THE MARCH 1929 EDITION

RADIO

"THE TUNING BOOK"



Who Will Buy?

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

A ND 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 Ra tio Commission. We also find that it has a power of 50,000 watts, that it is located in New York City and is ewned by the National Broadcasting Co., Inc.

INDEX BY FREQUENCIES AND DIAL NUMBERS 590 kilocycles 508.2 meters Louis Wramer Inc Achraska Westeyan University belison Elec Illuminating Co Woodmen of the World Emmunuel Missionary College Abithi Power & Pager Co.
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Airf in Radio Corp.
Monument i Radio Co. Inc.
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In the blanks for dial numbers opposite 660 kilocycles (which is the wave length of 454.3 meters) enter the dial readings of your set. It is immaterial whether your set has one, two or Use as three dials. 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 Fre-

quencies 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

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RADIO IN DEX



F. C. BUTLER, Editor

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THE RADEX PRESS

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THE QUESTION BOX

Conducted by S. E. Shapiro Technical Editor of RADEX

MY RADIO set is a type that uses a UX 171 Power Tube. Would there be any advantage if I changed it to a UX 171-A Power Tube?

The only advantage you would derive would be less A Battery consumption. The 171-A will not deliver more volume than the 171, nor will it last any longer or give better tone quality. In actual figures the new 171-A uses approximately half of the power a 171 does.

I have a new AC set. The efficiency of this set has dropped considerably during the last week or so. I feel that my tubes are not giving the proper output. How can I make sure that they need replacing?

If your set has slowly given up its sensitivity to weak signals; if it no longer reproduces low notes or receives DX signals on a good night when your next door neighbor is getting distant stations, it would be advisable to have your tubes tested. When the quality seems bad and the amplifier overloads easily, look for bad power tube. In this case the filament of the power tube has been over loaded so that it no longer has sufficient electrons to handle low or loud notes. Any reputable dealer can test your tubes.

I purchased a radio receiving set in September and since that time have had to replace three tubes. This set has RCA Tubes. What can be the trouble? Also advise what kind of out-door Antenna is the best for distance with less static.

The burning out of tubes is probably due to a high line voltage or an excess of voltage from your power supply to the filament. Have both of these lines tested. We find a 50 foot aerial most efficient although a longer aerial will

give more distance but will it also amplify your interference. We would suggest you install both a long and a short aerial so that you can change as conditions permit.

I have a 7 tube electric set with Dynamic speaker and am troubled with a sort of hum and rattle connected with it. I have had two sets of the same make and still get this. Is it possible that a line noise through the power supply would cause this?

Your trouble in the Dynamic speaker is not an unusual one. Remember that Dynamic speakers are very sensitive and will amplify any electrical disturbance. This causes us to believe that your trouble may be due to a line noise. Should this not be the trouble, your speaker is possibly out of adjustment.

Just a few words in regard to my radio set, which is a 5 tube Sonora Model-C. I have had this set about three years and always have had good reception with same, but for the last two months the tone of same has changed from a mellow tone to a high pitch tone, which does not sound so good. I have been told to try some other brand of tubes but I am not sure it would be safe, so I am asking your advice and I would appreciate it very much if you would help me out. I am using four tubes CX301-A, and CX-112-A as a detector. What I would like to know is if it would be safe to use the UX-240 tube as a detector for better tone, or any other one which you may know of.

Your question undoubtedly, leads to a long discussion as to where your trouble may lie. If your set is 3 years old it is possible that your tubes may be low although they seem to light as bright as ever. Then, your loud speaker too you must bear in mind. It is not uncommon for a speaker to lose its

(Continued on page 9)



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ve either or s may secure each.

TOTAL INAUDIBILITY

SYMPTOM

Click heard but no signal comes in when loudspeaker is plugged in.

CAUSE

Aerial or lead-in open-circuited.

Aerial grounded.

Aerial and ground disconnected.

Faulty and ineffective ground.

Use of loop-designed receiver on outside aerial or vice versa.

Primary and secondary windings of tuning coil short-circuited.

Broken "pigtail" connection on variable inductance or condenser.

Defects in radio-frequency stages.

Short-circuited or open-circuited grid condenser.

One or more internally open-circuited

Improper contact of one or more tubes in sockets.

Static blanket.

Dead spot.

Shielding effect of steel structure.

Loose connection or high-resistance joint.

Symptom

No click heard when loudspeaker is plugged in although all tubes light.

for Trouble

ALPH HAAN

CAUSE

Worn-out batteries.

Disconnected or open-circuited B-supply leads.

Defective or poorly adjusted B-eliminator.

Internally open-circuited B-battery. Breakdown in eliminator—usually a

condenser, or a resistor.

Lack of A. C. supply for eliminator.

Open circuit in grid or plate leads.

Defective transformers or resistors.

Reversed C-battery.

Break in loudspeaker cord.

Defective loudspeaker plug or jack. Open-circuited winding of loudspeaker. Loudspeaker diaphragm adjusted too

tight.

SYMPTOM

All tubes fail to light.

CAUSE

Discharged storage battery.

Worn-out or broken-down storage battery.

Discharged dry-cell A-battery.

Defective A-eliminator.

Disconnected or open-circuited Asupply leads.

Too small wire used for A-supply leads causing high resistance.

Burned-out tubes.

Loose socket prongs not touching tube tips.

Defective filament switch.

Open-circuited filament wiring in receiver.

SYMPTOM

Some tubes fail to light.

CAUSE

Open-circuited rheostat or ballast.

Some burned-out tubes. Loose socket prongs.

Part of wiring open-circuited.

(Continued on page 14)

HERE is no more exasperating thing about a radio than when there comes crashing into the program that rending, tearing, roaring disturbance that completely drowns out the loudest jazz band. (Personally we think one is just about as bad as the other). George W. Leasure, of Zanesville, Ohio, writes us of such a noise in his set. "At times I get a crackling noise like the tearing of a piece of heavy canvas." Faced with the fact that such a noise almost completely destroys one's pleasure with radio, it becomes of the greatest importance to try to eliminate it. This means hard work for someone but the end is well worth the trouble.

First let us make sure the noise is from outside the set. This is demonstrated of course by the mere expedient of disconnecting the antenna from the set. If the noise stops, it comes from outside; if it continues, it is from within. In the latter case our task is simple; we should merely follow the instructions in the article by E. R. Hahn in this and preceding issues of RADEX. But we are here considering the disturbance from without.

Next let us ascertain from our neighbors if they, too, are troubled in the same way. Have them as well as yourself note the exact time at which the noise starts and ceases some particular evening (for these noises are almost always intermittent). Compare your log of noise with that of your neighbors Of course if your neighbors do not get. the noise, the trouble is still around your set. Something may be touching your aerial or the lighting arrester may be faulty or your antenna may be too near to a power line or even to a telephone line or another aerial. You may find the trouble in some electrical device in your own home—the motor in the refrigerator or oil-bubattery-charger, the sethe percolator or even the be-Your log of noise will help you

If, however, as is more probable, the noise annoys the neighborhood, then there is nothing to do but to go sleuthing. For this you will need a portable set with a loop. Put this in a car and drive around the neighborhood, carefully noting from the position of the loop, the point from which the maximum interference comes. Gradually you can reduce the radius of your circle and locate the immediate vicinity in which the noise is greatest. Your power company will undoubtedly help you for if, as is often found, the cause is a faulty insulator or a tree limb brushing against an uninsulated wire, then the company loses current every time the noise is on.

Use your noise-log in ascertaining if there is any electrical device used in the vicinity at times that correspond to your log. Now all of this is going to take work but by calling a meeting of the radio users in your locality, the work can be divided and the disturbance gradually run down. And as we said before the end certainly repays all the work and trouble. An extreme case is cited in a letter from Mrs. Neil E. Mott, of Bellevue, Ohio, who writes: "I am a reader and user of your publication and like it so much. I am writing to ask whether you can help out everyone in in this district with the interference we receive on all electric radio sets. I own a Crosley Showbox but whatever it is affects any kind of set. There is such a terrible buzzing noise, that when it is on, it cuts off every station on the dial.

We have had the Power Company try to locate the trouble and they have (Continued on page 64)

DEAD OR ALIVE

Radio Plays a Role in a Real Drama

By ELIZABETH S. HICKEY

ARY waved a final goodbye to her father and mother as they drove away in the family "flivver," then turned and went into the kitchen of the spacious old farmhouse. She took her long apron down from the hook, slipped it over her head and gave an appraising glance at the heap of dishes awaiting her in the sink. But first she held out the long apron in a grand dame manner and walked daintly over to the radio and turned the switch. Music came in instantly from the broadcasting station some forty miles away. Keeping time to it prettily she waltzed back and forth across the long kitchen in what she deemed the stately style of ages bygone. For Mary had recently played the stellar role in a revival of "Lady Audrey's Secret" with the highschool players and she was apt to lapse back into the nineteenth century upon the slightest provocation. A dainty lady of the realm she made with her regular features, her dark brown hair and eyes which always had a sort of glow in them.

Finally with a reproachful glance at the clock, she waltzed over to the sink and began her morning task. The radio changed to a song and Mary chimed in with her sweet soprano voice and the dishes rapidly achieved their virgin whiteness. So engrossed was she in the music and in her work, that she jumped quickly when a sharp rap was given at the screen-door. She went to the door but before she could reach it, it was opened from without and a man entered. He was not only a person she did not know but her quick glance showed her that he was a man she did not wish to know. Her first reaction was anger at the intrusion.

"How dare you come into this house?" she demanded.

"I want something to eat," growled the stranger.

"Well, stay out on the porch and I will bring you something," the girl replied, deciding that compliance was the better course.

"I'll sit right here," said the man truculently, pulling out a chair at the table. Mary looked at him angrily but again she decided to keep the peace and without a further look in his direction, she prepared some food from the cupboard and placed it before him. The man eyed her sulkily watching every movement the girl made. He continued to do this even while he gulped down great mouthfuls of the food.

Mary's mind went over her situation rapidly. She was entirely alone; the nearest neighbors were half a mile away. She thought of the telephone which hung on the kitchen wall but decided it would be of little help for the man would never let her use it. She would feed him well, she decided, and perhaps he would then leave. So she brought forth the best the house permitted and it was a great deal. The man ate on seemingly never to be surfeited.

The girl decided upon a ruse and she walked to the outer door, the man watching her every step with the intentness of a cruel cat playing with a helpless mouse. The girl opened the door and called "Father." An evil grin came out upon the sullen countenance of the stranger.

"Do you think he can hear you?" he sneered.

It was plain that he knew the girl's parents were away and so Mary fell (Continued on page 11)

OUR MAIL BOX

Letters to the Editor

AY SCHEIB, 6456 Ellis Ave., Chicago, is our first correspondent this month. He writes "I'm glad I received this expiration notice from you as I would sure miss my RADEX and most of the fun of DX without it."

And speaking of DX, John J. A. Connors, 39 Sherman Place, Jersey City, writes: "Being an ardent DX fan I have bought almost every radio log on the market and found they were incomplete. Mr. Paul Godley of Station WAAM of Newark each Sunday morning rebroadcasts distant stations and gives their data on wavelengths and kilocycles. I was surprised at the rapidity with which he gave the call letters and locations of the stations. I got in touch with him and he told me that he used the RADEX log, so I am enclosing 25 cents for an issue."

We have received a large number of requests for RADEX stating they had learned of RADEX through an announcement by Station WAAM. That several dozen people would take down an address and send away to a distant point in this way indicates two things: first, the general need for such a book as RADEX and, second, the value of station WAAM as an advertising medium. Our thanks to you, friend WAAM.

MEXICAN STATIONS

From San Antonio, Texas, Chas. E. Whitney writes: "RADEX is my reliance in my pleasure which is DX-ing. But there are many in the southwest who find little help in getting Mexican stations as some have changed call letters and some wavelengths. Can't you give us a correct list of Mexican stations? Hundreds of us would appreciate it as some of these stations do not announce in English."

We find it most difficult to keep our Mexican stations (and this applies to Cuba also) up to the minute. There does not seem to be much if any governmental control of radio in those two countries hence no one place where we can check our lists. We are forced to rely on such data as we can get from our own government at Washington.

But, wait, here is a letter from Mexico —from A. Verastegui at Tampico—who writes "Yesterday I was lucky enough to get a copy of RADEX. This small magazine gives more useful information than any other I have seen." Perhaps our good friend in Tampico (or some of our other subscribers in Mexico) will help us in this difficulty. If he will secure for us an up-to-date list of Mexican stations with call letters, wavelength or frequency, name of owner and power, we will certainly appreciate it and so will the hundreds of listeners in our southwest to whom Mr. Whitney refers.

Where is PWX?

Several friends of RADEX write us of the trouble they have had trying to locate PWX at Havana in any one spot. It seems this station has been sampling various places in the ether this winter trying to find one where they can get through the barrage. Mr. G. W. U. Phillips of Bound Brook, N. J., sends us a printed announcement from PWX stating they are now CMC with a frequency of 840 kilocycles instead of 750. The change is being made in this issue of RADEX. Mr. Phillips also gives us correct data on 6 KW at Tuinucu, Cuba.

Claude Chapman of Seminole, Okla., also writes of his chasing PWX all over his dials until he finally called on us for help. Readers must remember that PWX—pardon, CMC—is not under our

Radio Commission and hence is free to shift about as it desires. Let's hope they will stay put on 840 although they surely will get all tangled up with KWKH, Shreveport, on 850 and with HHK, Haiti, on 830. Mr. Chapman adds this postcript to his letter: "By the way, RADEX is great. It has helped me to get 123 stations and getting one or two more every day." Let's all move to Oklahoma.

Next is a letter from a sailor who is going to have a RADEX in every port. Mr. Harold D. Johnson of the U. S. Fleet Naval Reserve, stationed at Woodford, Maine, writes: "I have had a great variety of so-called log-books in the past five years but the most practical publication I have yet found is your RADEX. It covers the entire band of wavelengths in such a variety of ways that everyone should welcome it as a part of their radio set."

Then one from a railroad man—Mr. A. M. Mitchell with the C. & O. Ry. at Charleston, W. Va.—"I consider myself fortunate in picking up your December RADEX and thus learning what assistance a REAL radio log is to a fan. I told several friends of this valuable book and the newsdealer had to reorder to satisfy everyone." Maybe you think letters like this don't brighten up an editor's day!

And here is a friend who says it with subscriptions: "I want my best friends to have the best Radio Tuning Book so I am enclosing three one-year subscriptions to your magazine." This was from William McDade at Selbyville, W. Va. Many thanks, Mr. McDade.

The City Clerk at Toulon, Ill., Mr. Claude L. White puts this in his order: "This is the finest thing of the kind I've ever seen and I want these copies for friends who have seen mine." You know how the rings spread out from pebbles thrown in the water, well each copy of RADEX seems to be a pebble all its own.

Wants Short Waves

Here is one from away up in Saskatchewan, from J. O. Girouard with The Pas Lumber Co. at Nipawin: "Being a subscriber to your most useful Radio Index, which renders tuning so easy for everyone, I am wondering if you also publish a short-wave index which would be of great help to me, just starting using a low-wave adapter."

We will answer this inquiry together with a similar one from Mrs. F. E. Geathard, 217 West 21st Avenue, Spokane, Washington, who writes: "I desire to express to you the satisfaction your publication has given me the past year. But why don't you give at least once a year a list of the foreign stations? We DX fans have to also buy another book for the stations you do not give us for the South American, Japanese, Australian and other stations ceive, when we go fishing." If Mrs. Geathard refers to stations in the broadcast bend, there are enough in the countries she names not to mention those to the east, to fill half of RADEX. We are certain that the number of our friends who can get any of these stations must be very, very small and we do not feel that we should take several pages of other material away from the great majority to help so few. For Mrs. Geathard must remember that if she gets these stations in the broadcasting band, she is a very lucky person. If we were to get even one of them here in the "eastern middle west" we think we would brag about it more than we would of a hole-in-one at golf.

If, however, both of the above subscribers refer to the short-wave stations, we have to confess our inability so far to get really authentic lists of such stations in other countries. It is hard enough right here in the United States due to the fact that short-wave broadcasting is still in swaddling-clothes. Then, too, they are not arranged in steps by kilo-

cycles as are our broadcasting stations and hence we could not use the RADEX system of tuning with them. But we shall keep this matter always in mind and hope some day to provide a service that will satisfy in this regard.

Who is Who?

Alfred H. Taylor, of Bywood, Upper Darby, Penna., wants to know where and who WWO is as he finds it, as do many others, messing up their signals. WWO is not a broadcasting station in the common use of the term although it does broadcast in the regular band. This is a station located at the big Cleveland Airport which broadcasts for a few minutes at intervals each day, the weather and landing conditions for our When they trouble you, be patient for a few minutes and remember those brave fellows away off up there in the clouds who are listening so eagerly for this information that may mean life or death to them. We mustn't forget that radio is something for more than a means for our pleasure and information.

Horace Ware of 219 Poinciana Drive, Birmingham, Ala., writes: "I am delighted with the leatherette cover for RADEX which I have just received. I wanted my subscription to begin with the February number but you sent an old October copy in the cover." We have received several such complaints and we want to say to all who are ordering those beautiful blue and gold covers that where there is no copy of RADEX due to go with the cover, we always put in an old one. There are three reasons: first, due to a peculiarity in postal rates, a cover with a book goes cheaper than a cover alone (try to figure that out!); second, a book protects the cover from being bent in the mails; third, we fold the cover of the old book to show you how to insert it into the pockets in the leatherette cover. So when you get an old book you did not order, remember we aren't charging it to your subcription.

A GOOD IDEA

Texas. From Eastland. A. Caldwell sends us the suggestion that the Index by Locations also show the power. His reason is "if one is attempting to get a station in Mexico City, when looking at this index they, at the same time, may see the size of the various stations so they may know without looking further which stations they have the greatest possibility of tuning in." This suggestion has much merit and we will consider it carefully to see if it can be carried out without making it necessary to give more space to this index.

Another friend from the far South is Juan Prieto-Quemper of 3825 Trowbridge St., El Paso, Texas, who writes: "I am very fond of RADEX which I buy every time it is issued. I am also very proud of my Brunswick Superheterodyne 9-tube, with which I have been able in two months to log 149 stations in the U. S. and Mexico. Practically all of the Pacific Coast stations have been heard and also many of the eastern ones, including Philadelphia, Baltimore, Buffalo, Atlantic City, Newark and others." Some record for RADEX and Brunswick.

One more letter and we will close Our Mail Box for this month. This is from C. K. Shepard, 134 Geneva Ave., Elmhurst, Ill.: "We are unable to get RADEX here. There are only a few come to the news stands here and one almost has to fight to obtain a copy. The magazine racks are full of all the other logs but the RADEX melt like snow in August immediately upon appearance. I can't say too much for your RADEX."

FREE A Leatherette Cover for your Radex

See Page 35

QUESTION BOX

(Continued from page 2)

magnetism slightly or completely. This would change your tone considerably. I would also call special attention to your 112-A tube. Have that tested and also test your grid leak. You can use a UX240 tube as a detector but you will have to experiment with your plate voltage on this particular tube; that is, try as many different voltages as you can and listen for the one that gives most clarity and tone quality.

I would also like to know just what kind of acid to use in my Storage A6 Volt Battery which I have filled with Distillata water to keep the Plates covered as I charged the battery myself but never put any acid in.

Under no circumstances put any acid in your battery. Merely keep the plates covered with distilled water. If you should still have trouble keeping it up, take it to a competent battery man in your neighborhood.

I am constantly bothered with crackling noise in my radio. I am sure this is not due to static completely. What other trouble could there be?

Disregarding static as an interference, these noises may come from loose connections that are soldered, screwed or bolted. Go over your wiring system and look for such ailment. Cold soldered joints usually make bad connections, the soldering flux acting in this case as an insulation.

My set has suddenly lost its tone quality. By that I mean that it does not reproduce notes with usual quality The high and low notes are also very much distorted.

Let us assume that we have already tested the loud speaker and found it efficient. The most probable cause for trouble would lie in the audio frequency transformers. This does not necessarily mean that your transformers are dead. They may be too high a ratio. The most common trouble experienced with transformers is burnt out windings. In that case it is best to replace them.

What is the approximate consumption of the average AC Radio Set?

Our laboratory engineer after making a test on twelve of the leading AC sets Manufacturers today has come to the conclusion that the average electric set will not consume any more than a 60 Watt bulb. Therefore we can readily make claim by authentic figuring that you can operate your radio for three hours each evening at the cost of 1 cent per evening or 30 cents per month increase on your present electric light bill.

I suppose my question will be considered a frequent one with you, but however, which course would you pursue in getting stations around 200 meters?

Your question is quite a frequent one, but this may solve your trouble. Remove about five to ten windings on your secondary coils of the radio frequency and tuning transformers, or use a smaller capacity tuning condenser. With many sets this is quite an easy adjustment, but on new sets it is most practical to let an experienced radio man do your job.

My radio set has given me almost more than I could expect, but still there is one condition that I would like to clear up. That is, "what is it that causes Station KDKA Pittsburgh to fade?"

Your question is as yet unanswerable. Station KDKA has spent thousands of dollars trying to discover and eliminate this condition. The trouble is not with your receiver. It is an atmospherical or geological trouble.

What advantage would I gain by using a 250 tube in place of my regular power tube?

All that you can expect from this change would be greater volume and more clarity. The 250 tube will not increase your distance capacity. It was manufactured for the sole purpose of delivering greater volume, with less distortion.

My radio which is a new AC set has developed what I would call distemper. By that I mean the slightest jar or vibration

made near the radio set comes through the speaker. This is terribly annoying. Is this caused by microphonic tubes?

Yes, your trouble is undoubtedly due to microphonic tubes. This is caused by a poorly constructed tube. It is advisable that you have these tubes exchanged as there is a compensation allowed on such tubes.

On what low wave meter does 8XAL broadcast?

8XAL the experimental station of WLW uses a low wavelength of 52.05 meters, and 500 Watts.

I have a Stewart-Warner AC 8 Tube Radio Set. I hear a lot of crackling and buzzing through my speaker. Sometimes, it goes as far as to completely eliminate the program. In this case, I tap the side of the set and the program usually starts. When it doesn't I have to shut off my switch, and turn it on again. Is the trouble in the set or the Speaker?

After careful consideration, we are quite sure that your trouble is in your set. It may be due to any of the following:

- (1) A loose connection.
- (2) A short in one of your tubes.
- (3) Or a short in the circuit.

We have a 5 tube battery set with an A-Eliminator. What would cause our reception to fade every time a switch is turned on in the house, for example the switch on our electric water pump. All of our tubes are new. Now, here is another. What harm or good is there in having two fifty-foot aerials parallel to each other, instead of having one 100 foot aerial. Would it bring in more noise? We have plenty of it now.

The reason for the fading when you turn on another switch in the house, is because you are drawing more voltage from your house line. A motor turned on would therefore drop the volume considerably, because, it draws more voltage and amperage than an electric bulb. As to your aerial, I would not advise the use of two 50 foot lines. Especially when you are receiving plenty of noise now. If your noise is very bad, I would advise cutting your aerial down to about 50 or 75 feet.

I have a Crosley Showbox and have trouble getting stations under 215 Meters. Do you think a short wave convertor would help the set any by tuning sharper, also, do you think it would be satisfactory for DX?

You are probably one of a few million people who are having a great deal of trouble in tuning in stations around the 200 meter band. The best suggestion would be to stand by until further developments. I suppose you know of the trouble that is now brewing between a few broadcasting stations and Radio Commission. Regarding a short wave adapter, I would say No. They are made for stations between 20 and 100 meters.

Who was the earliest experimenter in Radio?

Your question is quite an interesting one and also a very much discussed one. Probably, the first or one of the first experimenters, was Heinrich Hertz. a German Scientist, who based his experiments on the former theories of James Maxwell. In 1887 Hertz succeeded in actually sending radio waves. Here is just how he did the almost unknown. His receiving set consisted of a small spiral of wire with a gap in it. When he sent his radio waves, a spark would jump across the gap. Little did the professor then realize what his experiment would lead to. Here the story ends; but we could go on indefinitely and tell of Marconi, De Forest, Cunningham, Armstrong, and many more, who have helped to make radio what it is.

Quite recently I have purchased an AC set with a Dynamic speaker. This combination worked beautifully until my speaker suddenly lost its clarity and then stopped completely. Is this a common trouble with Dynamic Speakers?

Your trouble is a common occurrence in one respect. That is leaving your power on your speaker when you turn your radio set off. By doing this, you cause your coil in your speaker to over heat because of the steady flow of current. Why, you may say, doesn't my

coil heat while the radio is playing? And the answer is "Yes", but, when your radio is playing, you have a large amount of fluctuation in your diaphragm. This fluctuation would offset the steadiness of the line flow and will therefore keep the coils from becoming too hot. The best way to use this dynamic speaker combination would be to have it wired to the switch on the radio set. This will turn off all the power, that is both the set and the speaker.

(Continued on page 63)

A PUZZLER

For some time the writer was annoved by the peculiar performance of his set. Even local programs would die away suddenly (not slowly as in fading) but the music would lose its volume all at once until it could scarcely be heard. Then, just as suddenly, the normal volume would return. The trouble was finally located where the wires were attached to the battery posts. Large toothed, spring clips were used for the leads from the A battery and a corrosion had taken place which could not be seen and yet which served to make the current flow intermittently. The clips were carefully scraped and filed and the annoying trouble was gone.

MUSIC INTO LIGHT

The daily press reports an interesting experiment when Allen C. Clarke, Danville, Va., amateur, attached an electric pick-up to a phonograph and fed its output into a home-built television reproducer. Music then became curved streaks of light of varying thickness.

Low notes of the double bass and the roll of the tympani produced broad black bands. When the lower register instruments of an orchestra were eclipsed by the shrill treble of violins and highly pitched brasses, fine lines of light were drawn.

As music moved up and down the scale there was a corresponding fluctuation in the picture to left or right. During the more tempestuous passages of the music the picture assumed the appearance of a futuristic drawing.

A jazz band would probably have looked like a premature explosion of a carload of Fourth of July fireworks.

DEAD OR ALIVE

(Continued from page 5)

back upon a fib assuring herself that if one were ever warranted, now was the time. "I am expecting him back every minute," she defended. "He just drove over to a neighbors."

"Yeh. Do you kiss them goodbye every time they go over to the neighbors?"

And then Mary knew that the man had been watching the house for some time. He had seen her parents drive away on their trip to the county-seat. He had watched her kiss them goodbye and had evidently reached the conclusion that the girl was entirely alone. Mary sent a fervent prayer for help into heaven but where it could come from she little knew.

During all this time, like the subdued accompaniment of the theatre orchestra, the radio had been reproducing the strains of the distant instruments, the players never dreaming that they were providing the music for a tense drama.

Mary said nothing but went on about her work. Still the man ate. With her heart pumping as if it would burst, the girl calmly finished wiping her dishes and putting them away. Finally she reached up to the hook and took down a straw hat as if she were going into the garden but as she neared the door, the man moved his huge bulk before her and said, "Oh, no, you don't." And he sat there blocking her way while he reached out for a great slice of pie which he ate, still greedy.

Mary hung the hat back upon its hook and walked around the great dining table which stood in the middle of the big kitchen. She would place this much protection between herself and Behind the outer door which stood open, was her father's rifle with its magazine kept loaded. But like the telephone it was of little use to her for well she knew that before she could reach and use either the man would be upon her. She could only pray that help might come from some source. Perhaps some one would drive into the vard. It was too early for the rural-delivery carrier and she could think of no one else who might come. Her parents would not return until after dark. She stood and waited. She could no longer make a pretense of working. She was thoroughly frightened.

Finally the man turned toward her, an evil leer upon his face. "Come over here and see me," he ordered. Mary did not move.

"Come over here or I will come and get you," was the demand in still rougher tones. The girl ignored the command.

Slowly the fellow rose to his feet and slowly he walked toward her. Mary moved around the table to keep it between her and the brute. The man started to follow and the thought came to Mary that she might get on his side of the table with access to the outside door. But the man grinned and moving toward the door tipped a chest of drawers across blocking the doorway. Mary was now in a panic.

The intruder turned again to the frightened girl. Darting around the table first one way and then another, he endeavored to get his coarse hands upon her. But the girl was swift and eluded him. He chased her back and forward and around. And as Mary passed the telephone on her way she reached out and knocked the receiver off the hook and then screamed "Help. Help."

With an oath the brute grasped the instrument and ripped it completely from the wall. Again he turned to the pursuit.

The distant orchestra took up the strains of "There's a Rainbow Round my Shoulder."

As Mary ran she tripped and the huge hand fell on her. She darted away again and her clothing was torn off her shoulder leaving it bare. Again she was on the opposite side of the table from her tormentor, leaning on it for support, her breath in gasps, her breasts rising and falling like the body of a dying thing. The man glared at her and if he had seemed vile before, he now was the very devil incarnate. He grasped the huge walnut table with both great hands and Mary sensed that he was about to overthrow it upon her. She closed her eyes and shuddered, almost in a faint.

"We are interrupting this program," came a voice from the loud speaker, "at the request of the state police." At the word "police" the corded muscles in the hands that gripped the edge of the table relaxed and the startled brute turned bewildered toward the speaker.

"A convicted murderer escaped from the authorities at Galesburg this morning. He is wanted for the killing of Sam Jackson and his wife at Morton."

And then feature by feature, the radio described the brute on the opposite side of the table from Mary and she knew that she faced a man not only utterly deprayed and without conscience but even without fear of consequences for he was already under sentence of death. With a terrible oath the killer turned and kicked the radio instrument as though it were an inform-The table upon which it rested leaned precariously against the wall but still the loud speaker went on: "The State offers a reward of Five Thousand Dollars for the capture of this man dead or alive. State police are now searching in the vicinity of Cambridge where it is believed this man was seen this morning."

With another vile imprecation, the desperado knocked the set to the floor, then ran to the outer door, pushed the chest of drawers violently out of his way and jumped out on the porch. He looked up and down the road to see if the troopers were near who were hunting in the vicinity. As he ran he pulled a vicious-looking gun from his pocket. No one was in sight for a mile or more in either direction and he turned back into the kitchen to his prey.

Too late. When he turned, he looked into a 32-calibre hole in the end of a Winchester. And back of the sights which were trained steadily upon the very center of his forehead, were the determined and blazing brown eyes of "Hands up!" his intended victim. she said, quietly but in a voice that he knew meant just what it said. Slowly the hands were lifted into the air over his head. Like participants in a tableau, the two faced each other. "What shall I do next?" thought Mary to herself. Slowly, almost imperceptibly, the revolver in the right hand of the criminal inclined. A fraction of an inch at a time it lowered until it was almost in line with the girl in the doorway. Another degree of its terrible arc would have been death but Mary saw it and simultaneously two shots rang out. One bullet imbedded itself in the door jamb above Mary's head. But the other had met its target. The revolver flew from the hand that held it and two fingers hung backward upon the upraised arm while jets of blood spurted down the wrist.

"Now whatever will I do with you?" the girl asked, this time aloud. "You would be less trouble if you were dead. 'Dead or alive'," the girl repeated slowly, pondering the situation. The desperate man misread her intentions, assuming that she would do what he would himself do in a like case. He

paled and losing all control of himself groveled like a whipped cur.

"You wouldn't kill me in cold blood?" he cried.

"Why wouldn't I?" Mary returned. "What chance did you give Mr. and Mrs. Jackson? After they gave you everything you killed them just to make it impossible for them ever to testify against you. You ought to be dead and I do not think I would have any more compunction in killing you than I would a rattle-snake."

The coward whined, really frightened, and muttered something about not meaning to harm anyone.

"Oh, no," returned the girl. "You didn't intend to harm me a few minutes ago, did you? If it hadn't been for that blessed radio....." and the girl shuddered.

At last she spoke sternly to the abject and cowering brute, "Right about face and march to the barn. And let me tell you I can shoot a rabbit on the hop, skip and jump. If you make one false move it will be your very last."

The man, now thoroughly cowed, did as he was bid and with hands still reaching to the sky, he turned and shambled toward the stables. At the girl's direction, he entered one of the cattle stalls which was deep with straw. Still holding the rifle at his head, she ordered him to lie down in the straw with his head in the low manger upon hay that had been left by the cattle. As he laboriously eased himself into the bed and lay over upon his back with his head between the stanchions, the girl suddenly kicked the latter to and the man was safely imprisoned with his head securely locked between the great oak bars.

With her gun slung over her forearm, the stock under her upper arm, in the hunter's "ready" position, Mary backed slowly toward the cupboard which held the remedies used on cuts suffered by the stock. Reaching into the cupboard

still with eyes alert for any untoward move on the part of the prostrate man, she found a box of carbolic salve. Her captive seemed only too willing to lie in the deep straw and await developments having indeed no other alternative. With a strip of the white undergarment hanging in shreds from her shoulder, the young girl spread on the salve and bound up the injured hand as best she could.

She smiled to herself as she addressed the scowling ruffian. "I don't suppose you ever had any idea that you were going to do one good deed before you died. But you are. You are going to send a young woman to college. Now isn't that nice? I never knew how I was going to get the money for college and here you come in and bring me five thousand dollars—sufficient for my whole education and then some. You don't look much like a fairy god-father, do you?" A horrible grimace was the only response.

At that moment, the girl paused, threw up her head and listened. She heard the sharp, staccato bark of a motorcycle. Picking up the rifle she ran to the door of the barn. A state trooper was passing at a high rate of speed. Throwing the barrel of the gun into the air, three shots rang out in quick succession. The cyclist slackened, looked around and then wheeling his machine about, he came roaring into the farm yard. With a grinding stop in front of the girl, he grinned and asked "What's all the shootin' fer?"

It was Lady Audrey who answered. "For whom are you seeking?" she inquired sweetly.

"I'm looking for an escaped murderer—the fellow who killed Mr. and Mrs. Jackson. You haven't seen anything of him have you?"

Mary nodded toward the stall. "Allow me to turn him over to you," she said.

The trooper turned and looked,

walked forward curiously and stared at the imprisoned figure. Then he turned to the girl and stammered, "Ma'am, I'm a son-of-a-gun. Excuse me, ma'am. Yes, sir, I'm a son-of-a-gun."

If Set Goes Wrong

(Continued from page 3)

Symptom

Inability to tune in distant stations.

CAUSE

Limited range of receiver.

Atmospheric conditions.

Aerial is too short.

Use of a substitute aerial, loop or indoor aerial for regular outdoor aerial.

Worn-out tubes which need reactivation.

Low A and B-batteries.

Careless tuning by operator.

WEAK RECEPTION

SYMPTOM

Occasional weak signals.

CAUSE

Static conditions.

Corroded tube tips and socket prongs.

SYMPTOM

Constant weak signals.

CAUSE

Receiver is located a considerable distance from broadcasting stations.

Aerial is too short

Use of indoor aerial on receiver designed for outdoor aerial.

Too loose adjustment of loudspeaker unit.

One or more defective tubes.

High-resistance joint.

SYMPTOM

Signal comes in louder when ground is disconnected.

CAUSE

Grounded aerial.

SYMPTOM

Rheostats must be turned up excessively high for fair volume.

CAUSE

Tubes worn out and need reactivation. Low A-battery.

SYMPTOM

Signal is strong when receiver is turned on but soon dies down.

CAUSE

Low A or B-battery, or both.

SYMPTOM

Weak signals accompanied by slight whistling or crackling noises (may also oscillate.)

CAUSE

Low B-batteries. Incorrect B-voltages.

SYMPTOM

Better volume obtained when tubes are changed.

CAUSE

Some tubes work better for r.f. and other for a.f. amplification.

Symptom

Signal strength varies with the use of different phones and loudspeakers.

CAUSE

Demagnetized phone or loudspeaker

One loudspeaker better designed than another.

Reversed phone-cord connections causing wrong polarity.

SYMPTOM

Tubes do not light up sufficiently and receiver has poor volume.

CAUSE

Corrosion on battery terminals causing high resistance joint and preventing required amount of current from passing.

SYMPTOM

Weak signals after battery has been changed.

CAUSE

Reversed A-supply leads. Reversed C-supply leads.

SYMPTOM

Weak signals after lead-in and ground wires have been re-connected.

CAUSE

Lead-in and ground wires reversed on receiver binding posts.

FLUCTUATING RECEPTION

SYMPTOM

Sporadic fading of signal strength.

CAUSE

Atmospheric conditions.

SYMPTOM

Intermittent fluctuations of reception.

CAUSE

Variations in B-supply from eliminator due to line surges.

Symptom

Signal strength varies when hand is removed from tuning dial.

CAUSE

Body capacity.

FAULTY TUNING

SYMPTOM

Broad tuning.

CAUSE

Proximity of receiver to broadcasting station.

R. F. coils too closely coupled.

Aerial is too long.

Antenna effect of eliminator.

Inadequate tuning circuit.

SYMPTOM

Too sharp tuning.

CAUSE

R. F. coils too loosely coupled.

Aerial is too short for distant reception.
Use of indoor aerial on receiver designed
for outdoor aerial.

High - peaked intermediate - frequency transformers of superheterodyne receivers.

SYMPTOM

Receiver breaks into oscillation easily when tuning signals carefully, causing an "oscillation handover."

CAUSE

Too low value of grid leak.

DISTORTED SIGNALS

SYMPTOM

Loud notes distorted.

CAUSE

Audio tubes overloaded.

Poorly designed transformers.

Symptom

Metallic reproduction.

CAUSE

Metal loudspeaker bell.

SYMPTOM

Constant distortion, especially on high and low notes.

CAUSE

Poorly designed and cheaply made transformers.

Poor tubes having low mutual conductance.

Intercoupling between non-shielding audio transformers.

Too high transformer ratios.

Incorrect value of defective resistors in resistance-coupled a.f. amplifier.

SYMPTOM

Distorted signals when r.f. and detector rheostats are tuned up too high.

CAUSE

Oscillating r.f. tube or detector.

SYMPTOM

Distortion from certain broadcasting stations.

CAUSE

Poor broadcasting equipment and faulty operation.

SYMPTOM

Distortion when two stations on nearly the same wavelength are broadcasting at the same time.

CAUSE

Overlapping wavebands prevent tuning in either one sharply, resulting in mutual interference. SYMPTOM

Distortion on signals from distant stations.

CATISE

Receiver tunes too sharp and cannot get benefit of the full waveband.

Symptom

Harsh-toned reception.

CAUSE

Too high grid and plate voltages.

Detector filament rheostat turned up too high.

Incorrect resistors in resistance-coupled receiver.

Too high grid-leak value.

SYMPTOM

"Fuzzy" reproduction.

CAUSE

Slow-leaking condenser in eliminator. Poorly adjusted eliminator. Incorrect value of grid-leak.

NOISY RECEPTION

Symptom

Crashing and crackling noises at certain times.

CAUSE

Static discharges.

Power lines grounded by trees, wet insulators, etc.

Defective power transformer.

Dirty commutators on electric motors causing sparking brushes.

Passing street cars, interurbans, etc. Farm lighting unit.

Defective buffer condenser of eliminator.

Trickle charger in operation while receiver is used.

SYMPTOM

"Motorboating" (putt-putt sounds).

CAUSE

High internal impedance of filter section of eliminator.

Faulty resistors and leady condensers in eliminator.

Fluctuations of voltage of a. c. supplying eliminator.

Excessive voltage on r.f. and detector tubes.

Incorrect value of resistor in detectorplate circuit of resistance-coupled receiver.

Incorrect grid bias.

Defective grid condenser.

Too high grid-leak resistance.

Reversed winding of a.f. transformer. Unmatched impedance between power tube and loudspeaker.

SYMPTOM

Squawking noises when tuning.

CAUSE

Set turned up too high for proper operation.

Symptom

Howling and whistling noises.

CAUSE

Too much regeneration.

Pick-up from other reradiating receivers.

Too high grid-leak.

Unneutralized r.f. stages.

Inductive effects between parallel grid and plate lines.

Inductive effect of a loop.

Two stations at slightly different wavelengths operating simultaneously.

Intermediate stages of superheterodyne oscillating.

Incorrect value or defective filter condenser in superheterodyne.

SYMPTOM

Clicking while tuning.

CAUSE

Oscillating r.f. tubes.

Short-circuited buffer condenser in eliminator.

Arcing across anode leads of eliminator rectifier, across prongs of rectifier-tube socket, or across output of power transformer or eliminator.

Defective eliminator resistors.

SYMPTOM

Buzzing sounds.

CAUSE

High-frequency electrical apparatus. Rotary spark gap of transmitting station.

Symptom

Rasping, spluttering or crackling noises when receiver is being tuned.

CAUSE

Loose connection.

Thread-like burrs on plate of variable condensers.

SYMPTOM

Constant crashing and crackling noises (sometimes evidenced with weak signal strength).

CAUSE

Noisy B-battery, especially when old and nearly worn out.

SYMPTOM

Sporadic hissing, crackling and frying noises.

CAUSE

Internal short circuits in tubes.

SYMPTOM

Howl, increasing gradually in pitch and volume.

CAUSE

Microphonic detector or other tube (caused by too high plate voltage or by vibration).

Symptom

Ringing noise when receiver or cabinet is tapped.

CAUSE

Microphonic detector.

Symptom

Steady humming sound.

CAUSE

Aerial parallel to electric power lines. Lead in or ground wire, loop, or receiver in close proximity to extension cords or electric lamps.

Poor filtration of eliminator.

Inductive effect from eliminator.

NOTICE OF COPYRIGHT

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

550 kilocycles 545.1 meters

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

560 kilocycles 535.4 meters

KFDM	509	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

570 kilocycles 526.0 meters

KGKO	250	Wichita Falls, Tex.
KMTR	1000	Hollywood, Calif.
KPLA	1000	Los Angeles, Calif.
KUÓM	500	Missoula, Mont.
KXA	500	Seattle, Wash.
WHA	750	Madison, Wis.
WIBO	1000	Chicago, Ill.
WKBN	500	Youngstown, Ohio
WMAC	2 50	Cazenovia, N. Y.
WMCA	500	New York City
WNAX	1000	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.

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.
WOBU	250	Charleston, W. Va.
WSAZ	250	Huntington, W. Va.
WSUI	500	Iowa City, Iowa
WTAG	250	Worcester, Mass.

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

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

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. P. Williamson, Jr.
Clive B. Meredith
Greeley Square Hotel Co.
Dakota Radio Apparatus Co.
Dept. of Plants & Structures
North Shore Congregational Church
Stanley M. Krohn, Jr.
Clive B. Meredith
Chamber of Commerce

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 Rallways
Dana McNeil
State Agricultural College
Charleston Radio Brdcstg. Co.
McKellar Electric Co.
University of Iowa
Telegram Publishing Co.

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.	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. KFSD 500 San Diego, Calif. KWYO 500 Laramie, Wyo. WCAC 250 Storrs, Conn. WCAO 250 Baltimore, Md. WEBW 350 Beloit, Wis. WOAN 500 Lawrenceburg, Tenn. WREC 500 Memphis, Tenn. WTIC 250 Hartford, Conn.	Abitibi Power & Paper Co. Airfan Radio Corp. Bishop N. S. Thomas Conn Agricultural College Monumental Radio Co., Inc. Beloit College Vaughan School of Music WREC, Inc. Travelers Insurance Co.
610 kilocycles 491.5 meters	72 31 13,
KFRC 1000 San Francisco, Calif. WDAF 1000 Kansas City, Mo. WFAN 500 Philadelphia, Pa. WIP 500 Philadelphia, Pa. WOQ 1000 Kansas City, Mo.	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 Bangor Me. WTMJ 1000 Milwaukee, Wis.	Electrical Equipment Co. Oregonian Publishing Co. Tampa Publishing Co. Rolline College, Inc. Maine Brdcstg. Co. Milwaukee Journal
630 kilocycles 475.9 meters	
CFCT 500 Victoria, B. C. CJGX 500 Yorkton, Sask. CNRA 500 Moncton, N. B. CYR 250 Mazarlan, Mex. KFRU 500 Columbia, Mo. WGBF 500 Evansville, Ind. WMAL 250 Washington, D. C. WOS 500 Jefferson City, Mo.	Victoria Broadcasting Ass'n. Winnipeg Grain Exchange Canadian National Railways Castulo Llamas Stephens College Evanswille 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	Earle C. Anthony, Inc. American Insurance Union
650 kilocycles 461.3 meters	National Life & Accident Ins. Co.
4 - 4	National Dife & Accident ins. Co.
660 kilocycles 454.3 meters WAAW 500 Omaha, Nebr.	Omaha Grain Exchange
WEAF 50000 New York City	National Broadcasting Co., Inc.
670 kilocycles 447.5 meters WMAQ 5000 Chicago, III.	Chicago Daily News, Inc.
680 kilocycles 440.9 meters	
KPO 5000 San Francisco, Cal.	Hale Bros. & The Chronicle
WPTF 5000 Raleigh, N. C.	Durham Life Insurance Co.

690 kilocycles 434.5 meters	
CFAC 500 Calgary, Alta. CFCN 1800 Calgary, Alta. CHCA 250 Calgary, Alta. CJCJ 250 Calgary, Alta. CKCO 100 Ottawa, Ont. CNRC 500 Calgary, Alta. CNRO 500 Ottawa, Ont. NAA 1000 Arlington, Va.	The Caigary 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	W. J. & C. I. McWhinnie Crosley Radio Corp.
710 kilocycles 422.3 meters	
CYO 100 Mexico City WOR 5000 Newark, N. J.	M. Y. Zetina L. Bamberger & Co.
720 kilocycles 416.4 meters	
WGN 25000 Chicago, Ill. WLIB 25000 Chicago, Ill.	Chicago'Tribune Liberty Weekly, Inc.
730 kilocycles 410.7 meters	
CFCF	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.	The M. M. Johnson Co. Atlanta Journal Co.
750 kilocycles 399.8 meters	
CYJ 2000 Mexico City CYL 500 Mexico City WCX 5000 Detroit, Mich. WJR 5000 Detroit, Mich.	R. Ascarraga Detroit Free Press WJR, Inc.
760 kilocycles 394.5 meters	
WEW 1000 St. Louis, Mo. WJZ 30000 New York City	St. Louis University Radio Corp. of America, Inc.
770 kilocycles 389.4 meters	
WBBM 5000 Lincoln, Nebr. Chicago, III.	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 250 Wellesley Hills, Mass. WMC 500 Memphis, Tenn. WPOR 500 Norfolk, Va. WSEA 500 Portsmouth, Va. WTAR 500 Norfolk, Va.	Manitoba Telephone System Canadian National Railways Earl L. White Pickwick Brdcstg. Corp. Babson's Statistical Organization. Memphis Commercial-Appeal Reliance Electric Co. Virginia Beach Brdcstg. Co. Reliance Electric Co., Inc.

790 kilocycles 379.5 meters	
KGO 7500 Oakland, Calif. WGY 50000 Schenectady N. Y. 6KW 1500 Tulnucu, Cuba	General Electric Co. General Electric Co. Frank H. Jones
800 kilocycles 374.8 meters	
CYH 190 Mexico City KTHS 10000 Hot Springs, Ark. WBAP 50000 Fort Worth, Tex. WSAI 5000 Cincinnati, Ohio	C. de Tarnava Chamber of Commerce Carter Publications, Inc. Crosley Radio Corp., Lessee
810 kilocycles 370.2 meters	
WCCO 15000 Minneapolls-St. Paul WPCH 500 Jersey City, N. J.	Washburn-Crosby Co. Concourse Radio Corp.
820 kilocycles 365.6 meters	
WHAS 10000 Louisville, Ky.	Courier-Journal & Times
830 kilocycles 361.2 meters	
HIIK 1000 Port au Frince, Haiti KOA 12500 Denver, Colo. WHOH 1000 Gloucester, Mass.	Republic of Hait! 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. CMC 500 Havana, Cuba CNRT 500 Toronto, Ont.	Star Publishing & Ptg. Co. C. F. Tull & Ardern, Ltd. Jarvis Street Baptist Church Alberta Pacific Grain Co. Nestle'is Food Co. Cuban Telephone Co. Canadian National Railways
850 kilocycles 352.7 meters	
KFQZ 1000 Hollywood, Calif. KWKH 20000 Shreveport, La. WWL 5000 New Orleans, La.	Leslie E. Taft W. K. Henderson Logola University
860 kilocycles 348.6 meters	
CZE 500 Mexico City WABC 5000 New York City WBOQ 5000 New York City 20K 100 Havana, Cuba 7SR 500 Elia, Cuba	Department of Education Atlantic Broadcasting Corp. Atlantic Broadcasting Corp. Merio G. Velez Salvador Rionda
870 kilocycles 344.6 meters	
WENR 25000 Chicago, III. * WLS 5000 Chicago, III. *	Great Lakes Brdcstg. Co. The Prairie Farmer
880 kilocycles 340.7 meters	
CHCS 10 Hamilton, Ont. CHML 50 Hamilton, Ont. CHRC 5 Ouebec, Oue. CKCI 22.5 Quebec, Que. CKCV 50 Quebec, Que. CKOC 100 Hamilton, Ont. CNRQ 50 Quebec, Que. KFKA 500 Greeley, Colo. KL X 500 Oakland, Calif. KPOF 500 Denver, Colo. WCOC 500 Columbus, Miss. WGBI 250 Scranton, Pa. WQAN 250 Scranton, Pa.	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

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.
WKAQ	500	San Juan, P. R.
WMAZ	250	Macon, Ga.
WMMN	250	Fairmont, W. Va.

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. Radio Corp. of Porto Rico Mercer University Holt Rowe Novelty Co.

900 kilocycles 333.1 meters

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

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

910 kilocycles 329.6 meters

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

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.

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

930 kilocycles 322.4 meters

500	Halifax, N. S.
100	Tampico, Mex.
500	San Francisco, Calif.
500	Oakland, Calif.
500	York, Nebr.
500	Shenandoah, Iowa
500	Birmingham, Ala.
250	Roanoke, Va.
50	Elkins Park, Pa.
	100 500 500 500 500 500 500 250

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

940 kilocycles 319.0 meters

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

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

950 kilocycles 315.6 meters

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

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

HADDA DI TREQUENCIES A	DIAL NOWIDERS
960 kilocycles 312.3 meters	
CFCY 100 Charlottetown, P. E. I. CFRB 1000 Twp. of King, Ont. CHCK 30 Charlottetown, P. E. I. CHWC 500 Regina, Sask. CJBC 5000 Toronto, Ont. CJBR 500 Regina, Sask. CKCK 500 Regina, Sask. CKGW 5000 Bowmanville, Ont. CNRR 500 Regina, Sask. CYU 100 Puebla, Mex.	The Island Radio Co. Standard Radio Mfg. Corp. W. E. Burke R. H. Williams & Sons Jarvis St. Baptist Church Cooperative Wheat Producers Leader Pub. Co. Gooderham & Worts Canadian Nat'l. Railways A. del P. Zaonz
970 kilocycles 309.1 meters	
CZF 250 Chihuahua, Mex. KJR 5000 Seattle Wash. WCFL 50000 Chicago, III.	State of Chihuahua Northwest Radio Service Co. Chicago Federation of Labor
980 kilocycles 305.9 meters	
KDKA 50000 Pittsburgh, Pa.	Westinghouse Elec. & Mfg. Co.
990 kilocycles 302.8 meters	
WBZ 15000 Springfield, Mass. WBZA 500 Boston, Mass.	Westinghouse Elec. & Mfg. Co. Westinghouse Elec. & Mfg. Co.
1000 kilocycles 299.8 meters	
CYA 500 Mexico City KGFH 250 Glendale, Calif. WHO 5000 Des Moines, Iowa WOC 5000 Davenport, Iowa	E. R. Comes Frederick Robinson Bankers Life Co. Palmer School of Chiropractic
1010 kilocycles 296.9 meters	
CFLC 50 Prescott, Ont. CJRM 500 Moose Jaw, Sask. CJRW 500 Fleming, Sask. CKCR 50 Brantford, Ont. CKSH 50 St. Hyacinthe, Que. KGGF 500 Picher, Okla. KOW 500 San Jose, Calif. WHN 250 New York City WNAD 500 Norman, Okla. WPAP 250 Cliffside, N. J. WQAO 250 Cliffside, N. J. WRNY 250 New York City WSIS 250 Sarasota, Fla.	Radio Association Jas. Richardson & Sons Jas. Richardson & Sons, Ltd. John Patterson City of St. Hyaciuthe D. L. Connell, M. D. First Baptist Church Marcus Loew Booking Agency University of Oklahoma Palisades Amusement Park Calvary Baptist Church Experimenter Publishing Co. Chamber of Commerce
1020 kilocycles 293.9 meters	
KFKX 5000 Chicago, III. KYW 5000 Chicago, III. KYWA 5000 Chicago, III. WRAX 250 Philadelphia, Pa.	Westinghouse Elec. & Mfg. Co. Westinghouse Elec. & Mfg. Co. Westinghouse Elec. & Mfg. Co. Berachah Church, Inc.
1030 kilocycles 291.1 meters	
CJOR 50 Sea Island, B. C. CNRV 500 Vancouver, B. C.	G. C. Chandler Canadian Nat'l Railways
1040 kilocycles 288.3 meters	
KRLD 10000 Dallas, Texas WFAA 5000 Dallas, Texas WKAR 500 East Lansing, Mich. WKEN 1000 Buffalo, N. Y.	KRLD, Inc. Dallas Morning News Michigan Agricultural College Radio Station WKEN, Inc.
1050 kilocycles 285.5 meters	
KNX 5000 Hollywood, Calif. WFBM 25000 Indianapolis, Ind. 2MG 20 Havana, Guba	Western Broadcast Co. Indianapolis Power & Light Co. M. y G. Salas

HADDY DI INTONIO	
1060 kilocycles 282.8 meters	
KWJJ 500 Portland, Ore. WBAL 5000 Baltimore, Md. WJAG 500 Norfolk, Nebr. WTIC 5000 Hartford, Conn.	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	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.	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	J. J. Reynosa Voice of St. Louis Benito V. Ferro
1100 kilocycles 272.6 meters	
KJBS 100 San Francisco, Cal. WLWI, 5000 New York City WPG 5000 Atlantic City, N. J.	Julius Brunton & Sons Co. Missionary Society of St. Paul Municipality of Atlantic City
1110 kilocycles 270.1 meters	
KSOO 500 Sloux Falls, S. D. WRVA 5000 Richmond, Va. 2TW 20 Havana, Cuba	Sioux Falls Broadcast Assn. Larus & Bros. Co., Inc. Roberto E. Ramirez
1120 kilocycles 267.7 meters	
CFJC 15 Kamloops, B. C. CFMC 20 Kingston, Ont. CFRC 500 Kingston, Ont. CHGS 25 Summerside, P. E. I. CJOC 50 Lethbridge, Alta. CKPR 50 Midland, Ont. KFSG 500 Los Angeles, Cal. KRSC 50 Seattle, Wash. KUT 500 Austin, Texas WCOA 500 Pensacola, Fla. WDEL 250 Wilmington, Del. WHAD 250 Milwaukee, Wis. WISN 250 Milwaukee, Wis. WTAW 500 College Station, Texas	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 Citv of Pensacola WDEL, Inc. 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	F. Zonillo Dr. J. R. Brinkley Radio Service Corp. of Utah International Brdcstg. Corp.
1140 kilocycles 263.0 meters	
KVOO 5000 Tulsa, Okla. WAPI 5000 Birmingham, Ala.	Southwestern Sales Corp. Alabama Polytechnic Institute
1150 kilocycles 260.7 meters	
KGDM 10 Stockton, Calif. WHAM 5000 Rochester, N. Y. 6BY 200 Clenfuegos, Cuba	E. F. Peffer Stromberg-Carlson Tel. Mfg. Co. Jose Ganduxe

1160 kilocycles 258.5 meters

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

1170 kilocycles 256.3 meters

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

1180 kilocycles 254.1 meters

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

1190 kilocycles 252.0 meters

WICC 500 Bridgeport, Conn. 5000 San Antonio, Texas

1200 kilocycles 249.9 meters

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

100

100

50

WRBL

2BB

WWAE

Columbus, Ga. Hammond, Ind.

Hayana, Cuba

Main Auto Supply Co. West Virginia Brdcstg. Corp.

Norman Baker Universal Broadcasting Co. Oscar C. Orta

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

Bridgeport Broadcasting Station Southern Equipment Co.

Western College of Colorado Marshall Electric Co. State Teachers College James R. Fouch St. Louis Truth Center, Inc. Mandan Radio Association Jaren Drug Co. 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. 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. 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. Martin Hammond-Calumet Brdcstg. Co. Bernardo Barrie

1210 kilocycles 247.8 meters Chatham, Ont. Fredericton, N. B. Chilliwack, B. C. CFCO CFNB CHWK CKMC Western Ontario "Better Radio" club James S. Neill & Sons 25 50 Chilliwack Brdcstg. Co., Ltd. 5 R. L. MacAdam Cobalt, Ont. CKPC 25 Preston, Ont. Wallace Russ Devils Lake, N. D. Kellogg, Idaho Lincoln, Nebr. Cape Girardeau, Mo. Radio Electric Co. KDLR 100 KFEY 10 Union High School Union High School Howard A. Shuman Hirsch Battery & Radio Co. Cutler's Radio Brdcatg. Service Boy Scouts of America Pacific Coast Biscuit Co. Archie Taft & Louis Wasmer KFOR KFVS 100 100 Brookings, S. D. Pueblo, Colo. Seattle, Wash. Seattle, Wash. KGCR 100 KGDP 10 KPCB 100 KPQ KWEA 100 Archie Taft & Louis Wasmer William E. Antony John H. Stenger, Jr. H. L. Dewing & Chas. Messter Westchester Brdcstg. Corp. Clinton R. White Dutee W. Filmt Roy W. Waller Tare Radio Co. 100 Shreveport, La $\bar{1}00$ WBAX WCBS Wilkes-Barre, Pa. Springfield, Ill. 100 wсон 100 Greenville, N. Y. Chicago, Ill. WCRW 100 WDWF 100 Cranston, R. I Cambridge, Ohio Harrisburg, Ill. Chicago, Ill. Freeport, N. Y. WEBE 100 WEBQ 50 Tate Radio Co. WEDC WGBB WGCM 1ŏŏ Emil Denemark, Inc. Harry H. Carman Gulf Coast Music Co. 100 Gulfport, Miss. Rock Island, Ill. 100 Guli 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 WHBF 100 Rock Island, III. Anderson, Ind. Madison, Wis. Bay Shore, N. Y. Red Bank, N. J. Lewisburg, Pa. Gadsden, Ala. Mansfield, Ohio Ithaca, N. Y. Cranston, R. F. Columbus, Ohio WHBU 100 WIBA 100 100 WJBI WJBU 100 100 WJBY 50 WLBV 100 Mansfield Broadcasting Assn. WLCI 50 Lutheran Assn. of Ithaca WLSI 100 The Lincoln Studios, Inc. WMAN WMBG Golumbus, Ohio Richmond, Va. 50 W. E. Heskitt 100 Havens & Martin, Inc. Richmond, Va. Tampa, Fla. Jamestown, N. Y. Manitowoc, Wis. Pawtucket, R. I. Greenville, Miss. Gastonia, N. C. Chicago, Ill. Sprindfeld, Tenn. WMBG WMBR WOCL WOMT F. J. Reynolds A. E. Newton Mikadow Theatre 100 25 100 WPAW WRBO 100 Shartenburg & Robinson J. Pat Scully A. J. Kirby Music Co. 100 WRBU 100 World Battery Co., Inc. WSBC 100 Springfield, Tenn. Streator, Ill. Richmond, Va. Williams Hardware Co. Williams Hardware Co. W. Reynolds & T. J. McGuire WSIX 100 WTAX WTAZ 50 15 1220 kilocycles 245.8 meters Lawrence, Kans. Canton N. Y. KFKU WCAD 1000 University of Kansas 500 St. Lawrence University Kaufman & Baer Co. WCAE 500 Pittsburgh, Pa. WREN 1000 Lawrence, Kans. Jenny Wren Co. 1230 kilocycles 243.8 meters KFIO 100 Spokane, Wash. North Central High School Spokane, Wash. Anchorage, Alaska San Francisco, Cal. Boston, Mass. Ft. Wayne, Ind. Indianapolis, Ind. Boston, Mass. State College, Pa. South Bend, Ind. KFOD KYA WBIS Anchorage Radio Club Pacific Broadcasting Corp. 100 1000 The Shepard Stores Fred C. Zleg 500 WGL 500 WFBM 500 Indianapolis Power & Light Co. WNAC 500 The Shepard Stores WPSC Pennsylvania State College 500 500 South Bend Tribune 1240 kilocycles 241.8 meters Ft. Worth, Texas Detroit, Mich. Miami Beach, Fla. Waco, Texas Miami, Fla. Valparaiso, Ind. KTAT WGHP 1000 Texas Air Transport Brdcst. Co. 750 1000 American Brdcstg. Corp. WIOD Isle of Dreams Brdcstg. Co.

WJAD

WOAM WRBC

1000

750 500 Frank P. Jackson Electrical Equipment Co. Immanuel Lutheran Church

1250 kilocycles 239.9 meters

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

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.

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.
WEAL	500	Ithaca, N. Y.
WFBR	250	Baltimore, Md.
WOOD	500	Grand Rapids, Mich.

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

1280 kilocycles 234.2 meters

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

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.
KTSA	1000	San Antonio, Texas
WJAS	1000	Pittsburgh, Pa.
WNBZ	10	Saranac Lake, N. Y.

Intermountain Brdcstg. Corp. Will H. Ford C. L. Lintzrnich Lone Star Broadcast Co. Plttsburgh 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	Roosville, N. Y.
WEVD	500	Woodhaven, N. Y.
WHAP	1000	New York City
WHAZ	500	Troy, N. Y.
WIBW	1000	Topeka, Kansas

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

1310 kilocycles 228.9 meters	
KFBK 100 Sacramento, Calif.	Kimball-Upson Co.
KFCB 100 Phoenlx, Ariz. KFGO 100 Boone, Iowa	Nielson Radio Supply Co. Boone Biblical College
KEIII 10 Iuneau Alaska	Alaska Elec. Light & Power Co.
KFJY 100 Ft. Dodge, Iowa KFPL 15 Dublin, Texas	C. S. Tunwall C. C. Baxter
KFPM 15 Greenville, Texas	The New Furniture Co.
KFJY 100 Ft. Dodge, Iowa KFPL 15 Dublin, Texas KFPM 15 Greenville, Texas KFUP 100 Denver, Colo	Fitzsimmons General Hospital
KFXR 100 Oklahoma City	R. G. Howell Exchange Ave. Baptist Church
KGEZ 100 Kalispell, Mont.	Flathead Broadcasting Assn.
KGFI 100 San Angelo, Texas KGGH 50 Cedar Grove, La.	San Angelo Broadcasting Co. Bates Radio & Electric Co.
KGHG 50 McGeehee, Ark.	Chas. W. McCollum
KMED 50 Medford, Ore. KRMD 50 Shreveport, La.	W. J. Virgin Robert M. Dean
KWCR 100 Cedar Rapids, Iowa	H. E. Paar
WABY 50 Philadelphia, Pa.	John Magaldi, Jr.
WAGM 50 Royal Oak, Mich. WBMH 100 Detroit, Mich.	Robert L. Miller Braun's Music House
WBOW 100 Terre Haute, Ind.	Banks of Wabash Brdsctg. Assn. Louis G. Baltimore
WBRE 100 Wilkes-Barre, Pa. WCLS 100 Joliet, III.	WCLS, Inc.
WDAH 100 El Paso, Texas	Trinity Methodist Church
WEBR 100 Buffalo, N. Y. WEHS 100 Evanston, III.	H H HOWELL
WFBG 100 Altoona, Pa.	Victor C. Carlson Wm. F. Gable Co. Frank D. Fallain
WFDF 100 Flint, Mich.	Frank D. Fallain
WFKD 50 Philadelphia, Pa. WGAL 15 Lancaster, Pa.	Foulkrod Radio Engineering Co. Lancaster Electric Supply Co.
WGH 100 Newport News, Va.	Virginia Brdestg. Co., Inc. Johnstown Ausomobile Co. Goodson & Wilson, Inc.
WHBP 100 Johnstown, Pa. WHFC 100 Chicago, Ill.	Johnstown Automobile Co.
WIBU 100 Poynette, Wis.	William G. Forrest
WIBU 100 Poynette, Wis. WJAK 50 Kokomo, Ind. WKAV 100 Laconia, N. H. WKBB 100 Jollet, III.	J. A Kautz-Kokomo Tribune Laconia Radio Club
WKBB 100 Joliet, Ill.	Sanders Bros.
WKSC IV BITHINGDAID, AIR.	H. I. Ansley
WKBI 50 Chicago, III. WKBS 100 Galesburg, III.	Fred L. Schoenwolf Permil N. Nelson Demail A. Puston
WLBC 50 Muncie, Ind.	Donald A. Burton Fred A. Trebbe, Jr.
WLBO 100 Galesburg, Ill. WMBL 100 Lakeland, Fla.	Benford's Radio Studios
WNAT 100 Philadelphia, Pa.	Lennig Bros. Co. New Bedford Broadcasting Co.
WNBH 100 New Bedford, Mass. WNBJ 50 Knoxville, Tenn.	New Bedford Broadcasting Co. Lonsdale Baptist Church
WOBT 15 Union City, Tenn.	Tittsworth's Radio & Music Shop
WOL 150 Washington, D. C. WRAW 100 Reading, Pa.	American Broadcasting Co. Avenue Radio & Electric Shop
WRBI 20 Tifton, Ga.	Kent's Furniture & Music Store
WRBW 100 Columbia, S. C.	Paul S Pearce
WRK 100 Hamilton, Ohio WSAJ 100 Grove City, Pa.	S. W. Doron & J. C. Slade Grove City College
WSMD 100 Salisbury, Md.	Tom F. Little
WTHS 100 Atlanta, Ga.	Technical High School
1320 kilocycles 227.1 meters	
KGHB 250 Honolulu, Hawaii	Radio Sales Co.
KGHF 250 Pueblo, Colo.	C. P. Ritchie & J. E. Finch
KGIO 250 Idaho Falls, Ida. KGIQ 250 Twin Falls, Ida.	Jack W. Duckworth, Jr. Stanley M. Soule
WADC 1000 Akren, Ohio	Stanley M. Soule Allen T. Simmons Saenger Theatre & Maison Blanche
WSMB 750 New Orleans, La.	Saenger Theatre & Maison Blanche
1330 kilocycles 225.4 meters	
CYM 1500 Torreon, Mexico	Parlalma Para Co
KSCJ 1000 Slour City, Iowa WDRC 500 New Haven, Conn.	Perkins Bros. Co. Doollitle Radio Corp.
WTAQ 1000 Eau Claire, Wisc.	Gillette Rubber Co.
1340 kilocycles 223.7 meters	!
	Por Variation W. Starrant
	Rev. Lannie W. Stewart KMO, Inc.
KVI 1000 Tacoma, Wash.	Puget Sound Brdcstg. Co.
WSPD 500 Toledo, Ohio	Toledo Broadcasting Co.

1350	kilocy	cles	222.1	meters		1	<u>} </u>
KWK WBNY	1009	St. Lou	is, Mo.		Greater St	. Louis Brdcst	g. Corp.
WEDA	250 250	New Yo	ork City		Baruchron Italian Ed	ne Corp. uc. Brdcstg. Co Cahill Co., Inc).
WKBQ	250	New Yo	yn, N. Y. ork City		Standard	Cahill Co., Inc	•
WMSG	250	New Yo	ork City		Madison S	quare Garden	
1360	kilocy	clee	2204	meters			
KFBB	250	Havre,		HILLECIO	F. A. Butte	TV Co.	1
KGB	250	San Di	ego, Calif.		Pickwick I	Bracstg. Corp.	
KGIR WBET	250 500	Butte,			Symons Br	roadcasting Co anscript Co.	•
WGES	500	Boston Chicag	o. Ili.		Oak Leave	s Broadcasting	Corp.
WJKS	500	Gагу, I	nd.		Johnson-F	kennedy Radio	Corp.
WMAF WQBC	500 300	S. Dart Utica,	mouth, M	1288.	Chamber	ls Radio Corp. of Commerce	
-							
13/0	kilocy	cles	218.7	meters		1	
KFBL KFEC	50	Everett	, Wash. id, Ore.		Leese Bros		
KFJI	100 50	Astoria	Ore.		Meler & Fr George Kir	rank Co.	
KrJZ	100	Ft. Wo	rth, Texas on, Texas		Henry C. A	llison	
KFLX	100	Galvest	on, Texas		George Ro	Clough	
KFUR	50 100	Ogden,	Utan		Peery Bull	ding Co.	
KGAR KGBX	100	St Jose	, Ariz.		Foster-Hal	ablishing Co. 1 Tire Co.	
KGCB	100	Enid, C)kla.		Champlin	Refining Co.	
K G C I K G D A	100 15	San An	tonio, Tex pids, S. D	28	Liberto Ra Home Auto	dlo Sales	
KGER	100	Lors B	each, Cal.	•	C. Merwin		
KGFG	100	Oklaho	ma City		Faith Tab	ernacle Assn.	
KGFL	50	Raton,	N. M.	3.6	N. L. Cotto Jay Peters	er	
KGGM KGKL	100 100	San An	erque, N. gelo, Texa	IVL.	KGKL.Inc.	Oper. by Rags	dale Auto Co.
KGRC	100	San An	tonio, Tex	ag	Eugene Ro	th	
KKP	15	Seattle	, Wash.		City of Sea	ittle	
KOH KOOS	100 50	Reno, Marshi	ield, Ore.		Jay Peters H. H. Han	seth	
KRE	100	Berkele	y, Calif. Wash.		First Cong	seth regational Chu Dailey	ırch
K V L K W K C	100 100	Seattle	. Wash.		Arthur C.	Dailey ncan Brdcstg. :	Co
KZM	100	Haywat	City Mo.		I con P To	nnaw	
WBBL	100	Richm	ond, Va. ore, Md. ld, N. J.		Grace Cove	nant Presbyte eau	rian Church
WCBM WEAM	100 100	Plainfie	ore, Ma.		W J. Butte	eau rfield	
WELK	100	Philade	elphia, Pa.		Howard R. St. John's	Miller	
WFBJ	100	College	ville, Mina	n.	St. John's	University	•
WHBD WHBQ	100 100	Memni	ntaine, Ob	110	Broadcasti	yterian Churc ng Station Wi	n IBO. Inc
WHDF	100	Calum	nis, Tenn. et, Mich. n, Mich. nti, Mich.		Chas. C. M	lacLeod	DQ, IIIC.
WIBM	100	Jackson	ı, Mich.		Chas. C. M. C. L. Carre	11	
WJBK WJBO	50 100	New Or	leans, La.		Ernest F. C Valdemar	Joodwin Jensen	
WMBO	100	Auburr	ı, N. Y.		Radio Serv	ice Laboratorio	98
WRAK WRBT	50	Erie, Pa	1.	,	C. R. Cum	mins	lastan
WRJN	50 100	Racine	gton, N. C Wis. , N. Y.	۵۰	Racine Bro	n Radio Associ adcasting Cor	n.
WSVS	50	Buffalo	, N. Y.		Seneca Voc	ational School	
1380	kilocy	-lee	2173	meters		I	
KOV	500		rgh, Pa.	micters	Daubladar	 -Hill Electric (<u> </u>
KŠO	1000	Clarind	a, lowa		Berry Seed	Co.	
wcso	500	Springf	ield, Ohlo		Wittenberg	College	
WKBH	1000	La Gros	se, Wisc.		Callaway N	Ausic Co.	
1390	kilocy	cles	215.7	meters			
KFPY	500	Spokan	e, Wash.			vestment Co.	
KLRA KOW	1000 500	Denver	lock, Ark. Colo.		Arkansas i Associated	Broadcasting C Industries. In	o. c.
KUOA	1000	Fayette	ville, Ark.		University	Industries, In of Arkansas	·•
KWSC	500	Pullma	n Wash		State Colle	ge of Washing	ton
WDGY WHDI	500 500	Minnes	polis, Mir polis, Mir	II.	Dr George	W. Young Dunwoody In	due Inetteres
WHK	1000		nd, Ohio		Radio Air	Service Corp.	THOUGH

1400	kilocycles 214.2 meters	1 1 1
	500 Lafayette, Ind.	Purdue University
WBAA WBBC	500 Lafayette, Ind. 250 Brooklyn, N. Y.	Brooklyn Broadcasting Corp.
WCGU	500 Coney Island, N. I.	U. S. Broadcasting Corp.
WCMA	500 Culver, Ind.	Culver Military Academy
WKBF	500 Indianapolis, Ind.	Noble Butler Watson
WLTH	500 Brooklyn, N. Y. 500 Brooklyn, N. Y.	The Voice of Brooklyn, Inc. Amateur Radio Specialty Co.
WSGH	500 Blooklyn, N. 1.	Amated Radio Specialty Co.
1410	1:1 1 2126	
1410	kilocycles 212.6 meters	
KFLV	500 Rockford, Ill.	A. T. Frykman
		Gish Radio Service
KGRS WDAG	1000 Amarillo, Tex. 1000 Amarillo, Texas	J. Laurence Martin
WHBL	500 Sheboygan, Wis.	Press Pub. Co. & C. L. Carrell
WBCM	500 Bay City, Mich.	World's Star Knitting Co.
4 400	1 . 1	
1420	kilocycles 211.1 meters	
KFIF		Benson Polytechnic Institute
KFIZ	100 Fond du Lac, Wis	Commonwealth-Reporter
KFQU	100 Holy City, Cain.	W. E. Riker
KFÓW KFXD	100 Seattle, Wash. 50 Jerome, Idaho	KFQW, Inc. Service Radio Co.
KFXY	100 Flagstaff, Ariz.	Mary M. Costigan
KFYO	100 Abilene, Tex.	Mary M. Costigan T. E. Kirksey
KGCN	50 Concordia, Kansas	Concordia Broadcasting Co.
KGCX	10 Vida, Mont. 100 Alva, Okla.	First State Bank
KGFF KGFJ	100 Los Angeles, Calif.	Earl E. Hampshire Ben S. McGlashan
KGFW	50 Ravenna, Nebr.	Otto F. Sothman
KGHD	50 Missoula, Mont.	Elmore-Nash Broadcasting Corp.
KGIW KGKX	100 Trinidad, Colo.	Trinidad Creamery Co., Inc.
KGTT	15 Sandpoint, Idaho 50 San Francisco, Cal. 100 Red Oak, Iowa	C. E. Twiss Glad Tidings Temple
KICK	100 Red Oak, Iowa	Attantic Automobile Co.
KOCW	100 Chickasha, Okla.	College for Women
KORE	100 Eugene, Ore. 100 San Antonio, Tex.	Eugene Broadcasting Station Robert B. Bridge
KTAP KTUB	100 San Antonio, Tex. 5 Houston, Texas	Uhalt Electric
KXRO	75 Aberdeen, Wash.	KXRO, Inc.
WAAD	25 Cincinnati, Ohio	Ohio Mechanics Institute
WEDH	30 Erie, Pa. 10 Tupper Lake, N. Y.	Erie Dispatch-Herald George Franklin Bissell
WHDL WHPP	10 Tupper Lake, N. Y. 10 New York City	Bronx Broadcasting Co.
WIAS	100 Ottumwa, lowa	Poling Electric Co.
WIBR	50 Steubenville, Ohio	Thurman A. Owings
WIL WKBP	100 St. Louis, Mo. 50 Battle Creek, Mich.	WIL Broadcasting Corp. Enquirer-News Co.
WLBF	50 Battle Creek, Mich. 100 Kansas City, Mo.	Everett L. Dillard
WLBH	30 Farmingdale, N. Y.	Everett L. Dillard Joseph J. Lombardi
WLEX	100 Lexington, Mass.	Lexington Air Station
WMBC WMBH	100 Detroit, Mich. 100 Joplin, Mo.	Michigan Broadcasting Co., Inc. Edwin Dudley Aber
WMRJ	10 Jamaica, N. Y.	Peter J. Prinz
WOBZ	60 Weirton, W. va.	Peter J. Prinz J. H. Thompson
WSRO	100 Middletown, Ohio	Harry W. Fahrlander Tremont Temple Baptist Church
WSSH	100 Boston, Mass. 50 Cumberland, Md.	Tremont Temple Baptist Church Cumberland Electric Co.
WTBO	50 Cumberland, Md.	Cumpelland Electric Co.
1420	Irilacriales 200 7 masters	
14)U	kilocycles 209.7 meters	
WBAK	500 Harrisburg, Pa.	Penna. State Police
WBRL	500 Tilton N H.	Booth Radio Laboratories
WCAH	250 Columbus, Ohio	Commercial Radio Service Co.
WGBC WMBS	500 Memphis, Tenn. 500 Lemoyne, Pa.	First Baptist Church Mack's Battery Co.
WNBR	250 Golumbus, Ohio 500 Memphis, Tenn. 500 Lemoyne, Pa. 500 Memphis, Tenn.	John Ulrich
1440	kilocycles 208.2 meters	
KLS	250 Oakland, Calif.	Warner Bros.
WABF	250 Kingston, Pa.	Markle Broadcasting Corp.
WABO WCBA	500 Rochester, N. Y. 250 Allentown, Pa.	Lake Ave. Baptist Church B. B. Musselman
WHEC	Allentown, Pa. 800 Rochester, N. Y.	Hickson Electric Co.

	HIDER DI HEQUELICADO	
WMBD	500 Peoria Heights, Ill.	Peoria Heights Radio Laboratory Wayne M. Nelson
WNRC WOKO	500 Greensboro, N. C. 500 Peekskill, N. Y.	Wayne M. Nelson Harold E. Smith
WSAN	250 Allentown, Pa.	Allentown Call Publishing Co
WTAD	500 Quincy, Ill.	Ills. Stock Medicine Brdcstg. Corp.
1/50	kilocycles 206.8 meters	
	/	
KSBA WBMS	1000 Shreveport, La. 250 Union City, N. J.	W. G. Patterson WBMS Broadcasting Corp.
WFJC	500 Akron, Ohio	W. F. Jones Broadcast, Inc.
WIBS	250 Elizabeth, N. J.	New Jersey Broadcasting Corp.
WJAY WKBO	500 Cleveland, Ohio 250 Jersey City, N. J.	Cleveland Radio Brdcstg, Corp. Camith Corp.
WNJ	250 Jersey City, N. J. 250 Newark, N. J. 250 Fall River, Mass.	Radio Investment Co.
WSAR	250 Fall River, Mass.	Doughty & Welch Electric Co.
WTFI	500 Toccoa, Ga.	Toccoa Falls Institute
1460	kilocycles 205.4 meters	
	•	National Partners Parlants C
KSTP WJSV	10000 St. Paul, Minn. 10000 Washington, D. C.	National Battery Brdcstg. Co. Independent Publishing Co.
	,	
1470	kilocycles 204.0 meters	
KFJF	1000 Oklahoma City	National Radio Mfg. Co.
KGA	5000 Spokane, Wash,	Northwest Radio Service Co.
WKBW	5000 Spokane, Wash. 5000 Buffalo, N. Y.	Churchill Evangelistic Assn.
WRUF	5000 Gainesville, Fla.	University of Florida
1/120	kilocycles 202.6 meters	
	•	g tal De die Geer
WJAZ WORD	5000 Chicago, III. 5000 Batavia, III.	Zenith Radio Corp. People's Pulpit Association
WHT	5000 Chicago, Ill.	Radiophone Brdcstg. Corp.
	4 44 4	
1490	kilocycles 201.2 meters	
KPWF	50000 Westminster, Calif.	Pacific Western Brdcstg, Fed.
WBAW WIAG	5000 Nashville, Tenn. 5000 Nashville Tenn.	Waldrum Drug Co. Life & Casualty Insurance Co.
WFBL	1000 Syracuse, N. Y.	The Onondaga Co.
1500	kilocycles 199.9 meters	
KFCR	100 Santa Barbara, Cal.	Santa Barbara Brdcatg. Co.
KGDR	100 San Antonio, Tex.	Joe B. McShane
KGKB KGHI	100 Brownwood Tex. 100 Little Rock, Ark.	Eagle Publishing Co. Berean Bible Class
KGHX	50 Richmond, Texas	Ft. Bend County School Board
KGHX KPJM	100 Prescott, Afix.	Frank Wilburn
KUJ KWBS	10 Longview, Wash. 15 Portland, Ore.	Lovejoy & Kerfoot Schaeffer Radio Co.
KWTC	100 Santa Ana, Calif.	Pacific Broadcasting Foundation
WAFD	100 Detroit, Mich.	Albert B. Parfet Co.
WALK WCLB	50 Willow Grove, Pa. 100 Brooklyn, N. Y.	Albert A. Walker Arthur Faske
WHBW	100 Philadelphia, Pa.	D R Kienzie
WIBZ	15 Montgomery, Ala.	Alexander I) Trum
WILM	100 Wilmington, Del.	Delaware Brdcstg, Co.
WKBV WKBZ	100 Brookville, Iud. 50 Ludington, Mich.	Delaware Brdcstg. Co. Knox Battery & Electric Co. K. L. Ashbacker
\mathbf{WLBX}	100 Long Island City, N. Y.	John N. Brany
WLOE	100 Chelsea, Mass. 100 Newport, R. I.	William S. Pote LeRoy Joseph Beebe
WMBA WMBJ	100 Wilkinsburg, Pa.	Rev. John W. Sproul
WMBM	10 Memphis, Tenn.	Rev. John W. Sproul Seventh Day Adventist Church
WMBQ	100 Brooklyn, N. Y. 50 Boston, Mass.	Paul J. Gollhofer Mass. Educational Society
WMES WMPG	20 I apper Mich	First M. R. Church
WNBF	50 Binghamton, N. Y.	Howitt-Wood Radio Co.
WNBQ WOO	50 Binghamton, N. Y. 15 Rochester, N. Y. 100 Philadelphia, Pa	Gordon P. Brown John Wanamaker
WPSW	50 Philadelphia, Pa.	School of Wireless Telegraphy
WRB J	10 Hattlesburg, Miss.	Woodruff Furniture Co.
WWRL	100 Woodside, N. Y.	Wm. H. Reuman

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Use Your RADEX Properly

(Continued from Inside Cover)

71-69 our set will be tuned to 640 kcys. and at that point KFI of Los Angeles will be heard, always assuming of course that it is on the air and within range of our particular set.

Now we tune in some other station, proceeding as before, until after an evening or two, we have blanks filled on every page. We are now able to set our dials for any frequency we desire and consequently any sta-

tion we may want whether we have ever received it before or not.

Our Index now becomes of great value to us in identifying programs. Let us say that we hear music at 67-65 on our dials. We refer to our Index by Frequencies and Dial Numbers and we find that we are in tune to 680 kilocycles. On this wave there are two stations: KPO at San Francisco and WPTF at Raleigh, N. C. Both of these stations have 5000 watts in power. But knowing which is the closer to our set, we can tell almost invariably which station we are hear-

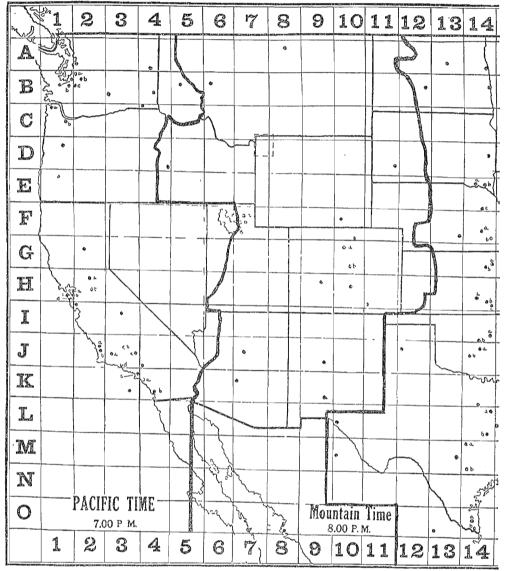
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ing. The Radio Commission has had to give the same frequency in most cases to several stations but they have distributed them geographically so they should not interfere. Where two stations in the same locality have the same frequency, they are required to divide time. In this case of course it is not possible to tell which one of the two stations is broadcasting at the particular moment we hear it but we do know it is one or the other of them.

The second column in the Index by Frequencies, as we have seen, gives the power

of the station as measured in watts. This power also aids us in identifying stations as we will not ordinarily hear those stations with 500 watts or less unless they are close to our home city.

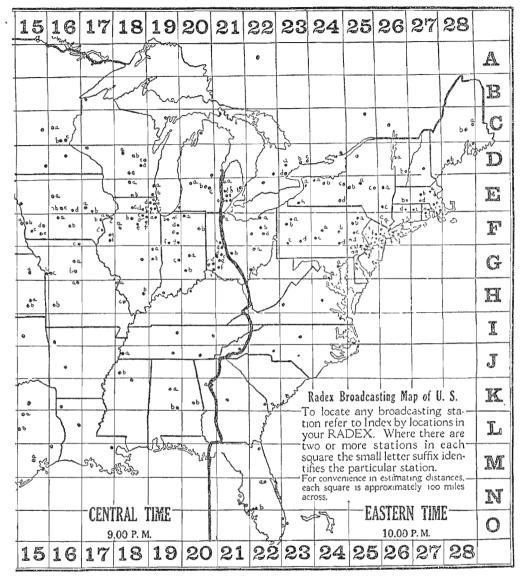
The Index by Call Letters also has spaces providing for logging dial numbers but these are provided merely for the convenience of those who want to be able to turn instantly to some favorite station. They may or may not be used as you desire. Remember that it is the Index by Frequencies that we must use to get the most value and pleasure out of our radios.



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Hot Springs, Arr.	Carlo Carlo	El Centro, Cal.	
KTM 780	A. S. C.	KXRO 1420	
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Santa Monica, Cal.		Aberdeen, Wash.	
KTNT 1170		─ KYA 1230	
		San Francisco, Calif.	
Muscatine, Iowa			
KTSA 1290		KYW 1020	184 191 1 2 2
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		KI WA TIE 1020	
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Seattle, Wash.		Hayward, Calif.	
KUJ 1500		NAA 690	
Longview, Wash.		Arlington, Va.	1 1
KUOA 1390		─ WAAD 1420	
Fayetteville, Ark.		Cincinnati, Ohio	
KUOM 570		WAAF 920	
Missoula, Mont.		Chicago, Ill.	
KUSD 890		WAAM 1250	
Vermillion, S. Dak.		_ Newark, N. J.	
KUT 1120		WAAT 1070	
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KVI 1340		WAAW 660	
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Seattle, Wash.		New York City	
KVOO 1140		WABF 1440	
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Tulsa, Okla.		Kingston, Pa.	
KVOS 1200		WABI 1200	1 1 1
Bellingham, Wash.		Bangor, Maine	
KWBS 1500		WABO 1440	1
Portland, Ore.		Rochester, N. Y.	
KWCR 1310		WABY 1310	
Cedar Rapids, Iowa	1	Philadelphia, Pa.	
KWEA 1210		WABZ 1200	
Shreveport, La.		New Orleans, La.	
KWG 1200		- WADC 1320	
		Akron, Ohio	
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Portland, Ore.		Detroit, Mich.	
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Decorah, Iowa			
		Birmingham, Ala.	
KWSC 1390		WASH 1270	
Pullman, Wash.		Grand Rapids, Mich.	
ENVITO			
KWTC 1500		WBAA 1400	
Santa Ana, Calif.		Lafayette, Ind.	
KWWG 1260		WBAK 1430	
Brownsville, Texas		_ Harrisburg, Pa.	
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Laramie, Wyo.		Baltimore, Md.	
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WBAW 1490	WCAM 1280
Nashville, Tenn.	
	Camden, N. J.
WBAX 1210	WCAO 600
Wilkes-Barre, Pa.	Baltimore, Md.
WBBC 1400	WCAP 1280
Brooklyn, N. Y.	
	Asbury Park, N J.
WBBL 1370	WCAT 1200
Richmond, Va.	Rapid City, S. D.
WBBM 770	WCAU 1170
Chicago; Ill.~	Philadelphia, Pa.
WBCM 1410	WCAX 1200
Bay City, Mich.	Burlington, Vt.
WBBR 1300	
Rossville, N. Y.	Carthage, Ill.
WBBW 1200	WCBA 1440
Norfolk, Va.	Allentown, Pa.
	WCBD 1080
Charleston, S. C.	Zion, Ill.
WBBZ 1200	WCBM 1370
Ponca City, Okla.	
W/PET 1260	Baltimore, Md.
WBET 1360	WCBS 1210
Boston, Mass.	Springfield, Ill.
WBIS 1230	₩CCO 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.
WBOO 860	WCLB 1500
New York City	
	Brooklyn, N. Y.
WBOW 1310	WCLO 1200
Terre Haute, Ind.	Kenosha, Wisc.
WBRC 930	WCLS 1310
Birmingham, Ala.	
WIRDER 1210	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. 45 49
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 600	WCSO 1380
Storrs, Conn.	Springfield, Ohio
TY/CAD	WCX 750
WCAD 1220	
WCAD 1220 Canton, N. Y.	
Canton, N. Y.	Detroit, Mich.
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WDAY 1280	WEW 760	
Fargo, N. D.	St. Louis, Mo.	
WDBJ 930	WFAA 1040	
Roanoke, Va.	Dallas, Texas	
WDBO 620	WFAN 610	
Orlando, Fla.	Philadelphia, Pa.	
WDEL 1120		
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.	
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Plainfield, N. J.	Hopkinsville, Ky.	_
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Providence, R. I.	Akron, Ohio	
WEAO 550	WFKD 1310	
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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.	
WEEI 590	WGCP 1250	_
Boston, Mass.		,
	Newark, N. J.	
WEHS 1310	WGES 1360	
Evanston, Ill.	Chicago, Ill.	
WELK 1370	WGH 1310 -	_
	Newport News, Va.	
Philadelphia, Pa.		
WEMC 590	WGHP 1240	
Berrien Spgs., Mich.	Detroit, Mich.	
WENR 870	WGL 1230	
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Chicago, Ill.	Ft. Wayne, Ind.	
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WJBW 1200	1 [1 1	WLB 1250		
New Orleans, La.			Minneapolis, Minn.		
WJBY 1210			WLBC 1310		
Gadsden, Ala.		1	Muncie, Ind.		
WJJD 1180			WLBF 1420		
Mooseheart, Ill.			Kansas City, Mo.	1	
			W/I PC 1200		
WJKS 1360	1		WLBG 1200		
Gary, Ind.			Petersburg, Va.		
WJR 750			WLBH 1420		
Detroit, Mich.			Farmingdale, N. Y.		
WJSV 1460			WLBL 900		
Washington, D. C.			Stevens Point, Wisc.		
WJZ 760		-	WLBO 1310		
New York City		I			
WILL O			Galesburg, Ill.		
WKAQ 890			WLBV 1210		
San Juan, P. R.			Mansfield, Ohio		
WKAR 1040			WLBW 1260		
East Lansing, Mich.	1		Oil City, Pa.		
WKAV 1310			WLBX 1500		
Laconia, N. H.			LongIslandCity, N.Y.		
WKBB 1310		-\ !			
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Joliet, Ill.			Bangor, Me.		
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WKBE 1200		1	WLEX 1420		
Webster, Mass.		1 1	Lexington, Mass.		
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Indianapolis, Ind.		1	Chicago, Ill.		
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La Crosse, Wisc.			Philadelphia, Pa.		
WKBI 1310		1	WLOE 1500		
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Buffalo, N. Y.		i			
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Grand Island, N. Y.		1	Washington, D. C.		
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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.			
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Fairmont, W. Va.			Ames, Iowa			
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Jamaica, N. Y.			Washington, D. C.			
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Atlantic City, N. J.				New York City			
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Scranton, Pa.				Fall River, Mass.			
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Weirton, W. Va.				South Bend, Ind.			
WRAF 1200				WSEA 780			
La Porte, Ind.				Portsmouth, Va.	i		
				WSGH 1400			
				D 11 X X			
Erie, Pa.				Brooklyn, N. Y			
WRAW 1310				WSIS 1010	1		
Reading, Pa.				Sarasota, Fla.			
WRAX 1010				WSIX 1210			
				1	i		
Philadelphia, Pa.				Springfield, Tenn.			
WRBC 1240			"	WSM 650	my, i	ا ما	77 2
Valparaiso, Ind.				Nashville, Tenn.	1/ 1/	1	13
				WSMB 1320	pr		
Tifton, Ga.				New Orleans, La.		<u> </u>	
WRBJ 1500				WSMD 1310	1	!	
Hattiesburg, Miss.				Salisbury, Md.		I	
				WSMK 570			
WRBL 1200						1	
Columbus, Ga.				Dayton, Ohio		<u></u>	
WRBQ 1210				WSPD 1340			
Greenville, Miss.	1			Toledo, Ohio			
WRBT 1370	1			WSRO 1420			
Wilmington, N. C.			L	Mıddletown, Ohio	L		
WRBU 1210				WSSH 1420			
	1	l		1	1		
Gastonia, N. C.				Boston, Mass.			
WRBW 1310		1		WSUI 580	1		
Columbia, S. C.		1		Iowa City, Iowa	1		
		'		47 7	 		

WSUN 900			WWJ 920	1 1
St. Petersburg, Fla.			Detroit, Mich.	
WSVS 1370			WWL 850	
Buffalo, N. Y.			New Orleans, La.	
WSYR 570			WWNC 570	
Syracuse, N. Y.			Asheville, N. C.	
WTAD 1440			WWRL 1500	
Quincy, Ill.			Woodside, N. Y.	
WTAG 580			WWVA 1160	
Worcester, Mass.		- 1	Wheeling, W. Va.	1 1
WTAM 1070			2BB 1200	
Cleveland, Ohio			Havana, Cuba	
WTAQ 1330			2LR 1280	
Eau Claire, Wis.	1		Havana, Cuba	
WTAR 780			2MG 1050	
Norfolk, Va.			Havana, Cuba	
WTAW 1120			2OK 860	
College Station, Tex.			Havana, Cuba	
WTAX 1210			2OL 1170	
Streator, III.			Havana, Cuba	
WTAZ 1210			2RK 950	
Richmond, Va.			Havana, Cuba	
WTBO 1420			2TW 1110	
Cumberland, Md.			Havana, Cuba	
WTFI 1450			2UF 1090	
Toccoa, Ga.			Havana, Cuba	
WTHS 1310			6BY 1150	
Atlanta, Ga.			Cienfuegos, Cuba	
WTIC 600-1060			6KW 790	
Hartford, Conn.			Tuinucu, Cuba	
WTMJ 620			7SR 860	
Milwaukee, Wis.			Elia, Cuba	
WWAE 1370			•	
Hammond, Ind.				<u> </u>

THE OUTPUT TRANSFORMER

The writer's set gave him some trouble by a gradual loss of volume until after a week or two it finally died al-Batteries and tubes tested OK and everything seemed right clear up to the loud-speaker unit. Putting on a set of head-phones each of the cordtips was applied to the wires leading to the loud-speaker coil and the "program came in fine." This coil was therefore replaced and everything was as it should be but about a year later the thing happened again. It was not only expensive buying new speaker-coils but it was a lot of trouble tearing down the unit. An output transformer was purchased for \$3.50 and the speaker leads of the set were attached to this transformer while the leads of the transformer were attached to the speaker. The

results were gratifying beyond all hopes. Not only was the speaker unit protected from the voltage of the B battery as the current that entered this coil was now an inductance from the transformer, but the volume was increased greatly. Before, the set had seemed to choke up with too much volume and the filament rheostat would have to be turned back to clear up the tone. But with the output transformer, it would take all the current there was without choking while the volume would rouse the dead, even with distant stations. Of course it was not volume we wanted but a good clear tone and with the transformer we got not only this but a far better tone as well, with a deeper resonance in the bass notes than this set had ever given before.

INDEX BY LOCATIONS WITH MAP KEY

ALABAMA	ì		Ontario	KFWC	1200
Birmingham K-19-a	WAPI	1140	Pasadena I-4	KPPC	1200
2, 2, 0	WBRC	930	Lubitetia j	KPSN	950
	WKBC	1310	Sacramento H-2-a	KFBK	1310
Gadsden K-20-a	WJBY	1210	San Diego K-4-b	KFSD	600
Montgomery K-19-b	WIBZ	1500		KGB	1360
ALASKA	***************************************	2500	San Francisco H-1-c	KFRC	610
Anchorage	KFOD	1230		KFWI	930
Juneau	KFIU			KGTT	1420
Ketchikan	KGBU	1310		KIBS	1100
	KGBU	900		KPO	680
ARIZONA	T.France Por v			KYA	1230
Flagstaff J-7	KFXY	1420		KQW	1010
Phoenix K-7	KFAD	620	San Jose I-2	KWTC	1500
	KFCB	1310	Santa Ana K-4	KFCR	1500
Prescott J-6	KPJM	1500	Santa Barbara J-3		1200
Tucson L-7	KGAR	1370	Santa Maria J-2-b	KSMR	
ARKANSAS			Santa Monica K-3	KTM KGDM	780 1150
Blytheville I-18	KLCN	1290	Stockton H-2-b	KWG	1200
Fayetteville I-16	KUOA	1390	V977		
Hot Springs J-16	KTHS	800	Westminster	KPWF	1490
Little Rock J-17	KGHI	1500	COLORADO		
	KGJF	890	Colorado Springs H-10	KFUM	1270
	KLRA	1390	Denver G-10-b	KFEL	940
McGehee K-17	KGHG	1310		KFUP	1310
Siloam Springs I-16	KFPW	1340		KFXF	940
CALIFORNIA			1	KLZ	56 0
Berkelev H-1-a	KRE	1370		KOA	830
Burbank J-4	KELW	780		KOW	1390
Culver City K-3	KFVD	700		KPOF	880
El Centro K-5	KXO	1200	Edgewater G-10	KFXJ	1310
Fresno I-3	KMI	1200	Fort Morgan G-11	KGEW	1200
Glendale K-3	KGFH	1000	Greeley F-10	KFKA	880
Hayward H-2	KZM	1370	Gunnison H-9	KFHA	1200
Hollywood K-3	KFQZ	850	Pueblo H-11	KGDP	1210
	KMTR	570		KGHF	1320
Holy City I-2	KFQU	1420	Trinidad H-10	KGIW	1420
Inglewood K-4	KMIC	1120	Yuma G-11	KGEK	1200
Long Beach K-4-a	KFOX	1250	CONNECTICUT		
	KGER	1370	Bridgeport F-26	WICC	1190
Los Angeles K-3-b	KEJK	1250	Hartford E-26-d	WTIC	1060
	KFI	640	Mansfield E-27-i	WCAC	600
	KFSG	1120	New Haven F-26-b	WDRC	1330
	KFWB	950	DELAWARE		
	KGEF	1300	Wilmington G-25	WDEL	1120
	KGFI	1420	Willington Gas	WILM	1500
		-	STORY OF COL		2500
	KHJ	900	DISTRICT OF COL	WMAL	630
	KNX	1050	Washington G-24-c		
	KPLA	570		WRC	950
Oakland H-1-b	KTBI	1300	II.	WJSV	1460
	KFWM	930		WOL	1310
	KGO	790	FLORIDA	W/EI A	900
	KLS	1440	Clearwater N-21	WFLA	1470
	KLX	880	Gainesville M-21	WRUF	1260
	KTAB	550	Jacksonville M-22	WJAX	1200
			<u></u>		

INDEX BY LOCATIONS WITH MAP KEY

Lakeland N-22	WMBL	1310	Decatur G-18	WJBL	1200
Miami O-23	WOAM	1240	Evanston E-19	WEHS	1390
Miami Beach O-23	WIOD	1240	Galesburg F-18-a	WKBS	1310
	WMBF	560		WLBO	1310
Orlando N-22	WDBO	620	Harrisburg H-18-b	WEBQ	1210
Pensacola L-19	WCOA	1120	Joliet E-19-f	WCLS	1310
Sarasota N-22	WSIS	1010		WKBB	1310
St. Petersburg N-21	WSUN	900	La Salle F-18-d	WJBC	1200
Tampa N-22-b	WDAE	620	Mooseheart E-18-e	WJJD	1180
	WMBR	1210	Peoria Heights G-18	WMBD	1440
GEORGIA			Quincy G-17	WTAD	1440
Atlanta K-20-a	WGST	890	Rockford E-18-c	KFLV	1410
	WSB	740	Rock Island F-17-c	$\mathbf{W}\mathbf{H}\mathbf{B}\mathbf{F}$	1210
	WTHS	1310	Springfield G-18	WCBS	1210
Columbus K-20	WRBL	1200	Streator F-18-e	WTAX	1210
Macon K-21	WMAZ	890	Tuscola G-19-b	WDZ	1070
Tifton L-21	WRBI	1310	Urbana G-19-a	WILL	890
Toccoa J-21	WTFI	1450	Zion E-19-c	WCBD	1080
HAWAII					
Honolulu	KGHB	1320	INDIANA		
	KGU	940	Anderson G-20-a	WHBU	1210
IDAHO			Brookville G-20	WKBV	1500
Boise D-4	KIDO	1250	Culver F-19-d	WCMA	1400
Idaho Falls D-7	KGIO	1320	Evansville H-19	WGBF	630
Jerome B-5	KFXD	1420	Fort Wayne F-20-b	WGL	1230
Kellogg B-5	KFEY	1210		wowo	1160
Pocatello E-7	KSEI	900	Gary F-19	WJKS	1360
Sand Point A-4 Twin Falls E-5	KGKX KGIQ	1420 1320	Hammond F-19	WWAE	1200
	QID%	1520	Indianapolis G-19-c	WFBM	1230
ILLINOIS				WKBF	1400
Batavia F-18-c	WORD	1480	Kokomo F-19-g	WJAK	1310
Carthage F-17-e	WCAZ	1070	Lafayette F-19-f	WBAA	1400
Chicago B-19-g	KFKX	1020	La Porte F-19-c	WRAF	1200
	KYW	1020	Muncie G-20	\mathbf{WLBC}	1310
	KYWA	1020	South Bend F-20-a	WSBT	1230
	WAAF	920	Terre Haute G-19	wbow	1310
	WBBM	770	Valparaiso F-19-b	WRBC	1240
	WCFL	970			
	WCRW	1210	IOWA		
	WEDC	1210		WOI	560
	WENR	870	Ames E-16-c		560
	WGES	1360	Boone E-16	KFGQ KWCR	1310
	WGN	720	Cedar Rapids E-17-a Clarinda E-15-c		1310
	WHFC	1310		KSO	1380
	WHT	1480	Council Bluffs F-15-b	KOIL	1260
	WIBO	570	Davenport F-17-a	WOC	1000
	WJAZ	1480	Decorah D-17	KGCA	1270
	WKBI	1310	D. W T.	KWLC	1270
	WLIB	720	Des Moines F-16-a	WHO	1000
	WLS	870	Fort Dodge E-16-a	KFJY	1310
	WMAQ	670	Iowa City E-17-b	WSUI	580
	WMBI	1080	Marshalltown E-16-d	KFJB	1200
	WPCC	570	Muscatine F-17-b	KTNT	1170
	WSBC	1210	Ottumwa F-17	WIAS	1420
		!	L		

Red Oak F-15	KICK	1420	Chelsea E-27	WLOE	1500
Shenandoah F-15-c	KFNF	890	Fall River B-27	WSAR	1450
	KMA	930	Gloucester E-27	WEPS	1200
Sioux City E-15	KSCJ	1330	r For	WHOH WLEX	830 1420
Waterloo F-17	WMT	1200	Lexington E-27	WNBH	1310
WARTOAC			New Bedford E-27-g South Dartmouth E-27	WMAF	1360
KANSAS			Springfield E-26-b	WBZ	990
Concordia G-14	KGCN	1420	Webster B-27-d	WKBE	1200
Lawrence G-15-a	KFKU	1220	Wellesley Hills E-27	WBSO	780
	WREN	1220	Worcester E-27-b	WTAG	580
Manhattan G-14-a	KSAC	580			
Milford G-14	KFKB	1130	MICHIGAN		
Topeka G-14	WIBW	1300	Battle Creek E-20	WKBP	1420
Wichita H-14-a	KFH	1300	Bay City D-21	WBCM	1410
VENTON LONG		ľ	Berrien Springs E-19	WEMC	5 90
KENTUCKY		,	Calumet B-18	WHDF	1370
Hopkinsville I-19	WFIW	940	Detroit E-21-g	WAFD	1500
Louisville H-20	WHAS	820		WBMH	1310
	WLAP	1200	i	WCX	750
LOUISIANA				WGHP	1240
	KGGH	1310		WJR WMB C	750
Cedar Grove M-17 New Orleans M-17	WABZ	1200			1420
Idem Otleans M-1/	WDSU	1270	East Lansing E-20-b	WWJ WKAR	920 1040
	WIBO	1370	Flint E-21-a	WFDF	1310
	WJBW	1200	Grand Rapids E-20-a	WASH	1270
	WSMB	1320	January 1 and 1 an	WOOD	1270
	WWL	850	Jackson E-20	WIBM	1370
Shreveport K-16	KRMD	1310	Lapeer E-21	WMPC	1500
K	KSBA	1450	Ludington D-19	WKBZ	1500
	KWEA	1210	Royal Oak B-21-e	WAGM	1310
	KWKH	850	Ypsilanti E-21-f	WJBK	1370
MAINE			MINNESOTA		
Bangor C-28-b	WABI	1200	Collegeville C-15	WFBJ	1370
	WLBZ	620	Fergus Falls B-15	KGDE	1200
Portland D-28-b	WCSH	940	Hallock A-14	KGFK	1200
		ļ	Minneapolis C-16-B	WCCO	810
MARYLAND				WDGY	1390
Baltimore G-24-a	WBAL	1060		$\mathbb{W}GMS$	1250
Daidmore G-27-4	WCAO	600	!	WHDI	1390
	WCBM	1370	i	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 WGMS	810 1250
Boston E-27-c	WBET	1360	I STOCTOCTODY	W GIVIS	1230
	WBIS	1230	MISSISSIPPI	W7000	000
	WBZA	990	Columbus K-18	WCOC	880
	WEEI	590	Greenville K-17	WRBQ	1210
	WMES	1500	Gulfport M-18	WGCM	1210
	WNAC WSSH	1230 1420	Hattiesburg L-18 Utica L-17	WRBJ WQBC	1500 1360

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
Calibas City G-13-5	WDAF	610	, , , , , , , , , , , , , , , , , , , ,	WKBO	1450
	WHB	950		WPCH	810
	WLBF	1420	Newark F-25-h	WAAM	1250
	WOO	610	Trewark 1-25-11	WGCP	1250
Kirksville F-16-c				WNJ	1450
	KFKZ	1200	İ	WOR	710
St. Joseph G-15	KFEQ	560	Dataman F.26		
C. I III 10 .	KGBX	1370	Paterson F-26-c	WODA	1250
St. Louis H-18-a	KFUO	550	Plainfield F-25	WEAM	1370
	KFWF	1200	Red Bank G-26	WJBI	1210
	KMOX	1090	Trenton F-25	WOAX	1280
	KSD	550	Union City F-26	WBMS	145
	KWK	1350			
	WEW	760	NEW MEXICO		
	\mathbf{WIL}	1420			
	WMAY	1200	Albuquerque	KGGM	1370
MONTANA			Raton I-11	KGFL	1370
MONTAINA			State College K-9	KOB	1180
Billings C-8	KGHL	950	1		
Butte C-7	KGIR	1360	NEW YORK		
Havre A-8	KFBB	1360			
Kalispell A-5	KGEZ	1310	Auburn E-24	WMBO	1370
Missoula B-6	KGHD	1420	Bay Shore F-26-h	WINR	121
	KUOM	570	Binghamton E-25	WCGU	140
Vida B-10	KGCX	1420	Brooklyn F-26-f	$\mathbf{W}\mathbf{B}\mathbf{B}\mathbf{C}$	140
Vida B-10	RGCA	1420		WCDA	1356
				WCLB	1500
NEBRASKA				WLTH	1400
Cl C C 4	775 FE FF			WMBO	1500
Clay Center G-14	KMMJ	740	1	WSGH	1400
Lincoln F-14-b	KFAB	770	Buffalo E-23-a	WEBR	1310
	KFOR	1210		WGR	550
	WCAJ	590	,	WKBW	147
Norfolk E-14-c	WJAG	1060		WKEN	1040
Omaha F-15-a	WAAW	6 60		WMAK	900
	WOW	590		WSVS	1370
Ravenna F-13	KGFW	1420	Canton D-25		
York F-13	KGBZ	930	Cazenovia E-25-b	WCAD	1220
			Coney Island F-26	WMAC	570
		j	Farmingdale F-26	WNBF	1500
NEVADA			Freeport F-26-i	WLBH	1420
P C 2	VOI!	1270	Grand Island E-23	WGBB	1210
Reno G-3	KOH	1370	Greenville E-26	WCOH	1210
			Ithaca E-24-d	WEAI	1270
NEW HAMPSHIRE			1	WLCI	1210
TAD M. LIVINIE DI LIKE			Jamaica F-26-f	WMRI	1420
Laconia D-27 Tilton E-27	WKAV WBRL	1310	Jamestown E-23-b	WOCĹ	1210

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	ł	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	$\mathbf{W}LBV$	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	$\mathbf{W}\mathbf{SPD}$	1340
	WNBQ	1500	Youngstown F-22	WKBN	570
Rossville F-26	WBBR	1300	OKLAHOMA		
Saranac Lake D-26	WNBZ	1290	Alva I-13	KGFF	1420
Schenectady B-25-c	$\mathbf{W}\mathbf{G}\mathbf{Y}$	790	Chickasha J-14-b	KOCW	1420
Syracuse E-24-c	\mathbf{WFBL}	900	Enid I-14	KGCB	1370
	WSYR	570	Norman J-14-a	WNAD	1010
Troy E-21-a	WHAZ	1300	Oklahoma City I-14-b	KFJF	1470
Tupper Lake D-25	WHDL	1420		KFXR	1310
Utica E-25-a	WIBX	1200		KGFG	1370
Woodhaven F-26	WEVD	1300		WKY	900
Woodside F-26	WWRL	1500	Picher I-15	KGGF	1010
			Ponca City I-14	WBBZ	1200
NORTH CAROLINA	A.		Tulsa I-15	KVOO	1140
Asheville J-21	WWNC	570	OREGON		
Charlotte J-22	$\mathbf{W}\mathbf{B}\mathbf{T}$	1080	Astoria C-1-a	KFJI	1370
Gastonia J-22	WRBU	1210	Corvallis D-1	KOAC	560
Greensboro I-22	WNRC	1440	Eugene D-1	KORE	1420
Raleigh I-23	WPTF	680	Marshfield E-1	KOOS	1370
Wilmington J-24	WRBT	1370	Medford E-1	KMED	1310
			Portland C-1-b	KEX	1180
NORTH DAKOTA				KFEC	1370
	YZTYZZD	220		KFIF	1420
Bismarck B-12	KFYR	550		KFJR	1300
Devils Lake A-13	KDLR	1210		KĠW	620
Fargo B-14	WDAY	1280		KOIN	940
Grand Forks A-14	KFJM	550		KTBR	1300
Mandan B-12	KGCU	1200		KWBS	1500
OHIO				KWJJ	1060
Akron F-22-b	WADC	1320	PENNSYLVANIA	KXL	1250
I ENI UII E -DE-U	WFJC	1450	Allentown F-25-c	WCBA	1440
Bellefontaine G-21-a	WHBD	1370	/ MICHOWII A-23-C	WSAN	1440
Cambridge F-22	WEBE	1210	Altoona F-24-c	WFBG	1310
Cambridge r-22 Canton F-22-d	WHBC	1200	Carbondale F-25	WNBW	1200
Canton 1-22-0		1200		77 A 122 YY	A200

Elkins Park G-25-c	WIBG	930	SOUTH DAKOTA		
Erie B-23	WEDH	1420	Brookings D-14	KFDY	550
	WRAK	1370	Droomings D-14	KGCR	121
Grove City F-23-b	WSAJ	1310	D-11 D: 1- D-14	KGDA	137
Harrisburg F-24-d	WBAK	1430	Dell Rapids D-14	KGDY	120
3	WPRC	1200	Oldham D-14		
Johnstown F-23-d	WHBP	1310	Pierre D-12	KGFX	58
Kingston F-24	WABF	1440	Rapid City D-11	WCAT	120
Lancaster G-25-a	WGAL	1310	Sioux Falls D-14	KSOO	111
	WKJC	1200	Vermillion E-14-b	KUSD	89
Lemoyne G-24	WMBS	1430	Yankton E-14-a	WNAX	57
Lewisburg F-24-b	WIBU	1210			
Oil City F-23-a	WLBW	1260	TENNESSEE		
	WABY	1310		WIDOD	
Philadelphia G-25-d	WCAU	1170	Chattanooga J-20	WDOD	128
			Knoxville I-20	WFBC	120
	WELK	1370	i	WNBJ	1310
	WFAN	610		WNOX	56
	WFI	560	Lawrenceburg J-19	WOAN	60
	WFKD	1310	Memphis J-18-a	WGBC	143
	WHBW	1500		WHBQ	137
	WIP	610		\mathbf{WMBM}	150
	WLIT	560		WMC	78
	WNAT	1310		WNBR	143
	woo	1500		WREC	60
	WPSW	1500	Nashville I-19	WBAW	149
	WRAX	1020		WLAC	149
Pittsburgh F-23-c	KDKA	980	í	WSM	65
z ittoburgar x ab c	KQV	1380	Springfield I-19	WSIX	121
	WCAE	1220	Union City I-18	WOBT	131
	WJAS	1290			
Reading F-25-d	WRAW	1310	TEXAS		
Scranton F-25-a	WGBI	880	IDAAS		
Scianton 1-25-a	WQAN	880	Amarillo J-12	KGRS	141
State C-11 # 24 -	WPSC	1230		WDAG	1410
State College F-24-a	WNBO	1200	Austin L-14-b	KUT	112
Washington F-23	WBAX	1210	Beaumont M-16	KFDM	560
Wilkes-Barre F-25-b			Breckenridge K-13	KFYO	1420
With the Flora	WBRE	1310	Brownsville O-14-b	KWWG	126
Wilkinsburg F-23	WMBJ	1500	Brownwood L-13	KGKB	150
Willow Grove G-25	WALK	15 0 0	College Station M-13	WTAW	112
			Dallas L-15-a	KRLD	104
PORTO RICO				WFAA	104
San Juan	WKAQ	890		WRR	128
Dan Jana			- 10 TF - 1		
RHODE ISLAND			Dublin K-14	KFPL	131
	12/12 12/12 1	1010	El Paso L-10	WDAH	131
Cranston F-27-a	WDWF	1210	Fort Worth L-14-a	KFJZ	137
	WLSI	1210	I	KTAT	124
Newport F-27	WMBA	1500	1	WBAP	80
Pawtucket B-27	WPAW	1210	Galveston M-15-b	KFLX	137
Providence E-27-h	WEAN	550	ll .	KFUL	129
	WJAR	890	Greenville K-15	KFPM	131
			Harlingen O-14	KRGV	126
SOUTH CAROLINA	A.		Houston M-15-a	KPRC	92
Charlestown K-23	WBBY	1200		KTUE	142
Columbia K-22	WRBW	1310	Richmond M-15	KGHX	150

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San Angelo M-12	KGFI	1310	Tacoma B-1-a	KMO	134
C A	KGKL	1370		KVI	1340
San Antonio M-14-a	KGCI	1370	WITTON SITTON		
	KGDR	1500	WEST VIRGINIA		
	KGRC	1370	Charleston H-22	WOBU	58
	KTAP	1420	Clarksburg G-22	WQBJ	120
	KTSA	1290	Fairmont G-23	WMMN	89
\$507 ¥ ≠ # 1	WOAI	1190	Huntington G-22	WSAZ	58
Waco L-15-b Wichita Falls K-14	WJAD	1240	Weirton G-22	WQBZ	142
wichita rails K-14	KGKO	570	Wheeling G-22	WWVA	116
UTAH			ì		
Ogden F-7-b	KFUR	1370	WISCONSIN		
Salt Lake City F-7-c	KDYL	1290	B. 1. 5.40.5	STATE OF THE	
•	KSL	1130	Beloit E-18-b	WEBW	60
VERMONT			Eau Claire D-17	WTAQ	133
Burlington D-26-a	WCAX	1200	Fond du Lac D-18-d	KFIZ	142
Springfield D-26-b	WNBX	1200	Kenosha E-19 La Crosse E-17	WCLO	120
			Madison E-18-2	WKBH WHA	138 57
VIRGINIA			Wadison E-10-2	WIBA	121
Arlington G-24-d	NAA	690	Manitowoc D-19	WOMT	121
Newport News	WGH	1310	Milwaukee E-19-a	WHAD	112
Norfolk I-24	WBBW	1200	Viliwaukee E-19-a	WISN	112
	WPOR	780		WTMJ	62
	WTAR	780	B	WIBU	131
Petersburg I-24	WLBG	1200	Poynette D-18-e	WRJN	137
Portsmouth I-24	WSEA	780	Racine E-19 Sheboygan C-18	WHBL	141
Richmond H-24	WBBL	1370	Stevens Point D-18-b	WLBL	90
	WMBG	1210	Superior B-17	WEBC	128
	WRVA	1110	West De Pere D-19	WHBY	120
	WTAZ	1210	West Be refe B-19		-
Roanoke H-23	$\mathbf{W}\mathbf{D}\mathbf{B}\mathbf{J}$	930			
WASHINGTON			WYOMING		
Aberdeen B-1	KXRO	1420	Laramie F-10	KWYO	60
Bellingham A-1	KVOS	1200			
Everett A-2	KFBL	1370	CANADA		
Lacey B-2-b	KGY	1200			
Longview B-1	KUJ	1500	ALBERTA		
Pullman B-4	KWSC	1390	Calgary	CFAC	69
Seattle B-2-a	KFQW	1420	Juigur)	CFCN	69
	KJR	970		CHCA	69
	KKP	1370		CJCJ	69
	KOL	1270	1	CNRC	69
	KOMO	920	Edmonton	CHMA	58
	KPCB	1210	[CJCA	58
	KPQ	1210	1	CKUA	58
	KRSC	1120		CNRE	58
	KTW	1270	Lethbridge	CJOC	112
	KVL	1370	Red Deer	CHCT	84
	KXA	570		CKLC	84
			1		
Spokane A-4	KFIO	1230	BRITISH COLLIME	΄Α	
Spokane A-4		1230 1390	BRITISH COLUMBI	A	
Spokane A-4	KFIO		BRITISH COLUMBI Chilliwack	A CHWK	121

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Sea Island	CJOR	1030	QUEBEC		
Vancouver	CHLS	730	Montreal	CFCF	730
	CKCD	730	1.xomi cui	CHYC	730
	CKFC	730		CKAC	730
	CKMO	730		CNRM	730
	CKWX	730	Quebec	CHRC	880
	CNRV	1030	Quebec	CKCI	880
Victoria	CFCT	630		CKCV	880
	01 01	0,00		CNRQ	880
MANITOBA			St. Hyacinthe	CKSH	1010
Winnipeg	CKY	780	SASKATCHEWAN		
	CNRW	780		CIDW	1010
NEW BRUNSWICK			Fleming	CJRW CJRM	1010 1010
			Moose Jaw	CHWC	960
Fredericton	CFNB	1210	Regina		
Moncton	CNRA	630	1	CIBR	960
St. John	CFBO	890		CKCK	960
NOVI GOOMT		J	6.1.	CNRR	960
NOVA SCOTIA			Saskatoon	CFQC	910
Halifax	CHNS	930	1	CJHS	910
1 Idilian	CITIO	950		CNRS	910
ONTARIO			Yorkton	CJGX	630
Bowmanville	CKGW	960	HAITI		
Brantford	CKCR	1010	Port au Prince	HHK	830
Chatham .	CFCO	1210	I off and I finde	* ** ***	0,50
Cobalt	CKMC	1210	MEXICO		
Hamilton	CHCS	880		CTT	070
	CHML	880	Chihuahua	CZF	970
	CKOC	880	Mazatlan	CYR	630
Iroquois Falls	CFCH	600	Merida	CYY	550
King Twp.	CFRB	960	Mexico City	CYA	1000
Kingston	CFMC	1120		CYB	1090
	CFRC	1120		CYH	800
London	CIGC	910		CYJ	750
Midland	CKPR	1120		CYL	750
Ottawa	CKCO	690		CYO	710
Otta wa	CNRO	690	1	CYX	920
Prescott	CFLC			CZE	860
Preston		1010	Oaxaca	CYF	1130
	CKPC	1210	Puebla	CYU	960
Toronto	CFCA	840	Tampico	CYO	930
	CFCL	580	Torreon	CYM	1330
	CHNC	580	Vera Cruz	CYC	890
	CJBC	580		0.0	0,50
	CIBC	840	CUBA		
	CIBC	960	Cienfuegos	6BY	1150
	CISC	580	Elia	7SR	860
	CKCL	580	Havana	CMC	840
	CKNC	580		2BB	1200
,	CKOW	840	l	2LR	1280
	CNRT	840	l .	2MG	1050
DDINGE CDWAR				2OK	860
PRINCE EDWARD		ı	1	2OL	1170
ISLAND		-	1	2RK	
Charletteter	CECV	060			950
Charlottetown	CFCY	960		2TW	1110
Summerside	CHCK CHGS	960 1120	Tuinucu	2UF 6KW	1090 790

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.

WGR

Every Morning 6:45-8:00 Tower Health Exercises WEAF WEEI WFI WRC WGY WGR WCAE	4:00-5:00 Cathedral Hour WABC KMOX WHK WNAC WCAO WKRC KMBC WMAQ WEAN WIAS WGHP KOIL WCAU WFBL WADC WOWO WSPD WLBW WMAL WKBW WCCO
8:00-8:15 Rastus' Musical Menagerie WEAF WEEI WGY 8:15-8:30 Morning Devotions WEAF WRC WGY WGR 8:30-8:50 Cheerio	4:00-5:00 Dr. S. Parkes Cadman WEAF WEEI WTIC WJAR WTAG WHAS WCSH WIIT WGY WBT WGR WCAE WSAI WSB WFAA WOW KVOO WSM KOA WKY
WEAF WEEI WRC WGY 8:50-9:00 Parnassus Trio WEAF WEEI WRC	4:30-5:00 McKinney Musicians WIZ WBZ WBZA WBAL WHAM KDKA WJR WLW KYW KWK WREN
9:00-9:15 Virginia Arnold, Pianist WJZ KWK WREN 9:00-10:00 U. S. Navy Band	5:30-6:00 Dr. Harry Emerson Fosdick WJZ WBZ WBZA WBAL WLW KWK WREN WHAM
9:15-10:00 Three Little Maids WJZ KWK WREN 10:00-10:30 Dr. Royal S. Copeland	5:30-6:00 Rev. Donald Grey Barnhouse WABC WCAU WNAC WEAN WFEL WJAS WADC WKRC WGHP WMAQ WOWO KMOX KOIL WMAL WLBW
WIZ WBZ WBZA WHAM KDKA WLW WJR KFKX WREN WRC 11:15-11:30 Radio Household Institute WEAF WEEI WTIC WJAR WTAG WCSH SLIT WRC WGY WGR WCAE WTAM WWJ WSAI KSD KSTP WTMJ KVOO	6:00-6:30 The Stetson Parade WEAF WTIC WJAR WTAG WCSH WFI WRC WGY WGR WCAE WTAM WWI KSD WEEI WGN WOW WDAF KYOO WFAA KPRC WOAI WHAS WSM WSB WTMJ KSTP KOA WHO
Sunday 1:30-2:00 Peerless Reproducers WEAF WLIT WWI WOW WIMI	6:30-7:00 Acousticon Hour WEAF WEEI WRC WGY WDAF WCAE WTAM WWJ WOW WCSH WFI WGR KSD WTIC WJAR WTAG WHO
WEAF WLIT WWY WOW WTMJ WEFI WRC WSAI WDAF WTIC WGY KSD KVOO WSM WJAR WGR WOAI WFAA WTAG WCAE KYW KPRC WCS WTAM WSB KSTP 2:00-3:00 Roxy Symphonic Concert	6:30-7:00 Whittall Anglo-Persians WJZ WBZ WBZA WBAL WHAM KDKA WLW WJR KYW KWK WREN KOA WCCO WTMJ KSTP WEBC KSL KPO KGO KFI KGW KOMO KHO
WJZ WBZ WBZA WBAL KYW KDKA WJR WTMJ WREN WLW WEBC	7:00-7:30 Old Company's Program WEAF WEEI WTIC WJAR WTAG WCS WFI WRC WGY WGR
2:00-2:30 Biblical Drama WEAF WTIC WCAE WSAI KSD WOW WDAF KVOO WFAA WHAS	7:30-8:00 At the Baldwin
3:00-4:00 Symphonic Hour WABC WOWO WSPD WNAC WCAO WKRC KMOX WHK WEAN WJAS WGHP KMBC WCAU WFBL WADC	WIR WLW KWK WREN KOA WHAS WSM WSB WFAA KPRC WOAI KYW WKY
WMAQ KOIL WLBW WMAL WKBW WCCO WISN 3:00-4:00 Young People's Conference	7:30-9:00 Major Bowes' Family WEAF WTIC WRC WJAR WGY WCAE WTAM WHAS WSM WMC WGR
WJZ WLW KWK WBT WBAL WSB KVOO KSTP WREN WTMJ	8:00-8:15 The Enna Jettick Melodies WIZ WBZ WBZA WBAL WHAM
3:00-4:00 Dr. Stephen S. Wise WEAF WTIC WJAR WRC WSAI	KDKA WTMJ WJR KYW KWK WREN WSB WHAS WSM WKY

LVOO WFAA

WOAI

KSTP KPRC

7:30-8:30 Roxy and his Gang WJZ WBZ WBZA WHAM KDKA 8:00-8:30 Around the Samovar WFBL WCAO KMOX KOIL WLBW WMAL WCCO WABC ĸwĸ WHK WJR WBT WSM WSB WBAL WREN WRC KOA WT.S 8:15-9:15 Colliers Radio Hour WEBC WBZA WBAL WHAM WLW KYW KWK WIZ WBZ7:45-8:00 The Piano Twins KDKA WJR KOA WREN KSTP WEAF WOW 8:30-9:00 La Palina Hour 8:00-8:30 School Daze WABC WFBL WADC WOWD WSPD WOR WNAC WADC WEAN WFBL WMAK WKRC WHK WCAU WJAS KMBC WNAC WGHP WKRC WMAQ KMOX WJAS WBBM WEAN KOIL KOIL WMAL WLBW WHK WCAO WLBW WMAL WCCO WCAU WGL WISN 9:00-9:15 David Lawrence 8:00-8:30 Voice of Firestone WFAA WEAF WTIC WJAR WRC WSB WEAF WJAR WEEI WTIC WTAG WOW WGR WHAS WGY WTAG WCSH WCSH WLIT WRC WGR WCAE KSD KVOO WWJ WFAA WCAE WOW WDAF KSD KVOO WHO WOAI WBT WTMJ WKY KPRC WOAI WEBC WTMJ KYW WHAS WSM WSB 9:00-10:00 Majestic Theatre of the Air WBT WTAM KSTP WRVA WJAX WKRC WABC WMAK KMOX WNAC WOC WKY WIAS WCAO WGHP KMBC WEAN 8:30-9:00 Ceco Couriers WFBL wowo KOIL WHK WSPD WOR WCAO KGA WMAL WBBM WLBW WNAC WEAN WFBL WMAK WCAU WCCO KYA WJAS WKRC KEX KID WADC RTWIN WGHF WDOD WERC WTAR WMAQ WWNC KMOX KMBC KOIL WCAU WREC KLZ KTSA KDYL KFJF WRR WDSU KLRA WHK WSPD WMAL WGL WIBW WISN 8:30-9:30 A. & P. Gypsies
WEAF WTIC WIAR V
WGY WCAE WTAM V
KSD WDAF WRC V WDBI WCSH WLIT 9:15-9:30 Utica Jubilee Singers WWJ WGN WTAG WGR WIZ WBAL KDKA KWK WHAM WEEI WOC 9:15-10:15 Atwater Kent Radio Hour 8:30-9:00 Automatic Duo Disc Duo WJZ WBZ WBZA WBAL WHA KDKA WLW KYW KWK WRE WEAF WGR WEEI WRC WGN KSD WCAE WWJ WGY WHO WHAM WOAI WFI WTAM KVOO WOW WREN WSM WFAA KPRC WSB WBT KOA WJR KSTP KOA KPO KGO KFI 9:00-9:30 Physical Culture Magazine
WOR WCAU WNAC WEAN WFBL
WGHP WMAQ KMOX KMBC WSPD
WHL WLBW KOIL WMAL WGL KGW KOMO KHO WKY KSL 9:45-10:00 El Tango Romantico WJZ KDKA KWK WREN V WREN WBZ WEZA WHAM

10:00-10:30 De Forest Audions
WARC WCAU WNAC WEAN WFBL KMOX 9:30-10:00 General Motors Party WJAR WGY WTAG WRC WCAE WOWO WHK WLBW WMAL WGHP WBBM WTAM WWJ WDAF WGN WTMJ KSD WFAA KPRC KOIL WSPD WOW WOAL WHAS KHQ WSB KFI WSM WBT WJAX 10:15-10:45 Morley Singers KGO KGW WLW KWK KOMO KPO KOA KSL10:15-11:00 National Light Opera 9:30-10:00 Vitaphone Jubilee WEAF WGY WFI WTAM WHAS WOR WCAU WNAC WEAN WFBL KSTP KOA WHO WJAS KMOX KOIL WMAK WCAO WADC WKRC WGHP WMAQ WLBW KMBC WSPD 10:30-11:00 Souvenir WGL WEAN WFBL WADC KMOX WHK WMAL WABC WCAU WNAC KLZKDYL $\mathbf{K}\mathbf{Y}\mathbf{A}$ KEX KJR WMAK WJAS WSPD WCAO KGA KMTR WKRC WGHP WOWO WHK KMBC WLBW WMAL WMAQ KOIL 9:30-10:00 Real Folks WJZ KDKA WBZ WBZA WBAL WHAM WLW KYW WJR Monday WREN 10:30-11:30 Blue Birds Novelty 10:00-11:00 Show Boat WCAU WCAO WMAQ WLBW WIZ KFKX WREN KWK WOR WNAC WEAN WFBL WMAK WJAS WADC WKRC 12:45-1:45 Palais d'Or Orchestra KMOX WGHP WSPD KOIL WEAF KSD wwr WOWO WCCO WHK WMAL 4:00-5:00 U. S. Marine Band WISN WIZ KWK WRC WJR WBZ 10:30-11:00 Empire Builders WBZA WEEI WJAR WGY WEAF WTAG WCSH WGR WLIT WRC WCAE 6:00-6:25 Waldorf-Astoria Music WWJ KSTP KYW WTAM KSD WOC WEAF WCAE WRC WEBC WHAS WOW WIMI WSB WBT WFAA KPRC WOAI

[58]

WKY

KGO

WEAF

WFAA

KOĀ

KGW

WGR

WSAI

KSL

WWJ WRVA

11:00-11:30 National Grand Opera

KPO

KSD

WIAX

KOMO KHO

KFI

WRC

7:00-7:30 South Sea Islanders

WBAL

WLIT

KWK

World Today," WFAA WOW WKY

WIZ

WEAF

WTMI

7:30-7:45 "The

Tuesday

- 9:15-10:00 Harry Merker's Orchestra WEAF WEEI WRC
- 10:00-10:30 Ida Bailey Allen
 WABC WCAU WNAC WEAN WFBL
 WKBW WCAO WJAS WADC WGHP
 WOWO KMOX KMBC KOIL WSPD
 WHK WMAL WBBM
- 10:30-11:00 Blue Birds Novelty WREN
- 10:30-11:00 Jewel Radio Hour
 WABC WFBL WCAO WJAS WADC
 WGHP WBBM KOIL WHK WMAL
 WKBW WOWO KMOX
- 10:45-11:00 Harriet Wilson Food Club WEAF WTIC WIAR WTAG WCSH WGY WFI WRC WGR WTAM WSAI KYW wwi KSD WOC WHAS WMC wöw WDAF ŴĪMJ KVOO WFAA KPRC WSB WBT MOAI KSTP
- 11:00-11:15 Parnassus Trio WEAF WRC WGY KSD
- 11:00-11:30 Radio School of Cookery WJZ WBZ WBZA WHAM KDKA WLW WIR KWK
- 2:15-3:15 Orpheus String Trio WEAF WRC WGR
- 4:30-5:00 Auction Bridge Game WJAR WGY WTIC WTAG WEAF TEEM WGR WCSH WLIT WRC WCAE WWJ KOA WSAI WGN WTAM WTMJ KSD WOW WDAF KVOO WFAA KPRC WOAI WHAS WSM WSB WBT WOC
- 6:00-6:55 Waldorf-Astoria Music WEAF WRC WCAE WFI
- 6:30-7:00 Savannah Liner's Orchestra WJZ WBZ WBZA
- 7:00-7:30 Voters Service

 WEAF WTIC WJAR WTAG WCSH
 WFI WRC WGY WCAE KSD
 WOW WDAF KOA WHAS WBT
 WFAA WTMJ WMC
- 7:30-8:00 Soconyland Sketches
 WEAF WEEI WTIC WJAR WTAG
 WCSH WGY WGR
- 7:30-8:00 Fundamentals of the Law WJZ WHAM WRVA WKY KWK KOA WHAS WOAI KSTP
- 8:00-8:30 Genia Fonariova, Soprano WEAF WFI WRC KSD
- 8:00-8:30 Sweethearts
 WABC WFAN WNAC WEAN WFBL
 WIAS KMOX WLBW WKBW WISN
- 8:00-8:30 Stromberg-Carlson Sextet WBZA WHAM WJZ WBZ WBAL KDKA WJR KSTP WREN KYW KWK WTMJ KVOO WFAA KPRC WOAI WHAS WSB WBT KOA WSM WKY
- 8:30-9:00 Music Room
 WABC WFAN WNAC WEAN WFBL
 WJAS KMOX WLBW WKBW
- 8:30-9:00 Prophylactic Program
 WEAF WEEL WTIC WJAR WTAG
 WCSH WFI WRC WGY WGR
 WCAE WWJ KSD WOW WDAF
 WHO

- 8:30-9:00 Michelin Hour
 WIZ WBZ WBZA WBAL WHAM
 KYOO WFAA KPRC WOAL WJR
 KDKA KYW KWK WREN
- 9:00-9:30 Three-In-One-Theatre
 WJZ WBZ WBZA WBAL WHAM
 KDKA KYW KWK WREN WLW
- 9:00-10:00 Eveready Hour WJAR WCAE WEAF WEEI WFI WRC WTAM WWJ WSB WDAF WGY WGR WGN KSD WMC KHO WHAS WSM KOMO KVOO KOA WOAI KGO KFI KSTP WEBC KSL WHO KPO

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- 9:00-10:00 Old Gold-Paul Whiteman WNAC WEAN WFBL WABC WFAN WCAO WIAS WADC wowo KMOX WSPD KMBC KOIL WLBW WBBM WHK WMAL WKBW wcco WDBI WTAR WREC KFIF KLRA WISN WDSU KIR KEX WWNC WLAC KFH WBRC KTSA KGA WDOD WRR KLZ KDYL KYA KMTR
- 9:30-10:00 Dutch Masters Minstrel
 WJZ WTMJ WBZ WBZA WBAL
 WHAM KDKA WLW KYW WREN
 WJR KWK WTMJ
- 10:00-10:30 Clicquot Club Eskimos WEAF WEFI WTIC WJAR WCAE WFI WRC WGY WTAM WTMJ KPRC WWJ WFAA KSD WMC WDAF WHAS WOAI KOA WSM WSB WBT WGR KSTP KYW WOW WHO KSL KPO KGO KFIKGW KOMO KHO
- 10:00-11:00 Curtis Institute of Music WEAN WFBL WFAN WJAS KMOX WABC WCAO WOWO WNAC WADC KMBC KOIL WSPD WKBW WBBM WMAL WLBW WTAR WWNC WLAC WDOD WBRC WREC KLZ KDKYAKMTR KIR KGA KEX KFJF KRLD KTSA WC WISN KLRA WDSU WDBI WIBW
- 10:30-11:00 The Contraltones
 WEAF WFI WCAE WHO WRVA
- 10:30-11:00 Orchestradians WJZ KDKA WBZ WBAL WHAM WBZAKYW WJR KOA KWK WREN KSTP KSL KGO KPO KGW KFI KOMO KHO
- 11:00-12:00 Wrigley--Guy Lombardo AN WFBL WCAO WEAN WNAC WABC WGHP WBBM WJAS WADC WCAU wowo KMOX KMBC KOIL WSPD WLBW WHK WKBW WMAL KLZ KDYL KMTR KJR KYA KEX KGA
- 11:00-12:00 Radio Keith-Orpheum WEAF WEEI WTIC WJAR WTAG WTAG WFI WGY WCSH WRC WGR WTAM wwj WCAE KYW KSD WHO KSTP WTMJ WEBC WDAF WHAS WSB WJAX WSM WMC KPRC WBT WRVA WFAA WOAL WKY KOA KSL KPO KGW KOMO KHO KFI
- 11:00-12:00 Slumber Music

Wednesday

9:15-10:00 Harry Merker's Orchestra WEAF WEEI WRC

10:00-11:00 National Home Hour WTAG WEAR WJAR WGR WEEI WTIC WCSH WFI WRC WGY WCAE WEAR WWI WSAI WTMI KSD KFKX WHO

10:00-10:30 Ida Bailey Allen
WABC WCAU WNAC WEAN WFBL
WMAK WCAO WJAS WADC WGHP
WBBM WOWO KMOX KMBC KOIL
WSPD WHK WMAL WRHM

10:30-11:00 Blue Birds Novelty
WJZ KWK WREN WJR

11:00-11:15 Parnassus Trio WEAF WRC WGY KFKX KSD

11:00-11:30 Radio School of Cookery WJZ WBZ WBZA WHAM KDKA WLW KWK WJR

12:45-1:45 Palais d'Or Orchestra WEAF WWJ KSD

2:15-3:15 Orpheus Trio WEAF WRC WHO WGR

4:00-5:00 U. S. Navy Band WJZ WLW WRC WREN WBZ WBZA

6:00-6:25 Waldorf-Astoria Music WEAF WRC WCAE WTAG

7:30-8:00 La Touraine Tableaux
WEAF WEEI WTIC WIAR WTAG
WCSH WGY WGR WCAE WWJ
WTAM WHAS WSB

7:45-8:00 Frederic William Wile WRC WJZ WBAL KDKA WLW WJR KWK WBZ WBZA

8:00-8:30 Mobiloil Orchestra WBZA WJZ KDKA WHAM WBZWBAL WJR WTMI WLW KYW WREN KVOO WFAA KSTP KOA KPRC WOAI WEBC

8:00-8:30 The Crystal Gazer
WOR WNAC WEAN WFBL WMAK
WCAO WJAS WADC WMAQ KMOX
KOIL WLBW WCCO WISN

8:30-9:00 Sylvania Foresters
WJZ KDKA WBZ WBZA WBAL
WHAM WLW WJR KWK KYW

8:30-9:00 Thirty Minute Men
WOR WNAC WEAN WFBL WMAK
WJAS WADC WMAQ KMOX KOIL
WLBW WMAL WCAU

8:30-9:00 The Intimate Musicale
WEAF WTIC WTAG WCSH WLIT
WCAE KSD WWJ WRC KSD
WOC WOW WMC

9:00-9:30 Smith Brothers
WJZ WBZ WBZA WBAL WHAM
WJR KYW KWK WREN KDKA

9:00-9:30 Ipana Troubadours WEAF WEEI WTIC WJAR WTIC WJAR WGR WTAG WCSH WRC WCAE WTAM WWI KPRC WOAI WHAS WSB WSM WBT KOA WIMI KSD WOW WDAF WBAP WGN KSTP WOC KVOO

9:00-9:30 Daguerreotypes WNAC WOR WCAU WEAN WEBL WMAL WCAO WIAS WADC WLBW KMOX KMBC WKRC WGHP WMAQ WSPD KOIL WHK WMAK WGI. WISN

9:30-10:00 La Palina Smoker WOR WCAU WNAC WEAN WFBL WMAK WCAO WIAS WADC KMOX WGHP WKRC WMAQ WOWO KOIL KMBC WSPD WHK WLBW WMALWCCO

9:30-10:30 Palmolive Hour WEAF WJAX ŴSM WBT WEEI WRC WGY WGN WDAF WJAR WGR KSD KVOO WTAG WCAE KPRC WFAA WLIT wcs WTAM wwj wow WOAT KOA WHAS KSTP wöc WTMJ **KPO** KGO KFI KGW KOMO KHO KSL

9:30-10:60 The Cabin Door WJZ WBAL KDKA WREN WJR

10:00-10:30 Kolster Radio Hour WFBL WOR WOWO WHK WADC WCAU WMAK WKRC KMOX KOIL WNAC WCAO WGHP KMBC WMAL WEAN WJAS WMAO WSPD WLBW WCCO KLZ KDYL KYA KEX KGA KMTR KJR

10:30-11:00 Night Club Romances WOR WMAK WFBL WOWO WSPD WCAU KMOX WHK WCAO WKRC WJAS WMAQ WNAC WGHP WLBW WEAN WMAL WCCO WADC KOIL WISN

11:00-12:00 Hal Kemp's Orchestra WEAF KSD WOW WKY WCAE

11:00-12:00 Slumber Music WJZ WHAM WRC

Thursday

10:00-10:15 Harry Merker's Orchestra WEAF WGR WOC

10:00-10:30 Ida Bailey Allen
WABC WCAU WFBL WKBW WCAO
WJAS WADC WGHP WBBM WOWO
KMOX WSPD WHK WMAL WNAC

10:30-11:00 Rit Program
WABC WCAU WFBL WKBW WCAO
WJAS WADC WGHP WBBM WOWO
KMOX WSPD WHK WMAL WNAC

11:00-11:30 Radio School of Cookery WJZ WBZ WBZA WHAM KDKA WLW WJR KWK

4:00-5:00 U.S. Army Band WREN

6:00-6:55 Waldorf-Astoria Music WEAF WRC WCAE WTAG WFI

7:00-8:00 Ben Pollack's Orchestra

7:30-8:00 Coward Comfort Hour WEAF WEEI WTIC WJAR WTAG WCSH

8:00-8:30 The Song Shop
WEAF WTIC WIAR WTAG WCSH
WFI WRC WGY WGR WCAE
WTAM WWI WTMJ WRHM WOW
WDAF KOA WEEI KSD WHO

Jehner John Colores

8:00-8:30 WIZ KDKA KYW WREN	Lehn a WBZ WOAI KWK WKY	nd Finl WBZA WLW KVOO	Seren WBAL WIR WFAA	ade WHAM WFAA KPRC
8:00 ₇ 9:00 WABC KMOX	United WNAC KOIL	Opera WEAN WLBW	Compa WFBL WMAL	ny WIAS WKBW
8:30-9:00 WEAF WGY WSM WGN	Hoover WEEI WCAE WOW WGR	Sentin WTAM WWI WSB WHO	els WFI KSD WFAA WKY	WRC WHAS WDAF KSTP
8:30-9:00 WIZ KDKA WJR	Champ WBZ WLW	oion Spa WBZA WREN	arkers WBAL KWK	WHAM KYW
9:00-9:30 WEAF WCSH KPO KOA KPRC WTMJ WHD	Seiberl WEEI WFI WWJ WBT WHAS KGO WJAX	ing Sin WTIC WRC KFI WOW WSM KGW	gers WJAR WGY KSD WDAF WMC WTAM KOMO	WTAG WGR KHQ WFAA WSB KYW WKY
9:00-9:30 WABC WCAO WBRM WSPD	Aunt J WFAN WJAS WOWO WHK	emima WNAC WADC KMOX WLBW	WEAN WKRC KMBC WMAL	WFBL WGHP KOIL WKBW
9:30-10:00 WABC WMAL WGHP WKBW	Sonor WFAN WJAS WOWO WHK	a Phon WNAC WADC KMOX WLBW	ograph WEAN WKRC KMBC KOIL	Hour WFBL WBBM WSPD WCAO

) Sonora Phonogr	aph Hour
WFAN WNAC WE	EAN WFBL
	KRC WBBM
WHK WLBW K	OIL WCAO
KEX KJR KI	FJF WRR
KDYL KMTR KY	ZĂ KGA
WWNC WLAC WI	DOD WREC
KTSA WDSU WI	ISN WDBJ
KFH	-
WJAS WADC WI WOWO KMOX KM WHK WLBW KO KEX KJR KF KDYL KMTR KY WWNC WLAC WI KTSA WDSU WI	KRC WBBM MBC WSPD OIL WCAO FJF WRR A KGA DOD WREC

9:30-10:00 Maxwell House Hour					
WIZ	WBZ	WBZA	WBAL	WHAM	
KDKA	w_Lw	WJR	KYW	KSD	
WHO	WDAF	KVOO	WBAP	KPRC	
WHAS	WSM	WSB	WBT	KOA	
WOW	WEBC	WIAX	WTMI	KSTP	
WRVA					

10:00-10:3	30 Colu	mbians		
WABC	WFAN	WEAN	WNAC	WFBL
WJAS	WADC	WKRC	WGHP	WMAL
wowo	KMOX	KMBC	wspd	WKBW
\mathtt{WHK}	wlbw	KOIL	WCAO	WBBM
WCCO	KLZ	$\mathtt{K}\mathtt{D}\mathtt{Y}\mathtt{L}$	\mathbf{KMTR}	KYA
$\mathbf{K}\mathbf{E}\mathbf{X}$	KJR	KGA	WTAR	WWNC
WLAC	WDOD	wrec	KLRA	KFJF
$\kappa_{\rm RLD}$	KTSA	w_{DSU}	WISN	WDBJ
WBRC	KFH			-

10:00-10:30 Halsey Stuart Hour						
WEAF	WEEI	WTIC	WJAR	WTAG		
WCSH	WFI	WRC	WGY	WGR		
WCAE	wrmJ	\mathbf{KSD}	wow	KVOO		
WFAA	WOAL	WHAS	$\mathbf{w}\mathbf{B}\mathbf{T}$	KOA		
WSB	wwj	KYW	WHO	KPRC		
KSTP						

10:30-11:30 Palais d'Or Orchestra WEAF WTIC WFI WGY WWJ

10:30-11:00 Close-Ups
WABC WFAN WNAC WEAN WCAO
WKRC WGHP KMBC WSPD WHK
WLBW WMAL WJAS WADC WOWO
KMOX KOIL WKBW WFBL WBBM

Friday

9:15-10:00	Harry	Merker's	Orchestra
WEAF	WEEL	WRC	

10:00-10:30 Ida Bailey Allen						
	WARC	WNAC	WEĂN	WCAO	WADC	
	WGHP	WBRM	KMOX	WMAL	WOWC	
	WMAK	KMBC	KOIL	WSPD	WHK	
	WCAU	wrbl	WIAS			

10:00-11:0	M Note	anal Ha	ma Ha	77*
WEAF	WEEI	WTIC	WTMI	KSD
WIAR	WTAG	WCSH	WFI	WRC
WGY	WGR	WCAE	wwi	WSAI
WEAR	KFKX	WHO	3	

11:00-12:0	00 RCA	Educat	ional I	Tour
WIZ	WBZ	WBZA	WBAL	WHAM
KDKA	WTR	WLW	$\mathbf{K}\mathbf{W}\mathbf{K}$	KYW
wow	WDAF	KVOO	WFAA	KPRC
WOAI	KOA	WTMI	WHAS	WSM
WSB	WRVA	WSMB	WBT	KFKX
WRC	WHO	KSTP	WJAX	

12:00-12:1	5 Jean	Carroll		
WOR	WCAU	WNAC	WEAN	\mathbf{WFBL}
wmak	WCAO	WJAS	WADC	WKRC
wghp	WMBC	WHK	WMAL	wbbm
wowo	KOIL			

12:00-12:1	l5 Teet	h, and	Health	
WEAF	WEEI	WTIC	WJAR	WTAG
WCSH	WLIT	WRC	WOW	WCAE
WTMJ	WSAI	wwj	WGY	WGR
WEAR	KFKX	KSD	KSTP	WHO
WGR				

12:45-1:45 Palais d'Or Orchestra WEAF WWJ KSD WRC

4:00-5:00	U.S.	Marine	Band	
WIZ	WBZ	WBZA	w_{Lw}	WJR
KWK	KOA	WRC		

5:00-5:30	Florida	Citrus	Growe	
WEAF	WEEI	WTIC	WJAR	WTAG
WCSH	WRC	WGY	WGR	WCAE
WTAM	wwJ	WSAI	KYW	KSD

6:00-6:55 Waldorf-Astoria Music WEAF WRC WCAE

6:30-7:00	Raybe	stos Twi	ns	
WEAF	WTIC	WJAR	WTAG	WCS
WFI	WRC	WGY	WGR	WCAE
WTAM	wwJ	KSD	wow	WDAF
woc	KOÀ	\mathtt{KSL}	\mathbf{KPO}	KGO
$_{ m KFI}$	κ_{GW}	KOMO	KHQ	

6:45-7:00	Enna.	Jettick	Melodie	es
WABC	WCAU	WNAC	WEAN	WFBL
WMAK	WJAS	WADC	wbbm	WOWO
KMOX	KOIL	\mathbf{KMBC}	\mathtt{WHK}	WLBW
WMAL	WRHM			

7:00-7:30 Happy Wonder Bakers WEAF WRC WGR

7:15-7:30	Squibb	s Healt	h Talk	
WJZ	WBZ	WBZA	WHAM	KDKA
WJR	wlw	KYW	KWK	WREN
KSTP	WTMI	KOA		

7:30-8:00	Dixies	Circus		
WJZ	WBZ	WBZA	WBAL	KDKA
WJR	WLW	KYW	WBT	WSB
WSM	WHAS			

8:00-8:30	The Cr	ystal G	azer	
WOR	WNAC	WEAN	WFBL	WMAK
WJAS	WKRC	WMAQ	KMOX	KOIL
WLBW	\mathbf{WMAL}	WCCO_	WGHP	WADC
WCAO	\mathtt{WHK}	WISN		

8:00-9:00 Cities Service Orchestra WEAF WDAF WEEI WLIT WRC wwī KSD WCAE WTAM WOW WFAA KOA KYW WOC WKY KSTP WGR

8:30-9:00 The Armstrong Quakers
WIZ WBAL WIR KWK WSB
WBZ WHAM WLW WREN WBZA
KDKA WBT WHAS WSM WLS

8:30-9:00 Then and Now
WOR WCAU WNAC WEAN WFBL
WMAK WJAS WKRC WMAQ KMOX
KOIL WLBW WMAL WCCO WADC
WHK WKBW

9:00-9:30 An Evening in Paris
WEAF WEEI WTIC WRC WGR
WCAE WTAM WWJ WCSH WDAF
KSD WJAR WTAG WGN WLIT
WGY WOW WOC

9:00-10:00 True Story Hour WOR WSPD WT.BW WMAK WCĀU WMAL WCAO WKRC KMOX WMAC WIAS WGHP KMBC WFBL WEAN WADC WHK WMAO KOIL

9:00-10:00 Wrigley Review WJZ KDKA WBZA WHAM WBZWBAL ŸĹŴ WJR KYW WREN wšm WHAS WBT WRVA WJAX KFI KGO WFAA WOAI KPO KGW KOMO KHQ KPRC KOA KSD KSTP

9:30-10:00 Schradertown Brass Band WEAF WEEI WDAF WTIC WJAR WTAG WCSH WLIT WGY WGR WCAE WWJ WOC KSD WOW

9:30-10:00 Philco Hour WJZ WBAL WHAM WBZ WBZA KDKA WJR KPRC WLW KYW KWK WÕÄI WREN WFAA WHAS WSB WBT WIMJ

10:00-10:30 United Choral Singers WOR WFBL WADC WMAQ WSPD WHK WNAC WMAK WCAU WCAO KOIL KMOX KMBC WLBW WEAN WKRC WIAS WGHP WMAL WCCO WISN

10:00-11:00 Concert Bureau Hour WEAF WEEI WTIC WTAG WLIT WRC WCAE WWJ KSD WGR WOW WKY WGY WRVA WCSH WRC

10:00-10:30 Hudson-Essex Challengers WBZA WBAL WIZ WBZ MAHW WRVA KDKA WJR WLW KYW KPRC KWK wrenKVOO WFAA WTMJ WOAI WHAS WSM WBT KSTP WEBC KOA KPO KSL KCO KGW KOMO KHQ KFI wĸv WSB WJAX

10:30-11:00 Thirty Minute Men WNAC WOR WCAU WEAN WFBL WMAK WCAO WJAS WADC WKRC WGHP KMOX KMBC KOIL WSPD WHK WLBW WMAQ WCCO WMAL WSIN

11:00-12:00 Hotel St. Regis Orchestra WEAF WCAE WWJ KOA WOW KSD WKY

11:00-12:00 Slumber Music WJZ WLW WRC WTMJ WHAS

Saturday

9:15-9:30 Harry Merker's Orchestra WEAF WEEI WRC

9:30-10:30 U. S. Army Band WEAF WRC WEEL WGR WOC KDKA

12:30-1:30 Waldorf-Astoria Orchestra WEAF WEEI WRC WWI

3:30-4:30 RCA Demonstration Hour WBZWBZA WJZ KYW WHAM KDKA WLW WIR KWK KOA KPRC WOAI WHAS WSB WFAA KVOO WDAF WOW WTMJ WBT WOC KSTP

6:30-7:00 Gold Spot Orchestra WJZ WBZ WBZA KDKA WLW

6:30-7:00 White House Dinner Music WEAF WEEI WTIC WJAR WRC WSB WGY WTAG WCSH WFI WGR WCAE WTAM wwj WLS WBT WTMJ KSTP

7:00-7:30 Phil Spitalny's Music WEAF WFI WRC WGY WSB

7:30-8:00 Romance Isle
WEAF WEEI WTIC WJAR WTAG
WCSH

7:45-8:00 The World's Business
WJZ WBAL WSM KDKA KWK
KOA WFAA WTMJ WRC

8:00-8:30 Lew White Organ Recital WEAF WTIC WCAE WSAI KSD

8:00-8:30 Pure Oil Band WJZ WLW WBAL WHAM KDKA WJR WTMJ WBT KWK WMC WREN KYW Жŝм WHAS KPRC WFAA WOAT WKY WRVA WEBČ WJAX KSTP

8:30-9:00 Interwoven Entertainers WJZ WBZ WBZA WBAL WHAM ŘĎKA WJR WLW KYW KWK WREN WHAS WMC WSB WBT WFAA KPRC WOAT WKY WRVA WJAX

8:30-9:00 Marimba Orchestra WEAF WGY WCAE WWJ KSD WHO WTIC WJAR WTAG

9:00-10:00 General Electric Hour WEEI WJAR WGY WTAG WEAF WTIC WCSH WFI WRC WGR WCAE WTAM wwi KSD WHO WTMJ WHAS WOW WDAF KOA WMC WSB WBT WFAA KPRC WOAI WKY WJAX KGO WRVA WEBC KPO KSL KHQ KGW KOMO KFI

10:00-11:00 Lucky Strike Orchestra WEAF KOA WRC KSD WEEL KŠL WGR KPO WTMJ WTIC wow WCAE KHQ WJAR WWJ WTAM WDAF KGO WTAG KVOO KFI WCSH WFAA WSB KGW WFI WGN KPRC WBT KOMO WGY WOAL KSTP WHO WJAX WKY

11:00-11:15 Penee Sisters
WEAF WFI WCAE WWJ KSD
WHO WOW WKY

11:15-12:00 Ben Pollack's Orchestra
WEAF WCAE WWJ KSD WHO
WDAF WKY

Those Short Waves

HE following letter from J. Carroll Hay, Huntsville, Ala., is typical of many that we receive: "I am a subscriber to your magazine and think it a wonderful little book. I am now getting stations that I have never gotten before. I have a Kolster AC set with a Western Electric magnetic loud speaker. I have ordered the larger set with dynamic speaker. My first set was splendid and I am expecting big things out of the latter. I have been told that by a very simple plug-in attachment I would be able to get the principal foreign stations. Can you give me any information in regard to this attachment, its cost, where I can get parts or where I can buy one already built?"

There are now on the market parts for short-wave sets, kits for their construction and sets built ready for use by manufacturers. Any of these can be arranged to lead the signals to a plug which fits into the detector socket of any broadcast receiver. These signals then go through the audio amplification system of the regular set and out through head phones or loud speaker. Using the regular set in this way will of course do it no harm.

But this can certainly not be described as a simple "plug-in attachment" for the short-wave receiver is not only a complete radio set in itself but is much more delicate, sensitive and tricky than an ordinary set. In fact the short-wave receiver may be said to be today where the broadcast receiver was back in 1923.

(Continued on page 64)

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LESTER L. SARGENT

Registered Patent Attorney

1115-K St. Washington, D. C.

QUESTION BOX

(Continued from page 11)

I am using a super-heterodyne receiver, tone quality and DX reception are wonderful. I still find some dificulty in tuning distance because of the numerous whistles that are always prevalent at many points on the dial. These are not re-generative whistles caused by my own receiver because I get them when the intermediate amplifier is not oscillating. During daylight I have much less trouble from this source and also after midnight the number of whistles gradually diminish. The receiver is a straight seven tube super with a loop antenna.

Your trouble lies in the fact that your loop circuit tunes too broadly. As a result several signals are present in your first tube circuit at the same time that you are trying to tune in signals. These frequencies or beats between some of these frequencies and the fundamental or harmonic frequencies of your oscillator combine to give you heterodyne beats of audible frequency. Check over the circuit of your first tube to make sure that there are no poor connections that might provide high resistance and therefore give you broad tuning. In the event that you cannot eliminate this trouble yourself, I suggest that you call a radio service man to repair your set.

When I tune in station KDKA Pittsburgh, I hear a constant whistle which in my estimation cannot be a heterodyne, because there isn't another station on the same wavelength.

The station that is heterodyning is not necessarily on the same wavelength that you are tuned to. It can be 10 kilocycles above or below this station.

The whistle that you are receiving may be somebody tuned to the same station that you are tuned to. In this event, the set is of an oscillating type.

The interference that you are receiving can be on the same frequency that you are tuned to. It may be your light line, electrical apparatus in your neighborhood, poor wiring in your dwell-

(Continued on page 64)

ing, or power transformers on light poles.

How much would it cost to electrify my six tube set? First, If I do the work? Second, If I have it done?

Cost of the necessary parts, tubes, etc., assuming that you have none of these on hand, will be in excess of \$60. If you have the work done, about \$15 additional charge will be made for labor. You must remember that you do not then have an electric set but a re-built battery set.

Can a charger used for large radio batteries be used to charge my automobile battery?

Yes. Providing its charging rate is two amperes or more. You will generally find this charging rate on the plate attached to the charger. Care must be taken to connect the charger to the battery correctly.

Those Short Waves

(Continued from page 63)

The short-wave receiver is of course simplified to some extent and consequently cheapened when the audiofrequency portion of the regular set is used.

Many radio users, being accustomed to the present-day efficiency and simplicity of the broadcast set, lose all patience with the short-wave receiver and some give it up as a bad job. We have had subscribers write us that they bought a nationally known short-wave receiver and after weeks of trial had been unable to hear a single signal. Any radio user knows how much more careful one must be in tuning in stations at the lower end of a dial. That is, the lower the wave the more critical the Well, this principle is intensified a hundred-fold in the extreme short waves.

We do not want to discourage our listeners from experimenting in the short-wave field for we believe that is where the great progress of the next decade is going to be made but we do want them to know that it is an experiment when they work in the vast space below the broadcast band. The ether there is full of signals of all sorts, most of which of course are utterly unintelligible to one who cannot read code, with here and there a broadcast station and foreign short-wave station. It is a fascinating job for the technically-minded but it's no place like home for the fellow with scant patience who wants to spin the dials and get his results quickly and certainly.

RADEX does not deal in the technical side of radio. For the technically-minded interested in short waves, we recommend the numerous articles on this subject which have appeared in the magazine Radio Broadcast.

Neighborhood Noises

(Continued from page 4)

checked over every known electrical device in the neighborhood but have not located it. Can you suggest what we can do? A radio around here is almost useless because the noise is only off for a few hours at a time every few days."

Such a situation as described here is maddening and only the most careful and systematic search will locate it. We know of one such noise that caused a whole town to rage which was finally located in the telephone-central in a ringing device. In another town the interurban cars could be heard clicking in the loud speaker while they were still several miles away but, oddly enough, when they were going the other way there was no noise at all. indicates that we cannot lay down any set rules for finding the causes of electrical disturbances of the ether. Patience, determination and work are the only tools.

When You Write a Letter

Give a Good Impression of Yourself

Use Individual Stationery

Every business house receives letters daily from people who forget to sign their names or sign them so illegibly they cannot be answered.

When you receive a letter from a person who uses startionery with his own name and address printed on it, your opinion of that person rises at once.

Printed stationery costs but little more than the other. Why not give yourself this distinction of standing in your community?

> We can furnish you with letterheads and envelopes on high grade paper neatly packed in a strong box. Fifty sheets of paper and fifty envelopes to match.

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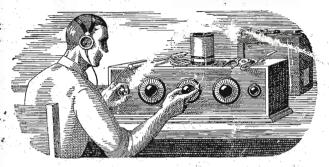
Brookline, Massachusetts

Mrs. Bavid Harry Moore

3424 North Tenth Street

Philadelphia, Pennsylvania

911/01/11



If all the Radio sets I've "fooled" with in my time were piled on top of each other, they'd reach about halfway to Murs. The trouble with me was that I thought I knew so much about Radio that I really dian't know the first thing. I thought Radio was a plaything - that was all I could see in it for me.

Thought Radio Was a Plaything

But Now My Eyes Are Opened, at d I'm Making Over \$100 a Week!

\$50 a week! Man alive, just one year ago a salary that big would have been the height of my ambition.

Twelve months ago I was skimping along on starvation wages, just barely making both ends meet. It was the same old story—a little job, a salary just as small as

If you'd told me a year ago that in twelve months time I would be making \$100 and more every week in the Radio business—whew! I know I'd have thought you were crazy. But that's the sort of money I'm pulling down right now-and in the future I expect even more.

Why, only today—
But I am getting ahead of my story. I was hard up a year ago because I was kidding mysed, that's all—not

because I had to be.

When broadcasting first became the rage, I first began dabbling with Radio. There's a fascination—connecting that grabs hold of a fell w-about twirling a little knoo and suddenly listening to a voice speaking a thousa. miles away!

Unto a year ago, I was just a dabbler—I thought Rac. was a plaything. I never realized what an enormous, fastgrowing industry Radio had come to be—employing thou ands and thousands of trained men. I usually stayed home in the evenings after work, because I didn't

make enough money to go out very much.

And as for the idea that a splendid Radio job might be mine, if I made a little effort to prepare for it—such an idea never entered my mind. When a friend suggested it to me one year ago I laughed at him.
"You're kidding me," I said.
"I'm not," he replied. "Take a look at this ad."

He pointed to a page ad in a magazine I'd seen many times but just passed up. This time I read the ad carefully. It told of many hig opportunities for trained men to succeed in the great new Radio field. With the advertise ment was a coupon. I sent the coupon in, and in a few days received a handsome 64-page book, telling about the opportunities in the Radio field and how a man can prepare quickly and easily at home to take advantage of these opportunities. Well, it was a revelation to me. I read the book carefully, and when I finished it I made

my decision.
What's happened in the twelve months since that day seems almost like a dream to me now. For ten of those twelve meaths, I've had a Radio business of my own. At first, of course, I started it as a little proposition on the side, under the guidance of the National Redio Institute. It wasn't long before I was getting so much to do that I quit my measly little clerical job, and Cvoted my full time to my Radio business.

Since that time I've gone right on up. They would have given me just as much help, too, if I had wanted to follow some other line of Radio besides building my

own retail business-such as broadcasting, manufacturing, experimenting, sea operating, or any one of the score of lines they prepare for you. And to think that until that day I sent for their eye-opening book, I'd been wail: ... "I never had a chance."

Now Prom making, as I told you before, over \$100 a week. And I know the future holds even more, for Radio is one of the most progressive, fastest-growing businesses in the world today. And it's work that I like—work a man can get interested in.

You may not be as bad off as I was. But think it over

are you satisfied? Are you making enough money, at work that you like? Would you sign a contract to size where you are now for the next ten years-makin same money? If not, you'd better be doing something

This new Radio game is a live-wire field of golden rewards. The work is fascinating, absorbing, well paid. The National Radio Institute—oldest and largest Radio home-study school in the world—will train you inex-

pensively in your own home to know Radio from A to Z.

Take another tip—No matter what your plans are, no matter how much or how little you know about Radioclip the coupon below and look their free book over. It is filled with interesting facts, figures, and photos, and the information it will give you is worth a few minutes of anybody's time. You will place yourself under no obligation—the book is free, and is gladly sent to anyone who wants to know about Radio. Just address J. E. Smith. President, National Radio Institute, Dep. 9P91, Washington, D. C.

I. E. SMITH, President, National Radio Institute, Dept. 9P91, Washington, D. C.

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

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