Boston, Mass.					Minneapolis-St. Paul				
WBMH	1310				WCDA	1350			
Detroit, Mich.					Brooklyn, N. Y.				
WBMS	1450				WCFL	970			
Union City, N. J.					Chicago, Ill.				
WBNY	1350				WCGU	1400			
New York City					Coney Island, N. Y.				
WBOQ	860				WCLB	1500			
New York City					Brooklyn, N. Y.				
WBOV	1310				WCLO	1200			
Terre Haute, Ind.					Kenosha, Wisc.				
WBRC	930				WCLS	1310			
Birmingham, Ala.					Joliet, Ill.				
WBRE	1310				WCMA	1400			
Wilkes-Barre, Pa.					Culver, Ind.				
WBRL	1430				WCOA	1120			
Tilton, N. H.					Pensacola, Fla.				
WBSO	780				WCOC	880			
Wellesley H'ls, Mass.					Columbus, Miss.				
WBT	1080				WCOH	1210			
Charlotte, N. C.					Greenville, N. Y.				
WBZ	990				WCRW	1210			
Springfield, Mass.					Chicago, Ill.				
WBZA	990				WCSE	940			
Boston, Mass.					Portland, Maine				
WCAC	1330				WCSE	1380			
Storrs, Conn.					Springfield, Ohio				
WCAD	1220				WCWK	1230			
Canton, N. Y.					Fort Wayne, Ind.				
WCAE	1220				WCX	750			
Pittsburgh, Pa.					Detroit, Mich.				
WCAH	1430				WDAE	620			
Columbus, Ohio					Tampa, Fla.				
WCAJ	590				WDAF	610			
Lincoln, Nebr.					Kansas City, Mo.				
WCAL	1250				WDAG	1410			
Northfield, Minn.					Amarillo, Texas				
WCAM	1280				WDAH	1310			
Camden, N. J.					El Paso, Texas				
WCAO	600				WDAY	1280			
Baltimore, Md.					Fargo, N. D.				

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<b>WDBJ</b> 930				<b>WFAA</b> 1040			
Roanoke, Va.				Dallas, Texas			
<b>WDBO</b> 620				<b>WFAN</b> 610			
Orlando, Fla.				Philadelphia, Pa.			
<b>WDEL</b> 1410				<b>WFBC</b> 1200			
Wilmington, Del.				Knoxville, Tenn.			
<b>WDGY</b> 1390				<b>WFBE</b> 1200			
Minneapolis, Minn.				Cincinnati, Ohio			
<b>WDOD</b> 1280				<b>WFBG</b> 1310			
Chattanooga, Tenn.				Altoona, Pa.			
<b>WDRC</b> 1330				<b>WFBJ</b> 1370			
New Haven, Conn.				Collegeville, Minn.			
<b>WDSU</b> 1270				<b>WFBL</b> 900-1490			
New Orleans, La.				Syracuse, N. Y.			
<b>WDWF</b> 1210				<b>WFBM</b> 1050-1230			
Cranston, R. I.				Indianapolis, Ind.			
<b>WDZ</b> 1070				<b>WFBR</b> 1270			
Tuscola, Ill.				Baltimore, Md.			
<b>WEAF</b> 660				<b>WFDF</b> 1310			
New York City				Flint, Mich.			
<b>WEAI</b> 1270				<b>WFI</b> 560			
Ithaca, N. Y.				Philadelphia, Pa.			
<b>WEAM</b> 1370				<b>WFIW</b> 940			
Plainfield, N. J.				Hopkinsville, Ky.			
<b>WEAN</b> 550				<b>WFJC</b> 1450			
Providence, R. I.				Akron, Ohio			
<b>WEAO</b> 550				<b>WFKD</b> 1310			
Columbus, Ohio				Philadelphia, Pa.			
<b>WEAR</b> 1070				<b>WFLA</b> 900			
Cleveland, Ohio				Clearwater, Fla.			
<b>WEBC</b> 1280				<b>WGAL</b> 1310			
Superior, Wis.				Lancaster, Pa.			
<b>WEBE</b> 1210				<b>WGBB</b> 1210			
Cambridge, Ohio				Freeport, N. Y.			
<b>WEBQ</b> 1210				<b>WGBC</b> 1430			
Harrisburg, Ill.				Memphis, Tenn.			
<b>WEBR</b> 1310				<b>WGBF</b> 630			
Buffalo, N. Y.				Evansville, Ind.			
<b>WEBW</b> 600				<b>WGBI</b> 880			
Beloit, Wisc.				Scranton, Pa.			
<b>WEDC</b> 1210				<b>WGBS</b> 1180			
Chicago, Ill.				New York City			
<b>WEDH</b> 1420				<b>WGCM</b> 1210			
Erie, Pa.				Gulfport, Miss.			
<b>WEEI</b> 590				<b>WGCP</b> 1250			
Boston, Mass.				Newark, N. J.			
<b>WEHS</b> 1310				<b>WGES</b> 1360			
Evanston, Ill.				Chicago, Ill.			
<b>WELK</b> 1370				<b>WGH</b> 1310			
Philadelphia, Pa.				Newport News, Va.			
<b>WEMC</b> 590				<b>WGHP</b> 1240			
Berrien Spgs., Mich.				Detroit, Mich.			
<b>WENR</b> 870				<b>WGMS</b> 1250			
Chicago, Ill.				St. Paul-Minneapolis			
<b>WEPS</b> 1200				<b>WGN</b> 720			
Gloucester, Mass.				Chicago, Ill.			
<b>WEVD</b> 1300				<b>WGR</b> 550			
Woodhaven, N. Y.				Buffalo, N. Y.			
<b>WEW</b> 760				<b>WGST</b> 890			
St. Louis, Mo.				Atlanta, Ga.			

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<b>WGY</b> 790				<b>WIBM</b> 1370			
Schenectady, N. Y.				Jackson, Mich.			
<b>WHA</b> 570				<b>WIBO</b> 570			
Madison, Wisc.				Chicago, Ill.			
<b>WHAD</b> 1120				<b>WIBR</b> 1420			
Milwaukee, Wisc.				Steubenville, Ohio			
<b>WHAM</b> 1150				<b>WIBS</b> 1450			
Rochester, N. Y.				Elizabeth, N. J.			
<b>WHAP</b> 1300				<b>WIBU</b> 1310			
New York City				Poynette, Wisc.			
<b>WHAS</b> 820				<b>WIBW</b> 1300			
Louisville, Ky.				Topeka, Kansas			
<b>WHAZ</b> 1300				<b>WIBX</b> 1200			
Troy, N. Y.				Utica, N. Y.			
<b>WHB</b> 950				<b>WIBZ</b> 1500			
Kansas City, Mo.				Montgomery, Ala.			
<b>WHBC</b> 1200				<b>WICC</b> 1190			
Canton, Ohio				Bridgeport, Conn.			
<b>WHBD</b> 1370				<b>WIL</b> 1420			
Bellefontaine, Ohio				St. Louis, Mo.			
<b>WHBF</b> 1210				<b>WINR</b> 1210			
Rock Island, Ill.				Bay Shore, N. Y.			
<b>WHBL</b> 1410				<b>WIOD</b> 1240			
Sheboygan, Wisc.				Miami Beach, Fla.			
<b>WHBP</b> 1310				<b>WIP</b> 610			
Johnstown, Pa.				Philadelphia, Pa.			
<b>WHBQ</b> 1370				<b>WISN</b> 1120			
Memphis, Tenn.				Milwaukee, Wisc.			
<b>WHBU</b> 1210				<b>WJAD</b> 1240			
Anderson, Ind.				Waco, Texas			
<b>WHBW</b> 1500				<b>WJAG</b> 1060			
Philadelphia, Pa.				Norfolk, Nebr.			
<b>WHBY</b> 1200				<b>WJAK</b> 1310			
West De Pere, Wisc.				Kokomo, Ind.			
<b>WHDI</b> 1390				<b>WJAR</b> 890			
Minneapolis, Minn.				Providence, R. I.			
<b>WHDF</b> 1370				<b>WJAS</b> 1290			
Calumet, Mich.				Pittsburgh, Pa.			
<b>WHEC</b> 1440				<b>WJAX</b> 1260			
Rochester, N. Y.				Jacksonville, Fla.			
<b>WHFC</b> 1310				<b>WJAY</b> 1450			
Chicago, Ill.				Cleveland, Ohio			
<b>WHK</b> 1390				<b>WJAZ</b> 1480			
Cleveland, Ohio				Chicago, Ill.			
<b>WHN</b> 1010				<b>WJBB</b> 1010			
New York City				Sarasota, Fla.			
<b>WHO</b> 1000				<b>WJBC</b> 1200			
Des Moines, Iowa				La Salle, Ill.			
<b>WHOH</b> 830				<b>WJBI</b> 1210			
Gloucester, Mass.				Red Bank, N. J.			
<b>WHPP</b> 1420				<b>WJBK</b> 1370			
New York City				Ypsilanti, Mich.			
<b>WHT</b> 1480				<b>WJBL</b> 1200			
Chicago, Ill.				Decatur, Ill.			
<b>WIAS</b> 1420				<b>WJBO</b> 1370			
Ottumwa, Iowa				New Orleans, La.			
<b>WIBA</b> 1210				<b>WJBU</b> 1210			
Madison, Wis.				Lewisburg, Pa.			
<b>WIBG</b> 930				<b>WJBW</b> 1200			
Elkins Park, Pa.				New Orleans, La.			

A COMPLETE INDEX BY CALL LETTERS

<b>WJBY</b> 1210				<b>WLB</b> 1250			
Gadsden, Ala.				Minneapolis, Minn.			
<b>WJJD</b> 1180				<b>WLBC</b> 1310			
Mooseheart, Ill.				Muncie, Ind.			
<b>WJKS</b> 1360				<b>WLBF</b> 1420			
Gary, Ind.				Kansas City, Mo.			
<b>WJR</b> 750				<b>WLBG</b> 1200			
Detroit, Mich.				Petersburg, Va.			
<b>WJSV</b> 1460				<b>WLBH</b> 1420			
Washington, D. C.				Farmingdale, N. Y.			
<b>WJZ</b> 760				<b>WLBL</b> 900			
New York City				Stevens Point, Wisc.			
<b>WKAQ</b> 580				<b>WLBO</b> 1310			
San Juan, P. R.				Galesburg, Ill.			
<b>WKAR</b> 1040				<b>WLBV</b> 1210			
East Lansing, Mich.				Mansfield, Ohio			
<b>WKAV</b> 1310				<b>WLBW</b> 1260			
Laconia, N. H.				Oil City, Pa.			
<b>WKBB</b> 1310				<b>WLBX</b> 1500			
Joliet, Ill.				Long Island City, N. Y.			
<b>WKBC</b> 1310				<b>WLBZ</b> 620			
Birmingham, Ala.				Dover-Foxcroft, Me.			
<b>WKBE</b> 1200				<b>WLCI</b> 1210			
Webster, Mass.				Ithaca, N. Y.			
<b>WKBF</b> 1400				<b>WLEX</b> 1420			
Indianapolis, Ind.				Lexington, Mass.			
<b>WKBH</b> 1380				<b>WLIB</b> 720			
La Crosse, Wisc.				Chicago, Ill.			
<b>WKBI</b> 1310				<b>WLIT</b> 560			
Chicago, Ill.				Philadelphia, Pa.			
<b>WKBN</b> 570				<b>WLOE</b> 1500			
Youngstown, Ohio				Chelsea, Mass.			
<b>WKBO</b> 1450				<b>WLS</b> 870			
Jersey City, N. J.				Chicago, Ill.			
<b>WKBP</b> 1420				<b>WLSI</b> 1210			
Battle Creek, Mich.				Cranston, R. I.			
<b>WKBQ</b> 1350				<b>WLTH</b> 1400			
New York City				Brooklyn, N. Y.			
<b>WKBS</b> 1310				<b>WLW</b> 700			
Galesburg, Ill.				Cincinnati, Ohio			
<b>WKBT</b> 1420				<b>WLWL</b> 1100			
New Orleans, La.				New York City			
<b>WKBV</b> 1500				<b>WMAC</b> 570			
Brookville, Ind.				Cazenovia, N. Y.			
<b>WKBW</b> 1470				<b>WMAF</b> 1360			
Buffalo, N. Y.				S. Dartmouth, Mass.			
<b>WKBZ</b> 1500				<b>WMAK</b> 900			
Ludington, Mich.				Buffalo, N. Y.			
<b>WKEN</b> 1040				<b>WMAL</b> 630			
Grand Island, N. Y.				Washington, D. C.			
<b>WKJC</b> 1200				<b>WMAN</b> 1210			
Lancaster, Pa.				Columbus, Ohio			
<b>WKRC</b> 550				<b>WMAQ</b> 670			
Cincinnati, Ohio				Chicago, Ill.			
<b>WKY</b> 900				<b>WMAY</b> 1200			
Oklahoma City				St. Louis, Mo.			
<b>WLAC</b> 1490				<b>WMAZ</b> 890			
Nashville, Tenn.				Macon, Ga.			
<b>WLAP</b> 1200				<b>WMBA</b> 1500			
Louisville, Ky.				Newport, R. I.			

A COMPLETE INDEX BY CALL LETTERS

<b>WMBC</b> 1420				<b>WNBR</b> 1430			
Detroit, Mich.				Memphis, Tenn.			
<b>WMBD</b> 1440				<b>WNBW</b> 1200			
Peoria Heights, Ill.				Carbondale, Pa.			
<b>WMBF</b> 560				<b>WNBX</b> 1200			
Miami Beach, Fla.				Springfield, Vt.			
<b>WMBG</b> 1210				<b>WNBZ</b> 1290			
Richmond, Va.				Saranac Lake, N. Y.			
<b>WMBH</b> 1420				<b>WNJ</b> 1450			
Joplin, Mo.				Newark, N. J.			
<b>WMBI</b> 1080				<b>WNOX</b> 560			
Chicago, Ill.				Knoxville, Tenn.			
<b>WMBJ</b> 1500				<b>WNRC</b> 1440			
Wilkinsburg, Pa.				Greensboro, N. C.			
<b>WMBL</b> 1310				<b>WNYC</b> 570			
Lakeland, Fla.				New York City			
<b>WMBM</b> 1500				<b>WOAI</b> 1190			
Memphis, Tenn.				San Antonio, Texas			
<b>WMBO</b> 1370				<b>WOAN</b> 600			
Auburn, N. Y.				Lawrenceburg, Tenn.			
<b>WMBQ</b> 1500				<b>WOAX</b> 1280			
Brooklyn, N. Y.				Trenton, N. J.			
<b>WMBR</b> 1210				<b>WOBT</b> 1310			
Tampa, Fla.				Union City, Tenn.			
<b>WMBS</b> 1430				<b>WOBU</b> 580			
Lemoyne, Pa.				Charleston, W. Va.			
<b>WMC</b> 780				<b>WOC</b> 1000			
Memphis, Tenn.				Davenport, Iowa			
<b>WMCA</b> 570				<b>WOCL</b> 1210			
New York City				Jamestown, N. Y.			
<b>WMES</b> 1500				<b>WODA</b> 1250			
Boston, Mass.				Paterson, N. J.			
<b>WMMN</b> 890				<b>WOI</b> 560			
Fairmont, W. Va.				Ames, Iowa			
<b>WMPC</b> 1500				<b>WOKO</b> 1440			
Lapeer, Mich.				Peekskill, N. Y.			
<b>WMRJ</b> 1420				<b>WOL</b> 1310			
Jamaica, N. Y.				Washington, D. C.			
<b>WMSG</b> 1350				<b>WOMT</b> 1210			
New York City				Manitowoc, Wis.			
<b>WMT</b> 1200				<b>WOO</b> 1500			
Waterloo, Iowa				Philadelphia, Pa.			
<b>WNAC</b> 1230				<b>WOOD</b> 1270			
Boston, Mass.				Grand Rapids, Mich.			
<b>WNAD</b> 1010				<b>WOQ</b> 610			
Norman, Okla.				Kansas City, Mo.			
<b>WNAT</b> 1310				<b>WOR</b> 710			
Philadelphia, Pa.				Newark, N. J.			
<b>WNAX</b> 570				<b>WORD</b> 1480			
Yankton, S. D.				Batavia, Ill.			
<b>WNBF</b> 1500				<b>WOS</b> 630			
Endicott, N. Y.				Jefferson City, Mo.			
<b>WNBH</b> 1310				<b>WOV</b> 1130			
New Bedford, Mass.				New York City			
<b>WNBJ</b> 1310				<b>WOW</b> 590			
Knoxville, Tenn.				Omaha, Nebr.			
<b>WNBO</b> 1200				<b>WOWO</b> 1160			
Washington, Pa.				Fort Wayne, Ind.			
<b>WNBQ</b> 1500				<b>WPAP</b> 1010			
Rochester, N. Y.				Cliffside, N. J.			



A COMPLETE INDEX BY CALL LETTERS

<b>WPAW</b> 1210				<b>WRJN</b> 1370			
Pawtucket, R. I.				Racine, Wisc.			
<b>WPCC</b> 570				<b>WRK</b> 1310			
Chicago, Ill.				Hamilton, Ohio			
<b>WPCH</b> 810				<b>WRNY</b> 1010			
Jersey City, N. J.				New York City			
<b>WPG</b> 1100				<b>WRR</b> 1280			
Atlantic City, N. J.				Dallas, Texas			
<b>WPOR</b> 780				<b>WRUF</b> 1470			
Norfolk, Va.				Gainesville, Fla.			
<b>WPRC</b> 1200				<b>WRVA</b> 1110			
Harrisburg, Pa.				Richmond, Va.			
<b>WPSC</b> 1230				<b>WSAI</b> 800			
State College, Pa.				Cincinnati, Ohio			
<b>WPSW</b> 1500				<b>WSAJ</b> 1310			
Philadelphia, Pa.				Grove City, Pa.			
<b>WPTF</b> 680				<b>WSAN</b> 1500			
Raleigh, N. C.				Allentown, Pa.			
<b>WQAM</b> 1240				<b>WSAR</b> 1450			
Miami, Fla.				Fall River, Mass.			
<b>WQAN</b> 880				<b>WSAZ</b> 580			
Scranton, Pa.				Huntington, W. Va.			
<b>WQAO</b> 1010				<b>WSB</b> 740			
Cliffside, N. J.				Atlanta, Ga.			
<b>WQBC</b> 1360				<b>WSBC</b> 1210			
Utica, Miss.				Chicago, Ill.			
<b>WQBJ</b> 1200				<b>WSBT</b> 1230			
Clarksburg, W. Va.				South Bend, Ind.			
<b>WRAF</b> 1200				<b>WSEA</b> 780			
La Porte, Ind.				Portsmouth, Va.			
<b>WRAK</b> 1370				<b>WSGH</b> 1400			
Erie, Pa.				Brooklyn, N. Y.			
<b>WRAW</b> 1310				<b>WSIX</b> 1210			
Reading, Pa.				Springfield, Tenn.			
<b>WRAX</b> 1440				<b>WSKC</b> 1410			
Philadelphia, Pa.				Bay City, Mich.			
<b>WRBC</b> 1240				<b>WSM</b> 650			
Valparaiso, Ind.				Nashville, Tenn.			
<b>WRBI</b> 1310				<b>WSMB</b> 1320			
Tifton, Ga.				New Orleans, La.			
<b>WRBJ</b> 1500				<b>WSMD</b> 1310			
Hattiesburg, Miss.				Salisbury, Md.			
<b>WRBL</b> 1200				<b>WSMK</b> 570			
Columbus, Ga.				Dayton, Ohio			
<b>WRBQ</b> 1210				<b>WSPD</b> 1340			
Greenville, Miss.				Toledo, Ohio			
<b>WRBT</b> 1370				<b>WSRO</b> 1420			
Wilmington, N. C.				Middletown, Ohio			
<b>WRBU</b> 1210				<b>WSSH</b> 1420			
Gastonia, N. C.				Boston, Mass.			
<b>WRBW</b> 1310				<b>WSUI</b> 580			
Columbia, S. C.				Iowa City, Iowa			
<b>WRC</b> 950				<b>WSUN</b> 900			
Washington, D. C.				St. Petersburg, Fla.			
<b>WREC</b> 600				<b>WSVS</b> 1370			
Memphis, Tenn.				Buffalo, N. Y.			
<b>WREN</b> 1220				<b>WSYR</b> 570			
Lawrence, Kansas				Syracuse, N. Y.			
<b>WRHM</b> 1250				<b>WTAD</b> 1440			
Minneapolis, Minn.				Quincy, Ill.			

## A COMPLETE INDEX BY CALL LETTERS

<b>WTAG</b> 580 Worcester, Mass.	<b>WWL</b> 850 New Orleans, La.
<b>WTAM</b> 1070 Cleveland, Ohio	<b>WWNC</b> 570 Asheville, N. C.
<b>WTAQ</b> 1330 Eau Claire, Wis.	<b>WWRL</b> 1500 Woodside, N. Y.
<b>WTAR</b> 780 Norfolk, Va.	<b>WWVA</b> 1160 Wheeling, W. Va.
<b>WTAW</b> 1120 College Station, Tex.	<b>2BB</b> 1200 Havana, Cuba
<b>WTAX</b> 1210 Streator, Ill.	<b>2LR</b> 1280 Havana, Cuba
<b>WTAZ</b> 1210 Richmond, Va.	<b>2MG</b> 1050 Havana, Cuba
<b>WTBO</b> 1420 Cumberland, Md.	<b>2OK</b> 860 Havana, Cuba
<b>WTBQ</b> 1500 Wilmington, Del.	<b>2OL</b> 1170 Havana, Cuba
<b>WTFI</b> 1450 Toccoa, Ga.	<b>2RK</b> 950 Havana, Cuba
<b>WTHS</b> 1310 Atlanta, Ga.	<b>2TW</b> 1110 Havana, Cuba
<b>WTIC</b> 600-1060 Hartford, Conn.	<b>2UF</b> 1090 Havana, Cuba
<b>WTMJ</b> 620 Milwaukee, Wis.	<b>6BY</b> 1150 Cienfuegos, Cuba
<b>WWAE</b> 1370 Hammond, Ind.	<b>6KW</b> 880 Tuinucu, Cuba
<b>WWJ</b> 920 Detroit, Mich.	<b>7SR</b> 860 Eliá, Cuba

## Questions and Answers

What are the short waves that we hear and read so much about?

Briefly, all of those wave lengths below the lowest wave length now in use for broadcasting, which is about 200 meters. The wave bands below this from 200 down to 5 meters are referred to as short waves. There are many foreign and continental stations broadcasting both speech and music on these waves.

Leaving tubes out of consideration, what is there to go wrong about the average electric set?

Nothing, unless the set is damaged by misuse. Of course a defective part can cause the set to become inoperative but these are well covered by every

manufacturer's warranty. Unlike the old style equipment, there are no parts requiring attention, such as cells which must be filled with water and so forth. One precaution must be observed, that is to turn off the set switch when through using the set for any considerable period of time.

How can I tell when my tubes are bad and need replacement?

The best method is to take them to a responsible dealer who has the necessary equipment for testing the various types of tubes. However, by keeping a known good tube of each type that you use at hand, you can compare the tubes in your set with the known good ones.

INDEX BY LOCATIONS WITH MAP KEY

<b>ALABAMA</b>			<b>Ontario</b>	<b>KFWC</b>	1200
Birmingham K-19-a	WAPI	1140	Pasadena J-4	KPPC	1200
	WBRC	930		KPSN	950
Gadsden K-20-a	WKBC	1310	Sacramento H-2-a	KFBK	1310
Montgomery K-19-b	WJBY	1210	San Diego K-4-b	KFSD	600
	WIBZ	1500		KGB	1360
<b>ALASKA</b>			San Francisco H-1-c	KFRC	610
Anchorage	KFQD	1230		KFWI	930
Juneau	KFIU	1310		KGTT	1420
Ketchikan	KGBU	900		KJBS	1100
<b>ARIZONA</b>				KPO	680
Flagstaff J-7	KFXV	1420		KYA	1230
Phoenix K-7	KFAD	620	San Jose I-2	KQW	1010
	KFCB	1310	Santa Ana K-4	KWTC	1500
Prescott J-6	KPJM	1500	Santa Barbara J-3	KFCR	1500
Tucson L-7	KGAR	1370	Santa Maria J-2-b	KSMR	1200
<b>ARKANSAS</b>			Santa Monica K-3	KTM	780
Blytheville I-18	KLCN	1290	Stockton H-2-b	KGDM	1150
Fayetteville I-16	KUOA	1390		KWG	1200
Hot Springs J-16	KTHS	800	<b>COLORADO</b>		
Little Rock J-17	KGHI	1500	Colorado Springs H-10	KFUM	1270
	KGJF	890	Denver G-10-b	KFEL	940
	KLRA	1390		KFUP	1310
McGehee K-17	KGHG	1310		KFXF	940
Siloam Springs I-16	KFPW	1340		KLZ	560
<b>CALIFORNIA</b>				KOA	830
Berkeley H-1-a	KRE	1370		KOW	1390
Burbank J-4	KELW	780	Edgewater G-10	KPOF	880
Culver City K-3	KEVD	700	Fort Morgan G-11	KFXJ	1310
El Centro K-5	KXO	1200	Greeley F-10	KGEW	1200
Fresno I-3	KMJ	1200	Gunnison H-9	KFKA	880
Glendale K-3	KGFH	1000	Pueblo H-11	KFHA	1200
Hayward H-2	KZM	1370		KGDP	1210
Hollywood K-3	KFQZ	850		KGHF	1320
	KMTR	570	Trinidad H-10	KGIW	1420
Holy City I-2	KFQU	1420	Yuma G-11	KGEK	1200
Inglewood K-4	KMIC	1120	<b>CONNECTICUT</b>		
Long Beach K-4-a	KFON	1250	Bridgeport F-26	WICC	1190
	KGER	1370	Hartford E-26-d	WTIC	1060
Los Angeles K-3-b	KEJK	1250	Mansfield E-27-i	WCAC	1330
	KFI	640	New Haven F-26-b	WDRC	1330
	KFSG	1120	<b>DELAWARE</b>		
	KFWB	950	Wilmington G-25	WDEL	1410
	KGEF	1300		WTBQ	1500
	KGJF	1420	<b>DISTRICT OF COLUMBIA</b>		
	KHJ	900	Washington G-24-c	WMAL	630
	KNX	1050		WRC	950
	KPLA	570		WJSV	1460
Oakland H-1-b	KTBI	1300		WOL	1310
	KFWM	930	<b>FLORIDA</b>		
	KGO	790	Clearwater N-21	WFLA	900
	KLS	1440	Gainesville M-21	WRUF	1470
	KLX	880	Jacksonville M-22	WJAX	1260
	KTAB	550			

INDEX BY LOCATIONS WITH MAP KEY

Lakeland N-22	WMBL	1310
Miami O-23	WQAM	1240
Miami Beach O-23	WIOD	1240
	WMBF	560
Orlando N-22	WDBO	620
Pensacola L-19	WCOA	1120
Sarasota N-22	WJBB	1010
St. Petersburg N-21	WSUN	900
Tampa N-22-b	WDAE	620
	WMBR	1210

GEORGIA

Atlanta K-20-a	WGST	890
	WSB	740
	WTHS	1310
Columbus K-20	WRBL	1200
Macon K-21	WMAZ	890
Tifton L-21	WRBI	1310
Toccoa J-21	WTFI	1450

HAWAII

Honolulu	KGHB	1320
	KGU	940

IDAHO

Boise D-4	KIDO	1250
Idaho Falls D-7	KGIO	1320
Jerome E-5	KFXD	1420
Kellogg B-5	KFEY	1210
Pocatello E-7	KSEI	900
Sand Point A-4	KGKX	1420
Twin Falls E-5	KGIQ	1320

ILLINOIS

Batavia F-18-c	WORD	1480
Carthage F-17-e	WCAZ	1070
Chicago E-19-g	KFKX	1020
	KYW	1020
	WAAF	920
	WBBM	770
	WCFL	970
	WCRW	1210
	WEDC	1210
	WENR	870
	WGES	1360
	WGN	720
	WHFC	1310
	WHT	1480
	WIBO	570
	WJAZ	1480
	WKBI	1310
	WLIB	720
	WLS	870
	WMAQ	670
	WMBI	1080
	WPCC	570
	WSBC	1210

Decatur G-18	WJBL	1200
Evanston E-19	WEHS	1390
Galesburg F-18-a	WKBS	1310
	WLBO	1310
Harrisburg H-18-b	WEBQ	1210
Joliet E-19-f	WCLS	1310
	WKBB	1310
La Salle F-18-d	WJBC	1200
Mooseheart E-18-e	WJJD	1180
Peoria Heights G-18	WMBD	1440
Quincy G-17	WTAD	1440
Rockford E-18-c	KFLV	1410
Rock Island F-17-c	WHBF	1210
Springfield G-18	WCBS	1210
Streator F-18-e	WTAX	1210
Tuscola G-19-b	WDZ	1070
Urbana G-19-a	WILL	890
Zion E-19-c	WCBD	1080

INDIANA

Anderson G-20-a	WHBU	1210
Brookville G-20	WKBV	1500
Culver F-19-d	WCMA	1400
Evansville H-19	WGBF	630
Fort Wayne F-20-b	WCWK	1230
	WOWO	1160
Gary F-19	WJKS	1360
Hammond F-19	WWAE	1200
Indianapolis G-19-c	WFBM	1230
	WKBF	1400
	WJAK	1310
	WBAA	1400
	WRAF	1200
	WLBC	1310
	WSBT	1230
	WBOW	1310
	WRBC	1240
Kokomo F-19-g		
Lafayette F-19-f		
La Porte F-19-c		
Muncie G-20		
South Bend F-20-a		
Terre Haute G-19		
Valparaiso F-19-b		

IOWA

Ames E-16-c	WOI	560
Boone E-16	KFGQ	1310
Cedar Rapids E-17-a	KWCR	1310
Clarinda E-15-c	KSO	1380
Council Bluffs F-15-b	KOIL	1260
Davenport F-17-a	WOC	1000
Decorah D-17	KGCA	1270
	KWLC	1270
Des Moines F-16-a	WHO	1000
Fort Dodge E-16-a	KFJY	1310
Iowa City E-17-b	WSUI	580
Marshalltown E-16-d	KFJB	1200
Muscatine F-17-b	KTNT	1170
Ottumwa F-17	WIAS	1420

INDEX BY LOCATIONS WITH MAP KEY

Red Oak F-15	KICK	1420	Chelsea E-27	WLOE	1500
Shenandoah F-15-c	KFNF	890	Fall River E-27	WSAR	1450
	KMA	930	Gloucester E-27	WEPS	1200
Sioux City E-15	KSCJ	1330		WHOH	830
Waterloo F-17	WMT	1200	Lexington E-27	WLEX	1420
<b>KANSAS</b>			New Bedford E-27-g	WNBH	1310
Concordia G-14	KGCN	1420	South Dartmouth E-27	WMAF	1360
Lawrence G-15-a	KFKU	1220	Springfield E-26-b	WBZ	990
	WREN	1220	Webster E-27-d	WKBE	1200
Manhattan G-14-a	KSAC	580	Wellesley Hills E-27	WBSO	780
Milford G-14	KFKB	1130	Worcester E-27-b	WTAG	580
Topeka G-14	WIBW	1300	<b>MICHIGAN</b>		
Wichita H-14-a	KFH	1300	Battle Creek E-20	WKBP	1420
<b>KENTUCKY</b>			Bay City D-21	WSKC	1410
Hopkinsville I-19	WFIW	940	Berrien Springs E-19	WEMC	590
Louisville H-20	WHAS	820	Calumet B-18	WHDF	1370
	WLAP	1200	Detroit E-21-g	WAFD	1500
<b>LOUISIANA</b>				WBMH	1310
Cedar Grove M-17	KGGH	1310		WCX	750
New Orleans M-17	WABZ	1200		WGHP	1240
	WDSU	1270		WJR	750
	WJBO	1370	East Lansing E-20-b	WMBC	1420
	WJBW	1200	Flint E-21-a	WWJ	920
	WSMB	1320	Grand Rapids E-20-a	WKAR	1040
	WWL	850		WFDF	1310
Shreveport K-16	KFDX	1210		WASH	1270
	KRMD	1310	Jackson E-20	WOOD	1270
	KSBA	1450	Lapeer E-21	WIBM	1370
	KWEA	1210	Ludington D-19	WMPC	1500
	KWKH	850	Royal Oak E-21-e	WKBZ	1500
			Ypsilanti E-21-f	WAGM	1310
				WJBK	1370
<b>MAINE</b>			<b>MINNESOTA</b>		
Bangor C-28-b	WABI	1200	Barrett C-14	KGDE	1200
Dover-Foxcroft C-28	WLBZ	620	Collegeville C-15	WFBJ	1370
Portland D-28-b	WCSH	940	Hallock A-14	KGFK	1200
			Minneapolis C-16-B	WCCO	810
<b>MARYLAND</b>				WDGY	1390
Baltimore G-24-a	WBAL	1060		WGMS	1250
	WCAO	600		WHDI	1390
	WCBM	1370		WLB	1250
	WFBR	1270		WRHM	1250
Cumberland G-23	WTBO	1420	Northfield D-16	KFMX	1250
Salisbury G-25	WSMD	1310		WCAL	1250
			St. Paul C-16-c	KSTP	1460
<b>MASSACHUSETTS</b>				WCCO	810
Boston E-27-c	WBET	1360		WGMS	1250
	WBIS	1230	<b>MISSISSIPPI</b>		
	WBZA	990	Columbus K-18	WCOC	880
	WEEI	590	Greenville K-17	WRBQ	1210
	WMES	1500	Gulfport M-18	WGCM	1210
	WNAC	1230	Hattiesburg L-18	WRBJ	1500
	WSSH	1420	Utica L-17	WQBC	1360

**INDEX BY LOCATIONS WITH MAP KEY**

**MISSOURI**

Cape Girardeau H-18-c	KFVS	1210
Columbia G-16-b	KFRU	630
Independence G-16-c	KLDS	950
	KMBC	950
Jefferson City H-16-a	WOS	630
Joplin H-16	WMBH	1420
Kansas City G-15-b	KWKC	1370
	WDAF	610
	WHB	950
	WLBF	1420
	WOQ	610
Kirksville F-16-c	KFKZ	1200
St. Joseph G-15	KFEQ	560
	KGBX	1370
St. Louis H-18-a	KFUO	550
	KFWF	1200
	KMOX	1090
	KSD	550
	KWK	1350
	WEW	760
	WIL	1420
	WMAY	1200

**MONTANA**

Billings C-8	KGHL	950
Butte C-7	KGIR	1360
Havre A-8	KFBB	1360
Kalispell A-5	KGEZ	1310
Missoula B-6	KGHD	1420
	KUOM	570
Vida B-10	KGCCX	1420

**NEBRASKA**

Clay Center G-14	KMMJ	740
Lincoln F-14-b	KFAB	770
	KFOR	1210
	WCAJ	590
Norfolk E-14-c	WJAG	1060
Omaha F-15-a	WAAW	660
	WOW	590
Ravenna F-13	KGFW	1420
York F-13	KGBZ	930

**NEVADA**

Reno G-3	KOH	1370
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**NEW HAMPSHIRE**

Laconia D-27	WKAV	1310
Tilton E-27	WBRL	1430

**NEW JERSEY**

Asbury Park G-26	WCAP	1280
Atlantic City G-25	WPG	1100
Camden F-25-f	WCAM	1280
Cliffside F-26	WPAP	1010
	WQAO	1010
Elizabeth F-26-h	WIBS	1450
Jersey City F-26-d	WAAT	1070
	WKBO	1450
	WPCH	810
Newark F-25-h	WAAM	1250
	WGCP	1250
	WNJ	1450
	WOR	710
Paterson F-26-c	WODA	1250
Plainfield F-25	WEAM	1370
Red Bank G-26	WJBI	1210
Trenton F-25	WOAX	1280
Union City F-26	WBMS	1450

**NEW MEXICO**

Albuquerque	KGGM	1370
Raton I-11	KGFL	1370
State College K-9	KOB	1180

**NEW YORK**

Auburn E-24	WMBO	1370
Bay Shore F-26-h	WINR	1210
Brooklyn F-26-f	WBBC	1400
	WCDA	1350
	WCLB	1500
	WLTH	1400
	WMBQ	1500
	WSGH	1400
Buffalo E-23-a	WEBR	1310
	WGR	550
	WKBW	1470
	WKEN	1040
	WMAK	900
Canton D-25	WSVS	1370
Cazenovia E-25-b	WCAD	1220
Coney Island F-26	WMAC	570
Endicott E-25	WCGU	1400
Farmingdale F-26	WNBF	1500
Freeport F-26-i	WLBH	1420
Grand Island E-23	WGBB	1210
Greenville E-26	WCOH	1210
Ithaca E-24-d	WEAI	1270
	WLCI	1210
Jamaica F-26-f	WMRJ	1420
Jamestown E-23-b	WOCL	1210
Long Island City F-26	WLBX	1500

INDEX BY LOCATIONS WITH MAP KEY

New York City F-26	WABC	860
	WBNY	1350
	WBOQ	860
	WEAF	660
	WGBS	1180
	WHAP	1300
	WHN	1010
	WHPP	1420
	WJZ	760
	WKBQ	1350
	WLWL	1100
	WMCA	570
	WMSG	1350
	WNYC	570
	WOV	1130
	WRNY	1010
Peekskill F-26-a	WOKO	1440
Rochester E-24-b	WABO	1440
	WHAM	1150
	WHEC	1440
	WNBQ	1500
	WBBR	1300
Rossville F-26	WNBZ	1290
Saranac Lake D-26	WGY	790
Schenectady E-25-c	WFBL	900
Syracuse E-24-c	WSYR	570
	WHAZ	1300
Troy E-21-a	WIBX	1200
Utica E-25-a	WEVD	1300
Woodhaven F-26	WWRL	1500
Woodside F-26		

NORTH CAROLINA

Asheville J-21	WWNC	570
Charlotte J-22	WBT	1080
Gastonia J-22	WRBU	1210
Greensboro I-22	WNRC	1440
Raleigh I-23	WPTF	680
Wilmington J-24	WRBT	1370

NORTH DAKOTA

Bismarck B-12	KFYR	550
Devils Lake A-13	KDLR	1210
Fargo B-14	WDAY	1280
Grand Forks A-14	KFJM	550
Mandan B-12	KGCU	1200

OHIO

Akron F-22-b	WADC	1320
	WFJC	1450
Bellefontaine G-21-a	WHBD	1370
Cambridge F-22	WEBE	1210
Canton F-22-d	WHBC	1200

Cincinnati G-20-e	WAAD	1420
	WFBE	1200
	WKRC	550
	WLW	700
	WSAI	800
Cleveland F-22-a	WEAR	1070
	WHK	1390
	WJAY	1450
	WTAM	1070
Columbus G-21-b	WAIU	640
	WCAH	1430
	WEAO	550
	WMAN	1210
	WSMK	570
Dayton G-21-e	WRK	1310
Hamilton G-20-d	WLBV	1210
Mansfield F-21	WSRO	1420
Middletown G-20	WCOS	1380
Springfield G-21-c	WIBR	1420
Steubenville F-22	WSPD	1340
Toledo F-21-a	WKBN	570
Youngstown F-22		

OKLAHOMA

Alva I-13	KGFF	1420
Chickasha J-14-b	KOCW	1420
Enid I-14	KGCW	1370
Norman J-14-a	WNAD	1010
Oklahoma City I-14-b	KFJF	1470
	KFXR	1310
	KGFG	1370
	WKY	900
Picher I-15	KGGF	1010
Ponca City I-14	WBBZ	1200
Tulsa I-15	KVOO	1140

OREGON

Astoria C-1-a	KFJI	1370
Corvallis D-1	KOAC	560
Eugene D-1	KORE	1420
Marshfield E-1	KOOS	1370
Medford E-1	KMED	1420
Portland C-1-b	KEX	1180

	KFEC	1370
	KFIF	1420
	KFJR	1300
	KGW	620
	KOIN	940
	KTBR	1300
	KWBS	1500
	KWJJ	1060
	KXL	1250

PENNSYLVANIA

Allentown F-25-c	WCBA	1500
	WSAN	1500
Altoona F-24-c	WFBG	1310
Carbondale F-25	WNBW	1200

INDEX BY LOCATIONS WITH MAP KEY

Elkins Park G-25-c	WIBG	930
Erie E-23	WEDH	1420
	WRAK	1370
Grove City F-23-b	WSAJ	1310
Harrisburg F-24-d	WBAK	1430
	WPRC	1200
Johnstown F-23-d	WHBP	1310
Kingston F-24	WABF	1440
Lancaster G-25-a	WGAL	1310
	WKJC	1200
Lemoyne G-24	WMBS	1430
Lewisburg F-24-b	WJBU	1210
Oil City F-23-a	WLBW	1260
Philadelphia G-25-d	WABY	1310
	WCAU	1170
	WELK	1370
	WFAN	610
	WFI	560
	WFKD	1310
	WHBW	1500
	WIP	610
	WLIT	560
	WNAT	1310
	WOO	1500
	WPSW	1500
	WRAX	1440
Pittsburgh F-23-c	KDKA	980
	KQV	1380
	WCAE	1220
	WJAS	1290
Reading F-25-d	WRAW	1310
Scranton F-25-a	WGBI	880
	WQAN	880
State College F-24-a	WPSC	1230
Washington F-23	WNBO	1200
Wilkes-Barre F-25-b	WBAX	1210
	WBRE	1310
Wilkesburg F-23	WMBJ	1500
Willow Grove G-25	WALK	1500
<b>PORTO RICO</b>		
San Juan	WKAQ	580
<b>RHODE ISLAND</b>		
Cranston F-27-a	WDWF	1210
	WLSI	1210
Newport F-27	WMBA	1500
Pawtucket E-27	WPAW	1210
Providence E-27-h	WEAN	550
	WJAR	890
<b>SOUTH CAROLINA</b>		
Charlestown K-23	WBBY	1200
Columbia K-22	WRBW	1310

<b>SOUTH DAKOTA</b>		
Brookings D-14	KFDY	550
	KGCR	1210
Dell Rapids D-14	KGDA	1370
Oldham D-14	KGDY	1200
Pierre D-12	KGFX	580
Rapid City D-11	WCAT	1200
Sioux Falls D-14	KSOO	1110
Vermillion E-14-b	KUSD	890
Yankton E-14-a	WNAX	570
<b>TENNESSEE</b>		
Chattanooga J-20	WDOD	1280
Knoxville I-20	WFBC	1200
	WNBJ	1310
	WNOX	560
Lawrenceburg J-19	WOAN	600
Memphis J-18-a	WGBC	1430
	WHBQ	1370
	WMBM	1500
	WMC	780
	WNBR	1430
	WREC	600
Nashville I-19	WBAW	1490
	WLAC	1490
	WSM	650
Springfield I-19	WSIX	1210
Union City I-18	WOBT	1310
<b>TEXAS</b>		
Amarillo J-12	KGRS	1410
	WDAG	1410
Austin L-14-b	KUT	1120
Beaumont M-16	KFDM	560
Breckenridge K-13	KFYO	1420
Brownsville O-14-b	KW/WG	1260
College Station M-13	WTAW	1120
Dallas L-15-a	KRLD	1040
	WFAA	1040
	WRR	1280
Dublin K-14	KFPL	1310
El Paso L-10	WDAH	1310
Fort Worth L-14-a	KFJZ	1370
	KFQB	1240
	WBAP	800
Galveston M-15-b	KFLX	1370
	KFUL	1290
Goldthwaite L-13	KGKB	1500
Greenville K-15	KFPM	1310
Harlingen O-14	KRGV	1260
Houston M-15-a	KPRC	920
	KTUE	1420
Richmond M-15	KGHX	1500



INDEX BY LOCATIONS WITH MAP KEY

San Angelo M-12	KGFI	1310	Tacoma B-1-a	KMO	1340
	KGKL	1370		KVI	1340
San Antonio M-14-a	KGCI	1370	<b>WEST VIRGINIA</b>		
	KGDR	1500	Charleston H-22	WOBU	580
	KGRC	1370	Clarksburg G-22	WQBJ	1200
	KTAP	1420	Fairmont G-23	WMMN	890
	KTSA	1290	Huntington G-22	WSAZ	580
	WOAI	1190	Wheeling G-22	WWVA	1160
Waco L-15-b	WJAD	1240	<b>WISCONSIN</b>		
Wichita Falls K-14	KGKO	570	Beloit E-18-b	WEBW	600
<b>UTAH</b>			Eau Claire D-17	WTAQ	1330
Ogden F-7-b	KFUR	1370	Fond du Lac D-18-d	KFIZ	1420
Salt Lake City F-7-c	KDYL	1290	Kenosha E-19	WCLO	1200
	KSL	1130	La Crosse E-17	WKBH	1380
<b>VERMONT</b>			Madison E-18-2	WHA	570
Burlington D-26-a	WCAX	1200		WIBA	1210
Springfield D-26-b	WNBX	1200	Manitowoc D-19	WOMT	1210
<b>VIRGINIA</b>			Milwaukee E-19-a	WHAD	1120
Arlington G-24-d	NAA	690		WISN	1120
Newport News	WGH	1310		WTMJ	620
Norfolk I-24	WBBW	1200	Poynette D-18-e	WIBU	1310
	WPOR	780	Racine E-19	WRJN	1370
	WTAR	780	Sheboygan C-18	WHBL	1410
Petersburg I-24	WLBG	1200	Stevens Point D-18-b	WLBL	900
Portsmouth I-24	WSEA	780	Superior B-17	WEBC	1280
Richmond H-24	WBBL	1370	West De Pere D-19	WHBY	1200
	WMBG	1210	<b>WYOMING</b>		
	WRVA	1110	Laramie F-10	KFBU	600
	WTAZ	1210	<b>CANADA</b>		
Roanoke H-23	WDBJ	930	<b>ALBERTA</b>		
<b>WASHINGTON</b>			Calgary	CFAC	690
Aberdeen B-1	KXRO	1420		CFCN	690
Bellingham A-1	KVOS	1200		CHCA	690
Everett A-2	KFBL	1370		CJCJ	690
Lacey B-2-b	KGY	1200		CNRC	690
Longview B-1	KUJ	1500	Edmonton	CHMA	580
Pullman B-4	KWSC	1390		CJCA	580
Seattle B-2-a	KFQW	1420		CKUA	580
	KJR	970		CNRE	580
	KKP	1370	Lethbridge	CJOC	1120
	KOL	1270	Red Deer	CHCT	840
	KOMO	920		CKLC	840
	KPCB	1210	<b>BRITISH COLUMBIA</b>		
	KPQ	1210	Chilliwack	CHWK	1210
	KRSC	1120	Kamloops	CFJC	1120
	KTW	1270			
	KVL	1370			
	KXA	570			
Spokane A-4	KFIO	1230			
	KFPY	1390			
	KGA	1470			
	KHQ	590			

INDEX BY LOCATIONS WITH MAP KEY

Sea Island	CJOR	1030	QUEBEC		
Vancouver	CHLS	730	Montreal	CFCF	730
	CKCD	730		CHYC	730
	CKFC	730		CKAC	730
	CKMO	730		CNRM	730
	CKWX	730	Quebec	CHRC	880
Victoria	CNRV	1030		CKCI	880
	CFCT	630		CKCV	880
MANITOBA			St. Hyacinthe	CNRQ	880
Winnipeg	CKY	780		CKSH	1010
	CNRW	780	SASKATCHEWAN		
NEW BRUNSWICK			Fleming	CJRW	1010
Fredericton	CFNB	1210	Moose Jaw	CJRM	1010
Moncton	CNRA	630	Regina	CHWC	960
St. John	CFBO	890		CJBR	960
NOVA SCOTIA				CKCK	960
Halifax	CHNS	930	Saskatoon	CNRR	960
ONTARIO				CFQC	910
Bowmanville	CKGW	960	Yorkton	CJHS	910
Brantford	CKCR	1010		CNRS	910
Chatham	CFCO	1210	HAITI	CJGX	630
Cobalt	CKMC	1210	Port au Prince	HHK	830
Hamilton	CHCS	880	MEXICO		
	CHML	880	Chihuahua	CZF	970
	CKOC	880	Mazatlan	CYR	630
Iroquois Falls	CFCH	600	Merida	CYY	550
King Twp.	CFRB	960	Mexico City	CYA	1000
Kingston	CFMC	1120		CYB	1090
	CFRC	1120		CYH	800
London	CJGC	910		CYJ	750
Midland	CKPR	1120		CYL	750
Ottawa	CKCO	690		CYO	710
	CNRO	690		CYX	920
Prescott	CFLC	1010	Oaxaca	CZE	860
Preston	CKPC	1210	Puebla	CYF	1130
Toronto	CFCA	840	Tampico	CYU	960
	CFCL	580	Torreón	CYQ	930
	CHNC	580	Vera Cruz	CYM	1330
	CJBC	580		CYC	890
	CJBC	840	CUBA		
	CJBC	960	Cienfuegos	6BY	1150
	CJSC	580	Elia	7SR	860
	CKCL	580	Havana	PWX	750
	CKNC	580		2BB	1200
	CKOW	840		2LR	1280
	CNRT	840		2MG	1050
PRINCE EDWARD				2OK	860
ISLAND				2OL	1170
Charlottetown	CFCY	960		2RK	950
	CHCK	960		2TW	1110
Summerside	CHGS	1120	Tuinucu	2UF	1090
				6KW	880

# WHAT'S ON THE AIR TONIGHT?

A Weekly Calendar

## Leading Features of the Network Programs

Time is given by Eastern Standard. For Central Time, subtract one hour, for Mountain Time, two hours and for Pacific Time, three hours.

Station lists beginning with WFAF and WJZ are the National Broadcasting Co. Inc., while those beginning with WABC and WOR are the Columbia Broadcasting System.

### Sunday

#### 1:30-2:00 Peerless Reproducers

WEAF	WLIT	WWJ	WOW	WTMJ
WEHI	WRC	WSAI	WDAF	WHAS
WTIC	WGY	KSD	KVOO	WSM
WJAR	WGR	WOAI	WFAA	WBT
WTAG	WCAE	KYW	KPRC	WCSH
WTAM				

#### 2:00-3:00 Roxy Symphonic Concert

WJZ	WBZ	WBZA	WBAL	KYW
KDKA	WJR	WTMJ	WREN	

#### 3:00-4:00 Symphonic Hour

WABC	WMAK	WAIU	WOWO	WSPD
WNAC	WCAO	WKRC	KMOX	WHK
WEAN	WJAS	WGHP	KMBC	WCAU
WFBI	WADC	WMAQ	KOIL	WLBW
WMAL				

#### 3:00-4:00 Young People's Conference

WJZ	WLW	KWK	WBT	WBAL
WSB	KPRC	KSTP	WREN	WTMJ

#### 4:00-4:30 Continentals

WJZ	WBAL	WHAM	KWK
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#### 4:00-5:00 Cathedral Hour

WABC	WMAK	WAIU	KMOX	WHK
WNAC	WCAO	WKRC	KMBC	WMAQ
WEAN	WJAS	WGHP	KOIL	WCAU
WFBI	WADC	WOWO	WSPD	WLBW
WMAL				

#### 4:00-5:00 Dr. S. Parkes Cadman

WFAF	WFEI	WTIC	WJAS	WTAG
WHAS	WCSH	WTIT	WGY	WBT
WGR	WCAE	WSAI	WSB	WFAA
WOW	KVOO	WSM	KOA	

#### 5:00-5:25 South Sea Islanders

WJZ	WBAL	WHAM	KWK
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#### 5:30-6:00 Dr. Harry Emerson Fosdick

WJZ	WBZ	WBZA	WBAL	WLW
KWK	WREN	WHAM		

#### 5:40-6:00 Arcadie Birkenholz, Concert Violinist

WEAF	WGR	WCAE	KSD	WRC
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#### 6:00-6:30 The Stetson Parade

WEAF	WTIC	WJAR	WTAG	WCSH
WFI	WRC	WGY	WGR	WCAE
WTAM	WWJ	WSAI	KSD	WEEI

#### 6:30-7:00 Acousticon Hour

WEAF	WFEI	WRC	WGY	WDAF
WCAE	WTAM	WWJ	WSAI	WOW
WCSH	WFI	WGR	KSD	WTIC
WJAR	WTAG			

#### 6:30-7:00 Whittall Anglo-Persians

WJZ	WBZ	WBZA	WBAL	WHAM
KDKA	WLW	WJR	KYW	KWK
WREN	KOA	WCCO	WTMJ	KSTP

#### 7:00-7:30 Old Company's Program—Reinald Werrenrath

WEAF	WEEI	WTIC	WJAR	WTAG
WCSH	WFI	WRC	WGY	WGR

#### 7:30-9:00 Major Bowes' Family

WEAF	WTIC	WRC	WJAR	WGY
WCAE	WWJ	KSD	WOW	WTAM
WHAS	WSM	WMC	WSB	WSAI

#### 8:00-8:15 The Enna Jettick Melodies

WJZ	WBZ	WBZA	WBAL	WHAM
KDKA	WTMJ	WJR	KYW	KWK
WREN	WMC	WSB	WHAS	WSM
KVOO	WFAA	WOAI	KSTP	KPRC

#### 8:15-9:15 Colliers Radio Hour

WJZ	WBZ	WBZA	WBAL	WHAM
KDKA	WJR	WLW	KYW	KWK
WREN	KOA	KSTP		

#### 8:30-9:00 La Palina Hour

WABC	WFBI	WADC	WOWO	WSPD
WNAC	WKRC	WGHP	KMBC	KMOX
WEAN	WJAS	KOIL	WHK	WCAU
WCAO	WBBM	WLBW	WMAL	

#### 9:00-9:15 "Our Government" by David Lawrence

WEAF	WTIC	WJAR	WFAA	WMC
WSB	WTAG	WCSH	WRC	WOW
WGR	WCAE	WSAI	KSD	KVOO
WHAS	WSM			

#### 9:00-10:00 Majestic's Two Black Crows

WABC	WMAK	WKRC	KMOX	WMAF
WNAC	WCAO	WGHP	KMBC	WICC
WEAN	WJAS	WOWO	KOIL	WHK
WFBI	WADC	WSPD	KGA	WMAL
WBBM	WLBW	KFRC	KPLA	WCAU
KYA	KTAB	KMTR	KEX	KJR

#### 9:15-9:45 Utica Jubilee Singers

WJZ	WBAL	KDKA	KWK	WREN
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#### 9:15-10:15 Atwater Kent Radio Hour

WEAF	WEEI	WRC	WGR	KSD
WCAE	WWJ	WSAI	WGN	

#### 9:45-10:00 El Tango Romantico

WJZ	KDKA	KWK	WREN
WBZ	WBZA	WHAM	

**10:00-10:30 The Adventurers**

WOR	WCAU	WNAC	WEAN	WFBL
WMAK	WCAO	WJAS	WADC	WAIU
WKRC	WGHP	WMAQ	KMOX	KMBC
KOIL	WSPD	WHK	WLBW	WMAL
WCWK				

**10:00-10:30 De Forest Audions**

WABC	WCAU	WNAC	WEAN	WFBL
WMAK	WCAO	WJAS	WADC	KMOX
WKRC	WGHP	WBBM	WOWO	WHK
KMBC	KOIL	WSPD	WLBW	WMAL

**10:30-11:00 Thirty Minute Men**

WOR	WCAU	WNAC	WEAN	WFBL
WMAK	WCAO	WJAS	WADC	WAIU
WKRC	WGHP	WMAQ	KMOX	KMBC
KOIL	WSPD	WHK	WLBW	WMAL
WCWK				

**10:30-11:00 Academy of Arts & Letters**

WABC	WCAU	WNAC	WEAN	WFBL
WMAK	WCAO	WJAS	WADC	KMOX
WKRC	WGHP	WSPD	WOWO	WHK
KMBC	KOIL	WLBW	WMAL	

**Monday****10:00-10:30 Dr. Royal S. Copeland**

WJZ	WBZ	WBZA	WLW	WHAM
KDKA	WJR	WRC	KWK	WREN
KFKX				

**11:15-11:45 Radio Household Institute**

WEAF	WEEI	WTIC	WJAR	WTAG
WCSH	WLIT	WRC	WGY	WGR
WCAE	WTAM	WWJ	WSAI	KSD
KYW				

**6:00-6:25 Waldorf-Astoria Dinner Music**

WEAF	WRC	WCAE	WWJ	WTAG
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**7:30-7:45 "The World Today" by James G. MacDonald**

WEAF	WLIT	WGR	WSAI	WFAA
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**7:30-8:30 Roxy and his Gang**

WJZ	WBZ	WBZA	WHAM	KDKA
KWK	WJR	WSM	WSB	WBAL
WREN	WBT	WRC	KOA	

**8:00-8:30 United Choral Singers**

WOR	WFAN	WNAC	WEAN	WFBL
WMAK	WCAO	WJAS	WADC	WAIU
WKRC	WMAQ	WOWO	KMOX	KMBC
KOIL	WMAL	WCWK	WHK	

**8:00-8:30 Voice of Firestone**

WEAF	WEEI	WTIC	WJAR	WTAG
WCSH	WLIT	WRC	WGY	WGR
WCAE	WWJ	KSD	WOW	WDAF
KVOO	WFAA	KPRC	WOAI	WBEC
KOA	WTMJ	KYW	WHAS	WSM
WMC	WSB	WBT	WRVA	WJAX

**8:30-9:00 Ceco Couriers**

WOR	WNAC	WEAN	WFBL	WAIU
WMAK	WCAO	WJAS	WADC	WKRC
WGHP	WMAQ	KMOX	KMBC	KOIL
WCAU	WHK	WSPD	WMAL	WCWK

**8:30-9:30 A. & P. Gypsies**

WEEI	WTIC	WJAR	WCSH	WLIT
WGY	WCAE	WTAM	WWJ	WSAI
WGN	KSD	WDAF	WRC	WTAG
WGR				

**8:30-9:00 Automatic Duo Disc Duo**

WJZ	WBZ	WBZA	WBAL	WHAM
KDKA	WLW	KYW	KWK	WREN
KOA	WJR	KSTP		

**9:00-9:30 Lowney Radio Hour**

WOR	WCAU	WNAC	WEAN	WFBL
WMAK	WCAO	WJAS	WADC	WAIU
WKRC	WGHP	WMAQ	KMOX	KMBC
WSPD	WCWK	WHK	WLBW	KOIL
WMAL				

**9:00-9:30 Neapolitan Nights**

WJZ	KDKA	WREN
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**9:30-10:00 General Motors Family Party**

WEAF	WEEI	WTIC	WJAR	WCSH
WLIT	WTAG	WRC	WGY	WGR
WCAE	WTAM	WWJ	WSAI	WGN
WTMJ	KSD	WOW	WDAF	KVOO
WFAA	KPRC	WOAI	WHAS	WSM
WSB	WBT	WJAX	KHQ	WMC
KGO	KFI	KGW	KOMD	

**9:30-10:00 Warner Bros. Vitaphone Jubilee**

WOR	WCAU	WNAC	WEAN	WFBL
WMAK	WCAO	WJAS	WADC	WAIU
WKRC	WGHP	WMAQ	KMOX	KMBC
WSPD	WHK	WLBW	KOIL	WMAL
WCWK				

**9:30-10:00 Real Folks**

WJZ	WBZ	WBZA	WBAL	WHAM
KDKA	WJR	WLW	KYW	KWK
WREN				

**10:30-11:00 National Grand Opera**

WEAF	WGR	WWJ	KSD	WOC
WHAS	WRC	WFAA	WSAI	WLIT

**Tuesday****4:30-5:00 Auction Bridge Game**

WEAF	WEEI	WTIC	WJAR	WTAG
WCSH	WLIT	WRC	WGY	WGR
WCAE	WTAM	WWJ	WSAI	WGN
WTMJ	KSD	KOA	WOW	WDAF
KVOO	WFAA	KPRC	WOAI	WHAS
WSM	WMC	WSB	WBT	

**6:00-6:55 Waldorf-Astoria Dinner Music**

WEAF	WEEI	WTIC	WRC	WCAE
WWJ				

**7:30-8:00 Soconyland Sketches**

WEAF	WEEI	WTIC	WJAR	WTAG
WCSH	WGY	WGR		

**7:30-8:00 In Memory's Garden**

WJZ	WBZ	WBZA	WLW	WHAM
KWK				

**8:00-8:30 The Sealy Air Weavers**

WJZ	WBZ	WBZA	WBAL	WHAM
KDKA	WJR	WLW	KYW	WOAI
WREN	KVOO	WFAA	KPRC	KWK
KOA				

**8:00-9:00 The Mediterraneans**

WEAF	WTIC	WTAG	WFI	WRC
WGY	WCAE	WWJ	KSD	WOW
KOA				

**8:30-9:00 Michelin Hour**

WJZ	WBZ	WBZA	WBAL	WHAM
KVOO	WFAA	KPRC	WOAI	WJR
KDKA	KYW	KWK	WREN	

**9:00-10:00 Eveready Hour**

WEAF	WEEI	WJAR	WFI	WRC
WGY	WGR	WCAE	WTAM	WWJ
WSAI	WGN	KSD	WMC	WSR
WDAF	WAS	WSM	WTIC	KOMO
WOW	KHQ	KVOO	KPRC	WFAA
WOAI	KGO	KFI	KGW	

**9:00-10:00 United Light Opera Company**

WABC	WFAN	WNAC	WEAN	WFBL
WCAO	WJAS	WADC	WKRC	WGHP
WOWO	KMOX	KMBC	KOIL	WSPD
WHK	WMAL	WLBW	WLBW	

**9:30-10:00 Dutch Masters Minstrel**

WJZ	WTMJ	WBZ	WBZA	WBAL
WHAM	KDKA	WLW	KYW	WREN
WJR				

**10:00-10:30 Clicquot Club Eskimos**

WEAF	WEEI	WTIC	WJAR	WCSH
WFI	WRC	WGY	WCAE	WTAM
WWJ	WSAI	WTMJ	KSD	WMC
WDAF	KVOO	WFAA	KPRC	WOAI
WHAS	WSM	WSR	WBT	KOA
WTAG	WGR	KYW	WOW	

**10:00-11:00 Hank Simmons' Show Boat**

WABC	WFAN	WNAC	WEAN	WFBL
WCAO	WJAS	WADC	WKRC	WGHP
WOWO	KMOX	KMBC	KOIL	WSPD
WHK	WMAL	WKBW	WLBW	

**10:00-11:00 Works of Great Composers**

WJZ	WRC	KWK		
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**11:00-12:00 Ben Bernie's Hotel Roosevelt Orchestra**

WEAF	WCAE	WWJ	WTMJ	KOA
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**12:00-1:00 Guy Lombardo Royal Canadians**

WABC	WJAS	WBBM	KMBC	
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**Wednesday****10:00-10:30 Dr. Royal S. Copeland**

WJZ	WBZ	WBZA	WHAM	KDKA
WJR	KWK	WREN		

**10:00-11:00 National Home Hour**

WEAF	WEEI	WTIC	WJAR	WTAG
WCSH	WFI	WRC	WGR	WGY
WCAE	WEAR	WWJ	WSAI	KYW
WTMJ	KSD			

**11:00-11:30 Radio School of Cookery**

WJZ	WBZ	WBZA	WHAM	KDKA
WLW	KWK			

**11:15-11:45 Radio Household Institute**

WEAF	WEEI	WTIC	WJAR	WTAG
WCSH	WLIT	WRC	WGY	WGR
WCAE	WTAM	WWJ	WSAI	KYW
KSD				

**6:00-6:25 Waldorf-Astoria Dinner Music**

WEAF	WRC	WCAE	WWJ	WTAG
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**7:30-8:00 La Touraine Tableaux**

WEAF	WEEI	WTIC	WJAR	WTAG
WCSH	WGY	WGR	WCAE	WWJ
WTAM				

**7:45-8:00 Frederic William Wile**

WRC	WJZ	WBAL	KDKA	WLW
WJR	KWK	WBZ	WBZA	

**8:00-9:00 American Magazine—Home Companion Hour**

WEAF	WEEI	WTIC	WJAR	WTAG
WCSH	WGY	WGR	WCAE	WLIT
WRC	WWJ	WSAI	KYW	KSD
WDAF				

**8:30-9:00 Sylvania Foresters**

WJZ	KDKA	WBZ	WBZA	WBAL
WHAM	WLW	WJR	WGN	KWK
WREN				

**8:30-9:00 The Columbians**

WOR	WNAC	WEAN	WFBL	WMAK
WJAS	WADC	WMAQ	KMOX	KOIL
WLBW	WMAL	WCCO		

**9:00-9:30 Smith Brothers**

WJZ	WBZ	WBZA	WBAL	WHAM
WLW	WJR	KYW	KWK	WREN
KDKA				

**9:00-9:30 Ipana Troubadours**

WEAF	WEEI	WTIC	WJAR	WTAG
WCSH	WRC	WGY	WGR	WCAE
WTAM	WWJ	WSAI	KPRC	WOAI
WHAS	WSM	WMC	WSB	WBT
KOA	WTMJ	KSD	WOW	WDAF
WBAP	WGN			

**9:00-9:30 NR Millionaires**

WOR	WCAU	WNAC	WEAN	WFBL
WMAL	WCAO	WJAS	WADC	WLBW
WKRC	WGHP	WMAQ	WOWO	KMOX
KMBC	WSPD	KOIL	WHK	

**9:30-10:00 La Palina Smoker**

WOR	WCAU	WNAC	WEAN	WFBL
WMAK	WCAO	WJAS	WADC	KMOX
WKRC	WGHP	WMAQ	WOWO	KOIL
KMBC	WSPD	WHK	WMAL	WLBW

**9:30-10:00 Blue Danube Nights**

WJZ	WJR	KWK		
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**9:30-10:30 Palmolive Hour**

WEAF	WJAX	WSM	WMC	WSB
WBT	WEEI	WRC	WSAI	WTIC
WGY	WGN	WDAF	WJAR	WGR
KSD	KVOO	WTAG	WCAE	KPRC
WFAA	WCSH	WTAM	WOAI	KOA
WLIT	WWJ	WOW	WTMJ	WHAS

**10:00-10:30 Kolster Radio Hour**

WOR	WFBL	WADC	WOWO	WHK
WCAU	WMAK	WKRC	KMOX	KOIL
WNAC	WCAO	WGHP	KMBC	WMAL
WEAN	WJAS	WMAQ	WSPD	WLBW

**10:00-11:00 Balkite Hour**

WJZ	WBZ	WBZA	WHAM	KDKA
WBAL	WLW	WJR	KYW	WENR
KWK				

**10:30-11:00 Night Club Romances**

WOR	WMAK	WFBL	WOWO	WSPD
WCAU	WCAO	WKRC	KMOX	WHK
WNAC	WJAS	WGHP	KMBC	WLBW
WEAN	WADC	WMAQ	KOIL	WMAL

**11:00-12:00 Hal Kemp's Hotel Manger Orchestra**

WEAF	KSD	WOW
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**Thursday****10:00-10:30 Dr. Royal S. Copeland**

WJZ	WBZ	WBZA	WHAM	KDKA
WLW	WJR	KWK		

**11:00-11:30 Radio School of Cookery**

WJZ	WBZ	WBZA	WHAM	KDKA
WLW	WJR	KWK		

**6:00-6:55 Waldorf-Astoria Dinner Music**

WEAF	WRC	WCAE	WWJ
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**7:30-8:00 Coward Comfort Hour**

WEAF	WEEI	WTIC	WJAR	WTAG
WCSH				

**8:00-8:30 The Song Shop**

WEAF	WTIC	WJAR	WTAG	WCSH
WFI	WRC	WGY	WGR	WCAE
WTAM	WWJ	WSAI	WTMJ	WRHM
WOW	WDAF	KOA		

**8:00-8:30 Lehn and Fink Serenade**

WJZ	WBZ	WBZA	WBAL	WHAM
KDKA	WOAI	WLW	WIR	WFAA
KYW	KWK	WVOO	WFAA	KPRC

**8:30-9:00 Hoover Sentinels**

WEAF	WEEI	WTAM	WFI	WRC
WGY	WCAE	WWJ	WSAI	KVOO
KSD	WHAS	WSM	WOW	WSR
WFAA	WEBC	WMC	WDAF	WGN

**8:30-9:00 Champion Sparkers with Vaughn de Heath**

WJZ	WBZ	WBZA	WBAL	WHAM
KDKA	WLW	WREN	KWK	KYW

**9:00-9:30 Milady's Musicians**

WJZ	WHAM	KDKA	KWK	WEBC
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**9:00-9:30 Seiberling Singers**

WEAF	WEEI	WTIC	WJAR	WTAG
WCSH	WFI	WRC	WGY	WGR
WCAE	KPO	WWJ	WSAI	KFI
KSD	KHQ	KOA	WBT	WOW
WDAF	WFAA	KPRC	KVOO	WOAI
WHAS	WSM	WMC	WSB	WTMJ
KGO	KGW	KOMU		

**9:00-10:00 Sonora Phonograph Hour**

WABC	WFAN	WNAC	WEAN	WFBL
WMAL	WJAS	WADC	WKRC	WRBM
WGHP	WOWO	KMOX	KMBC	WSPD
WKBW	WHK	WLBW	KOIL	WOR
WCAO	WCCO			

**9:30-10:00 Swanee River**

WEAF	WTIC	WJAR	WTAG	WCSH
WFI	WRC	WCAE		

**9:30-10:00 Maxwell House Hour**

WJZ	WBZ	WBZA	WBAL	WHAM
KDKA	WLW	WJR	KYW	KSD
WRHM	WOC	WHO	WDAF	KVOO
WBP	KPRC	WHAS	WSM	WSB
WBT	KOA	WOW	WEBC	WJAX

**9:30-10:00 The Contraltos**

WEAF	WTIC	WJAR	WTAG	WCSH
WFI	WCAE			

**10:00-10:30 Royal Command to Liszt**

WABC	WFAN	WEAN	WNAC	WFBL
WJAS	WADC	WKRC	WGHP	WMAL
WOWO	KMOX	KMBC	WSPD	WKBW
WHK	WLBW	KOIL	WCAO	

**10:00-10:30 Halsey Stuart Hour**

WEAF	WEEI	WTIC	WJAR	WTAG
WCSH	WFI	WRC	WGY	WGR
WCAE	WTMJ	KSD	WRHM	WOW
KVOO	WFAA	WOAI	WHAS	WMC
WBT	WDAF	KOA	WSAI	WSB
WGN				

**10:30-11:00 The Wayside Inn**

WJZ	WBZ	WBZA	WBAL	WHAM
KDKA	WJR	WLW	KYW	KWK
KPK				

**10:30-11:30 Palais d'or Orchestra**

WEAF	WTIC	WFI	WGY	WGR
WWJ	WOW	WMC		

**10:30-11:00 The Merrymakers**

WABC	WFAN	WNAC	WEAN	WCAO
WKRC	WGHP	KMBC	WSPD	WHK
WLBW	WMAL	WJAS	WADC	WOWO
KMOX	KOIL	WKBW		

**12:00-1:00 Lombardo Royal Canadians**

WABC	WFAN	WRBM	WCCO	WKBW
KOIL	KMBC			

**Friday****10:00-11:00 National Home Hour**

WEAF	WEEI	WTIC	WTMJ	KSD
WJAR	WTAG	WCSH	WFI	WRC
WGY	WGR	WCAE	WTAM	WWJ
WSAI				

**11:00-12:00 RCA Educational Hour**

WJZ	WBZ	WBZA	WBAL	WHAM
KDKA	WJR	WLW	KWK	KYW
WOW	WDAF	KVOO	WFAA	KPRC
WOAI	KOA	WTMJ	WHAS	WSM
WSB	WRVA	WSMB	WBT	KFKX
WRC				

**11:15-12:00 Radio Household Institute**

WEAF	WEEI	WTIC	WJAR	WTAG
WCSH	WLIT	WRC	WGY	WCAE
WGR	WTAM	WWJ	WGY	WDAF
WSAI				

**12:00-12:15 Radio Home Bazaar**

WOR	WCAU	WNAC	WEAN	WFBL
WMAK	WCAO	WJAS	WADC	WAIU
WKRC	WGHP	KMBC	WHK	WLBW
WMAL	WBBM	WOWO	KOIL	

**12:00-12:15 Teeth, Health and Happiness**

WEAF	WEEI	WTIC	WJAR	WTAG
WCSH	WLIT	WRC	WOW	WCAE
WTMJ	WSAI	WWJ	WGY	WDAF

**6:00-6:55 Waldorf-Astoria Dinner Music**

WEAF	WTIC	WRC	WCAE	WWJ
WTAG				

**6:45-7:00 Enna Jettick Melodies**

WABC	WCAU	WNAC	WEAN	WFBL
WMAK	WJAS	WADC	WAIU	WBBM
WOWO	KMOX	KOIL	KMBC	WHK
WLBW	WMAL			

**7:30-8:00 Dixies Circus**

WJZ	WBZ	WBZA	WBAL	KDKA
WJR	WLW	KYW	WBT	WSB
WMC	WSM	WHAS		

**8:00-8:30 Interwoven Entertainers**

WJZ	WBZ	WBZA	WBAL	WHAM
KDKA	WLW	WJR	KYW	KWK
WREN	WBT	WSB	WMC	WSM
WHAS				

**8:00-8:30 The Crystal Gazer**

WOR	WCAU	WNAC	WEAN	WFBL
WMAK	WJAS	WKRC	WMAQ	KMOX
KOIL	WLBW	WMAL	WCCO	

**8:00-9:00 Cities Service Orchestra**

WEAF	WEEI	WLIT	WRC	WDAF
WCAE	WTAM	WWJ	WSAI	WGY
KSD	WOW	KVOO	WFAA	KOA
KYW				

**8:30-9:00 The Armstrong Quakers**

WJZ	WBAL	WJR	KWK	WSB
WBZ	WHAM	WLW	WREN	WMC
WBZA	KDKA	KYW	WBT	WHAS
WRHM	WSM			

**8:30-9:00 Then and Now**

WOR	WCAU	WNAC	WEAN	WFBL
WMAK	WJAS	WKRC	WMAQ	KMOX
KOIL	WLBW	WMAL	WCCO	

**9:00-9:30 An Evening in Paris**

WEAF	WEEI	WTIC	WRC	WGR
WCAE	WTAM	WWJ	WSAI	WCSH
WDAF	KSD	WJAR	WTAG	WGN
WFI	WJR			

**9:00-10:00 True Story Hour**

WOR	WMAK	WOWO	WSPD	WLBW
WCAU	WCAO	WKRC	KMOX	WMAL
WNAC	WJAS	WGHP	KMBC	WFBL
WEAN	WADC	WMAQ	KOIL	WHK

**9:00-10:00 Wrigley Review**

WJZ	WBZ	WBZA	WBAL	WHAM
KDKA	WLW	WJR	KYW	WREN
WHAS	WHAS	WSM	WMC	WSB
WBT	WRVA	WIAX	KGO	WFAA
KVOO	WOAI	KPO	KFI	KGW
KOMO	KHQ	KPRC	KOA	KSD

**9:30-10:00 Rapid Transit**

WEAF	WTAG	WLIT	WRC	WGY
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**10:00-10:30 Stromberg-Carlson Sextette**

WJZ	WBZ	WBZA	WBAL	WHAM
KDKA	WJR	WLW	KYW	KWK
WREN	KOA	WBT	WSB	WSM
WHAS	WOAI	KPRC	WFAA	KVOO
WMC	WTMJ			

**10:00-10:30 United Opera Company**

WOR	WFBL	WADC	WMAQ	WSPD
WCAU	WMAK	KOIL	WOWO	WHK
WNAC	WCAO	WKRC	KMOX	WLBW
WEAN	WJAS	WGHP	KMBC	WMAL

**10:00-11:00 Concert Bureau Hour**

WEAF	WEEI	WTIC	WTAG	WCSH
WLIT	WRC	WCAE	WWJ	WSAI
WGN	WDAF	WTMJ	KSD	WGR

**11:00-12:00 Hotel St. Regis Orchestra**

WEAF	WCAE	WWJ	KOA	WOW
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**Saturday****11:15-11:30 Radio Household Institute**

WEAF	WEEI	WRC	WTIC	KYW
WJAR	WTAG	WCSH	WLIT	WGR
WCAE	WTAM	WWJ	WSAI	

**3:30-4:30 RCA Demonstration Hour**

WBZ	WBZA	WJZ	WHAM	KDKA
WLW	WJR	KYW	KWK	KOA
WOAI	WHAS	WMC	WSB	KPRC
WFAA	KVOO	WDAF	WOW	WTMJ
WRC	WBT			

**6:00-6:55 Waldorf-Astoria Dinner Music**

WEAF	WEEI	WRC	WCAE	KOA
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**7:45-8:00 A Week of the World's Business**

WJZ	WBAL	WSM	KDKA	WLW
KYW	KWK	KOA	WBZ	WHAS
WFAA	WTMJ	WRC		

**8:00-8:30 Lew White Organ Recital**

WEAF	WTIC	WCAE	WSAI	KSD
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**8:00-9:00 National Orchestra**

WEAF	WEEI	WTIC	WCSH	WFI
WRC	WGY	WGR	WCAE	WWJ
KSD	WOW	KOA	WHAS	

**8:30-8:45 Sam Herman, Xylophonist**

WJZ	WBZ	WBZA	KWK	KDKA
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**9:00-10:00 Philco Hour**

WJZ	KPRC	KVOO	WOW	KOMO
WFI	WCCO	WTMJ	WHAM	KHQ
KWK	WBAL	WHAS	WBZ	WBZA
KDKA	WJR	WREN	KOA	WBT
WSB	WMC	WLW	WOAI	KYW
KWK	WBAP	WRC	KGU	

**10:00-11:00 Lucky Strike Orchestra**

WEAF	KOA	WJAX	WRC	KSD
WEEI	WGR	KPO	WTMJ	KSL
WTIC	WCAE	WOW	WCCO	KHQ
WJAR	WTAM	WDAF	WJAS	KGO
WTAG	WWJ	KVOO	WMC	KFI
WCSH	WSAI	WFAA	WSB	KGW
WFI	WGN	KPRC	WBT	KOMO

## THE QUESTION BOX

(Continued from page 2)

The impression that insulated wire can not be successfully used comes from the fact that so little is used on account of its cost. Generally speaking, insulated wire costs twice as much as bare wire of the same diameter.

Is there anything that may be used to improve the tone quality of our set without making any changes in the set itself?

Yes, a good output transformer or filter will prove valuable for this purpose. This is connected between the loud speaker and the set itself. Amplifiers may be purchased using the new power tubes that will greatly improve the tone quality of any set.

What effect have some twenty other aerials on the roof of our apartment on our radio? What can I do about it?

Generally such a condition accounts for considerable interference. You no doubt are familiar with the squeals and catcalls such a condition brings. The only remedy is to erect your aerial so as to be parallel to as few of the others as possible and if possible, above them. Satisfactory results under the conditions you mention can hardly be expected.

A neighbor told us that their electric set has cost them more to run than a new electric washer. Is this true?

Hardly, for even if the set were left on all the time it would not cost as much. The average electric set consumes only 60 watts, as much as an ordinary light bulb, as against the average 250 watt motor on the washing machine. An electric set will not cause a noticeable increase in the electric light bill where a washing machine always will.

Why must distilled water only be used in auto and radio batteries?

Because water from the city supply usually contains a certain amount of mineral salts which will deteriorate the

elements in storage batteries and shorten their life considerably. Only water free from impurities such as distilled water which may be purchased in any drug store should be used. Rain water or melted snow makes a very good substitute for the distilled water and may be had at no expense whatsoever.

What can you say of the underground antennas offered on the market today?

They possess little if any advantage over a well located and constructed outside antenna, in fact several types tested showed a decrease in both signal strength and sensitivity of the set. Do not think from this that there are not good underground antenna systems possible, — there are, but none of the types advertised today incorporates any of their features.

We have a set which is now three years old but the cabinet is of an expensive type, in fact, it is worth as much as several radios. Can a new set be purchased to mount in this cabinet?

Yes, this is quite practical. Most modern A. C. sets are constructed in 2 units, the receiver chassis and the power pack. This construction lends itself to installation in practically any cabinet in use today. We would suggest that a modern speaker be selected and installed at the same time.

One can not help but notice the inaccuracy of the time given as the correct time by many radio announcers. Isn't there a standard time signal?

Yes, there is a standard time signal in the form of a series of dots and dashes sent out from the naval station at Arlington, Virginia, which is re-broadcast by many stations twice daily, at noon and 10 P. M. The time thus given is standard and absolutely correct. It is used on the high seas to check ships' chronometers as it is originally obtained from the government naval observatory. Most other announce-



ments must be accepted only as the approximate time.

Can more than one speaker be operated from a regular seven tube A. C. set?

Yes, several may be operated by connecting them in parallel. The speakers may be of the same or different types, the only precaution to be observed is that they be connected in shunt and not in series.

Can A. C. Tubes be rejuvenated? I have some that are old and the dealer says they are low.

No, these tubes are not of the type that may be rejuvenated. Generally speaking these tubes will give a thousand hours satisfactory service, after which time they must be replaced with new tubes.

Since the change in wave lengths, I cannot tune in any of the stations which formerly were received below 18 on the dials of my set. Is there any remedy for this?

Yes. Either by removing from five to eight turns on the secondary coils of the radio frequency and tuning transformers, or using smaller capacity tuning condensers. With many home-built sets this is a simple task. On such factory-built receivers which may be affected in this way, it is suggested that they be taken to any reliable dealer who maintains a service department.

Is it true that a lightning arrester is not necessary with the modern electric set?

Decidedly not. If an antenna is used, regardless of the kind of a set used, a good lightning arrester must be properly installed for your own protection under existing fire-underwriters' regulations.

What are the automatic tuning receivers we hear so much of today?

These are sets of the usual type to which have been added a number of keys, not more than twelve up to the present time. These keys may be set for any twelve different stations. When set, it is necessary to line up all

the keys and then depress the one set for the station to which you desire to listen. The same result is accomplished by keeping a record of where stations are received and setting the tuning dial at that point.

Are the so-called wave traps now generally for sale satisfactory for use with my single dial electric set?

Yes. When properly connected and used, it makes possible the elimination of interfering stations, provided, however, that it is not situated too near the receiver. In general, a good wave trap will sharpen the tuning of any set it may be used with.

Is an outside aerial necessary for good results from my six tube A. C. set?

This question may be answered by both yes and no. The answer is "no" if you are satisfied with nearby and local reception, and "yes" if you must have distance with good volume. Generally speaking, all of the modern receivers unless specially designed for other antenna, operate best when connected to a good outside antenna system.

What is the ordinary life of the gas filled (no filament) rectifier type used in B eliminators?

One thousand hours is considered good service from this type of tube and they are generally guaranteed for that length of time. If the set is used in the evenings, say about three hours daily, this tube will ordinarily be good for a year's service before replacement is necessary.

Can one of the new dynamic speakers be used on my six tube battery set which is now two years old?

Yes, providing you are using a power tube in the output stage delivering sufficient voltage to operate satisfactorily. Many power amplifiers are available making it possible to use a dynamic speaker on sets not using power tubes and without making any changes in the set itself.





