

FIRST 1929 EDITION

RADIO INDEX

"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 kcys. 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	1800	Spokane, Wash.
WJL	200	Livonia, Mich.
WEE	1800	Houston, Texas
WOW	1800	Ann Arbor, Mich.
WEMG	1800	Marion Springs, Mich.

600 kilocycles 499.7 meters

GFCH	250	Troquais Falls, Ont.
KVHE	500	Lafayette, Wis.
KFSO	500	San Diego, Calif.
WCAD	250	Baltimore, Md.
WEDW	250	Beloit, Wis.
WQAS	500	Lawrenceburg, Tenn.
WRCC	500	Memphis, Tenn.
WTC	250	Hartford, Conn.

610 kilocycles 491.5 meters

KRRC	1000	San Francisco, Calif.
WDAF	1000	Railway City, Mo.
WJAN	500	Philadelphia, Pa.
WIP	500	Philadelphia, Pa.
WGO	1000	Kansas City, Mo.

620 kilocycles 483.6 meters

KFAD	500	Phoenix, Ariz.
KCW	1000	Portland, Me.
WDAE	1000	Tampa, Fla.
WDBQ	1000	Orlando, Fla.
WLBZ	500	Dover-Foxcroft, Me.
WNLJ	1000	Wilmington, N. C.

630 kilocycles 475.9 meters

CFBW	500	Buffalo, N. Y.
CJGX	500	Yorkton, Sask.
CHSA	500	Chicago, Ill.
CYR	250	Manassas, Va.
WJLH	500	Columbia, Mo.
WGRH	500	Evansville, Ind.
WMSL	500	Washington, D. C.
WSS	500	Jefferson City, Mo.

640 kilocycles 468.5 meters

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

650 kilocycles 461.3 meters

WSM	5000	Nashville, Tenn.
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660 kilocycles 454.3 meters

WAAW	500	Omaha, Neb.
WEAF	50000	New York City

670 kilocycles 447.5 meters

WMAO	5000	Chicago, Ill.
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680 kilocycles 440.9 meters

KFO	5000	San Francisco, Cal.
WPTZ	5000	Raleigh, N. C.

76 74

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

75 73

Abilene Power & Paper Co.
Blings & S. Thomas
Airfax Radio Corp.
Monmouth Radio Co., Inc.
Beloit College
Youghan School of Music
WRCC, Inc.
Towheese Insurance Co.

74 72

Don Lee, Inc.
Kansas City Star Co.
Kyrene Broadcasting Co., Inc.
Citibid. Bldg., Inc.
Unity School of Christianity

73 71

Electrical Equipment Co
DeVos Publishing Co.
Tempo Publishing Co.
Balliet College, Inc.
Thompson I. Guernsey
Milliken Journal

72 70

Chicago Telephone Ass'n
Winning Grain Exchange
Canadian National Railways
Carolina Lignas
Southwestern College
Emmett on the Air, Inc.
M. A. Loebe Co.
State Marketing Bureau

70 68

Earle C. Anthony, Inc.
American Insurance Union

69 67

National Life & Accident Ins. Co.

68 66

Omaha Grain Exchange
National Broadcasting Co., Inc.

68 66

Chicago Daily News, Inc.

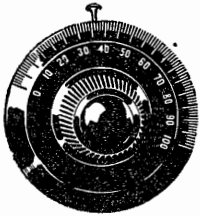
67 65

Hale Bros. & The Chronicle
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 kcys. 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 kcys. are 72-70 and the dial numbers for 660 kcys. are 69-67. If we now will set our dials for 70-68 it is obvious we will have our set tuned for 650 kcys. 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 kcys. Now it is clear that if we reset our dials at



RADIO IN DEX



F. C. BUTLER, Editor

FIFTH YEAR

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One Dollar the Year—Six Issues

Published Monthly, October to March

THE RADEX PRESS

P. O. Box 143

Cleveland, Ohio

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THE QUESTION BOX

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

WHAT 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."

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 blanket-ing 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 Beupre 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.

EVERY 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	WEEI	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	KFCB	W. K. Azbill	San Diego, Calif.		
6 XBH	KFOV	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	KJJR	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	52.05	509
8 XAO	WJR	WJR., Inc.	Detroit, Mich.	32.	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	AJJ	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

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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
Pulitzer Publishing Co.
Associated Broadcasters
The Shepard Stores
Ohio State University
Federal Radio Corp.
Kodel Radio Corp.

560 kilocycles 535.4 meters

KFDMM	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.
Sterchi 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.
WWNC	1000	Asheville, N. C.

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Wichita Falls Brdcstg. Co.
KMTR Radio Corp.
Pacific Development Radio Co.
University of Montana
American Radio Tel. Co.
University of Wisconsin
Nelson Bros. Bond & Mtg. Co.
W. F. 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.
CNRE	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 Brdcstg. Co.
McKellar Electric Co.
University of Iowa
Telegraph Publishing Co.

INDEX BY FREQUENCIES AND DIAL NUMBERS

590 kilocycles · 508.2 meters

KHQ 1000 Spokane, Wash.
 WCAJ 500 Lincoln, Nebr.
 WEEL 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

KFRG 1000 San Francisco, Calif.
 WDAF 1000 Kansas City, Mo.
 WFAN 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.
 WEAJ 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.
 CJCJ 250 Calgary, Alta.
 CKGO 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.
 Alvertan 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
 Sprott-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

CKY 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.
 WPOR 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.
WHOI 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 & Brdcastg. 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
2OK 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 Brdcastg. 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.
WGOC 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
LeSoleil
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 Brdcastg. 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 Excelsior
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 Sagona 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.
KPXF	250	Denver, Colo.
KGU	500	Honolulu, Hawaii
KOIN	1000	Portland, Ore.
WCSSH	500	Portland, Maine
WFIW	1000	Hopkinsville, Ky.

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Eugene P. O'Fallon, Inc.
Pikes Peak Brdcastg. Co.
Marion A. Mulroney
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

1060 kilocycles 282.8 meters

KWJJ 500 Portland, Ore.
 WBAL 500 Baltimore, Md.
 WJAG 500 Norfolk, Nebr.
 WTIC 500 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.
 WCBD 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.
 2UF 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.
 WLWL 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.
 CFRG 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 Brdcastg. 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. Pepper
 Stromberg-Carlson Tel. Mfg. Co.
 Jose Ganduxe

INDEX BY FREQUENCIES AND DIAL NUMBERS

1160 kilocycles 258.5 meters

WOWO 10000 Ft. Wayne, Ind.
 WWVA 5000 Wheeling, W. Va.

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Main Auto Supply Co.
 West Virginia Brdcstg. Corp.

1170 kilocycles 256.3 meters

KTNT 5000 Muscatine, Iowa
 WCAU 5000 Philadelphia, Pa.
 ZOL 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
 KFKZ 50 Kirksville, Mo.
 KFWC 100 Ontario, Calif.
 KFWF 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
 WBXY 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.
 WMAY 100 St. Louis, Mo.
 WMT 100 Waterloo, Iowa
 WNBO 15 Washington, Pa.
 WNBW 5 Carbondale, Pa.
 WNBX 10 Springfield, Vt.
 WPRC 100 Harrisburg, Pa.
 WQBJ 65 Clarksburg, W. Va.
 WRAF 100 La Porte, Ind.
 WRBL 50 Columbus, Ga.
 WWAE 100 Hammond, Ind.
 ZBB 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 Wireless Tel. Co.
 E. R. Irey 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. Gushard Dry Goods Co.
 Charles C. Carlson, Jr.
 K. & B. Electric Co.
 Kirk Johnson & Co.
 American Brdcstg. 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. Marrin
 Hammond-Calumet Brdcstg. Co.
 Bernardo Barrie

INDEX BY FREQUENCIES AND DIAL NUMBERS

1210 kilocycles 247.8 meters

CFCO	25	Chatham, Ont.
CFNB	50	Fredericton, 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.
WGRW	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.
WBHU	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
WLGI	50	Ithaca, N. Y.
WLSI	100	Cranston, R. I.
WMAN	50	Columbus, Ohio
WMBG	100	Richmond, Va.
WMBR	100	Tampa, Fla.
WOCL	25	Jamestown, N. Y.
WOMT	100	Manitowoc, Wis.
WPAW	100	Pawtucket, R. I.
WRBQ	100	Greenville, Miss.
WRBU	100	Gastonia, N. C.
WSBC	100	Chicago, Ill.
WSIX	50	Springfield, Tenn.
WTAX	100	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.
 Cutler'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 Denemark, Inc.
 Harry H. Carman
 Gulf Coast Music Co.
 Beardsley Specialty Co.
 Citizens Bank
 Capital Times-Strand Theatre
 Radiotel Mfg. Co., Inc.
 Robert S. Johnson
 Bucknell University
 Electric Construction Co.
 Mansfield Broadcasting Assn.
 Lutheran Assn. of Ithaca
 The Lincoln Studios, Inc.
 W. E. Hesklitt
 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.
WFAC	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
WOAM	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.
 KFNK 1000 Long Beach, Cal.
 KIDO 1000 Boise, Idaho
 KXL 500 Portland, Ore.
 WAAM 500 Newark, N. J.
 WCAL 1000 Northfield, Minn.
 WCGP 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 & Warinner, 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.
 WIBC 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. Wolff
 City of Dallas
 Jose Lara

1290 kilocycles 232.4 meters

KDYL 1000 Salt Lake City
 KFUL 500 Galveston, Texas
 KLCN 50 Blytheville, Ark.
 K TSA 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.
 KGEF 1000 Los Angeles, Calif.
 KTBI 1000 Los Angeles, Calif.
 KTBR 500 Portland, Ore.
 WBBR 1000 Roosevelt, 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
KFPL	15	Dublin, Texas
KFFM	15	Greenville, Texas
KFUP	100	Denver, Colo.
KFXJ	50	Edgewater, Colo.
KFXR	100	Oklahoma City
KGEZ	100	Kalispell, 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.
WFDL	100	Flint, Mich.
WFKD	50	Philadelphia, Pa.
WGAL	15	Lancaster, Pa.
WGH	100	Newport News, Va.
WHBP	100	Johnstown, Pa.
WHFC	100	Chicago, Ill.
WIBU	100	Poynette, Wis.
WJAK	50	Kokomo, Ind.
WKAU	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.
WNBK	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
Braun'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
Tirtsworth'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	Sioux 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.

INDEX BY FREQUENCIES AND DIAL NUMBERS

1350 kilocycles 222.1 meters

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

Greater St. Louis Brdcastg. Corp. Baruchrome Corp. Itallan 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

F. A. Buttery 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.

Leece Bros. Meier & Frank Co. George Kincaid Henry C. Allison George Roy Clough Peery Building Co. Citizens Publishing Co. Foster-Hall Tire Co. Wallace Radio Institute Liberato Radio Sales Home Auto Co. C. Merwin Dobyns Faith Tabernacle Assn. Lamond A. Hubbard Jay Peters KGKL, Inc., Oper. by Ragsdale 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
WCOS	500	Springfield, Ohio
WKBH	1000	La Crosse, Wisc.

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.
KWDCY	500	Minneapolis, Minn.
WHDI	500	Minneapolis, Minn.
WHK	1000	Cleveland, Ohio

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.		

INDEX BY FREQUENCIES AND DIAL NUMBERS

1400 kilocycles 214.2 meters

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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.
 WSLG 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

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KFLV 500 Rockford, Ill.
 KGRS 1000 Amarillo, Tex.
 WDAG 1000 Amarillo, Texas
 WDEL 500 Wilmington, Del.
 WHBL 500 Sheboygan, Wis.
 WSKG 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

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KFIF 50 Portland, Ore.
 KFIZ 100 Fond du Lac, Wis
 KFOU 100 Holy City, Calif.
 KFQW 100 Seattle, Wash.
 KFXD 50 Jerome, Idaho
 KFXY 100 Flagstaff, Ariz.
 KFYO 100 Breckenridge, Tex.
 KGCN 50 Concordia, Kansas
 KGCK 10 Vida, Mont.
 KGFF 100 Alva, Okla.
 KGFI 100 Los Angeles, Calif.
 KGFV 50 Ravenna, Nebr.
 KGHJ 50 Missoula, Mont.
 KGIW 100 Trinidad, Colo.
 KGGK 15 Sandpoint, Idaho
 KCTT 50 San Francisco, Cal.
 KICK 100 Red Oak, Iowa
 KMED 50 Medford, Ore.
 KOCW 100 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 100 Ottumwa, Iowa
 WIBR 50 Steubenville, Ohio
 WIL 100 St. Louis, Mo.
 WKBP 50 Battle Creek, Mich.
 WKBT 50 New Orleans, La.
 WLBK 100 Kansas City, Mo.
 WLBB 30 Farmingdale, N. Y.
 WLEX 100 Lexington, Mass.
 WMBC 100 Detroit, Mich.
 WMBH 100 Joplin, Mo.
 WMRJ 10 Jamaica, N. Y.
 WOBZ 60 Weirton, W. Va.
 WSRQ 100 Middletown, Ohio
 WSSH 100 Boston, Mass.
 WTBO 50 Cumberland, Md.

Benson Polytechnic Institute
 Commonwealth-Reporter
 W. E. Riker
 KFQW, 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
 Elmire-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

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

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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 Brcdstg. 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 Brcdstg. Corp.
 Camith Corp.
 Radio Investment Co.
 Doughty & Welch Electric Co.
 Toccoa Falls Institute

1460 kilocycles 205.4 meters

KSTP 10000 St. Paul, Minn.
WJSV 10000 Washington, D. C.

National Battery Brcdstg. 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 Brcdstg. 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 100 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.
WMBO 100 Brooklyn, N. Y.
WMES 50 Boston, Mass.
WMPC 30 Lapeer, Mich.
WNBf 50 Endicott, N. Y.
WNBQ 15 Rochester, N. Y.
WOO 100 Philadelphia, Pa.
WPSW 50 Philadelphia, Pa.
WRBJ 10 Hattiesburg, Miss.
WSAN 100 Allentown, Pa.
WTBQ 100 Wilmington, Del.
WWRL 100 Woodside, N. Y.

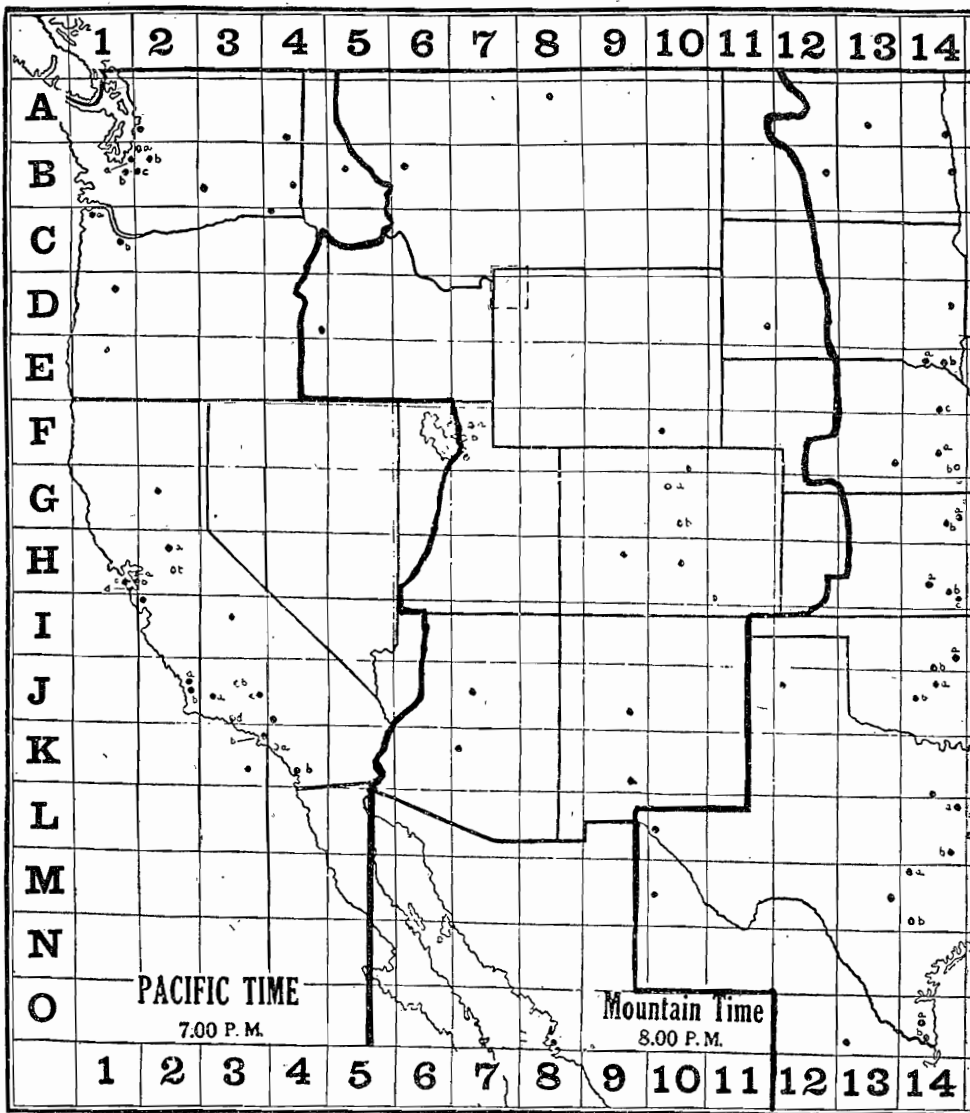
Santa Barbara Brcdstg. Co.
 Joe B. McShane
 Eagle Publishing Co.
 Berean Bible Class
 Ft. Bend County School Board
 Frank Wilburn
 Lovejoy & Kerfoot
 Schaeffer Radio Co.
 Pacific Broadcasting Foundation
 Albert B. Parfet Co.
 Albert A. Walker
 B. B. Musselman
 Arthur Faske
 D. R. Klenzie
 Alexander D. Trum
 Knox Battery & Electric Co.
 K. L. Ashbacker
 John N. Braby
 William S. Pote
 LeRoy Joseph Beebe
 Rev. John W. Sproul
 Seventh Day Adventist Church
 Paul J. Gollhofer
 Mass. Educational Society
 First M. E. Church
 Howitt-Wood Radio Co.
 Gordon P. Brown
 John Wanamaker
 School of Wireless Telegraphy
 Woodruff Furniture Co.
 Allentown Call Publishing Co.
 E. Brandt Boylan
 Wm. H. Reuman

AIR-LINE DISTANCES

FROM/TO	Albuquerque, N. Mex.	Atlanta, Ga.	Baltimore, Md.	Boise, Idaho	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.	Houston, Mich.	Jacksonville, Fla.	Kansas City, Mo.	Los Angeles, Calif.		
Albuquerque, N. Mex.	----	1273 670	774 1467	636 1577	1126 1248	1417 132	833 1360	228 666	561 803	588 773	1252 1492	717 663	1273 1273	575 1630	933 960	695 583	368 175	1363 762	218 1690	943 1221	1289 1019	956 560	880 662	675 1935	
Baltimore, Md.	1670 575	----	2055 558	1525 273	603 849	1234 454	----	249 307	918 310	236 1249	571 820	954 566	585 947	1239 1245	1154 964	808 682	942 2313	1263 1538	934 1304	1367 2098	1158 663	1015 1250	2590 1492		
Boise, Idaho	774 180	2055 558	----	1610 1872	1453 1663	1754 1505	1371 1155	1671 969	975 1765	1159 613	2067 1304	1574 1598	1415 1302	922 1015	1250 1492	1015 1250	2590 1492	1598 1415	1302 922	1015 1250	2590 1492	1015 1250	2590 1492		
Boston, Mass.	1967 933	358 2266	----	1681 398	849 737	550 1047	1102 1398	682 1445	471 287	1013 650	543 588	773 1252	1492 717	663 1273	575 1630	933 960	695 583	368 175	1363 762	218 1690	943 1221	1289 1019	956 560	880 662	675 1935
Brownsville, Tex.	838 960	1525 1610	1881 1575	1975 1234	1184 1402	1047 1102	1398 682	1445 471	287 1013	650 543	588 773	1252 1492	717 663	1273 575	1630 933	960 695	583 368	175 1363	762 218	1690 943	1289 1019	956 560	880 662	675 1935	
Buffalo, N. Y.	1577 695	273 1872	398 1126	583 603	1453 849	1234 454	----	249 307	918 310	236 1249	571 820	954 566	585 947	1239 1245	1154 964	808 682	942 2313	1263 1538	934 1304	1367 2098	1158 663	1015 1250	2590 1492		
Chicago, Ill.	1248 368	423 1663	737 1184	392 249	550 1047	1102 1398	682 1445	471 287	1013 650	543 588	773 1252	1492 717	663 1273	575 1630	933 960	695 583	368 175	1363 762	218 1690	943 1221	1289 1019	956 560	880 662	675 1935	
Cincinnati, Ohio	1437 550	305 1754	550 1402	175 307	218 1223	1047 1102	1398 682	1445 471	287 1013	650 543	588 773	1252 1492	717 663	1273 575	1630 933	960 695	583 368	175 1363	762 218	1690 943	1289 1019	956 560	880 662	675 1935	
Cleveland, Ohio	1313 1208	1505 637	1766 1047	1368 918	1090 1223	1047 1102	1398 682	1445 471	287 1013	650 543	588 773	1252 1492	717 663	1273 575	1630 933	960 695	583 368	175 1363	762 218	1690 943	1289 1019	956 560	880 662	675 1935	
Denver, Colo.	833 738	913 1155	1155 913	1020 762	310 509	617 607	1155 913	913 607	617 607	617 607	617 607	617 607	617 607	617 607	617 607	617 607	617 607	617 607	617 607	617 607	617 607	617 607	617 607	617 607	
Des Moines, Iowa	1360 595	398 1671	613 1398	218 236	234 94	1144 545	----	1475 745	1018 1111	850 1018	943 973	287 1013	650 543	588 773	1252 1492	717 663	1273 575	1630 933	960 695	583 368	175 1363	762 218	1690 943	1289 1019	
Detroit, Mich.	228 1293	1750 969	2067 682	1690 1249	1333 1521	554 980	1475 1161	----	973 1218	440 875	393 1400	943 973	287 1013	650 543	588 773	1252 1492	717 663	1273 575	1630 933	960 695	583 368	175 1363	762 218	1690 943	
El Paso, Tex.	968 1112	1163 975	1304 1445	923 571	618 838	642 397	745 1161	----	973 1218	440 875	393 1400	943 973	287 1013	650 543	588 773	1252 1492	717 663	1273 575	1630 933	960 695	583 368	175 1363	762 218	1690 943	
Fargo, N. Dak.	561 750	1239 1263	1574 471	1221 829	1369 1046	642 397	745 1161	----	973 1218	440 875	393 1400	943 973	287 1013	650 543	588 773	1252 1492	717 663	1273 575	1630 933	960 695	583 368	175 1363	762 218	1690 943	
Fort Worth, Tex.	803 698	1245 1538	1598 287	1289 954	847 1116	925 851	1111 713	1218 283	483 808	377 644	808 377	644 808	808 377	644 808	808 377	644 808	808 377	644 808	808 377	644 808	808 377	644 808	808 377	644 808	
Galveston, Tex.	588 901	1154 934	1413 1013	1019 566	747 816	925 851	1111 713	1218 283	483 808	377 644	808 377	644 808	808 377	644 808	808 377	644 808	808 377	644 808	808 377	644 808	808 377	644 808	808 377	644 808	
Hastings, Nebr.	773 498	964 1384	1303 650	956 585	569 787	749 488	761 802	875 749	458 1422	1422 393	1093 1277	666 901	----	1216 613	1787 216	952 2153	1192 413	1522 2070	1117 910	511 678	1675 819	838 1097	2446 634		
Hot Springs, Ark.	1252 947	808 1367	922 1540	1013 1013	1013 1013	1013 1013	1013 1013	1013 1013	1013 1013	1013 1013	1013 1013	1013 1013	1013 1013	1013 1013	1013 1013	1013 1013	1013 1013	1013 1013	1013 1013	1013 1013	1013 1013	1013 1013	1013 1013		
Houston, Mich.	1492 294	682 2098	1015 1025	890 861	628 768	1468 1024	832 1481	1400 943	799 1178	728 1216	1150 941	1468 983	1545 1287	1468 983	1545 1287	1468 983	1545 1287	1468 983	1545 1287	1468 983	1545 1287	1468 983	1545 1287	1468 983	
Jacksonville, Fla.	717 675	982 1158	1250 923	862 613	641 700	555 180	643 836	548 460	717 675	982 1158	1250 923	862 613	641 700	555 180	643 836	548 460	717 675	982 1158	1250 923	862 613	641 700	555 180	643 836	548 460	
Kansas City, Mo.	663 1935	2313 663	2590 1370	295 1471	1471 1892	2044 828	1433 1976	702 1426	1212 1423	1177 1437	1787 216	952 2153	1192 413	1522 2070	1117 910	511 678	1675 819	838 1097	2446 634	1492 294	682 2098	1015 1025	890 861	628 768	
Los Angeles, Calif.	1174 317	498 1653	823 938	385 727	1506 1133	777 802	481 410	627 878	485 821	978 822	448 492	591 176	830 591	370 1602	1710 610	958 2368	1258 1100	1184 1190	957 1068	1732 1338	1156 1662	1721 1150	941 1468	983 1545	
Memphis, Tenn.	980 905	948 1140	1125 1335	738 356	603 632	699 323	542 1156	219 877	1087 399	722 272	1192 413	1522 2070	1117 910	511 678	1675 819	838 1097	2446 634	1492 294	682 2098	1015 1025	890 861	628 768	1468 1024	832 1481	
Miami, Fla.	895 1790	1947 252	2124 1706	1740 1948	1578 1640	1018 523	646 1169	900 643	666 697	370 760	502 472	1777 1080	427 1001	1713 1359	536 1087	831 700	922 1079	825 938	1261 1150	941 1468	983 1545	1287 1468	983 1545		
Minneapolis, Minn.	1810 747	170 2153	188 1695	291 711	568 404	1628 1023	483 1902	1213 1398	1415 1275	1185 849	838 1097	2446 634	1492 294	682 2098	1015 1025	890 861	628 768	1468 1024	832 1481	1400 943	799 1178	728 1216	1150 941	1468 983	
Missoula, Mont.	1696 507	167 2137	467 1465	435 696	474 429	1562 983	523 1755	1258 1226	1195 1216	956 946	548 1009	8352 518	753	1173	1138	1490 659	1117	683	755	946	296	926	988	893	
Nashville, Tenn.	719 815	1026 1044	1280 1061	883 432	620 738	485 122	666 875	390 547	1098 185	1312 947	1098 185	1312 947	1098 185	1312 947	1098 185	1312 947	1098 185	1312 947	1098 185	1312 947	1098 185	1312 947	1098 185	1312 947	
New Orleans, La.	1748 663	90 2113	268 1614	278 664	501 343	575 972	444 1834	1186 1324	1335 1222	1051 827	758 1037	2388 1800	1065 357	1498 520	194 1863	478 1424	178 411	258 1151	258 1151	258 1151	258 1151	258 1151	258 1151	258 1151	
New York, N. Y.	330 1592	2002 793	2293 1023	1904 1451	1578 1745	565 1154	1685 347	1225 1320	1714 208	1592 952	1097 1140	967 825	931 924	1113 1300	2631 1107	2172 2367	349 2553	1944 2167	1765 1987	2063 985	1479 1975	1286 1348	1612 1885	1271 1733	
Norfolk, Va.	1628 470	128 2060	471 1428	375 618	399 353	1498 905	445 1695	1180 1170	1154 1142	897 870	952 937	2283 2542	1397 825	2172 2367	349 2553	1944 2167	1765 1987	2063 985	1479 1975	1286 1348	1612 1885	1271 1733	1638 2442	1397 825	
Oklahoma, Okla.	938 467	731 1339	1036 483	1580 1858	292 2099	917 1671	1260 1450	1567 793	270 454	1033 658	568 697	455 521	591 725	238 1555	483 1580	1858 292	2099 917	1671 1260	1450 1567	793 270	454 1033	658 568	697 455	521 591	
Omah, Nebr.	893 2133	2451 516	2696 1675	2298 1855	2037 2163	946 1547	2087 953	1447 1445	1693 1297	1648 1833	2375 1500	345 960	1107 2445	1505 956	1178 2180	2441 405	2508 2015	2013 1904	1743 1974	2035 1020	1470 1945	1373 1206	1658 1938	1288 1179	
Oklahoma, Okla.	764 548	1004 1430	1410 1510	1080 725	688 904	799 624	891 752	1002 170	233 615	142 1043	733 233	1420 1206	946	1107	2445 1505	956 1178	2180	2441	405 2508	2015 2013	1904 1743	1974 2035	1020 1470	1945 1373	
Oklahoma, Okla.	1020 1470	1945 1373	1206 1658	1938 1288	1179 1558	1445 1693	1297 1648	1833 2375	1500 345	960 1107	2445 1505	956 1178	2180 2441	405 2508	2015 2013	1904 1743	1974 2035	1020 1470	1945 1373	1206 1658	1938 1288	1179 1558	1445 1693	1297 1648	
Philadelphia, Pa.	1020 1470	1945 1373	1206 1658	1938 1288	1179 1558	1445 1693	1297 1648	1833 2375	1500 345	960 1107	2445 1505	956 1178	2180 2441	405 2508	2015 2013	1904 1743	1974 2035	1020 1470	1945 1373	1206 1658	1938 1288	1179			

IN STATUTE MILES

Louisville, Ky.	1174	938	1710	980	895	1117	1030	1810	1696	518	718	1748	330	1498	2015	1107	1628	938	483	893	1823	1178	764	1028	1889	742	1648
Memphis, Tenn.	317	335	610	905	1990	218	427	747	507	753	815	663	1592	520	1022	2172	470	467	1580	2133	840	2180	548	1960	863	917	542
Miami, Fla.	498	792	958	948	1947	597	1001	170	167	1173	1026	90	2002	194	446	2367	128	662	1708	2451	278	2341	1064	2110	262	1083	33
Minneapolis, Minn.	1623	1506	2368	1140	252	1631	1713	2153	2137	1138	1044	2113	733	1863	2282	349	2060	1389	292	516	2120	405	1433	290	2196	973	2045
Minneapolis, Mont.	823	1133	1258	1128	2124	941	1359	188	467	1490	1280	268	2295	478	100	2553	471	1036	2099	2696	150	2508	1410	2279	79	1314	392
Nashville, Tenn.	1093	777	1100	1335	1706	952	536	1695	1465	659	1061	1614	1023	1424	1961	1944	1428	975	1317	1675	1770	2015	510	1853	1805	1161	1493
New Orleans, La.	483	802	1184	735	1740	626	1087	291	435	1117	883	278	1904	178	438	2167	375	662	1701	2298	249	2130	1080	1900	325	916	290
New York, N. Y.	268	481	1190	356	1348	394	831	711	696	689	432	664	1451	411	892	1765	611	259	1260	1855	702	1743	275	1514	774	479	594
Rochester, N. Y.	92	410	957	603	1578	239	808	568	474	755	620	501	1578	258	802	1987	399	308	1450	2027	605	1974	688	1744	659	694	403
Rochester, N. Y.	309	627	1088	632	1640	456	922	404	429	946	738	343	1745	115	603	2063	353	490	1567	2162	408	2035	904	1804	473	785	303
Rochester, N. Y.	1035	591	1732	699	670	1018	1079	1628	1562	503	487	1575	855	1320	1803	985	1488	793	372	946	1618	1020	799	827	1692	468	1490
Rochester, N. Y.	477	485	1338	235	1074	523	825	1023	983	469	122	972	1154	718	1197	1479	908	270	952	1547	1012	1470	624	1243	1085	187	695
Rochester, N. Y.	315	621	1156	542	1552	468	938	483	522	905	666	444	1695	308	657	1975	445	825	1490	2087	647	1945	951	1715	540	705	397
Rochester, N. Y.	1253	978	1662	1156	1115	1169	986	1902	1755	578	875	1834	347	1592	2126	1206	1695	1033	689	933	1930	1373	752	1238	1990	920	1726
Rochester, N. Y.	818	882	1721	219	819	900	1221	1213	1258	766	390	1186	1825	952	1313	1248	1180	685	865	1447	1157	1206	1002	976	1240	284	1141
Rochester, N. Y.	751	448	1050	870	1312	643	470	1398	1262	168	590	1324	858	1097	1642	1612	1170	568	977	1454	1445	1658	209	1470	1495	669	1210
Rochester, N. Y.	807	492	1467	1097	1595	666	288	1415	1195	456	828	1335	1065	1140	1678	1885	1514	697	1249	1693	1497	1988	233	1715	1584	938	1214
Rochester, N. Y.	693	591	1668	399	891	697	870	1275	1162	357	135	1222	907	1454	1771	1142	545	708	1287	1267	1268	615	1061	1340	167	1139	
Rochester, N. Y.	480	176	983	722	1385	370	358	1125	955	260	490	1051	1094	825	1371	1733	897	325	1116	1648	1175	1759	142	1552	1224	605	936
Rochester, N. Y.	636	830	1545	272	1208	760	1187	849	946	926	547	827	1550	630	924	1638	870	591	1242	1933	776	1588	1043	1360	860	510	618
Rochester, N. Y.	595	591	328	1192	2070	502	511	838	548	988	1098	756	1800	703	1113	2442	953	755	1840	2735	960	2450	733	2239	597	1203	647
Rochester, N. Y.	480	370	1247	413	1117	472	678	1067	1009	293	165	1037	1045	784	1300	1397	937	238	922	1500	1107	1505	326	1286	1173	280	943
Rochester, N. Y.	1825	1602	2355	1522	910	1777	1675	2446	2352	1188	1312	2388	357	2135	2631	825	2283	1585	577	345	2445	956	1420	939	2515	1291	2295
Rochester, N. Y.	219	319	923	605	1550	153	328	650	578	675	579	580	1513	345	892	1953	457	242	1040	1983	695	1945	598	1720	1475	663	473
Rochester, N. Y.	923	978	878	700	1483	193	358	953	1228	422	529	878	1264	660	1205	1852	722	242	1250	1600	1010	1867	279	1652	1055	642	763
Rochester, N. Y.	603	978	1516	2359	821	681	1095	802	1233	1042	1023	1998	1014	1357	2716	831	1067	2098	2603	1229	2740	950	2528	1210	1510	927	
Rochester, N. Y.	605	700	1516	1010	665	1050	1019	1047	692	291	985	1279	745	1145	1435	968	1464	988	1585	975	1403	859	1173	1056	328	936	
Rochester, N. Y.	1550	1483	2359	1010	1582	1733	2030	2045	1162	978	1997	932	1754	2133	430	1967	1331	435	762	1978	935	1457	170	860	807	1940	
Rochester, N. Y.	153	193	821	695	1582	470	470	758	586	602	604	683	1445	472	1015	1970	526	253	1390	1958	820	1973	470	1752	863	704	567
Rochester, N. Y.	623	858	681	1050	1733	470	470	1173	932	575	845	1090	1318	932	1445	2063	899	593	1433	1923	1259	2098	280	1898	1287	960	968
Rochester, N. Y.	650	953	1095	1019	2030	758	1173	293	1324	1144	83	2142	313	277	2455	287	873	1752	2568	142	2419	1230	2190	120	1189	204	
Rochester, N. Y.	528	778	802	1047	2045	586	932	293	1186	1095	230	2027	316	565	2458	79	771	1825	2510	426	2440	1037	2211	411	1166	145	
Rochester, N. Y.	675	422	1833	692	1162	602	575	1304	1186	405	1256	843	1013	1015	1488	1128	456	862	1386	1354	1523	297	1324	1412	502	1150	
Rochester, N. Y.	579	529	1402	291	978	604	845	1144	1095	405	1094	1032	837	1318	1373	1020	352	833	1425	1133	1372	617	1149	1202	115	1012	
Rochester, N. Y.	580	878	1023	985	1997	683	1090	83	320	1256	1094	1027	2079	254	360	2119	205	808	1923	2518	205	2398	1153	2159	801	1143	122
Rochester, N. Y.	1512	1264	1998	1279	932	1445	1318	2142	2027	843	1032	2079	1829	245	2174	242	561	1670	2264	350	2145	1067	1020	2220	1043	1960	
Rochester, N. Y.	345	660	1014	745	1754	472	923	313	316	1013	837	254	1829	545	2174	242	561	1670	2264	350	2145	1067	1020	2220	1043	1960	
Rochester, N. Y.	892	1209	1357	1145	2133	1015	1445	277	565	1550	1218	360	2345	545	2563	565	1094	2127	2725	197	2513	1484	2285	159	1345	188	
Rochester, N. Y.	1953	1852	2716	1435	430	1970	2063	2455	2458	1488	1373	2419	1007	2174	2563	2381	1723	636	536	2405	143	1783	295	2468	1293	2360	
Rochester, N. Y.	447	722	821	968	1567	526	899	287	79	1122	1020	205	1950	242	565	2381	692	692	1850	2436	406	2362	985	2133	407	1089	96
Rochester, N. Y.	823	242	1067	404	1331	253	599	873	771	456	352	808	1270	561	1094	1723	699	1158	1158	898	1972	646	1500	958	480	740	
Rochester, N. Y.	1400	1250	2098	988	435	1930	1433	1792	1925	862	833	1923	561	1670	2127	638	1850	1158	1158	898	1972	646	1500	958	480	740	
Rochester, N. Y.	1993	1800	2603	1585	762	1958	1243	2568	2510	1386	1425	2518	652	2264	2725	536	2436	1738	592	592	1950	677	1515	548	2027	785	1845
Rochester, N. Y.	695	1010	1229	975	1978	820	1259	142	426	1354	1133	205	2152	350	197	2405	406	898	1950	2548	2363	1290	2139	86	1165	313	
Rochester, N. Y.	1645	1867	2740	1403	395	1973	2098	2419	2440	1523	1372	2388	1112	2145	2513	143	2362	1722	697	620	2362	1820	229	2445	1282	3335	
Rochester, N. Y.	598	279	950	859	1457																						



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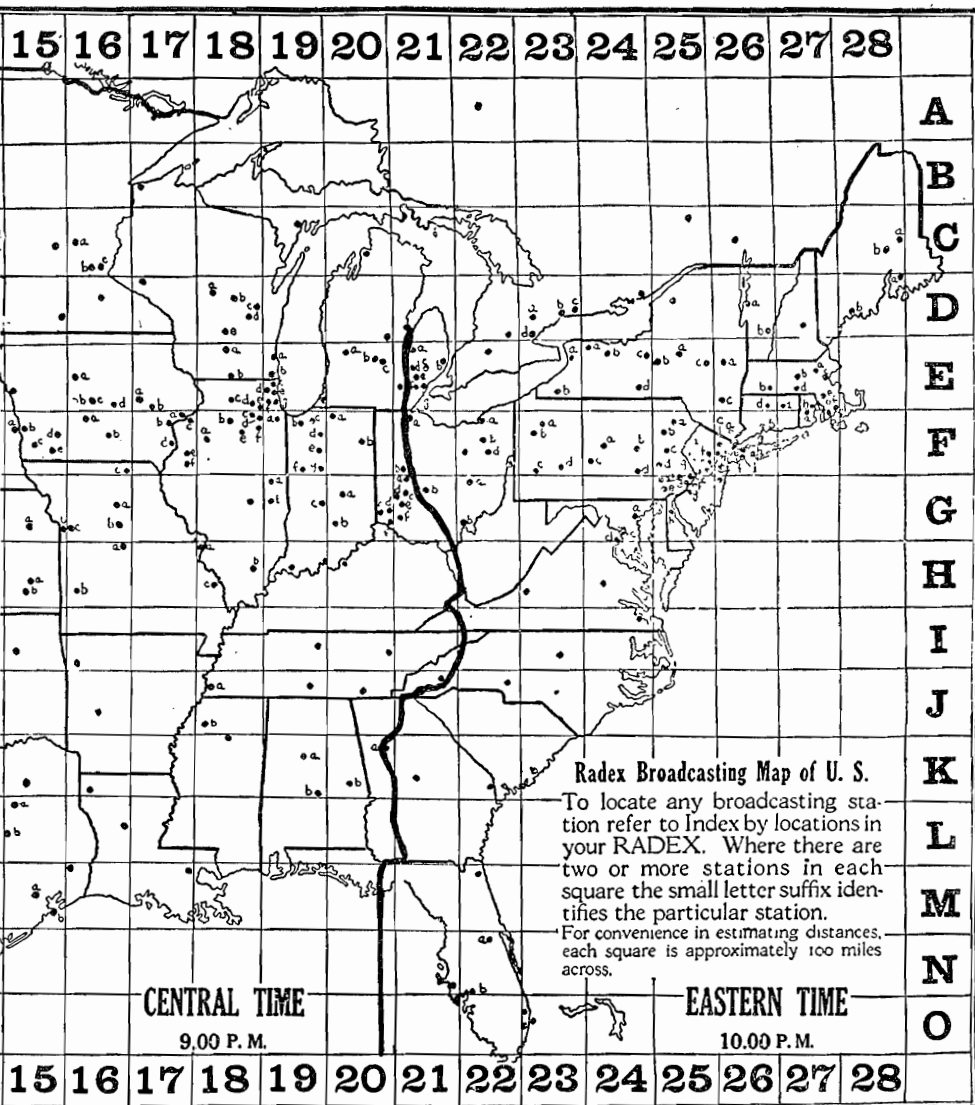
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CHNC 580				CKMO 730			
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CKWX	730			KDKA	980		
Vancouver, B. C.				Pittsburgh, Pa.			
CKY	780			KDLR	1210		
Winnipeg, Man.				Devils Lake, N. D.			
CNRA	630			KDYL	1290		
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CNRC	690			KEJK	1250		
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CNRE	580			KELW	780		
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CNRM	730			KEX	1180		
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CNRO	690			KFAB	770		
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Quebec, Que.				Phoenix, Ariz.			
CNRR	960			KFBB	1360		
Regina, Sask.				Havre, Mont.			
CNRS	910			KFBK	1310		
Saskatoon, Sask.				Sacramento, Calif.			
CNRT	840			KFBL	1370		
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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		
Torreón, 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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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			
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KFJR	1300				KFUO	550			
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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.				
KFQU	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.				
KGCCX	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.				
KGFE	1300				KGKB	1500			
Los Angeles, Calif.					Goldthwaite, Texas				
KGFEK	1200				KGKL	1370			
Yuma, Colo.					San Angelo, Texas				
KGER	1370				KGKO	570			
Long Beach, Calif.					Wichita Falls, Texas				
KGFW	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				
KGFIJ	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 San Francisco, Calif.				KOW 1390 Denver, Colo.			
KJR 970 Seattle, Wash.				KPCB 1210 Seattle, Wash.			
KKP 1370 Seattle, Wash.				KPJM 1500 Prescott, Ariz.			
KLCN 1290 Blytheville, Ark.				KPLA 570 Los Angeles, Calif.			
KLDS 950 Independence, Mo.				KPO 680 San Francisco, Calif.			
KLRA 1390 Little Rock, Ark.				KPOF 880 Denver, Colo.			
KLS 1440 Oakland, Calif.				KPPC 1200 Pasadena, Calif.			
KLX 880 Oakland, Calif.				KPQ 1210 Seattle, Wash.			
KLZ 560 Denver, Colo.				KPRC 920 Houston, Texas			
KMA 930 Shenandoah, Iowa				KPSN 950 Pasadena, Calif.			
KMBC 950 Independence, Mo.				KQV 1380 Pittsburgh, Pa.			
KMED 1420 Medford, Ore.				KQW 1010 San Jose, Calif.			
KMIC 1120 Inglewood, Calif.				KRE 1370 Berkeley, Calif.			
KMJ 1200 Fresno, Calif.				KRGV 1260 Harlingen, Texas			
KMMJ 740 Clay Center, Nebr.				KRLD 1040 Dallas, Texas			
KMO 1340 Tacoma, Wash.				KRMD 1310 Shreveport, La.			
KMOX 1090 St. Louis, Mo.				KRSC 1120 Seattle, Wash.			
KMTR 570 Hollywood, Calif.				KSAC 580 Manhattan, Kans.			
KNX 1050 Los Angeles, Calif.				KSBA 1450 Shreveport, La.			
KOA 830 Denver, Colo.				KSCJ 1330 Sioux City, Iowa			
KOAC 560 Corvallis, Ore.				KSD 550 St. Louis, Mo.			
KOB 1180 State College, N. M.				KSEI 900 Pocatello, Idaho			
KOCW 1420 Chickasha, Okla.				KSL 1130 Salt Lake City			
KOH 1370 Reno, Nevada				KSMR 1200 Santa Maria, Calif.			
KOIL 1260 Council Bluffs, Iowa				KSO 1380 Clarinda, Iowa			
KOIN 940 Portland, Ore.				KSOO 1110 Sioux Falls, S. Dak.			
KOL 1270 Seattle, Wash.				KSTP 1460 St. Paul, Minn.			
KOMO 920 Seattle, Wash.				KTAB 1280 Oakland, Calif.			
KOOS 1370 Marshfield, Ore.				KTAP 1420 San Antonio, Texas			
KORE 1420 Eugene, Ore.				KTBI 1300 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.			
KTM 780				KYA 1230			
Santa Monica, Cal.				San Francisco, Calif.			
KTNT 1170				KYW 1020			
Muscataine, 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.			
WBOW	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			WCSH	940		
Boston, Mass.				Portland, Maine			
WCAC	1330			WCSSO	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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WDBJ	930				WFAA	1040			
Roanoke, Va.					Dallas, Texas				
WDBO	620				WFAN	610			
Orlando, Fla.					Philadelphia, Pa.				
WDEL	1410				WFBC	1200			
Wilmington, Del.					Knoxville, Tenn.				
WDGY	1390				WFBE	1200			
Minneapolis, Minn.					Cincinnati, Ohio				
WDOD	1280				WFBG	1310			
Chattanooga, Tenn.					Altoona, Pa.				
WDRC	1330				WFBJ	1370			
New Haven, Conn.					Collegeville, Minn.				
WDSU	1270				WFBL	900-1490			
New Orleans, La.					Syracuse, N. Y.				
WDWF	1210				WFBM	1050-1230			
Cranston, R. I.					Indianapolis, Ind.				
WDZ	1070				WFBR	1270			
Tuscola, Ill.					Baltimore, Md.				
WEAF	660				WFDF	1310			
New York City					Flint, Mich.				
WEAI	1270				WFI	560			
Ithaca, N. Y.					Philadelphia, Pa.				
WEAM	1370				WFIW	940			
Plainfield, N. J.					Hopkinsville, Ky.				
WEAN	550				WFJC	1450			
Providence, R. I.					Akron, Ohio				
WEAO	550				WFKD	1310			
Columbus, Ohio					Philadelphia, Pa.				
WEAR	1070				WFLA	900			
Cleveland, Ohio					Clearwater, Fla.				
WEBC	1280				WGAL	1310			
Superior, Wis.					Lancaster, Pa.				
WEBE	1210				WGBB	1210			
Cambridge, Ohio					Freeport, N. Y.				
WEBQ	1210				WGBC	1430			
Harrisburg, Ill.					Memphis, Tenn.				
WEBR	1310				WGBF	630			
Buffalo, N. Y.					Evansville, Ind.				
WEBW	600				WGBI	880			
Beloit, Wisc.					Scranton, Pa.				
WEDC	1210				WGBS	1180			
Chicago, Ill.					New York City				
WEDH	1420				WGCM	1210			
Erie, Pa.					Gulfport, Miss.				
WEEL	590				WGCP	1250			
Boston, Mass.					Newark, N. J.				
WEHS	1310				WGES	1360			
Evanston, Ill.					Chicago, Ill.				
WELK	1370				WGH	1310			
Philadelphia, Pa.					Newport News, Va.				
WEMC	590				WGHP	1240			
Berrien Spgs., Mich.					Detroit, Mich.				
WENR	870				WGMS	1250			
Chicago, Ill.					St. Paul-Minneapolis				
WEPS	1200				WGN	720			
Gloucester, Mass.					Chicago, Ill.				
WEVD	1300				WGR	550			
Woodhaven, N. Y.					Buffalo, N. Y.				
WEW	760				WGST	890			
St. Louis, Mo.					Atlanta, Ga.				

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

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

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

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

A COMPLETE INDEX BY CALL LETTERS

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

ALABAMA			Ontario			KFWC	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		
ALASKA			San Francisco H-1-c	KFRC	610		
Anchorage	KFQD	1230		KFWI	930		
Juneau	KFIU	1310		KGTT	1420		
Ketchikan	KGBU	900		KJBS	1100		
				KPO	680		
ARIZONA				KYA	1230		
Flagstaff J-7	KFXV	1420	San Jose I-2	KQW	1010		
Phoenix K-7	KFAD	620	Santa Ana K-4	KWTC	1500		
	KFCB	1310	Santa Barbara J-3	KFCR	1500		
Prescott J-6	KPJM	1500	Santa Maria J-2-b	KSMR	1200		
Tucson L-7	KGAR	1370	Santa Monica K-3	KTM	780		
			Stockton H-2-b	KGDM	1150		
				KWG	1200		
ARKANSAS			COLORADO				
Blytheville I-18	KLCN	1290	Colorado Springs H-10	KFUM	1270		
Fayetteville I-16	KUOA	1390	Denver G-10-b	KFEL	940		
Hot Springs J-16	KTHS	800		KFUP	1310		
Little Rock J-17	KGHI	1500		KFXF	940		
	KGJF	890		KLZ	560		
	KLRA	1390		KOA	830		
McGehee K-17	KGHG	1310		KOW	1390		
Siloam Springs I-16	KFPW	1340		KPOF	880		
CALIFORNIA				KPFJ	1310		
Berkeley H-1-a	KRE	1370	Edgewater G-10	KGEW	1200		
Burbank J-4	KELW	780	Fort Morgan G-11	KFKA	880		
Culver City K-3	KFVD	700	Greeley F-10	KFHA	1200		
El Centro K-5	KXO	1200	Gunnison H-9	KGDP	1210		
Fresno I-3	KMJ	1200	Pueblo H-11	KGHF	1320		
Glendale K-3	KGFH	1000		KGW	1420		
Hayward H-2	KZM	1370	Trinidad H-10	KGEK	1200		
Hollywood K-3	KFQZ	850	Yuma G-11				
	KMTR	570					
Holy City I-2	KFQU	1420	CONNECTICUT				
Inglewood K-4	KMIC	1120	Bridgeport F-26	WICC	1190		
Long Beach K-4-a	KFON	1250	Hartford E-26-d	WTIC	1060		
	KGJR	1370	Mansfield E-27-i	WCAC	1330		
Los Angeles K-3-b	KEJK	1250	New Haven F-26-b	WDRC	1330		
	KFI	640					
	KFSG	1120	DELAWARE				
	KFWB	950	Wilmington G-25	WDEL	1410		
	KGEF	1300		WTBQ	1500		
	KGJF	1420	DISTRICT OF COLUMBIA				
	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	FLORIDA				
	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

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
	WHO	1000
Des Moines F-16-a	KFJY	1310
Fort Dodge E-16-a	WSUI	580
Iowa City E-17-b	KFJB	1200
Marshalltown E-16-d	KTNT	1170
Muscatine F-17-b	WIAS	1420
Ottumwa F-17		

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
KANSAS			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	MICHIGAN		
Wichita H-14-a	KFH	1300	Battle Creek E-20	WKBP	1420
KENTUCKY			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
LOUISIANA				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
MAINE			MINNESOTA		
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
MARYLAND				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
MASSACHUSETTS				WCCO	810
Boston E-27-c	WBET	1360		WGMS	1250
	WBIS	1230	MISSISSIPPI		
	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			NEW JERSEY		
Cape Girardeau H-18-c	KFVS	1210	Asbury Park G-26	WCAP	1280
Columbia G-16-b	KFRU	630	Atlantic City G-25	WPG	1100
Independence G-16-c	KLDS	950	Camden F-25-f	WCAM	1280
	KMBC	950	Cliffside F-26	WPAP	1010
Jefferson City H-16-a	WOS	630		WQAO	1010
Joplin H-16	WMBH	1420	Elizabeth F-26-h	WIBS	1450
Kansas City G-15-b	KWKC	1370	Jersey City F-26-d	WAAT	1070
	WDAF	610		WKBO	1450
	WHB	950		WPCH	810
	WLBF	1420	Newark F-25-h	WAAM	1250
	WOQ	610		WGCP	1250
Kirksville F-16-c	KFKZ	1200		WNJ	1450
St. Joseph G-15	KFEQ	560		WOR	710
	KGBX	1370	Paterson F-26-c	WODA	1250
	KFUO	550	Plainfield F-25	WEAM	1370
St. Louis H-18-a	KFWF	1200	Red Bank G-26	WJBI	1210
	KMOX	1090	Trenton F-25	WOAX	1280
	KSD	550	Union City F-26	WBMS	1450
	KWK	1350			
	WEW	760			
	WIL	1420			
	WMAY	1200			
MONTANA			NEW MEXICO		
Billings C-8	KGHL	950	Albuquerque	KGGM	1370
Butte C-7	KGIR	1360	Raton I-11	KGFL	1370
Havre A-8	KFBB	1360	State College K-9	KOB	1180
Kalispell A-5	KGEZ	1310			
Missoula B-6	KGHD	1420	NEW YORK		
	KUOM	570	Auburn E-24	WMBO	1370
Vida B-10	KGCX	1420	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
				WSVS	1370
			Canton D-25	WCAD	1220
			Cazenovia E-25-b	WMAC	570
			Coney Island F-26	WCGU	1400
			Endicott E-25	WNBF	1500
			Farmingdale F-26	WLBH	1420
			Freeport F-26-i	WGBB	1210
			Grand Island E-23	WCOH	1210
			Greenville E-26	WEAI	1270
			Ithaca E-24-d	WLCI	1210
				WMRJ	1420
			Jamaica F-26-f	WOCL	1210
			Jamestown E-23-b	WLBX	1500
			Long Island City F-26		
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			
NEW HAMPSHIRE					
Laconia D-27	WKAV	1310			
Tilton E-27	WBRL	1430			

INDEX BY LOCATIONS WITH MAP KEY

New York City F-26	WABC	860	Cincinnati G-20-e	WAAD	1420
	WBNY	1350		WFBE	1200
	WBOQ	860		WKRC	550
	WEAF	660		WLW	700
	WGBS	1180		WSAI	800
	WHAP	1300	Cleveland F-22-a	WEAR	1070
	WHN	1010		WHK	1390
	WHPP	1420		WJAY	1450
	WJZ	760		WTAM	1070
	WKBQ	1350	Columbus G-21-b	WAIU	640
	WLWL	1100		WCAH	1430
	WMCA	570		WEAO	550
	WMSG	1350		WMAN	1210
	WNYC	570	Dayton G-21-e	WSMK	570
	WOV	1130	Hamilton G-20-d	WRK	1310
	WRNY	1010	Mansfield F-21	WLBV	1210
Peekskill F-26-a	WOKO	1440	Middletown G-20	WSRO	1420
Rochester E-24-b	WABO	1440	Springfield G-21-c	WCSO	1380
	WHAM	1150	Steubenville F-22	WIBR	1420
	WHEC	1440	Toledo F-21-a	WSPD	1340
	WNBQ	1500	Youngstown F-22	WKBN	570
	WBBR	1300			
Rossville F-26	WNBZ	1290	OKLAHOMA		
Saranac Lake D-26	WGY	790	Alva I-13	KGFF	1420
Schenectady E-25-c	WFBL	900	Chickasha J-14-b	KOCW	1420
Syracuse E-24-c	WSYR	570	Enid I-14	KGCB	1370
	WHAZ	1300	Norman J-14-a	WNAD	1010
Troy E-21-a	WIBX	1200	Oklahoma City I-14-b	KFJF	1470
Utica E-25-a	WEVD	1300		KFXR	1310
Woodhaven F-26	WWRL	1500		KGFG	1370
Woodside F-26				WKY	900
			Picher I-15	KGGF	1010
NORTH CAROLINA			Ponca City I-14	WBBZ	1200
Asheville J-21	WWNC	570	Tulsa I-15	KVOO	1140
Charlotte J-22	WBT	1080			
Gastonia J-22	WRBU	1210	OREGON		
Greensboro I-22	WNRC	1440	Astoria C-1-a	KFJI	1370
Raleigh I-23	WPTF	680	Corvallis D-1	KOAC	560
Wilmington J-24	WRBT	1370	Eugene D-1	KORE	1420
			Marshfield E-1	KOOS	1370
			Medford E-1	KMED	1420
NORTH DAKOTA			Portland C-1-b	KEX	1180
Bismarck B-12	KFYR	550		KFEC	1370
Devils Lake A-13	KDLR	1210		KFIF	1420
Fargo B-14	WDAY	1280		KFJR	1300
Grand Forks A-14	KFJM	550		KGW	620
Mandan B-12	KGCU	1200		KOIN	940
				KTBR	1300
				KWBS	1500
				KWJJ	1060
OHIO				KXL	1250
Akron F-22-b	WADC	1320	PENNSYLVANIA		
	WFJC	1450	Allentown F-25-c	WCBA	1500
Bellefontaine G-21-a	WHBD	1370		WSAN	1500
Cambridge F-22	WEBE	1210	Altoona F-24-c	WFBG	1310
Canton F-22-d	WHBC	1200	Carbondale F-25	WNBW	1200

INDEX BY LOCATIONS WITH MAP KEY

Elkins Park G-25-c	WIBG	930	SOUTH DAKOTA	
Erie E-23	WEDH	1420	Brookings D-14	KFDY 550
Grove City F-23-b	WRAK	1370		KGCR 1210
Harrisburg F-24-d	WSAJ	1310	Dell Rapids D-14	KGDA 1370
Johnstown F-23-d	WBAK	1430	Oldham D-14	KGDY 1200
Kingston F-24	WPRC	1200	Pierre D-12	KGFX 580
Lancaster G-25-a	WHBP	1310	Rapid City D-11	WCAT 1200
Lemoine G-24	WABF	1440	Sioux Falls D-14	KSOO 1110
Lewisburg F-24-b	WGAL	1310	Vermillion E-14-b	KUSD 890
Oil City F-23-a	WKJC	1200	Yankton E-14-a	WNAX 570
Philadelphia G-25-d	WMBS	1430		
	WJBU	1210	TENNESSEE	
	WLBW	1260	Chattanooga J-20	WDOD 1280
	WABY	1310	Knoxville I-20	WFBC 1200
	WCAU	1170		WNBK 1310
	WELK	1370	Lawrenceburg J-19	WNOX 560
	WFAN	610	Memphis J-18-a	WOAN 600
	WFI	560		WGBC 1430
	WFKD	1310		WHBQ 1370
	WHBW	1500		WMBM 1500
	WIP	610		WMC 780
	WLIT	560		WNBR 1430
	WNAT	1310		WREC 600
	WOO	1500	Nashville I-19	WBAW 1490
	WPSW	1500		WLAC 1490
	WRAX	1440		WSM 650
Pittsburgh F-23-c	KDKA	980	Springfield I-19	WSIX 1210
	KQV	1380	Union City I-18	WOBT 1310
	WCAE	1220		
	WJAS	1290	TEXAS	
	WRAW	1310	Amarillo J-12	KGRS 1410
Reading F-25-d	WGBI	880		WDAG 1410
Scranton F-25-a	WQAN	880	Austin L-14-b	KUT 1120
State College F-24-a	WPSC	1230	Beaumont M-16	KFDM 560
Washington F-23	WNBO	1200	Breckenridge K-13	KFYO 1420
Wilkes-Barre F-25-b	WBAX	1210	Brownsville O-14-b	KWWG 1260
	WBRE	1310	College Station M-13	WTAW 1120
Wilkesburg F-23	WMBJ	1500	Dallas L-15-a	KRLD 1040
Willow Grove G-25	WALK	1500		WFAA 1040
				WRR 1280
PORTO RICO			Dublin K-14	KFPL 1310
San Juan	WKAQ	580	El Paso L-10	WDAH 1310
			Fort Worth L-14-a	KFJZ 1370
RHODE ISLAND				KFQB 1240
Cranston F-27-a	WDWF	1210		WBAP 800
	WLSI	1210	Galveston M-15-b	KFLX 1370
Newport F-27	WMBA	1500		KFUL 1290
Pawtucket E-27	WPAW	1210	Goldthwaite L-13	KGKB 1500
Providence E-27-h	WEAN	550	Greenville K-15	KFPM 1310
	WJAR	890	Harlingen O-14	KRGV 1260
			Houston M-15-a	KPRC 920
SOUTH CAROLINA			Richmond M-15	KTUE 1420
Charlestown K-23	WBBY	1200		KGHX 1500
Columbia K-22	WRBW	1310		

INDEX BY LOCATIONS WITH MAP KEY

San Angelo M-12	KGFI	1310
	KGKL	1370
San Antonio M-14-a	KGCI	1370
	KGDR	1500
	KGRC	1370
	KTAP	1420
	KTSA	1290
	WOAI	1190
Waco L-15-b	WJAD	1240
Wichita Falls K-14	KGKO	570

UTAH

Ogden F-7-b	KFUR	1370
Salt Lake City F-7-c	KDYL	1290
	KSL	1130

VERMONT

Burlington D-26-a	WCAX	1200
Springfield D-26-b	WNBX	1200

VIRGINIA

Arlington G-24-d	NAA	690
Newport News	WGH	1310
Norfolk I-24	WBBW	1200
	WPOR	780
	WTAR	780
Petersburg I-24	WLBG	1200
Portsmouth I-24	WSEA	780
Richmond H-24	WBBL	1370
	WMBG	1210
	WRVA	1110
	WTAZ	1210
Roanoke H-23	WDBJ	930

WASHINGTON

Aberdeen B-1	KXRO	1420
Bellingham A-1	KVOS	1200
Everett A-2	KFBL	1370
Lacey B-2-b	KGJ	1200
Longview B-1	KUJ	1500
Pullman B-4	KWSC	1390
Seattle B-2-a	KFQW	1420
	KJR	970
	KKP	1370
	KOL	1270
	KOMO	920
	KPCB	1210
	KPQ	1210
	KRSC	1120
	KTW	1270
	KVL	1370
	KXA	570
Spokane A-4	KFIO	1230
	KFPY	1390
	KGA	1470
	KHQ	590

Tacoma B-1-a	KMO	1340
	KVI	1340

WEST VIRGINIA

Charleston H-22	WOBU	580
Clarksburg G-22	WQBJ	1200
Fairmont G-23	WMMN	890
Huntington G-22	WSAZ	580
Wheeling G-22	WWVA	1160

WISCONSIN

Beloit E-18-b	WEBW	600
Eau Claire D-17	WTAQ	1330
Fond du Lac D-18-d	KFIZ	1420
Kenosha E-19	WCLO	1200
La Crosse E-17	WKBH	1380
Madison E-18-2	WHA	570
	WIBA	1210
Manitowoc D-19	WOMT	1210
Milwaukee E-19-a	WHAD	1120
	WISN	1120
	WTMJ	620
Poynette D-18-e	WIBU	1310
Racine E-19	WRJN	1370
Sheboygan C-18	WHBL	1410
Stevens Point D-18-b	WLBL	900
Superior B-17	WEBC	1280
West De Pere D-19	WHBY	1200

WYOMING

Laramie F-10	KFBU	600
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CANADA
ALBERTA

Calgary	CFAC	690
	CFCN	690
	CHCA	690
	CJ CJ	690
	CNRC	690
Edmonton	CHMA	580
	CJCA	580
	CKUA	580
	CNRE	580
Lethbridge	CJOC	1120
Red Deer	CHCT	840
	CKLC	840

BRITISH COLUMBIA

Chilliwack	CHWK	1210
Kamloops	CFJC	1120

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
	CNRV	1030		CKCI	880
Victoria	CFCT	630		CKCV	880
			St. Hyacinthe	CNRQ	880
MANITOBA				CKSH	1010
Winnipeg	CKY	780	SASKATCHEWAN		
	CNRW	780	Fleming	CJRW	1010
NEW BRUNSWICK			Moose Jaw	CJRM	1010
Fredericton	CFNB	1210	Regina	CHWC	960
Moncton	CNRA	630		CJBR	960
St. John	CFBO	890		CKCK	960
			Saskatoon	CNRR	960
NOVA SCOTIA				CFQC	910
Halifax	CHNS	930		CJHS	910
			Yorkton	CNRS	910
ONTARIO				CJGX	630
Bowmanville	CKGW	960	HAITI		
Brantford	CKCR	1010	Port au Prince	HHK	830
Chatham	CFCO	1210			
Cobalt	CKMC	1210	MEXICO		
Hamilton	CHGS	880	Chihuahua	CZF	970
	CHML	880	Mazatlan	CYR	630
	CKOC	880	Merida	CYY	550
Iroquois Falls	CFCH	600	Mexico City	CYA	1000
King Twp.	CFRB	960		CYB	1090
Kingston	CFMC	1120		CYH	800
	CFRC	1120		CYJ	750
London	CJGC	910		CYL	750
Midland	CKPR	1120		CYO	710
Ottawa	CKCO	690		CYX	920
	CNRO	690		CZE	860
Prescott	CFLC	1010	Oaxaca	CYF	1130
Preston	CKPC	1210	Puebla	CYU	960
Toronto	CFCA	840	Tampico	CYQ	930
	CFCL	580	Torreon	CYM	1330
	CHNC	580	Vera Cruz	CYC	890
	CJBC	580			
	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
				2OK	860
PRINCE EDWARD				2OL	1170
ISLAND				2RK	950
Charlottetown	CFCY	960		2TW	1110
	CHCK	960		2UF	1090
Summerside	CHGS	1120	Tuinucu	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 WEAf 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
WEEI	WRC	WSAI	WDAF	WHAS
WTIC	WGY	KSD	KVOO	WSM
WJAR	WGR	WQAI	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

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

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

WEAF	WEEI	WTIC	WJAR	WTAG
WHAS	WCSH	WLIT	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	WERI	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	WQAI	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	WFBL	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
WFBL	WADC	WSPD	KGA	WMAL
WBBM	WLBW	KPRC	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	WIR	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	WEEC
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	KHO	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	WSB
WDAF	WHAS	WSM	WTIC	KOMO
WOW	KHO	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	WKBW	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
WJZ	WRC	WGY	WCAE	WTAM
WWJ	WSAI	WTMJ	KSD	WMC
WDAF	KVOO	WFAA	KPRC	WOAI
WHAS	WSM	WSB	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
WMAK	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	WJR	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	WSB
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	WBBM
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
WBAP	KPRC	WHAS	WSM	WSB
WBT	KOA	WOW	WEBC	WJAX

9:30-10:00 The Contraltones

WEAF	WTIC	WJAR	WTAG	WCSH
WFI	WCAE			

10:00-10:30 Royal Command to Liszt

WABC	WFAN	WEAN	WNAC	WFBL
WIAS	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	WBBM	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	WAS	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.

JOSEPH WALLACE HOWE. CO.
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