

THE NOVEMBER 1931

RADIO INDEX

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Does Radio Offer Life Career?

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NOVEMBER 1, 1931



RADIO IN INDEX

REG. U. S. PATENT OFFICE

FRED CLAYTON BUTLER

Editor and Publisher



EIGHTH YEAR

Contents

NUMBER 53

Frontispiece — Harriet Lee of the CBS Her story is on page 7	
Is Television Ready for the Home?	2
Radio Troubles and the Remedies	4
Between the Acts, "Betty's" Gossip Page	6
Puzzles in Radio, a Fascinating Pastime	8
New City of Radio	9
Does Radio Offer a Life Work?	10
Walter Damrosch, Famous Conductor	12
The Month's Changes	12
Their Time on the Air, Some DX Targets	18
Foreign Language Programs	19
In the World of DX	22
Chain Stations, Alphabetically	33
What's on the Air Tonight?	34
Chain Stations by Frequencies	36
Principal Broadcasting Stations of the World	37
A Complete Index by Frequencies	40
A Complete Index by States and Cities	54
A Complete Index by Call Letters	60
Short Wave and Experimental Stations	66

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Is TELEVISION READY for the HOME?

MUCH publicity and discussion during the past year has left the radio public wondering what may be expected of television. Some radio experts believe the television, like prosperity, is "just around the corner," and that it will come into its own before long. Still others maintain that its present status is comparable to the radio receiver age of a decade ago. While the basic principles of television have been known for a long time, the modern application of them to provide practicable reception must be achieved before radio listeners can be entertained also by visual reception at home.

The father of television, Dr. C. Francis Jenkins, of Washington, has long been optimistic about home reception. His namesake, the Jenkins Television Corporation, now affiliated with the De Forest Radio Company, really began the boom in television through the manufacture of sets and sponsoring of the first broadcasts of moving shadow pictures. But Dr. Jenkins, when invited to tell the readers of RADEX his ideas of the status of television, was forced to decline because no disclosures are now being made public. It is certain that his organization will make public some important development before very long in the world of television.

Industry in a Boom

When the Jenkins Company started the television ball rolling it caught some other experimenters unexpectedly. The Radio Corporation of America, The Bell Laboratories, and others, were hard at work trying to perfect their own methods. But, as Jenkins patents were outstanding, that concern naturally came quickly to the front. And other concerns have seemed reluctant for some time to enter the field of radio-television receiver manufacture. The events of the past months, however, have caused a speculative boom in set building and selling. Heretofore the use of television apparatus has been left entirely to a few experimenters who have had but one or two special broadcasting services avail-

Survey by

B. FRANCIS DASHIELL

able. That situation found practically every radio fan excluded from the opportunities of television. In spite of this it has been estimated that more than 25,000 self-assembled television sets are in use.

New Set for \$100

A few high-priced radio television sets are now being manufactured and sold. Perhaps we are witnessing the development of a new industry that may quickly rise to astonishing heights as did radio not many years ago. At the September, 1931, radio world's fair in New York, a new television receiver that can be focused for any size screen up to 8 by 10 inches was shown. It was a Jenkins Corporation receiver and covers a short wave band from 80 to 200 meters. The scanning disc is set with 60 perfect lenses, each seven-sixteenths of an inch in diameter, and the light of a neon crater lamp is focused on a ground glass screen. This remarkable set is new and not yet commercially available, and will sell for more than \$100.

The Baird Shortwave and Television Corporation, British pioneers in television, has devised a home double-duty receiver which combines both sight and sound. The Western Television Corporation is manufacturing a two-set receiver similar to the Baird apparatus which will sell for about \$300. Television kits may be purchased for experimental purposes as low as twenty dollars. Radio television still has far to go; the industry may meet with radical changes at any time; hundreds of scientists are constantly devising new methods; a few stations can broadcast visual signals; and no one should invest in high-priced apparatus with the expectation of obtaining sensational results.

The most remarkable radio television demonstration in the New York show was given by U. A. Sanabria, a youthful Chicago inventor. Essentially his device

consisted of normal apparatus equipped with a powerful magnifier for projecting images on a great screen about four feet square. But, as most of these demonstrations reproduce local scenes that are carried over a few feet of wire and not through the air by radio for hundreds of miles, they are not real radio tests. The latter is the real criterion, for, with fading, interference, static, and electric noises to contend with, reception is another thing. Every sound other than those produced by the flickering spot of light will show up as unwanted flashes

forth from an experimental station in New York. Permanent television broadcasts are to be considered by the Commission in view of the number of applications received just as soon as it is known that television sets have been sold in sufficient number to justify an arrangement of fixed broadcasting channels.

The problem of television is that of breaking up a picture into about 72,000 light and electric impulses a second which must be transmitted and then reassembled in harmony to reproduce the original picture. Let us suppose a



Morton Downey, Kate Smith and Bing Crosby, all singers, all stars, and all posed, just for the fun of it, before a single microphone. Downey's tenor, Kate's soprano, and Crosby's baritone are now heard six nights a week in programs featuring each, over the Columbia network. How would you like to hear them as a trio?

on the image shown on the receiving screen.

The Federal Radio Commission considers television purely experimental, and stations broadcasting pictures are licensed accordingly. Few stations are permitted to transmit radio vision programs and available wave bands are hard to obtain. The visual channels are all short waves ranging in places from 4 to 150 meters. It will be necessary to have two receivers, one to pick up the sound broadcast, and one to bring in the visual signals. A new frequency channel has been assigned for the sound broadcasts accompanying television transmissions. The Columbia network began, in July, to broadcast sound over its system, but the accompanying sight impulses went

picture to be painted on a piece of cloth. Then the thread is unraveled, but it still bears variations in the painted color along its entire length. At some distant point this thread must be rewoven accurately to combine again to create a picture. This is the work to be done by the receiver in the home. A revolving scanning disc is perforated around its edge with 60 small holes equally spaced along a spiral path making a complete circle. As each hole passes across the screen, which is about one inch square, as the disc turns it leaves a shadowy line of light drawn just below the preceding one. Thus a complete revolution of the disc covers the receiving screen completely with 60 concentric and slightly

(Continued on page 30)

MORE HELP in Time of TROUBLE

By Our RADIO DOCTOR

Radio Enemy No. 2

Is there a cure for fading? My local station is the only one I don't have to stay by my volume control to bring it in. I have tried different aeriels and grounds.

There is no cure for true fading; it is caused by some mysterious condition in the atmosphere which varies the energy of the radio waves being transmitted. Some spots are constantly bothered with fading, and certain stations are noted for their fading peculiarities. Occasionally fading is due to variations in the line voltage supplying the receiver. A volt meter connected across the line where the radio set is plugged in will register voltage drops when fading occurs if this should be the cause. One or more tubes may have some defect that can be determined by testing. But if fading is noticed also by others in your neighborhood we are afraid nothing can be done about it.

Can I Use Pentodes?

I wish to use pentode tubes in my eight-tube Atwater Kent superheterodyne set by installing adapters for this purpose that I have seen advertised. Would this be feasible?

An adapter has been devised to fit in the sockets of radio sets using -45 tubes so that the new pentode -47 tubes can be inserted. We can not recommend this change in the case of your set, for it was designed to use the tubes now in operation. Since the pentode eliminates the need of additional intermediate audio amplification it would likely give too much amplification and power for your speaker and power pack. Considerable changes in the wiring will be necessary to install the pentode tube just after the detector—where it belongs. Likewise an adapter has been perfected so that the new variable- μ screen grid tubes can be used in place of the older types of tubes in the radio frequency circuits of radio receivers.

Range of Midget

I have a new R. C. A. Victor Radiolette. Reception is not good and I only get nearby stations in the daytime. What is the trouble? Also, I receive station WPEN at 88 on the dial and another station at 95 which is not listed.

This receiver will not bring in stations like a seven or eight-tube super-heterodyne for it has but three tubes—a radio-frequency, a detector, and a pentode power tube. Its range is, therefore, rather limited, but the set serves excellently as a small receiver to bring in local and other nearby stations. Station WPEN operates on the highest frequency given broadcasting stations—1500 kilocycles or about 200 meters. Evidently your set tunes below that since you get WPEN at 88 on the dial, and the station picked up at 95 has a much lower wave length. It may be a police station nearby.

Shielding Aerial and Ground

Must I ground the shield of shielded ground and lead-in wire? R. C. A. engineers say it should not be grounded, yet the Stromberg Carlson people advise to ground well.

There is no advantage in using shielded wire on a ground connection. The wire is already grounded so the shield is quite unnecessary. However, when shielded wire is used as an aerial lead-in it is supposed to prevent any electrical interferences taking place between the aerial and the radio set from affecting the lead-in wire. By encasing it with a metallic cover that is well grounded at its lower and upper ends the lead-in is effectively protected from stray currents which are carried off to the earth through the shield. But the enclosing shield is not satisfactory for it takes much from the weak currents passing down from the aerial. Its use is not recommended unless local interference is bad. Remember, the shielded wire cannot prevent static interferences that arise beyond the aerial.

Set Lacks Sensitivity

I have a model 35 Atwater Kent receiver which is not very sensitive. I get a

50,000-watt station 25 miles away, but fail on other stations. I think the tubes, batteries and aerial and ground are in perfect condition. What can I do to make the set more sensitive?

Test your speaker as it may be weak or burned out. Compare it with one that is known to be working satisfactorily. Then examine the windings on the primary coils of the transformers or impedance coils. They, too, may be burned out. Are you sure the tubes make good contact with the sockets? Is the grid leak or condenser in place and in good shape? Is the "C" battery properly connected in the circuit? Carefully test the batteries to make sure they are good. The tubes should also be tested by a dealer for weaknesses. There can be no constructional change that will make the set more sensitive.

The Ball Antenna

There are many aeriels around me and my Majestic receiver does not tune sharply nor work very well. Can I use a Ball antenna in place of my present 60-foot aerial with 15-foot lead-in and 30-foot ground? Will this reduce static and make sharper tuning?

Changing to a Ball antenna is substantially the same thing as reducing the effective length of your present aerial. It is entirely too long at the present time. Try cutting off about 30 feet. This should make your tuning somewhat sharper and reduce the local station interference. The number of surrounding aeriels will make no difference for there are practically no reradiating sets in use now. Of course, the Ball antenna might cut down the static to a greater extent, and you might be justified in its use. You do not indicate what else affects your receiver, but it might be well to have the tubes tested and replace them if necessary.

The Phone Adapter

An adapter was described in the September issue of RADEX that will enable one to use headphones instead of the loud speaker. Can I use this on a new model super-heterodyne?

The telephone adapter is designed to fit in the socket of the first audio tube

in any receiver. It is also used in the last stage of the power amplifier for distant signals that are very weak. But if the socket has five openings for five-prong tubes the adapter cannot be used. This would apply to sets using the new pentode tube and -27 detector. It may be used in sets having the -45 detector in the power stage or -71-A in intermediate stages. It is likely the makers have issued new adapters with five prongs by now, although we have not been advised.



Diminutive Ethel Norris, player of ingenue roles in such musical comedies as "Great Day," and "Rain or Shine," and featured artist in several broadcasts, was heard on "Vitality "Personalities" over CBS October 7th.

I have a 1928 Radiotrope receiver and the volume control gave trouble. I removed it and tried to get another. I bought a 500,000 ohm control and connected a 50,000 ohm resistor across the outside terminals. The result was disappointing. Does it make any difference how the three wires are connected, for I do not remember how they were originally? Please tell me what I should do. One expert said I needed a potentiometer and another said resistor. What do you think?

No one should remove a part of a radio circuit without first marking the wires as they are disconnected. It is best

(Continued on page 31)

BETWEEN The ACTS

By "BETTY"

RUSS COLUMBO, born in San Francisco in 1908, is tall, dark, handsome—and unmarried. He is one of radio's best-dressed men. Russ started life as a violinist, the dark-haired lad being no more than a child when he first tucked a violin under his chin for a gruff Teutonic teacher. By the time he was 14 he was playing solos in the Imperial Theatre in San Francisco, and when the family moved to Los Angeles he was made the first violinist in the Belmont High School orchestra. His parents were confident that he was started on a successful career as a violinist. But already Russ' mellow baritone was beginning to attract attention. And then came the great day when George Eckhardt, Jr., heard him sing and engaged him for \$75 a week to sing at the newly opened Mayfair Hotel in Los Angeles. Russ later sang and played in the Roosevelt Hotel and the Coconut Grove at the Ambassador Hotel. He also had a try at talking pictures, and finally opened his own club, the Club Pyramid in Los Angeles. The young singer then went east and the rest is radio history. Columbo's unique style of singing has captured the country. His personal interest is in opera and he has a private collection of every operatic work ever recorded. He was formerly billed by NBC's program department as "The Pacific Coast Sensation" and now listed as "The Vocal Valentino." Over the air he is announced as "The Lochinvar of the air." (Photo page 15.)

By the Name of Welcome

Do you know how Welcome Lewis got her unusual name? It seems Mrs. Lewis had eight children already, and when another was born she was so glad to have one more girl that she called her "Welcome." Now her family call her "Babe," and her friends "Half-Pint," for the reason that this miniature person stands just five feet in her very highest heels. When she steps on the scale, the hand barely points to 90 pounds. Wel-

come's chance to sing over the radio came unexpectedly. The musical director of a broadcasting company heard one of her recordings at a party given in honor of a well-known radio artist at the latter's home. He wrote her, she was given an audition and passed with flying colors. Miss Lewis lives in Yonkers and drives her own car to the studios. She has no chauffeur, driving is her hobby. She's loads of fun and popular with her fellow artists. Dark hair, brown eyes, and flashing white teeth. Welcome Lewis, the Coty Melody girl, can be heard every Thursday at 9:15 p.m. EST. (Photo page 25.)

The Voice of an Angel

Deliberately did Jessica Dragonette forsake a stage career that promised to be as bright as any, to seek her future before the radio microphone. The NBC was casting about for a young soprano for a light opera and musical comedy company it was assembling. A Broadway expert recommended Jessica, who was then appearing in "The Student Prince," known as the most promising of the young musical comedy voices, but entirely unknown to radio. She was invited to sing in audition. She accepted, more out of curiosity than anything else, she confessed later, and was scared to death. The silence and lack of applause after her first performance appalled her. But her first impression didn't last. She soon became fascinated by the microphone, by the thought that as she sang in the quiet studio, thousands and thousands of people in all parts of the country were listening to her every note. Miss Dragonette was born in Calcutta, India, and was educated in Georgian Court convent in Lakewood, N. J. Tune in the Cities Service program at 8:00 p.m. EST any Friday night and be thrilled by this "Voice of an angel," as Chaliapin termed it. (Photo page 19.)

Freddie Rich

Freddie Rich, orchestra leader, veteran of more than a thousand radio programs, is a product of New York's East Side, where he first played the piano in a

nickelodeon for \$11 a week. His debut as a broadcaster dates back to eight years ago when his orchestra provided the music at Hotel Astor, New York. He has been associated with many of the most important artists in theatre and radio, and at present conducts such programs as Radio Roundup, Vitality Personalities, Manhattan Seranaders, and the Columbians. Freddie is now completing work on a symphonic jazz composition entitled "Penthouse 34." It will depict penthouse life with the sounds emerging from the street distinguishable to its occupants, and presenting a 24-hour panorama of the city below.

"This is Kate Smith"

Kate Smith's professional career covers only six years, dating back to 1925 when she sang at a benefit vaudeville performance in Washington, her home town. At that time she was studying nursing at Georgetown University, but a theatrical producer was in the audience that night, and he lost no time in persuading her to follow a stage career. For two years she played in "Honeymoon Lane" without missing a performance, and after several vaudeville tours, she was seen and heard in "Flying High." Here her singing, clowning and dancing made her a favorite with New York audiences. It was at this time that the rotund Kate first dabbled in radio, but it was not until the termination of the show's New York run that she identified herself with microphone work. Finally, through arrangements with the Columbia System, she was signed as an exclusive artist and given her own fifteen-minute programs. She is now broadcasting four nights a week, Monday, Wednesday, Thursday and Saturday, at 8:30 EST, over 28 stations, under the sponsorship of La Palina, retaining her popular theme song, "When the Moon Comes Over the Mountain," which is said to be one of the most popular tunes in the country today. See her picture, with that of Morton Downey and Bing Crosby, two other outstanding CBS crooners, on page 3.

Our Cover Girl

Harriet Lee, tall, statuesque and blonde,



Jesse Crawford, "poet of the organ," who made his debut in September as an artist for the NBC. The famous organist will be heard every night, except Friday at 11:15 to 11:30 p.m. E.S.T. Sundays at to 11:30 to midnight.

is the first "Miss Radio" to be heard regularly on network programs. She is blue-eyed and nordic, born in Chicago, was named Harriet, although the family had wanted a Harry, and nicknamed "Bill." Harriet can't remember when there were not music and vocal lessons to be done. Her first job was in a music shop, where she worked all day and attended the Chicago College of Music in the evenings. Quite by accident she entered the radio profession. Practicing one morning there came a knock on her apartment door. It was a violinist who suggested an audition at a broadcasting studio. Harriet appeared at the studio but found she couldn't utter a note. They gave her no less than three chances before she got over her "Microphobia." After a number of radio appearances, Wendell Hall heard her deep contralto voice and brought her to New York where she was immediately signed for a long contract with Columbia. In clothes

(Continued on page 32)

PUZZLES in RADIO

Three Tantalizing Teasers

A VERY interesting puzzle," comments Lloyd Rees, Ridgewood, N. J., of October's No. 1; "Let's have more like it." We did think that this puzzle was a good one and would hold our puzzlers for a while, but already the correct solutions are coming in. For those who were unable to solve it the following explanation will be interesting. The translation of the letters given into figures can be reasoned out by simple logic. When the sum of two figures contains one more figure than either of the numbers added, the first figure must always be 1. W is therefore 1 and C must be 2. As G plus B equals B, G must be 0. No matter what F is, G plus F cannot be more than 9, therefore K must be 9 and E must be 8. D must be 4. The values of the remaining letters can now be quickly ascertained by similar calculations.

The seven letters in No. 2 were as follows:

C A
KM C
W B

and the seven calls were CMAC-CMBC-KMAC-KMBC-WMAC-WMBC and KMA. Some used CMC and WMC, thus skipping the third column; these could not be considered.

In No. 3 the code is translated thus:

WCAM
WCMA
WMAC
WMCA

Mr. McAfee's puzzle, No. 4, contained the following calls: HHK-KWK-KGW-WEW-WOC-CMK-KLX-XEW-WLW-WGN-NAA. Lower line: TIC-CKX-XFX-XEC-CMC-CMK-KEX-XFC-CMW-WOV-VAS.

The first puzzle for this month is of a new type and is illustrated in this small sample:

KWMRCS
CPOYRC
WWKHAY

It is required to form five station calls from the above table by dropping the vertical columns down leaving one call in each line, thus:

K M CS
W O R C
C P R Y
W K Y
W H A

With this explanation form seventeen calls from the following table. As an aid the frequencies of the calls are given: 1310-1200-890-1210-1200-1300-960-1240-1370-650-1200-1250-1500-1500-1310-1370-1210.

Puzzle No. 1

WKKGSCMARLF
WIXNEFBMXCC
CCWMXRTRYPZ
WXMLPGFYBHB
WKDEBKCPACG
KWGWJBXHBWQ

The form of this puzzle was suggested by J. F. Kelley, Jr., Troy, N. Y.

Puzzle No. 2

KJX KNC CKH WIK GWD KWKX

One certain letter is missing from the above line. When this letter is inserted in eighteen places, ten station calls will appear. What are they?

Manuel Miller, 2456 N. Patton Street, Philadelphia, finds twenty-two station calls in the word Kilowatts. How many can you find, using any letter but once in each call with the exception of T, of which there are two? This is puzzle No. 3.

Get your answers to these three problems to us before November 20th and receive a copy of the December RADEX or one of those radio maps of North America without cost. Subscriptions may be extended one issue if request is made.

If you could see one of those new leatherette covers for your RADEX, you wouldn't rest until one was on your radio.

New City of Radio

NEW YORK'S amazing "Radio City" is under way. Excavation work has been in progress for several weeks. Actual construction will start some time in the autumn. The theatres will be completed by October 1, 1932, and the office building by May 1, 1933. The capital required in this, the largest building project in the world's history, is \$250,000,000. Of this amount \$17,500,000 will be spent for land which will be used only for beautification for the benefit of the public and without revenue to the owners of the development. In addition, between a quarter million and a half million dollars will be spent on landscaping.

The accompanying illustration shows an air view of the general development taken from the east side of Fifth Avenue, north of 51st Street. In the left foreground are the two six-story office buildings. Immediately back of them is the Sunken Plaza. Back of that is the 66-story office building with its 16-story wing. This latter structure will have a floor space of 2,500,000 square feet.

A second unit is the International Music Hall, world's largest theatre, to be located on the west half of the block between 50th and 51st Streets. Seven acres of intensive landscaping will be devoted to waterfalls, fountains, reflecting pools, trees, shrubbery, formal flower beds, multi-colored tile walks, grass plots and statuary. The outer walls of the buildings will be covered with a heavy network of living ivy, giving the structures an immediate appearance of dignified age. Even the roofs will be landscaped, becoming gardens of beauty accessible through doors of the adjacent higher buildings. Even trees will be planted on these roofs, securely anchored in three feet of earth.

If you are interested in DX work, you can't imagine how much that new map of North America would add to your pleasure.



Stations Decreasing

There are now exactly 612 radio broadcasting stations in the United States, a substantial decrease from the 733 peak point attained just before the Federal Radio Commission took over the regulatory reins in February, 1927. Though it is following a general policy of licensing no more new stations, except in the few remote areas not now receiving good radio service, the Commission has authorized 11 new stations since the first of this year.

On the other hand, 20 stations have gone off the air since last January 1, six representing consolidations with other stations. Applications for new broadcasting stations, nevertheless, continue to pour into headquarters of the Commission at the rate of about one per day.

Does RADIO Offer LIFE WORK?

An Article for
TIM ADAMS

WHEN we received the following letter from Tim Adams, 97 Mt. Vernon Ave., Pittsburgh, Pa., it occurred to us that Mr. Adams must be representative of many hundreds of other young men who are wondering if radio perhaps does not offer them an opportunity for an interesting and profitable life work. We therefore asked Mr. Dashiell, our Technical Editor, and himself a radio engineer, what he would say to Mr. Adams.

Here is the letter: "I have been a reader of RADEX for three years and I now want to ask you a personal question. What do you think of the possibility of my becoming a radio service man? I know nothing about the work and I would have it all to learn. What is best for me to do—take a mail course at home or go to a resident school? I have a family and would like to better myself if possible, but do not know what is best for me to do. I work at nights and do not get home until 2:30 a.m. Please be frank with me."

In answer to Mr. Adams' question and to those who may be considering similar steps, Mr. Dashiell presents the following article:

Radio As a Life Career

Many ambitious young men see the prospects of a worth-while profession in the field of radio. But because of the limitations of their radio education they naturally wonder whether radio can be made a life work. Radio will provide an interesting career for any man, and it is quite feasible for energetic persons to prepare themselves at home for one or more of the several branches of service where trained men are needed. Radio offers unlimited opportunities not only in servicing and repairing, but in manufacturing, selling, broadcasting, commercial land, ship and aircraft station operation, television, and sound picture and public address engineering.

Naturally there is competition in

radio just as in any other line of occupation; only the trained man can expect to climb toward the top of the ladder. This opportunity is denied no man if he wishes to become proficient in radio. There are many men busy at other lines of work or schooling who desire thoroughly to learn the science of radio. However, the lack of time prevents them from attending local schools if they are present, and the would-be student is compelled to seek radio training by home study methods. Radio schools teaching by correspondence have gone far to assist those who are willing to work diligently to gain knowledge of the many perplexing problems met in the world of radio. Undoubtedly radio correspondence institutes meet a certain condition which is widespread in America, and are the best sources of training for average persons. It is clearly obvious that few men can attend practical schools far from their homes and occupations, and such schools as are available may be counted on the fingers of one hand.

Tomorrow's Experts

The older men who have grown up in the heretofore mysterious realm of radio are the leaders of today. But who shall be the experts of tomorrow? The science of radio must soon be passed along to the keeping of still unknown strangers who are preparing today for the duties of tomorrow. But how do these newcomers find the radio training in so short a time that older heads gathered only in a score of years? And the call of a new and still greater radio future beckons just beyond the horizon! Are you one of the army that will be needed? If so, you must be well trained in your new vocation.

Radio is a relatively new science. Few schools and colleges teach it except in a general way. If one wishes to go to the very roots of the science he immediately is confronted by a great problem—where and how may such education be found? The average man, especially when he is employed, cannot enter a distant university simply to obtain the brushing-over

of radio that accompanies other engineering courses. Of course, the college trained man will perhaps go farther in radio from the very first moment of his business association. And one or two colleges go deeply into radio. The average young man, however, must turn to a school that gives its lessons in radio by correspondence through the mail.

Are You Fitted?

Having decided upon the advantages of a thorough study of radio, the prospective student should now stop and take complete inventory of himself and his abilities. Has he unlimited perseverance? Is he adept as well as mechanically and electrically inclined? Has he previously experimented with radio apparatus and read good books and magazines on the subject? Then, too, he should decide which branch of radio holds the most outstanding appeal, for it is useless to waste time on studies that can be of little use in practical radio work. Radio servicing has the stronger appeal to many young men. Repairing and manufacturing come naturally to ingenious persons when they are properly trained. Perhaps actual broadcasting, commercial land and ship duty fires one to a greater enthusiasm. And aviation, with airport and aircraft radio is becoming an important and specialized field. Then there is television, the making of sound pictures in the movies, and public address systems. The two latter subjects involve much of radio and audio sound principles.

The first puzzle confronting the new candidate for radio training is the problem of how to select the source of his very necessary education. Obviously this is an important task, for the successful completion of the studies is a vital matter if one is to be well versed in radio as a science. And what may he expect to procure for his money investment and time consumed? The answer seems, therefore, to lie in efficient home-study methods given through correspondence with a progressive and recognized school. But no one should expect to make progress unless he is fully determined to work hard and keep everlastingly at it until all the mysteries of radio are laid bare.

Then, and then only, shall he receive the rewards of diligent application—the coveted diploma, for the leading schools do not pass out these certificates like so many coupons. Remember, only about 20 percent of all enrolled students actually graduate from recognized radio institutions, and this figure seems to balance with that of even our greatest institutions of learning.

The selection of a school can be made only after some study and investigation. It will pay to use care and judgment, for there are very few to decide upon. A study of a modern radio school reveals that it is a remarkable institution. The organization has perhaps over one hundred trained men on its staff, some of whom are world-famous experts. The institution handles hundreds of thousands of lessons a year; it furnishes and

(Continued on page 30)



"Here 'tis." Little Jack Little, the NBC's pianist and crooning songster, using the new "whispering mike" on which their engineers have been working for a long time.

Walter Damrosch



ALTHOUGH Walter Damrosch, for more than forty years conductor of the New York Symphony Orchestra and now Musical Counsel for the NBC, holds honorary degrees as Doctor of Music from three great American colleges he never attended one. His education was obtained from the masters of music, private tutors and the public schools of New York.

Damrosch was born in Breslau, Germany, coming to America in 1870 when he was nine years old. Already he had studied Latin and Greek. Here he was faced with the task of learning English. Pupils in public schools knew him for several years. Later he attended the Cooper Union high school, specializing in painting.

Meanwhile his musical education was progressing under the masters of his time—his father Leopold Damrosch, Rischbieter and Draeseke. His pianoforte teachers were von Inten, Beekelman and Pinner. He studied conducting under his father and Von Bulow. Damrosch was only 23 when his father died and he took over the latter's work of conducting the New York Symphony.

Damrosch is known to the radio audience for his work in directing the RCA

Educational Hour, a weekly feature nine months of the year through a coast-to-coast network of NBC stations. In these programs, always heard during the morning hours and designed for students he explains and demonstrates the works of the music masters for the purpose of inspiring a good foundation in musical taste.

Other highlights of Damrosch's musical career include the inauguration of the Sunday Symphony Concerts, the development of the Young People's Symphony Concerts and the writing of two operas, "The Scarlet Letter," and "Cyrano de Bergerac." The latter was produced at the Metropolitan Opera House.

Damrosch's honorary degrees were given him by Columbia University, the University of Pennsylvania and Princeton. The first came from Columbia in 1914 and the final was conferred by Princeton in 1929. He also is an officer of the French Legion of Honor, Chevalier of the Crown of Belgium and Officer of the Crown of Italy.

The new series of Music Appreciation Hour, conducted by Mr. Damrosch, was initiated on October 9th. It will be heard each Friday from 11:00 a.m. to 12:00 noon, EST, over coast-to-coast network of the NBC.

The Month's Changes

New:		
620	CMCJ	Havana, Cuba
660	CMDC	Havana, Cuba
735	XER	Villa Auna, Mex.
930	CMJF	Camaguey, Cuba
950	CMHD	Caibarien, Cuba
1020	CMJH	Ciego de Avila, Cuba
1200	CMJA	Camaguey, Cuba
1200	CKOV	Kelowna, B. C.
1285	CMCW	Havana, Cuba
Locations		
570	KMTR	Los Angeles, Calif., to Hollywood
710	KMPC	Los Angeles, Calif., to Beverly Hills
Chains		
570	WWNC	CBS to NBC
670	WMAQ	CBS to NBC
720	WGN	NBC to CBS
1010	WIS	CBS to NBC
1380	WKBB	New CBS
Permit to Move		
1310	KGFW	Ravenna, Nebr., to Kearney
1310	KTSL	Shreveport, La., to New Orleans
1310	WJAK	Marion, Ind., to Elkhart, Ind.
Reinstated		
1420	KFCW	Seattle, Wash.

What Dou You Think Of It?

WE are changing the form of "What's On the Air Tonight?" this month, and we hope the new arrangement will meet with the approval of our readers. We have been giving nine pages of each issue to this feature, with nine-tenths of that space devoted to a repetition of the stations carrying the program. There are now 166 stations on the three chains and to list all of those carrying each feature is requiring more and more space. We doubt if the majority of our readers have a choice of more than four Columbia stations, for instance, over which they consistently receive CBS programs while a very great many always tune in one particular station. To the great mass of our readers, therefore, the repetition of stations is waste space.

In the new form, we are able to list all of the programs on a single page which will be a marked convenience. We are now able to list over 300 programs weekly in place of only 200 heretofore. At the top of each column, our readers will find four blanks. We suggest that they place in each blank the dial numbers for the four stations through which they best receive that particular chain. If the first of these does not happen to have the feature desired, the next one can be turned to instantly.

As a convenience in tuning, we are continuing on page 33 the list of chain stations arranged alphabetically and on page 35 we are giving the same stations arranged by networks and by frequencies. It is not possible to list the Red and Blue National stations separately as many of them carry both networks.

We urge our readers to try the new form for a few nights and then write us frankly their opinions regarding it. We want to serve them in the manner that will please them best. We do feel, however, that we can use the five pages we are saving to greater advantage than by printing the list of stations over and over again scores of times.

Frequencies

630	CKOG	Hamilton, Ont., from 1010
690	CFRB	Toronto, Ont., from 960
790	CMBT	Havana, Cuba, from 1070
840	CKGW	Toronto, Ont., from 690
880	C&PC	Preston, Ont., from 1210.
925	CMCD	Havana, Cuba, from 1220
925	CMCN	Havana, Cuba, from 1220
960	CKNC	Toronto, Ont., from 580
1120	CFCA	Toronto, Ont., from 840
1205	CMGB	Matanzas, Cuba, from 1180
1225	CMBY	Havana, Cuba, from 1405
1285	CMCU	Havana, Cuba, from 1345
1345	CMCG	Havana, Cuba, from 1285
1345	CMCR	Havana, Cuba, from 1285
1370	CMGH	Matanzas, Cuba, from 780
1382	CMJC	Camaguey, Cuba, from 1321
1405	CMCH	Havana, Cuba, from 1285
1405	CMCM	Havana, Cuba, from 1500
1430	WHEC	Rochester, N. Y., from 1440
1430	WOKO	Albany, N. Y., from 1440
1500	CMBQ	Havana, Cuba, from 1405

Power:

580	CFCY	Charlottetown, P. E. I., 250 to 500
660	CMCO	Havana, Cuba, 225 to 250
730	CKMO	Vancouver, B. C., 50 to 100
790	CMHC	Tui ucu, Cuba, 500 to 100
860	WABC	New York, N. Y., 5000 to 50000
860	WBOQ	New York, N. Y., 5000 to 50000
930	CFCH	North Bay, Ont., 50 to 100
1030	CFCF	Montreal, Que., 1650 to 500
1210	CFNB	Fredericton, N. B., 500 to 100
1225	CMBY	Havana, Cuba, 100 to 350
1285	CMCU	Havana, Cuba, 50 to 150
1345	CMCR	Havana, Cuba, 20 to 150
1370	CMGH	Matanzas, Cuba, 60 to 150
1382	CMJC	Camaguey, Cuba, 15 to 150
1500	CMBL	Havana, Cuba, 15 to 20

Owners:

640	WAIU	Columbus, Ohio, to Associated Radio-casting Corp.
900	KSEI	Pocatello, Idaho, to Radio Service Corp.
1180	WMAZ	Macon, Ga., to Southeastern Broadcasting Co., Inc.
1200	WKJC	Lancaster, Pa., to Lancaster Broadcasting Service, Inc.
1310	KWCR	Cedar Rapids, Iowa, to Cedar Rapids Broadcast Co.
1310	WFDV	Rome, Ga., to Rome Broadcasting Corp.
1310	WJAK	Marion, Ind., to Truth Publishing Co.
1370	KGFL	Raton, New Mexico, to KGFL, Inc.
1400	CMBI	Havana, Cuba, to Francisco Mayorquin
1410	WTAD	Quincy, Ill., to Illinois Broadcasting Corp.
1500	KREG	Santa Ana, Calif., to J. S. Edwards

Deletions:

674	XER	Mexico City, Mex.
1100	CMKD	Santiago, Cuba
1140	CMGD	Matanzas, Cuba
1150	CMHA	Cienfuegos, Cuba
1170	CMKG	Santiago, Cuba
1180	WHDI	Minneapolis, Minn.
1200	CMKB	Santiago, Cuba
1210	KGMP	Elk City, Okla.
1249	CMKE	Santiago, Cuba
1276	CMJB	Ciego de Avila, Cuba
1285	CMBJ	Havana, Cuba
1285	CMBM	Havana, Cuba
1320	CMKH	Santiago, Cuba
1345	CMBA	Havana, Cuba
1345	CMBF	Havana, Cuba
1360	CMKF	Holguin, Cuba
1405	CMBG	Havana, Cuba
1405	CMBX	Havana, Cuba
1420	WHDL	Tupper Lake, N. Y.
1450	CMKA	Santiago, Cuba
1500	CMCT	Havana, Cuba

Monthly Meeting of RADEX FAMILY

THE new radio season is off in earnest. Sponsors of advertising are searching high and low for new and interesting features for their programs. Daylight saving time is gone for a few months and things are fast settling into smooth-running order. Everything is set for our winter's enjoyment.

Of course we have complaints. The fact that we have to have advertising of any sort is resented by many listeners. So far as we are concerned we have no objection to advertising as such but we confess we are terribly bored by those advertisers who repeat the same story over and over each night. They are in the same class as the small-town merchant who has run the same ad in the weekly paper for the last seventeen years. Surely if these advertisers really have a story to tell, they can find someone with ingenuity enough to put it in a new dress for each appearance.

Among our other pet peeves are the set manufacturers who number their dials backwards as compared to the channels, the monologists who tell jokes so old even grandpa won't laugh at them any more, the hired laughers who ha-ha at the leader's wise-cracks, the stations that stay on all night with phonograph records and back-country talent, and so on ad nauseum. But the greatest pest of all is the set manufacturer who puts the tube sockets in the bottom of a tin can that cannot be removed. Fitting five prongs into five holes in the bottom of a dark can is a puzzle greater than any that ever appeared in the puzzle pages of RADEX.

But all this notwithstanding, it is still a great old world and probably the best one we will ever inhabit. So warm up the tubes and let's see what's on this evening.

Our Readers Say

A hint for broadcasters who want to make an improvement is offered by L. U. Maltby, Jr., 101 West 55th St., New York City. "It is very annoying when one tunes in a station, to have to get up and turn up the volume for a

News from the Family Dials

talk and turn it down again for music. I should think the station would put on more power when people talk and have less when there is music. Dance music is the loudest type. One may want to keep the same station all the evening. The listeners-in have much trouble keeping the volume adjusted suitably. Is there an automatic machine that would save us the trouble of adjusting the volume of the receiving set?" There are, of course, automatic volume controls which are intended to keep the volume at a predetermined degree but nothing which will answer the needs of this listener. The answer lies in the hands of the control engineer at the broadcasting station. If he could be made to realize that people have their sets turned down for the musical numbers, he could very easily give additional volume to speakers.

Our Experimenters

Interesting experiments in aerials have brought Oliver W. Todd, 1619 Conestoga St., Philadelphia, what he thinks is the "best of all." Using two five-foot cross arms on a pole 25 feet high, he wound his aerial back and forth vertically between the two cross arms, which are fifteen feet apart, giving him 75 feet aerial length without lead-in. Now he gets the Pacific Coast almost at will and can go through locals and get stations at 15 to 20 kcs. separation, a difficult feat in his neighborhood.

R. W. Brumbaugh, 715 North Atlanta Ave., Tulsa, Okla., sends us his method of attaching headphones. He writes: "I have been reading RADEX for many months and have always been much interested in the suggestions of readers, especially in regard to aerial systems and installing phones in a. c. sets. I have not yet seen any dope on installing phones on a set which has only a single output tube instead of push-pull. I have a Jesse French Midget, Model G., consisting of three screen-grid tubes, a 245

and a 280. I installed phones on this set as follows: I drilled two holes in the chassis for binding posts. One post fastens on the chassis itself, being grounded thereto, there being no connection to it otherwise. The other post is insulated from the chassis, being wired to the plate terminal of the 245 socket with an .02 mfd. condenser in series. This method was first submitted to the manufacturers of the set for their approval and the fixed condenser was used on their recommendation."

Mrs. A. L. Dixon, 1690 Avenue D, Beaumont, Texas, writes to commend new features of RADEX. "'Gossip From Behind the Mike' is very good. We all like to read little intimate sketches of our favorites and you have such good stories about Phil Cook and Ted Husing. Being a member of the 'fair sex' I know little about the inside of a radio, but I surely do know something about the artists and all articles and stories about them certainly appeal to me. Please give us more of this sort of thing."



Edwin W. Scheuing (right) of the NBC Artists' Service, is trying up Paul Whiteman (left) and Russ Columbo for the exclusive use of the NBC.

William R. Anderson, 852 Manning Ave., Toronto, Ont., sends the following items of news gleaned from the air and Canadian newspapers:

WPDU is owned by the City of Philadelphia and is operated under the jurisdiction of the Police Department; it uses a frequency of 1712 kcs. and has been on the air in official service since May 11, 1931.

XEW operates a short-wave station on a frequency of 50 meters or 26,000 kcs.

CKPC, Preston, Ont., is going to share time with CKOC of Hamilton on 1010 kcs. in the near future.

New Toronto wave-lengths unofficially announced which it is rumored will be used very shortly are as follows: CKGW 840, CKNC 960, CFRB 690, CKCL 580, CFCA 1120.

M. M. Bailey, Hood River, Oregon, doesn't agree with Mr. Dashiell that static is radio's greatest pest. Mr. Bailey would give the medal to fading, with station interference running a close second. He thinks at least 75 stations ought to be weeded out, especially the smaller stations whose talent consists of phonograph records. So far as static or summer noise is concerned, Mr. Bailey states he got rid of 75 per cent of it by removing his ground from the water pipes and using a pipe wrapped with number eight copper wire. When bothered with any noise he soaks the ground thoroughly and in five or ten minutes, he reports, the noise is gone.

Almost every day we receive information regarding some new club which we are asked to publish. These new organ-

izations are becoming so numerous that we can no longer give the space unless they are backed by some reputable newspaper or organization. In this connection Harold L. Ball, 514 31st Street, South Bend, Ind., asks, "What is going to happen when all these clubs get to writing to the same station for special DX programs? It looks to me as though no one will then get any satisfaction. Personally I am going to stick to RADEX, the best DX club of them all."

A Hot Program

When WBEO, Marquette, Mich., was signing off for the night recently, clanging fire bells heralded a blaze at a nearby department store. The station manager grabbed a portable microphone and ran to the scene. Engineers strung lines to the transmitter and WBEO went on the air with a blaze-by-blast description of the fire. The business manager of the station saw the owner of the store in the crowd and in a few seconds sold him the idea of sponsoring the program with extra trimmings in the way of announcements of the inevitable fire sale to follow. It's a hot program when a department store broadcasts a description of the burning of its own building.

Commission Makes Changes

Due to an order of the District of Columbia Court of Appeals, the Federal Radio Commission has made changes affecting WHP, WCAH, WOKO and WHEC. WHP is authorized to change hours of operation to sharing with WBAK only and to operate simultaneously with WCAH, WOKO and WHEC. WOKO changes frequency from 1440 to 1430 with unlimited time, operating simultaneously with WHP, WCAH and WHEC. WHEC also changes from 1440 to 1430.

The Commission has revoked the license of KGMP, Elk City, Okla., as licensee has sold all of his interests to D. R. Wallace, who has operated the station since March 28th without the consent of the Commission.

WCFL Chicago, has been granted authority to operate full time on 970 kcs. as an experiment. This is a cleared channel allocated to KJR Seattle, which agreed to the tests.

The Radio Commission has granted authority to KSO, Clarinda, Iowa, to discontinue operation until November 1st, pending completion of construction of new equipment.

The license of WHDL, Tupper Lake, N. Y., has been revoked by the Radio Commission "because of violations of the Commission's rules and regulations."

Some Questions

We frequently receive letters from readers asking the meaning of the various symbols in the Index by Frequencies. These are all explained in the text at the top of page 40. This month we are adding a new symbol to indicate stations using a frequency simultaneously.

Several correspondents point out that Newfoundland is not a part of the Dominion of Canada. We happen to be aware of this fact but list the former country among the provinces as a mere matter of convenience.

A number of readers have written asking about a short-wave station on 980 kcs. What they have heard is merely the announcement. Several broadcasting stations operate short-wave stations. Among them are WGY, KDKA, WLW, WENR, WCFL, WABC, WEAF and WJZ. Some of these announce for both stations thus: "This is KDKA and W8XX, Pittsburgh." Naturally the listener tuned to 980 kcs. hears this announcement but it is coming to him over the broadcast band and not over the short waves.

Chas. E. Summers, Sr., 28 Gallatin Ave., Buffalo, N. Y., wants information regarding a station whose call he made out as DE9CB and the location as Toronto, Ont. The VE (not DE) Canadian stations were listed in the June RADEX, but no 9CB appears in this list and no station is listed from Toronto except in television. Mr. Summers also picked up a station near 570 kcs. on September 2nd which was playing records and soliciting members for a club. He gave his phone call as 1341 and was evidently making direct sales of some sort over the radio. He signed off at 1:00 a.m. PST. The call began with KM. Can any reader identify this station?

Guy B. Welsh, has also heard VE9CB

Toronto and hopes some Canadian reader can supply information regarding it. He has also received a 9CY in Ottawa.

"I understand the new 'Radio City' here in New York is to be wired for d. c.," states L. U. Maltby, Jr., and asks why direct current should be preferred to alternating. We have no information on this point; perhaps some of our readers can enlighten us.

"Can the original French Pathe receiver be purchased in the U. S.?" asks W. J. Bullock, Box 213, Red Deer, Alta. Mr. Bullock has studied the wiring diagram and believes it must be a wonderful receiver.

"The other night I got a station on 1500 keys. giving police calls; the call letters were KGBL. Do you know where KGBL is?" asks Charles C. Norton, 2545 Polk Street, San Francisco.

Some Answers

"In the October RADEX, Sam Kiamie wants to know why you list Mexican and Cuban stations of less than fifty watts," points out Charles Maier, Jr., 92 Zab-riskie St., Jersey City, N. J. "Let him know that stations of even five and ten watts can be heard thousands of miles away with a good set and some patience. I have a verification from XEL, Saltillo, Mexico (10 watts), also a Cuban 30-watt, CMGB, and I use just a loop antenna. Also please tell Charles H. Kramer," adds Mr. Maier, "that XETY verified my report promptly." Our Jersey City correspondent has now received 425 stations on his Magnaformer.

In answer to the query of Le Briton Faber, the following information is proffered by Ivan D. Ide, Box 312, Genoa, Ill.: KUX, Cagayan (Misamis) P. I., 5165 kcs. 58.09 meters, with hours from 7 a.m. to 7 p.m. Sundays and holidays, is owned by the Philippine Insular Government. KGWE, Los Angeles, Calif., on 4945 and 5525 kcs. is owned by Press Wireless, Inc. WGN has, of course, a harmonic on 5760 kcs. and that may explain how Mr. Faber got them near 6000. "I get them on 11500 kcs., which would be their next harmonic," says Mr. Ide, "but, of course, I am nearer to them than Mr. Faber." WLAP, Louisville, Ky., is now putting out

verifications and is on the air between 6:00 and 11:00 p.m. CST.

"Has anyone ever picked up KDA, the Chicago municipal airport station?" asks A. W. Snyder, of 3216 West 38th Place, of that city. "They come in at about 1050 kcs. Is that their channel or a harmonic?" KDA is licensed to use a number of frequencies: 855, 1400, and several on short waves. If received on 1050, it must be a harmonic. "Tell Fred W. Janssen," goes on Mr. Snyder, "that if he will send an unquestionable verification from any station not issuing Ekko stamps, to the Ekko Stamp Co., Daily News Plaza, Chicago, Ill., they will send a stamp for that station and return the verification, for ten cents for each station."

Several readers answer Victor J. Balt's inquiry regarding WMP to the effect that it is the station of the Massachusetts state police located in their barracks at Framingham, between Boston and Worcester.

C. T. Main, Stillwater, Oklahoma, is sure the station G. D. Iliffe heard was WBBZ, of Arkansas City, as that station has its studio in the Monroe Hotel.



Here's the "old maestro" himself, Ben Bernie, whose orchestra is one of the favorites heard regularly over the Columbia system.

WCAH—The Pioneer Broadcasting Station of Columbus.
 WCCO—Washburn-Crosby Company.
 WCFL—The Voice of Labor.
 WCOD—Wonderful City of Distribution.
 WDAF—Home of the Night Hawks.
 WDEV—The Voice of the Green Mountains.
 WEHC—In the Hills of Old Virginia.
 WENR—The Voice of Service.
 WFBM—The Crossroads of America.
 WFDF—One of the Pioneers.
 WFIW—Whitest Flour in the World.
 WGBF—Cross Roads of the Air.
 WGH—World's Greatest Harbor.
 WHBU—Only Bank-Owned Station in Indiana.
 WHDL—The Voice in the Clouds.
 WHP—The Radio Voice of Central Pennsylvania.
 WIL—The Friendly Station.
 WIS—Wonderful Iodine State.
 WJBC—The Voice of the Illinois Valley.
 WJBI—Monmouth County's First Broadcasting Station.
 WJKS—Where Joy Kills Sorrow.
 WJR—The Good-Will Station.
 WKAV—The Gateway to the White Mountains.
 WKBF—The Voice of the Capitol.
 WKBI—We Kill Blues Instantly.
 WKBS—The Voice of Galesburg.
 WKRC—The Home of the Gruen Watch.
 WLBW—Northwestern Pennsylvania's Broadcasting Station.
 WLTH—The Voice of Brooklyn.
 WLVA—In the Heart of Old Virginia, Where the Blue Ridge Begins.
 WMBO—The Voice of the Finger Lakes.
 WMRJ—In the Heart of Queensboro.
 WOPI—The Voice of the Appalachians.
 WOR—One of America's Great Stores.
 WOW—Woodmen of the World.
 WPCC—We Preach Christ Crucified.
 WRAM—The Playground of the South.
 WRDW—The Call of Augusta, Ga.
 WREN—The Jenny Wren Station.
 WSB—Covers Dixie Like the Dew.
 WSPA—The Voice of South Carolina.
 WSUN—Why Stay Up North.
 WTBO—The Voice of Cumberland.
 WTOC—Welcome to Our City.
 XED—The Voice of Two Republics.
 XEJ—Voice of the Continent.
 XEN—The Voice of Mexico.
 XEW—The Voice of Latin America.

KYW Chicago **French**
 Sunday, 4:00 p.m.
 WCFL Chicago **Irish**
 Sunday, 8:00-9:00 p.m.
 WHFC Cicero **Bohemian**
 Daily except Sunday, 9:30-10:15 a.m.
 WGES Chicago Daily except Sunday 9:30-10:00 a.m.
 WIBO Chicago **Norwegian**
 Sunday 3:00 p.m.
 WCFL Chicago **Lithuanian**
 Sunday 7:00 p.m.
 WSBC Chicago **Italian**
 Sunday 9:00 p.m.
 WJJD Chicago **Greek**
 Sunday 7:00 p.m.



Jessica Dragonette of the charming personality and the angel's voice. Read her story on page 6.

Foreign Language Programs

"INQUIRY was made in the October issue of RADEX," writes George Raba, Stevensville, Mich., for Czecho-Slovakian programs. I cannot supply this but following are a number of regular weekly programs in other foreign languages:

Polish

WTMJ	Milwaukee	Saturday, 8:00-9:00 p.m.
WSBC	Chicago	Sunday, 3:30 p.m.
WLS	Chicago	Sunday, 1:30 p.m.
WCFL	Chicago	Sunday, 3:00 p.m.
WBBM	Chicago	Saturday, 9:00 p.m.

German

WTMJ	Milwaukee	Sunday, 1:00-1:30 p.m.
WCFL	Chicago	Saturday, 7:00-8:00 p.m.

All of the times given are Eastern Standard. Many French programs are given by various Canadian stations, particularly those in the Province of Quebec. The CBS carries the WBBM Polish and the NBC the KYW French programs. WJAY Cleveland has programs in various foreign languages Sundays from 1:15 to 5:00 p.m. An Hawaiian program is carried by WAAF Chicago daily at 10:00 to 10:15 a.m. and Sundays 10:00 to 10:30 a.m. The NBC has an Italian program Sundays 11:00 to 11:30 a.m.

Station CKX, Brandon, Man., which many DXers need for the 540 frequency, will broadcast a special DX program at 1:00 a.m. CST., November 1st.

COLUMBIA wants "BOOSTER" Station

Asks Second Outlet in Capital

VITAL changes in the network broadcasting map of the United States are in the offing. Not only by the acquisition of financial interest in more stations, but by the introduction of new engineering technique, the major national chains this week revealed their purpose to widen their scope and influence in the broadcast structure.

Probably the most important of the chain projects now awaiting the sanction of the Federal rulers of radio is the proposal of the Columbia Broadcasting System to erect a 250-watt "booster" station here in Washington to be synchronized with WABC, its New York key station, in order to furnish the nation's capital with Columbia service on a full-time basis.

Not merely because of its local aspects, but because it again foreshadows the day when nation-wide chain broadcasting may be accomplished on a single wave length, this radical engineering departure is significant in the extreme. Columbia intends to sever its connections with WMAL, the independently owned outlet here which it has unsuccessfully sought to purchase, and through the "booster" give Washington the identical programs being broadcast by WABC over New York through all the waking hours of the day.

WMAQ will go off the Columbia network and henceforth subscribe only to NBC programs, one of which — Amos 'n' Andy — it has originated for the NBC, since the blackface pair went on the network, Columbia must now cast about for a new outlet or outlets to supplement WBBM, Chicago, which it owns but which is licensed only to broadcast four-sevenths time on the clear channel it shares with KFAB, Lincoln, Neb.

The apparent sparring between the two chains for supremacy in the matter of station outlets also broke out in

another way in Washington this week. Reports which the parties concerned would neither verify nor deny were current that NBC would shortly add Station WJSV, the Washington station owned by Ku Klux Klan publishing interests, as a regular outlet for its Blue network programs. Station WJSV is a 10,000 watt operating on 1460 kilocycles, which channel it uses simultaneously with KSTP, St. Paul, also a 10,000 watt. At present the NBC owns and operates WRC, which provides Washington with programs from both its Red and Blue networks.

The possibility was that, if WJSV goes on the network, it would match crystals with KSTP in order to eliminate the interference which KSTP claims it has been suffering from WJSV. This engineering method already being tried by a group of Pennsylvania and New York stations on the Columbia net, may also furnish further proof of the efficacy of simultaneous operation on a single channel.

Speculation was rife as to what the proposed Columbia "booster" development in Washington and the other developments would mean to clear channel broadcasting. Should Columbia secure a "booster" station in Washington, the wave of WABC, which has been rebuilt to 50,000 watts power, will no longer be a clear channel. By the same token, however, the channels of WEAf, which now synchronizes half time with WTIC, Hartford, and of WJZ, which synchronizes half time with WBAL, Baltimore, are no longer clear channels.

The latter synchronizing experiments, which have been conducted by NBC since early last spring, are not unlike the one proposed by Columbia, except that the powers of the Hartford and Baltimore stations involved are much greater than the 250-watts proposed for Washington. The Commission only last week authorized a continuance of the WEAf-WTIC and WJZ-WBAL synchronization, although the field reports thus far have indicated that rural and

distant reception from each of these stations — the prime reason for clear channels — has been rendered practically negligible, albeit local reception in Hartford and Baltimore is good.

Columbia, while standing to improve itself in Washington by having a full-time outlet, faces real trouble in Chicago with the withdrawal of WMAQ. It still has WBBM and serves WJJD, but it is precluded from serving WGN, KYW, WENR, WLS, WCFL, and now WMAQ, all also in the Chicago territory, because they have NBC tieups. However, reports have been current lately that KYW a Westinghouse station under lease to the Hearst newspaper interests, may soon end its Hearst and possibly its chain affiliation, and there have also been reports that WGN may withdraw from the NBC network.

New Cable Better Signals

PROBABLY unnoticed by the average radio listener has been the distinct improvement in the tonal quality of the radio programs that are being transmitted by various broadcasting stations on those portions of the basic networks of the National Broadcasting Company and Columbia Broadcasting System lying between New York and Chicago.

It is possible that the trained ears of some engineers and musicians have discerned the difference, but the average radio fan, unversed in the technical nuances of the mysterious art, must rest on the assurances of the American Telephone & Telegraph Company that its telephone line connections between those chain stations have been vastly improved by the recent installation of a new type of connecting cable.

Known as the new high-grade covered cable, its chief characteristic is that it widens the frequency — and thus the tone — range of music to make it possible to transmit and reproduce the studio performance more faithfully. Thus, if the receiving set is capable of tuning in the whole range of frequencies being transmitted by stations capable of radiating the full range of frequencies

carried into the stations via the telephone cable from the networks' key studios, vocal and orchestra renditions should be considerably more natural.

Ordinary telephone lines, specially engineered, hitherto have connected stations of the chains. Their frequency range is around 150-5000 cycles, which leaves out many of the lower and higher notes. The new cable widens this range to 30-8000 cycles, thus embracing many more low and high notes. Thus the piano's low C, at 32 cycles, should be heard as well as squeaks and chirps above 5,000 cycles, hitherto outside the hearing range of radio.

The harmonies of notes determine the fidelity, color and distinguishability of musical instruments, which occupy a considerably wider range of frequencies than the human voice, for which the telephone company provides only a 250-2750 cycle channel.

Most radio stations now on the air cannot transmit on as wide a range as the new 30-8000 cycle cable, and very few receivers and loud speakers are designed so that they can tune in high notes beyond 4000-5000 cycles. The trend, however, is to widen the range of transmission as fast as technique permits. The Federal Radio Commission allows 10,000 cycle bands to each station; the telephone company's new cable installation is thus keeping apace with, if not ahead of, the radio art.

It is the telephone company's plan to make the widened frequency range available to all network stations as rapidly as possible. At the present time it is installing spurs of the new cable between New York, Boston and Washington. Circuits will also be extended from Chicago to the west coast, using high grade open wires, however, rather than the covered cable.

WGN on Columbia

Just as we go to press, word comes that the Columbia Broadcasting System has completed arrangements with WGN, Chicago, to replace WMAQ, lost to the National.

In THE WORLD of DX

AN interesting report of the activities of the Buffalo Evening News DX Club is sent in by J. W. H. Johnston, 117 79th St., Niagara Falls, N. Y. "Our club had another successful DX contest from January 1st to April 30th which was won by L. J. Foster, 172 Tremaine St., Kenmore, N. Y., who was presented with a beautiful electric clock. Mr. Foster dialed 407 stations between the above dates, receiving 325 bonafide verifications back before the contest closed. Another contest ended September 30th, to see what member could log the most distant station with the lowest power. October will start our winter programs which will be broadcast over WBEN, Buffalo. Last winter we gave away four free membership cards every month to the most distant listeners to our programs and one went as far west as Merced, Calif., to Mr. Constantino Stefani. The same offer will apply to our broadcasts this winter."

East Coast vs. West Coast

In answer to the query of DXers on the Atlantic Seaboard as to why the West Coasters should seem to receive distant stations so much better, Eugene Martin, 704 S. Green St., Wichita, Kans., submits the following conjecture: "Radio waves just naturally travel much better from west to east than they do east to west. Proof? Well, here's a bit: Occasionally in winter we pick up KMPC, 500 watts, around 8:00 p.m. On the same wave is WOR with 5,000 watts and almost exactly the same distance away. WOR with ten times the power, does not come in as loud as KMPC. When WEAJ shared a wave with KFRC, 50,000 watts against 1000, we could get KFRC when both were on. KNX with 5000 watts is much better than WTIC with 50,000. Every ten kilowatt station in Japan comes in better than WBZ. 2BL, 4QG and 2YA are received better and oftener than WEEL."

"Has any Pacific-Coaster ever heard a station from the Atlantic Coast," Herbert V. Haussler, Box 15, Pratt Sta., Brooklyn, N. Y., wants to know. "These

What Globe Girdlers are Doing

'Pacifics' are forever bragging about their foreign Japanese catches." Mr. Haussler agrees with Eugene Martin that signals are easier to receive from the west than from the east.

Clement Van Velsor, 1033 Sanford Ave., Irvington, N. J., writes: "Today I2RO, FYA and G5SW are coming in with wonderful volume. I listened to the rebroadcast from G5SW over the NBC and when they ended, I listened to the rest of the program direct. I find the volume louder than it has been for weeks. Yesterday VK2ME came in rather well and quite steadily. Absence of fading was remarkable as this station usually fades badly. This station broadcast the cry of the cuckoo bird from a record." Mr. Van Velsor has installed a new ground, using a copper strip sixteen feet long in a trench eight feet long and one foot deep. He put one-half the copper strip in, covered it with dirt and turned the other half back. Rock salt was used generously around the copper. With the ground thoroughly soaked, Mr. Van Velsor reports reception on short waves greatly improved.

When to Count 'Em

"I do not agree with Mr. Holley that DXers should log every change of call letters as a new station," states A. E. Armstrong, P. O. Box 700, Glendale, Calif. "When a station changes its call I change the letters in my log and count it still as just one station. If, however, a station changes its location from one town to another, that's different. I believe, though, that it is quite proper to log separately such stations as WABC and WBOQ when each is received on a different occasion." Mr. Armstrong has logged 318 stations on his Westinghouse WR-6-42 states, 19 Canadians, 13 Mexicans, three Cubans, 9 Japanese and one each in Formosa, Manchuria, Hawaii, Philippines, New Zealand and Australia.

"By the way," comments Roy Cattle, R. F. D. 2, Paterson, N. J., "I've been tuning mornings from 2 to 5 EST this summer and have been rewarded with about 30 new ones—California, Oregon and Washington were fairly consistent, KFOX being heard after daylight nearly every morning." Roy now has a total of 537 with 400 verified. Over the water he haz New Zealand, Japan, Germany and Spain. He doesn't agree with the experts who say tubes should be replaced every one thousand hours. "For proof," he says, "I logged and verified KDB, KPQ, CKMO, CKWX, KGFJ, KJBZ, 2XA, EAJ1, JOFK with tubes at least 4000 hours old in conjunction with an old 71 Majestic Neutrodyne with a 50-foot antenna only 20 feet high."

Unusual Interference

Reginald Ogan, Star Pine Road, Carpinteria, Calif., has brought in many distant and low-powered stations on his Clarion eight-tube without an aerial. Among them are: XEJ, XEB, XEN, XEW, XET, XED, XEM and XES in Mexico, and CFCN, CFAC, CNRD, CFCT, CNRW, CKWX in Canada, and 8WMC in Newfoundland, CMK and CMX in Cuba and JOIK in Japan. His reception is almost ruined from 6:00 to 10 p.m. by KWG, Stockton, on 620, and KGB, San Diego, on 1330. He cannot understand how they can do this with only 100 and 500 watts respectively when he is much nearer more powerful stations. It is undoubtedly a peculiarity of location. A wave trap might help.

"A million dollars" is the value Clarence Burnham, 147 East Main Street, Gloucester, Mass., puts upon his RA-DEX. He "sure gets a kick out of the DX department." With his Radiola he has 260 stations added up. He gets most of a thrill out of the low-watters and is proud of CHGS, WFDW, WHDL, WMRJ, WRAK, WEDH, WMPC, WMBC, WILM, WMBG, WLBG and others. WOL came in at 3:00 o'clock in the afternoon and was verified. Some of these stations have increased their power since he received them.

Sam Kiamie, 2857 Sampson Ave., New York City, reports the new DX season opening with a bang. Early in

September he wrote that he had logged many low-watt stations among them WDEV, 50 watts in Vermont, WLBC Muncie and WJAK Marion, Indiana. He couldn't identify W8XAR, KDKA's testing call, on 980 and he wants some one to identify a station heard on 660 which he thinks was CHWK, Chilliwack, B. C. They were broadcasting phonograph records of which one was "One More Time," at 4:00 a.m. Sunday morning, September 6th.

"Can anyone help me on a station heard on September 5th at 2:15 a.m. EDST giving the call KSTJ, Kansas City, Iowa," inquires H. W. Hurlburt, 327 Orange Road, Montclair, N. J. "They were on 1340 playing 'Hallelujah, I'm a Bum.' This station tests nearly



Nick Lucas, the strumming guitarist and singer, who is a favorite artist on many programs of the NBC.

every night, giving the same call and location although our postmaster says no such city is listed in Iowa in the postal guide."

"One morning last March," writes the Rev. Edwin A. Batchelder, Ne-gaunee, Mich., "I picked up what sounded like a Philippine weather report on a frequency about half-way between 1500 kcs, and the Chicago police frequency. Is such a thing possible? Static was very bad as the station signed off and I was unable to get his call."

Herbert Childs, Jr., 99 Bruce St., London, Ontario, quotes the following from a letter received from CKWX:

"We broadcast two programs weekly solely for DX purposes—Wednesday and Saturday nights from 11:30 on, PST." Herbert wants the correct address of WCHI as his letters to that station have all been returned. Will some of our Chicago readers let us know?

Robert E. Moran, 31 Rochester St., Ottawa, Ontario, is anxious to identify a station he heard on 1200 kcs. broadcasting the "Half-Moon Orchestra from the Half-Moon Inn." Who knows?

"It may please you to know," advises William E. May, 14 Maple Place, Nutley, N. J., "that at the September meeting of the Newark News DX Club, the RADEX map was adopted as the standard by the committee which issues the DX certificates. The RADEX map will be officially used in determining the distance of stations and deciding competitions."

Good Summer Reception

Since July 17th (to September 3rd) Edward C. Houlgate, 351 Adelaide St., London, Ontario, has logged 205 stations including KFI, KNX, KPO, KGO, KOH, KJR, KGA, XEO, XEW, KHQ, etc. "Some reception for summer," he comments, "but the set is an 11-tube Philco Super." He reports that 10AX, at Stratford, has been rebroadcasting Amos 'n Andy all summer.

Meyer Tuchinsky, 3436 Filbert St., Philadelphia, opens the new DX season with 620 stations entered in his log. New ones are scarce now, he admits, and when he gets a new one a night, he is lucky and when he gets two he celebrates.

Earl R. Roberts, 712 South 9th St., Cambridge, Ohio, reports that his DX reception is improving with the weather. His total is 573 with 45 on the West Coast, eleven each in Cuba and Mexico, with his prize verification KFFM, 15 watts. He has an eight-tube superhet with an inside loop aerial.

Paul V. Trice, 379 Grant St., Sharon, Pa., reports that in a little more than four months he logged 218 stations on his one-tuber—44 states, Cuba, Canada and Mexico. He brought in KFFM, Greenville, Texas, with 15 watts. Mr. Trice points out that NRH in Costa

Rica should be T14NRH, as the N calls belong in the United States.

"I have received stations in 41 states of the union, four provinces in Canada, Cuba and Mexico," reports Geo. B. Holland, Jr., 1340 Baker Ave., Schenectady, N. Y. "In Mexico I have Tamaulipas and Mexico City and in Canada, Ontario, Quebec, Nova Scotia and Saskatchewan."

Some Good Records

Russell E. Myers, San Luis Obispo, Calif., has logged a nice list on his new General Electric S22X and thinks it is the best set of the ten he has had. He is getting more each night and hopes to have a very respectable hamper by spring. He begs us to do something to get stations to give their call letters between programs. Would that we had the power.

"Radio has been both a business and a hobby to me ever since its advent," states Harlan W. Newell, 1629 Centre St., Newton Highlands, Mass. "Although but 18 years old, I feel as if I were a veteran in the DX game." Harlan has received many Mexican, Cuban, Porto Rican and West Coast stations.

"This morning (September 6th) I received nine stations of Japanese vintage," is the statement of James Hurlquist, 146 E. San Carlos St., San Jose, Calif. "KZRM Manilla came in for good measure. The JO's were NK, LK, JK, BK, AK, HK, CK, IK and JQAK."

With an old Radiola 20 and a short indoor aerial, Richard H. Moore, Deep River, Conn., has received more than 100 stations, all logged before 9:30 p.m. Richard wants to join a DX club in his vicinity.

Japan in New Hampshire

Robert R. Rawstron, 15 Edgewood St., Claremont, N. H., opens the new season with 609 stations to his credit. He has 39 West Coasters to his credit and 2BL, LR4 JOAK, JOJK, RUS, from over the briny.

Frank A. Kunkel, Box 47, Stanhope, N. J., has logged every state except Nevada. He has a total of 554 stations including CKX, CKMO, CKWX, KGAR, KJBS, KXO and other distant and low-powered stations.

KWLC states that it is their intention to reply to all letters received. While rebuilding their transmitter some letters were unanswered, but as a rule all are given attention. This in answer to the complaint of one reader that he had sent them several letters without reply.

Oliver Todd, 1619 Conestoga St., Philadelphia, reports that WFDV, 1310 kcs., Rome, Ga., has a special DX program every Sunday starting at midnight EST. He reports WHBL, Sheboygan, Wis., on the air every Monday, Tuesday and Wednesday from 10 p.m. to midnight CST.

"WCHI, Chicago, has a new schedule," comments Daniel C. Looby, 141 West Seymour St., Philadelphia. "It is as follows: Daily, 12 to 2:45 p.m. and from 9:00 p.m. to 12:00 midnight."

Frederick L. Rushton, Worcester, Mass., submits the time on the air for WTAG, 580 kcs. Daily: 8:00 a.m. to 11:15 p.m. Sundays: 10:30 a.m. to 11:15 p.m.

The New XER

There seems to be some uncertainty regarding the new station of Dr. Brinkley's across the Rio Grande. Its call has been given out as XER although there is already an XER in Mexico City which probably should be deleted. In the October issue of this magazine, a statement from Dr. Brinkley gave the frequency of his new station as 665 kcs. T. J. Johnson, Drawer E, Bowlegs, Okla., however has the following to say regarding the reception of the new station:

"I happened to tune in Dr. Brinkley's new station, XER, tonight. They were on 735 kcs. and using 25,000 watts. Their transmitter is at Villa Acuna (R-12 on the radio map) with studios at Del Rio, Texas. They said they would be on tomorrow (October 4th) with 35,000 watts. They are coming in with great volume and should be picked up easily. In fact they came in with the volume control turned down so low that I could bring in no other station on the dial with the same volume, not even WFAA, less than 200 miles away."

Regarding the same station, James L. Goldwater, Adams Hall, Madison, Wis.,

writes: "Last Saturday evening, October 3rd, I logged XER testing with 25,000 watts, between 8:00 and 9:30 CST. It was broadcasting from the State of Coahuila on 730 kcs.

From the above reports it would seem that the new XER has given up its intention of using 665 between WFAF and WMAQ and is using either 730 or a split frequency of 735, thus taking the Canadian wave with possible heterodyne from WSB, one of the stations slated to be given greater power. The new station is outside the control of the United States Radio Commission as only its studio is located in this country.

"You can inform the DXers to be on the lookout for KQV every Saturday



"She's loads of fun." Read the story of Welcome Lewis, on page 6.

night as they will broadcast a 'DX Revue' that will continue until 3:00 a.m. or later, EST," is the advice given by Joseph Stokes, 7318 Woodlawn Ave., Pittsburgh, Pa., who also states that KELW is on each morning from 4:00 a.m. to 7:00 a.m. EST, and that OAX is planning a special DX program for some time in December. Mr. Stokes would like to hear from those DXers who have not less than 25 stations, 2,000 miles distant, verified.

James L. Goldwater, Madison, Wis., writes: "I have been active in the DX

game for four or five years and am just coming back to the thrill of it after a lay-off of a year or two. My log now includes 550 stations scattered through 47 states of the Union, Canada, Mexico and Cuba. I hopefully anticipate landing some of the foreigners the coming winter. Although the seasonal static is still very bad here, ten or fifteen of the Pacific Coast stations have been booming through on a single night. As for the Mexicans, they come straight up the Mississippi Valley with no intervening mountains and five or six of them crash through with tremendous volume. Sometimes in a single evening and frequently as early as 7:00 p.m. I have had XEW, XED, XEN and XEO. XES is more wary and apparently rarely announces in English. XET and XEB are occasional catches."

Fortune Tellers Barred

The Commission has called the following stations "on the carpet" and they may lose their licenses: KTAB, The Associated Broadcasters, Inc., San Francisco, Calif., "because information being broadcast not in the public interest; talks of one 'Zoro' during September not in public interest; licensee of station permitted use of station to others for their own personal benefit; 'Zoro' used station to deliver personal messages to private individuals." WCBA, B. Bryan Musselman, Allentown, Pa., "set for hearing on complaint of certain individuals who charge station is being operated for personal interest of private individuals; licensee has permitted broadcasting by astrologer with questions and answers not in the public interest; licensee permitted false and misleading 'ads' to be broadcast, etc."

"A verification from WRAW gives the information that the new WEEU, Reading, Pa., will open around November 25th," is the information that comes from Earl R. Roberts, 712 S. 9th St., Cambridge, Ohio. "One from WMIL states they are on Sundays and Thursdays from 1:00 a.m. to 4:00 a.m. EST with a DX program. CMCB failed to answer both my reports. A Cuban correspondent writes me that the Cuban stations will hardly ever bother to verify

our reports as they receive too many claims of reception at times they were not on the air. My loop aerial has now brought in 579 stations but no foreign ones. Will remedy that with the installation of an outside aerial and an Ollie Ross ground to work with my loop by inductance."

"As my chief hobby is experimenting and testing," says G. A. Doerflinger, 419 Wyomissing Blvd., Berkshire Heights, Pa., "let me tell you of the results I have had with the Filtered Aerial wire you sent me. This aerial is revolutionary in the results it will produce. It has three times the sensitivity of the old style aerial measured in distance and volume. The sensitivity is so great that many distant stations are practically localized. It greatly helps in selectivity. It was most interesting to note that while playing my local station, WOR, KMPC on the same wave could be heard quite plainly in the background with no interference or noise. The Ollie Ross ground which I am using is a very great help." The results achieved by Mr. Doerflinger are almost unbelievable, but the Filtered Aerial and the Ross ground ought to make a great team.

War Between the Chains

NOT a little concerned is the radio world at large over certain movements now going on behind the scenes in broadcasting. The actual and proposed acquisition of more stations by the chains, the sparring between the rival networks for commanding positions and the efforts of more newspapers to get into radio are among the important current developments.

Having acquired four stations on the West Coast recently at a more or less forced sale — namely: KJR, Seattle; KGA, Spokane; KEX, Portland, and KYA, San Francisco — the National Broadcasting Company shortly thereafter purchased one-half interest in — including the management of — Station WMAQ, of the Chicago Daily News. The chain takes over the station on November 1, at a price reputed to exceed \$500,000.

Now Station WMAQ is a primary outlet of the Columbia Broadcasting System in Chicago, and that network, having lost WMAQ to its rival, finds itself left with only one other Chicago outlet — Station WBBM, which it owns but which has only four-sevenths time on its clear channel. The remaining time is allocated KFAB, Lincoln, Neb., and all efforts on Columbia's part to purchase that station in order to increase WBBM's hours of operation have come to naught.

On the heels of the WMAQ deal, word went out that Station WGN, of the Chicago Tribune, may shortly sever its chain connection with the NBC. Thereupon various rumors were rife that Columbia might lease certain hours on WGN or make some other connection with that station. These reports none of the parties concerned will verify, but certain it is that Columbia must find some additional outlet or outlets in Chicago.

Columbia must solve its problem by November 1, and its solution may be announced shortly. One flat denial did come from Columbia, and that was that it intended to purchase WIBO, Chicago. There are also rumors afloat that Columbia has its eyes on WLW, Cincinnati, which the NBC about a year ago tried and failed to buy.

Meanwhile, NBC officials have been in heavy conferences for several weeks on other of their own expansion plans. Having taken over the management of all the General Electric stations, including recently WGY, Schenectady, the NBC very likely will shortly take over the three Westinghouse broadcasting units, namely, WBZ-WBZA, Boston; KDKA, Pittsburgh, and KYW, Chicago. If this is consummated, the NBC will own or control about a dozen outlets, most of them on clear channels.

One significant aftermath of the NBC's acquisition of KJR, Seattle, was the decision of the Federal Radio Commission this week granting full time operation to WCFL, of the Chicago Federation of Labor, which hitherto has operated only limited time on the KJR clear channel. The net effect is to make that wave a shared or regional channel. This was done with the consent

of the NBC, it is understood. Station WCFL's power of 1,500 watts was not, however, increased.

The labor station, incidentally, has long been a thorn in the side of the so-called "radio trust," demanding a clear channel and having gone so far as to secure passage of a bill in one house of the last Congress which, if enacted, would require the Commission to allocate a clear channel to labor. That channel could only be obtained by taking it away from some other fourth zone station or stations, and the presumption has been that WMAQ and WGN, each on a clear channel, would be forced to divide time on one of them in order to clear a channel for WCFL.

Having six affiliated stations in the Chicago territory, three of them directly controlled, it is not improbable that NBC may meet some political difficulties when the next Congress convenes. Political pressure obtained for WCFL its new full-time assignment, and Columbia, left high and dry with only a four-sevenths time outlet in Chicago, may possibly secure political relief, especially if the cry of monopoly is raised. What other hopes it has for holding its own in the Chicago territory, aside from the possibility of a tieup with WGN, no one can or will say.

On the newspaper side, there is a fairly well authenticated report that Hearst will enter the New York broadcasting field by the purchase of WGBS there. Then too the Boston Herald-Traveler has applied to the Commission for authority to erect a 100-watt station there on a practically unused frequency. In Iowa, the Des Moines Register and Tribune has bought or secured options on four small stations, hoping thereby to procure permission to consolidate them into one new station to serve Des Moines; a chain connection has been assured if this is consummated. In Indiana, the Elkhart Truth is seeking authority to move a small station to that city from Marion, and in Rock Island, Ill., the Rock Island Argus is expected to purchase the local station there, if it has not already done so.

Enter, The ALL-WAVE RADIO FAN

ENTER, the all-wave radio fan. The barrier that for years separated long and short waves from the broadcast listeners is rapidly disappearing. The fan who once was confined to the dials of a receiving set designed to tune in only the intermediate channels between 550 and 1500 kilocycles (545 and 200 meters) is now breaking the bounds and crossing over into both the short and long waves. And on the short waves especially he is finding thrills aplenty.

All-wave receiving sets are available by the simple expedient of plug-in coils, which already have widened the listen-range down through the high frequency spectrum that once was the sole domain of the amateurs. It is possible also to procure coils that will tune in the long waves that so many high-powered European stations are using.

Several groups of fans are gaining distinction as all-wave DXers. Many make their own sets, or at least the special coils. A few receivers are now on the market, and engineers and technical experts in contact with manufacturers, promise that many more allwave sets will be produced in time to be displayed at the annual radio shows.

Interest in all waves is following logically upon the work the networks have done in international broadcasts. The general radio public first became aware of the remarkable distances and volume possible on short waves with the programs which the National Broadcasting Company and the Columbia Broadcasting System rebroadcast from across the seas. We have heard King George of England, the Prince of Wales, concerts from London, the Pope from Vatican City, the Bayreuth festival, the Mozart festival at Saltzburg, Poland's honoring of Woodrow Wilson, a ship launching at Genoa, Mayo Jimmy Walker of New York speaking from Berlin, the Colonial Exposition in Paris, a concert from Budapest, the Simon Bolivar celebration from Venezuela and concerts and talks from Japan. These were announced as having

By Charles J. Gilcrest, Secretary,
the Chicago Daily News DX Club

come to the United States by short waves and then having been rebroadcast by the networks. At the same time a few scattered fans were hearing the same things direct on their own short wave receivers. And so the general radio public, already well acquainted with the intermediate waves to which most sets normally tune, became aware of what was happening on short waves. Hence the evolution of the all-wave radio fan.

DX or long distance radio clubs throughout the world are rapidly combining the short and intermediate waves, now that listeners are able to secure sets which get them both. The Chicago Daily News DX Club and other long distance clubs are becoming all-wave organizations. The club in Chicago plans to open the new DX season in October on an all-wave basis. During the summer the fans who have already added short waves to their hobby of searching the air for far distant stations have had many ether adventures. They hear regularly VK2ME and VK3ME, in Australia; G5SW, Chelmsford, England; Pontoise, France; I2RO, Rome, Italy; XEW, Mexico City; Zeesen, Germany, and Bogota, Colombia. In addition listeners have run into stations in Iceland, Japan, Africa, Russia, Argentine, Costa Rica, and many other far away spots.

At the same time that foreign countries are putting out short wave broadcasts with remarkable results, many of the leading United States stations have started relaying their broadcasts on short waves simultaneously with the long waves. These include WGY, Schenectady; KDKA, Pittsburgh; WLW, Cincinnati; WENR and WCFL, Chicago, and the net work key stations in New York, WABC, WEAJ and WJZ. There are also several high power short wave stations which have nothing to do with the long wave transmitters. Some

are located in Bolinas, Calif.; Bound Brook, N. J.; and Rocky Point, N. Y. The radio fan who wanders about the short waves will also run into many other items of interest. The police stations are often found, as well as the experimental radiotelephone stations and those used to dispatch planes flying the airways. The amateurs in both code and voice are in constant touch with one another in widely distant spots and also with the world's leading expeditions. In Chicago one amateur regularly works with Commander Donald B. MacMillan's schooner, the Bowdoin, with headquarters at Nain in Labrador, while another found Col. Lindbergh when the world was wondering what had happened to the noted flyer who was crossing the wastes of Canada en route to Alaska on the way to Japan.

In taking up short waves the radio public is not deserting the broadcast channels. The fans are simply combining both in one set and as one game, or hobby. Long wave DXing has been exceptionally good this year, due to favorable sun spots, the scientists say. Fans listen to stations on the other side of both the Atlantic and Pacific oceans during the early morning hours between the time when the American stations sign off and daylight. At that time the

opening morning programs in Europe manage to reach fans in this country, since almost the entire distance is in darkness and the programs from the west come through well despite the fact it is daytime in Australia and Japan.

The logical next step will probably be to include not only short waves and the broadcast channels in one set but also the waves above 550 meters. Already many of the European sets can reach as high as 2,000 meters and many of the stations over there actually broadcast on wave lengths that long and longer.

Editor's Note — A letter to the Editor from Mr. Gilchrest regarding the above article reads as follows:

"The set which gave me the idea for the all-wave story is the Scott. A folder concerning the set is enclosed.

"There are other companies making such sets, notably the Lincoln Radio Corporation in Chicago. I fully believe that the time is not far distant when the average radio fan will be an all-wave fan, using a set which covers both long and short waves. These sets are not only as good-looking furniture as any other long wave receiver, but give you perfect satisfaction all the way from 15 to 550 meters. I have heard many stations across the oceans with the Scott on short waves. Stations I hear almost

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Write Name Plainly

Street and Number

City and State

at will when they are on include VK3ME and VK2ME in Australia; G5SW, Chelmsford, England; and I2RO, in Rome. It seems that short waves cover enormous distances without and difficulty at all. The important thing is to know their correct wave length and the correct time of broadcast.

"I agree with you perfectly when you say that adaptors are not effective. Only the set built for short waves will really do well on low bands. But if you can combine a good short-wave and a good long-wave set into a single receiver, then you have something extremely worth while."

Grants High Power

The Radio Commission has made tentative grants of increased power to the following radio stations. The increase is to 25,000 watts with an additional 25,000 experimentally. Formal action will not be taken by the Commission until later. The favored stations are WOR, Newark; WCAU, Philadelphia; WSM, Nashville; WSB, Atlanta; WCCO, Minneapolis, WHO-WOC, Des Moines, KOA, Denver; KSL, Salt Lake City; KPO, San Francisco, WHAM, Rochester; WHAS, Louisville; WBT, Charlotte; WAPI, Birmingham; KVOO, Tulsa; KFAB, Lincoln.

Television's Status

(Continued from page 3)

curved lines. Since twenty complete pictures must be laid down every second we can see that 1200 half-tone lines are brushed across the screen a second. And each line is made up of about 60 different shadows of light. It is, therefore, extremely difficult to sweep these spots of light across the screen at such a rapid rate and still keep them synchronized absolutely with the speed of the transmitting television disc which is 1200 revolutions per minute. A loss or gain of one revolution per second will throw the alignment of the picture lines awry and result in a meaningless blot of light. This is the greatest problem of television. Static and other interference will remain always and be even more diffi-

cult to overcome. Standardization of parts, machines and broadcasts, is a matter which must be coordinated if all machines are to be able to tune in on any or all visual broadcasts.

The present status of television is not satisfactory to the average radio fan; it seems slowly developed and crude. Anything that is purely experimental appears chaotic because inventors are working independently and not in harmony. Commercial television may arrive within a year or two, or before—none can say with certainty. But, in New York City, occupying three square blocks in the heart of a region of fabulous values, a group of buildings to compose the \$250,000,000 Radio City is now under construction. Here will be a 60-story skyscraper with 27 great broadcasting studios, large theatres, and many other buildings. This city within a city will be dedicated to radio entertainment and every device for sound and visual broadcasting will be incorporated in the unlimited facilities available. The farsight of the men behind this remarkable development has seriously considered radio television, for ample provision for this form of entertainment has been made. Certainly television as a fixed and practicable form of radio broadcasting and reception is fully expected by the sponsors of this huge organization which will be completed in 1933.

Radio as a Career

(Continued from page 11)

conducts thousands of comprehensive experiments in radio, for the school does not believe entirely in the teaching of theory only; it solicits and replies to thousands of complex questions which arise in the minds of its students and graduates; it finds positions for its worthy graduates, and takes pride in their future successes and achievements. One popular school recently held a convention of its graduates, the first correspondence school alumni meeting ever to be held in America.

An average course in radio requires little or no previous background in engineering, electricity nor mathematics.

But, as stated before, the educated man is of greater value where theories and designing of radio apparatus are required. This man, however, works in a field vastly different than that of serviceman or station operator. The beginner will be started at the very first of radio and electricity. Many lessons will be furnished, one at a time, and the student led progressively into the complications of radio, electricity and sound, almost before he knows it. A number of interesting and practicable outfits are furnished, each with a very comprehensive set of directions and explanations, so that certain experiments may be carried on in the home along with the theory of the lessons. Thus the student finds the lessons can be more easily grasped. Experiments range from elementary telephone and sound waves to actual broadcasting and reception, and with tests of tubes, electric currents, resistance, amplification, conductance, neutralization, and all other phases met in the field of radio.

The student will have a number of special courses to select from. That embracing radio servicing, repairing and manufacturing is the most popular. Then broadcasting, and commercial and governmental ship and shore station operation has taken many men. Sound pictures, public address or speaker systems, aviation radio, television theory and practice, and code courses for mere telegraph operation, offer wide fields to be conquered.

The cost of a straight radio course at one of the leading correspondence schools is approximately one hundred dollars, which may be paid either in cash or by installments. Studies are grouped so that a student may take up any branch of radio, depending upon the kind of work he wishes to follow later on. After graduation he is given the benefit of an employment organization conducted by the school. Employers prefer trained radio men recommended by the school. The salaries paid such men are very good and compare well with other positions of influence and prestige. A mechanic in a radio shop receives good pay and desirable work when fully trained.

Shakespeare and Radio

Some people go so far as to deny that the Bard of Avon knew anything about radio but how do they account for the following quotations from his writings? "Ah, stand by," Anthony and Cleopatra. "Take up some other station," Coriolanus. "His lecture will be done ere you have tuned," Taming of the Shrew. "And my dial goes not true," All's Well That Ends Well. "'Tis no matter how it be in tune so it makes noise enough," As You Like It. "And those musicians that shall play to you hang in the air a thousand leagues from hence," Henry IV.

In Time of Trouble

(Continued from page 5)

to make a little sketch showing the entire connection. From the fact that you have three loose wires it is indicated that the volume control that was removed was a potentiometer. Its resistance was probably 25,000 ohms. When you connected a 50,000 resistor across your new 500,000 ohm potentiometer you short circuited it and rendered it useless. Procure a good 25,000 ohm volume control. Then you must trace the three wires. One is attached to the central or rotary connection of the control, and will be found to connect in the set to the grid of some tube, most likely the first audio tube, either direct or through a transformer or impedance coil. The other two wires connect each to the remaining two terminals of the control. These connections are probable because your set uses -26 and -71-A tubes and has no screen grid tubes. We believe that if you trace out your wires and locate the central arm or grid control connection you will solve the problem.

Takes All the Current

I have a Super-Zenith receiver with A and B eliminators. It is necessary to turn up the filament current dial full way to make it work. This was a good set, but is five years old. Should it be fitted anew with modern tubes?

Your letter indicates that the tubes are very old. If this is the case have them replaced by new tubes at once. Also, it

is likely that the tube in the B-eliminator and the rectifying unit of the A-eliminator are long past their usefulness. We suggest that all the tubes be tested by your local dealer. We then believe it will operate as well as it ever did.

Simple But Wrong

Why is it necessary to go to so much trouble to connect head telephones to a receiver? I simply attach mine by pulling out the lead from the speaker of my Zenith 35 receiver and insert the leads from the phones to the output terminals. This works well, but the phones get hot after an hour or so.

You have hit upon the ideal solution but it is far from being a practicable method of attaching headphones to a radio set. It is good as long as the telephones last, and the fact that yours get hot shows what a powerful overloading they are subjected to. Telephones are connected to the output of the detector tube simply because they cannot stand the heavy current that flows in the audio-amplification circuit of the final tube, which is a -50 in your case. Any station that can be amplified sufficiently to operate a loud speaker can be heard with headphones attached to the detector-plate output circuit. And if the signal cannot be heard by the earphones it cannot be amplified clearly without an overwhelming background of static and external noises, which render it unintelligible at the speaker.

Set Crackles

My five-tube battery set has developed a crackling noise that persists after the antenna and ground are disconnected. I have tested tubes and set and can find no trouble or loose wiring. Earphones and not speaker have been used for several months. What do you suggest as a source of trouble?

It seems rather definite that the noises you complain of come from the B battery due to failure of one or more of the individual cells in the battery. This can be determined by placing a B-battery voltmeter across the terminals for a short time. If there is a defective cell its presence will be shown by a sudden jerking of the hand of the testing instrument. The battery should be dis-

carded, or if new, the bad cell may be located and removed after the battery has been opened up. Bad tubes and socket connections are the causes of many internal noises. Check up these potential sources, and examine the connections to the wiring at the terminals of the radio-frequency secondary coils. Another troublesome source is between the plates of the variable condensers where particles of dirt and dust collect and cause a partial short-circuiting of the plates as the condenser is rotated. Clean the spaces carefully with pipe cleaners, first removing the B-battery connections from the set.

Between the Acts

(Continued from page 7)

she is partial to black, which so successfully contrasts her golden hair. Shoes and hats are almost an obsession with her. She loves a serious game of bridge, and her favorite pastime is driving in an open roadster with the speedometer registering around 78. She never before participated in any kind of a contest in her entire life, and is still very much in a fog over winning the title of Miss Radio of 1931. Photograph on front cover.

A Drummer Director

Abe Lyman, whose fame as a drummer and orchestra leader is familiar to audiences of two continents, is a native of Chicago, where he first played the traps in a movie house, long before the sound era. Lyman later migrated to California. At Santa Monica he worked in his brother's supper club, but wanted to lead his own orchestra. His brother told him it was impossible for a drummer to direct a group of musicians, so Abe decided to show him that it could be done. After a series of highly successful engagements in many of the west coast's most popular rendezvous, Lyman and his orchestra toured the country in musical comedy and vaudeville. They also became identified with recordings and motion picture work. Lyman, who, incidentally, has composed such popular tunes as "Mary Lou" and "What Can I Say Dear," directs his singing orchestra over Columbia every Tuesday, Thursday and Saturday, at 8:15 p.m. EST.

CFCF 1030 N	KPRC 920 N	WCCO 810 C	WHK 1390 C	WNAX 570 C
CFRB 690 C	KRLD 1040 C	WCFL 970 N	WHO 1000 N	WNOX 560 C
CKAC 730 C	KSCJ 1330 C	WCKY 1490 N	WHP 1430 C	WOAI 1190 N
CKGW 840 N	KSD 550 N	WCSH 940 N	WIBA 1280 N	WOC 1000 N
KDKA 980 N	KSL 1130 N	WDAE 1220 C	WIBO 560 N	WOKO 1430 C
KDYL 1290 C	KSTP 1460 N	WDAF 610 N	WIBW 580 C	WORC 1200 C
KECA 1430 N	KTAR 620 N	WDAY 940 N	WIOD 1300 N	WOW 590 N
KFAB 770 N	KTHS 1040 N	WDBJ 930 C	WIP 610 C	WOWO 1160 C
KFH 1300 C	KTRH 1120 C	WDBO 1120 C	WIS 1010 N	WPG 1100 C
KFI 640 N	KTSA 1290 C	WDOD 1280 C	WISN 1120 C	WPTF 680 N
KFJF 1480 C	KVI 760 C	WDRC 1330 C	WJAR 890 N	WQAM 560 C
KFKX 1020 N	KVOO 1140 N	WDSU 1250 C	WJAS 1290 C	WRC 950 N
KFPY 1340 C	KVOR 1270 C	WEAF 660 N	WJAX 900 N	WREC 600 C
KFRC 610 C	KWK 1350 N	WEAN 780 C	WJDY 1270 N	WREN 1220 N
KFSD 600 N	KYW 1020 N	WEBC 1290 N	WJJD 1130 C	WRR 1280 C
KFYR 550 N	WAAB 1410 C	WEEI 590 N	WJR 750 N	WRVA 1110 N
KGB 1330 C	WABC 860 C	WENR 870 N	WJZ 760 N	WSAI 1330 N
KGO 790 N	WACO 1240 C	WFAA 800 N	WKBH 1380 C	WSB 740 N
KGW 620 N	WADC 1320 C	WFAN 610 C	WKBN 570 C	WSM 650 N
KHJ 900 C	WAIU 640 C	WFBL 1360 C	WKBW 1480 C	WSMB 1320 N
KHQ 590 N	WAPI 1140 N	WFBM 1230 C	WKRC 550 C	WSPD 1340 C
KLRA 1390 C	WBAL 760 N	WFBR 1270 N	WKY 900 N	WSUN 620 N
KLZ 560 C	WBAP 800 N	WFI 560 N	WLAC 1470 C	WTAG 580 N
KMBC 950 C	WBBM 770 C	WFIW 940 C	WLAP 1010 C	WTAM 1070 N
KMOX 1090 C	WBCM 1410 C	WFLA 620 N	WLBW 1260 C	WTAQ 1330 C
KOA 830 N	WBEN 900 N	WGAR 1450 N	WLBZ 620 C	WTAR 780 C
KOH 1380 C	WBRC 930 C	WGL 1370 C	WLIT 560 N	WTIC 660 N
KOIL 1260 C	WBT 1080 C	WGN 720 C	WLS 870 N	WTMJ 620 N
KOIN 940 C	WBZ-A 990 N	WGR 550 C	WLW 700 N	WTOC 1260 C
KOL 1270 C	WCAE 1220 N	WGST 890 C	WMAL 630 C	WWJ 920 N
KOMO 920 N	WCAH 1430 C	WGY 790 N	WMAQ 670 N	WWNC 570 N
KPO 680 N	WCAO 600 C	WHAM 1150 N	WMC 780 N	WWVA 1160 C
	WCAU 1170 C	WHAS 820 N	WMT 600 C	WXYZ 1240 C
		WHFC 1430 C	WNAC 1230 C	

8:30-9:00 Thrillers
9:00-9:30 McKesson Musical Magazine
9:30-10:00 The Fuller Man
10:00-10:40 Lucky Strike Dance Orchestra
11:30-12:00 Jack Vallee and Orchestra
12:00-12:30 Rudy Vallee and Orchestra
12:30-1:00 Coon-Sanders and Orchestra
4:30-5:00 Phil Spitalny, The Danzante
6:30-6:45 Ray Pettinelli, the Old Topper
7:00-7:15 Sue Pettinelli and Pep
8:00-8:30 Silver Top
8:30-9:00 Mobile Concert
9:00-9:30 Halsey-Stuart Program
9:30-10:00 Palmolive Hour
10:30-11:00 Coca-Cola Program
11:00-11:15 Voice of Radio Digest
11:30-12:00 Vincent Lopez and Orchestra
12:00-12:30 Cab Calloway's Orchestra
THURSDAY
6:00-7:15 Vermont Lumber Jocks, male quartet
7:00-9:00 Fleischmann Hour, Rudy Vallee's Orchestra
9:00-9:30 American Musicale
9:30-10:00 Adventures of Sherlock Holmes
10:00-11:00 Lucky Strike Dance Orchestra
11:30-12:00 Sherbo's Contests
12:00-12:30 Florence Richardson and Melody Boys
12:30-1:00 Coon-Sanders and Orchestra
FRIDAY
5:30-5:45 Dolly Connolly, songs
6:30-6:45 Ray Perkins, the Old Topper
7:00-7:45 Guy Bowes, the Family
8:00-9:00 Chase Service Orchestra, Jessica Dragomette
9:00-9:30 The Club Club
9:30-10:00 Band's Dance Program, Leo Reisman's Orch.
10:00-10:30 The Main Floor, the Grofé's Orchestra
10:30-11:00 RKO Theatre of the Air
11:00-12:00 Vincent Lopez and Orchestra
12:00-12:30 Sweet Logan and Orchestra
12:30-1:00 Henry Tomatis and Orchestra
SATURDAY
1:45-4:15 Tothall Game
4:30-5:00 Phil Spitalny, Tea Danzante
9:00-9:30 Lady Next Door, Children's program
9:30-9:45 Dances of Yesterday, male quartet
9:45-6:00 Red Ole Mountains
6:00-6:30 Warner-Astor's Orchestra
6:30-7:00 Mr. Bones and Company
7:00-7:15 Lee Morse, song recital
7:30-7:35 Laws That Regard Society
8:00-8:30 Citizen Service Program
8:30-9:00 Civic Concert Service Council on Radio
9:00-9:30 National Orchestra, Erno Rapee
9:30-10:00 Club Vaudeville Dance Orchestra
10:00-11:00 Lucky Strike and Orchestra
11:30-12:00 Coon-Sanders and Orchestra
12:00-12:30 Rudy Vallee and Orchestra
12:30-1:00 Vincent Lopez and Orchestra

8:15-8:30 Sterling Products, Abe Lyman's Band
8:30-8:45 Red Goose Adventures
8:45-9:00 Walter Winchell, Gerardine Program
9:00-9:15 Ben Bernie and Blue Ribbon Orchestra
9:15-9:30 Columbians, Freddie Rich
9:30-10:00 Romances of the Sea
10:15-10:30 Star Brand Shoemakers
10:30-11:00 Arabesque, Desert Play
11:00-11:15 Jack Miller
11:45-12:00 Asbury Park Casino Orchestra
WEDNESDAY
7:15-7:30 Limit Orchestra
7:30-7:45 Boswell Sisters, Baker Chocolate
8:15-8:30 Singing Sam, Barbasol Man
8:30-8:45 La Palina, Kate Smith
8:45-9:00 Tastyteat Gloom Chasers
9:00-9:30 Gold Medal Past Freight
9:30-10:00 Eno Crime Club
10:00-10:15 Vitality Personalities
11:00-11:00 Columbia Concerts Program
11:00-11:15 Street Singer
11:45-12:00 Boswell Sisters, Baker Chocolate
THURSDAY
7:30-7:45 Kaltenborn Edits the News
8:15-8:30 Sterling Products, Abe Lyman's Band
8:30-8:45 La Palina, Kate Smith
9:00-9:30 Toscha Seidel, violinist
9:30-10:00 Love Story Drama
10:00-10:30 Har-Schnafner Trumpeters
10:30-10:45 Tito Guizar, Spanish tenor
10:45-11:00 Peter's Parade, Irene Beasley
11:00-11:15 Jack Miller
11:45-12:00 Radio Roundup
12:00-12:30 Guy Lombardo and Orchestra
FRIDAY
7:15-7:30 Limit Orchestra
7:30-7:45 Boswell Sisters, Baker Chocolate
8:15-8:30 Singing Sam, Barbasol Man
8:30-9:00 March of Time
9:00-9:15 Regal Radio Reproductions
9:15-9:45 Liberty Magazine Program
9:45-10:00 Friendly Five Footnotes
10:00-10:30 Pillsbury Pageant
10:30-10:45 Talk by Football Coach
10:45-11:00 Mills Bros.
11:00-11:15 Street Singer
11:45-12:00 Boswell Sisters, Baker Chocolate
SATURDAY
7:15-7:30 Political Situation in Washington
7:30-7:45 Reis and Dunn
8:15-8:30 Sterling Products, Abe Lyman's Band
8:30-8:45 La Palina, Kate Smith
8:45-9:00 Tastyteat Gloom Chasers
9:00-9:30 Chicago Variety Program
9:30-10:00 National Radio forum
10:00-11:00 Hank Simmons' Show Boat
11:00-11:15 Jack Miller
11:45-12:00 St. Mortiz Orchestra
12:00-12:30 Guy Lombardo and Orchestra

8:00-8:30 Armstrong Quakers, Voorhees' Orchestra
8:30-8:45 Heel Huggers Harmonies, male quartet
8:45-9:00 Sisters of the Skillet
9:00-9:30 Household Finance Program, Dumont's Orch.
9:30-10:00 Great Personalities, Frazier Hunt
10:00-10:30 Old Stager's Memories
10:45-11:00 Paris Night Life
11:45-12:15 Dream Pictures, Archer Gibson, organ
12:15-1:00 Paul Whiteman and Orchestra
WEDNESDAY
7:45-8:00 Esso Program, "Believe It or Not" Ripley
8:00-8:15 College Memories, male quartet
8:15-8:30 Guy Robertson, baritone, Joy's Orchestra
8:30-9:00 Jack Frost's Melody Moments
9:00-9:30 Adventures of Sherlock Holmes
9:30-10:00 Dutch Misses Program
10:00-10:30 Rochester Civic Orchestra
10:45-11:00 Radio's Greatest Lover, Carlo LeMar
11:00-11:30 Slumber Music
11:45-12:00 Lew White Organ Recital
12:00-12:15 Jane Prouman and Orchestra
12:15-12:30 Coon-Sanders and Orchestra
THURSDAY
5:30-5:45 Al and Pete, songs and dialogue
7:15-7:30 Tastyteat Veterans of Business
7:45-8:00 Famous Philadelphia Singers
8:00-8:15 Dixie Strangers
8:15-8:35 Rain-It-Down Theatre
8:30-8:45 Richard Taubert, Hill-Billy songs
8:45-9:00 Sisters of the Skillet
9:00-9:30 Backstage Flotation, Sanderson and Crumit
10:00-10:30 Maxell House Ensemble
10:40-10:50 A. P. Chevy
10:50-11:00 Paris Night Life
10:45-11:00 Silver Tone Quartet
FRIDAY
5:30-5:45 Al and Pete songs and dialogue
7:45-8:00 Esso Program, "Believe It or Not" Ripley
8:00-8:30 Ned's Program, Brusiloff's Orchestra
8:30-8:45 Smith Bros., Trade and Mark
8:45-9:00 Sisters of the Skillet
9:00-9:30 Intermoven Pair Jones and Hare
9:30-10:00 Armour Program, Koestner's Orchestra
10:00-10:30 Paul Whiteman's Paint Men
10:45-11:00 Waves of Melody, Arden's Orchestra
11:30-12:00 Jack Denny and Orchestra
12:15-12:30 Cab Calloway and Orchestra
SATURDAY
7:15-7:30 Tastyteat Jesters
7:30-7:45 Sonata Recital
7:45-8:00 Radio's Greatest Lover, Carlo LeMar
8:00-8:30 Danger Fighters, dramatic sketch
8:30-9:00 Dance with Countess D'Orsey
9:00-9:30 Careless Love, Negro dramatic sketch
9:30-10:00 The First Nighter
10:00-10:30 Cuckoo
10:45-11:00 Bennis Program, Katrman's Orchestra
11:45-12:00 Lew White Organ Recital
12:15-1:00 Paul Whiteman and Orchestra

CHAIN STATIONS by FREQUENCIES

COLUMBIA

550
 WGR, Buffalo, N. Y.
 WKRC, Cincinnati, Ohio
560
 KLZ, Denver, Colo.
 WNOX, Knoxville, Tenn.
 WQAM, Miami, Fla.
570
 WKBN, Youngstown, Ohio
 WNAX, Yankton, S. D.
580
 WIBW, Topeka, Kans.
600
 WCAO, Baltimore, Md.
 WMT, Waterloo, Iowa
 WREC, Memphis, Tenn.
610
 KFRC, San Francisco, Cal.
 WFAN, Philadelphia, Pa.
 WIP, Philadelphia, Pa.
620
 WLBZ, Bangor, Maine
630
 WMAL, Washington, D. C.
640
 WAIU, Columbus, Ohio
690
 CFRB, Toronto, Ont.
720
 WGN, Chicago, Ill.
730
 CKAC, Montreal, Que.
760
 KVI, Tacoma, Wash.
770
 WBBM, Chicago, Ill.
780
 WEAN, Providence, R. I.
 WTAR, Norfolk, Va.
810
 WCCO, Minneapolis, Minn.
860
 WABC, New York, N. Y.
890
 WGST, Atlanta, Ga.
900
 KHJ, Los Angeles, Cal.
930
 WBRC, Birmingham, Ala.
 WDBJ, Roanoke, Va.
940
 KOIN, Portland, Ore.
 WFIW, Hopkinsville, Ky.
950
 KMBC, Kansas City, Mo.
1010
 WLAP, Louisville, Ky.
1040
 KRLD, Dallas, Texas
1080
 WBT, Charlotte, N. C.
1090
 KMOX, St. Louis, Mo.
1100
 WPG, Atlantic City, N. J.
1120
 KTRH, Houston, Texas
 WDBO, Orlando, Fla.
 WISN, Milwaukee, Wis.
1130
 WJJD, Mooseheart, Ill.

1160
 WOWO, Ft. Wayne, Ind.
 WWVA, Wheeling, W. Va.
1170
 WCAU, Philadelphia, Pa.
1200
 WORC, Worcester, Mass.
1220
 WDAE, Tampa, Fla.
1230
 WFBM, Indianapolis, Ind.
 WNAC, Boston, Mass.
1240
 WACO, Waco, Texas
 WXYZ, Detroit, Mich.
1250
 WDSU, New Orleans, La.
1260
 KOIL, Council Bluffs, Iowa
 WLBW, Oil City, Pa.
 WTOG, Savannah, Ga.
1270
 KOL, Seattle, Wash.
 KVOR, Colorado Springs, Colo.
1280
 WDOD, Chattanooga, Tenn.
 WRR, Dallas, Texas
1290
 KDYL, Salt Lake City, Utah
 KTSJ, San Antonio, Texas
 WJAS, Pittsburgh, Pa.
1300
 KFJH, Wichita, Kans.
1320
 WADC, Akron, Ohio
1330
 KGB, San Diego, Cal.
 KSCJ, Sioux City, Iowa
 WDRG, Hartford, Conn.
 WTAQ, Eau Claire, Wis.
1340
 KFPY, Spokane, Wash.
 WSPDL, Toledo, Ohio
1360
 WFBL, Syracuse, N. Y.
1370
 WGL, Ft. Wayne, Ind.
1380
 KOH, Reno, Nev.
 WKBH, LaCrosse, Wis.
1390
 KLRA, Little Rock, Ark.
 WHK, Cleveland, Ohio
1410
 WAAB, Boston, Mass.
 WBCM, Bay City, Mich.
1430
 WCAH, Columbus, Ohio
 WHEC, Rochester, N. Y.
 WHP, Harrisburg, Pa.
 WOKO, Albany, N. Y.
1470
 WLAC, Nashville, Tenn.
1480
 KFJF, Oklahoma City, Okla.
 WKBW, Buffalo, N. Y.

NATIONAL

900
 WBEN, Buffalo, N. Y.
 WJAX, Jacksonville, Fla.
 WKY, Oklahoma City, Okla.
920
 KOMO, Seattle, Wash.
 KPRC, Houston, Texas
 WWJ, Detroit, Mich.
940
 WCSH, Portland, Maine
 WDAY, Fargo, N. D.
950
 WRC, Washington, D. C.
970
 WCFL, Chicago, Ill.
980
 KDKA, Pittsburgh, Pa.
990
 WBZA, Boston-Springfield
1000
 WHO, Des Moines, Iowa
 WOC, Davenport, Iowa
1010
 WIS, Columbia, S. C.
1020
 KFKX, Chicago, Ill.
 KYW, Chicago, Ill.
1030
 CFCH, Montreal, Que.
1040
 KTHS, Hot Springs, Ark.
1070
 WTAM, Cleveland, Ohio
1110
 WRVA, Richmond, Va.
1130
 KSL, Salt Lake City, Utah
1140
 KVOO, Tulsa, Okla.
 WAPI, Birmingham, Ala.
1150
 WHAM, Rochester, N. Y.
1190
 WOAI, San Antonio, Tex.
1220
 WCAE, Pittsburgh, Pa.
 WREN, Lawrence, Kans.
1270
 WFBR, Baltimore, Md.
 WJDX, Jackson, Miss.
1280
 WIBA, Madison, Wis.
1290
 WEBC, Superior, Wis.
1300
 WIOD, Miami, Fla.
1320
 WSMB, New Orleans, La.
1330
 WSAI, Cincinnati, Ohio
1350
 KWK, St. Louis, Mo.
1430
 KECA, Los Angeles, Cal.
1450
 WGAR, Cleveland, Ohio
1460
 KSTP, St. Paul, Minn.
1490
 WCKY, Covington, Ky.

550
 KFJR, Bismarck, N. D.
 KSD, St. Louis, Mo.
560
 WFI, Philadelphia, Pa.
 WIBO, Chicago, Ill.
 WLIT, Philadelphia, Pa.
570
 WWNC, Asheville, N. C.
580
 WTAG, Worcester, Mass.
590
 KHQ, Spokane, Wash.
 WEEL, Boston, Mass.
 WOW, Omaha, Neb.
600
 KFSD, San Diego, Cal.
610
 WDAF, Kansas City, Mo.
620
 KGW, Portland, Ore.
 KTAR, Phoenix, Ariz.
 WFLA, Clearwater, Fla.
 WSUN, St. Petersburg, Fla.
 WTMJ, Milwaukee, Wis.
640
 KFI, Los Angeles, Cal.
650
 WSM, Nashville, Tenn.
660
 WEAJ, New York, N. Y.
 WTIC, Hartford, Conn.
670
 WMAQ, Chicago, Ill.
680
 KPO, San Francisco, Cal.
 WPTF, Raleigh, N. C.
700
 WLW, Cincinnati, Ohio
740
 WSB, Atlanta, Ga.
750
 WJR, Detroit, Mich.
760
 WBAL, Baltimore, Md.
 WJZ, New York, N. Y.
770
 KFAB, Lincoln, Neb.
780
 WMC, Memphis, Tenn.
790
 KGO, San Francisco, Cal.
 WGY, Schenectady, N. Y.
800
 WBAP, Fort Worth, Texas
 WFAA, Dallas, Texas
820
 WHAS, Louisville, Ky.
830
 KOA, Denver, Colo.
840
 CKGW, Toronto, Ont.
870
 WENR, Chicago, Ill.
 WLS, Chicago, Ill.
890
 WJAR, Providence, R. I.

Principal Broadcasting Stations of the World

Fill in your dial numbers and you will then know where these foreign stations should be received on your set

Keys.	Meters	Call	City	Country	Keys.	Meters	Call	City	Country
150	2000	RYK	Kaunas	Lithuania	580	517	7ZL	Hobart	Australia
160	1875	.....	Huizen	Holland	581	516.3	.....	Wien-Rosenhugel	Austria
174	1724	.....	Paris	France	587.1	511	RW50	Armariv	Russia
183.5	1635	.....	Konigs Westerkhausen	Germany	590	508.5	ON4RB	Brussels	Belgium
187.5	1600	RW14	Irkoutsik	Russia	599	500.8	1MI	Milano	Italy
193	1554	TAE	Angora	Turkey	600				
193	1554	SXX	Daventry	Great Britain	_____				
202.6	1481	RW1	Moskva Noginsk	Russia	600	500	ZZG	Wanganui	New Zealand
207.5	1444	.....	Paris	France	600	500	ZZK	Wanganui	New Zealand
222.5	1348	SBG	Motala	Sweden	600	500	ZZR	Wanganui	New Zealand
230.1	1304	RW49	Moskva Stchelkovo	Russia	603.6	497	RW31	Ivanovo-Voznesensk	Russia
235.2	1275	.....	Tunis-Kasbah	Tunis	608	493.4	LKO	Oso	Norway
238	1260.5	RW8	Bakou	Russia	608	493.4	RW32	Stavropol	Russia
238	1260.5	RW43	Bakou	Russia	617	487	.....	Praha	Czechoslovakia
238.1	1260	RW6	Novosibirsk	Russia	618.5	484	KZRM	Manilla	Philippine Is.
250	1200	SBE	Boden	Sweden	620	484	3AR	Melbourne	Australia
250	1200	TAL	Istanbul	Turkey	621.1	483	RW40	Gomel	Russia
256.4	1170	RW11	Tachkent	Russia	625	480	KZRM	Manila	Philippine Is.
260	1153.8	.....	Kalundborg	Denmark	626	479	5GB	Daventry	Great Britain
260	1153.8	.....	Soro	Denmark	630	476.1	1ZH	Hamilton	New Zealand
260	1153.8	OXO	Skamlebak	Denmark	630.2	476	RW52	Simferopol	Russia
270	1111.1	SP1	Warsaw	Poland	635	472	.....	Langenberg	Germany
272.7	1100	RW58	Moskva Imeni	Russia	635	472	JONK	Nagano	Japan
280	1071	.....	Hilversum	Holland	635.6	472	RW28	Wladivostok	Russia
280	1071	PCF	Scheveningen	Holland	640	468.8	RW56	Penza	Russia
284.9	1053	RW7	Tiflis	Russia	644	465.8	OO	Lyon	France
297	1010	.....	Basel	Switzerland	645.2	465	RW48	Tomsok	Russia
300	1000	RW3	Leningrad	Russia	650	461.5	CX6	Montevideo	Uruguay
300	1000	RW53	Leningrad	Russia	650	461.5	RW33	Krasnodar	Russia
310	967.7	RW60	Alma-Ata	Russia	650	461.5	4YA	Dunedin	New Zealand
320	937.5	RW4	Kharkov	Russia	653	459	.....	Zurich	Switzerland
333.7	899.1	RW19	Achkhabad	Russia	662	453	.....	Klagenfurt	Austria
342.8	875	RW18	Samar kand	Russia	662	453	.....	Danzig	Germany
343	874.6	RW21	Erivan	Russia	662	453	LKD	Bodo Kringkaster	Norway
353.5	848.7	RW12	Rostov-sur-le-Don	Russia	662	453	LKM	Tromso	Norway
363.6	825	RW5	Sverdlovsk	Russia	662	453	LKP	Porsgrund	Norway
368.1	815	RW9	Kiev	Russia	662	453	LKT	Trondelag	Norway
385.6	778	RW25	Voronej Goubernski	Russia	662	453	SCT	Uppsala	Sweden
389	770	SBF	Ostersund	Sweden	662	453	1BZ	Bolzano	Italy
394	761.4	RW42	Nijni-Novgorod	Russia	665	451	2FC	Sydney	Australia
395	760	.....	Geneva	Switzerland	666.7	450	RW13	Odessa	Russia
414	724.6	.....	Rabat	Morocco	666.7	450	ZTJ	Johannesburg	South Africa
416.7	720	RW2	Moskva Opytnaia	Russia	670	448	LP4	Buenos Aires	Argentina
421.3	712	RW47	Tachkent	Russia	671	447	.....	Ecole Superieure	France
428.6	700	RW10	Minsk	Russia	671	447	LKA	Alesund	Norway
434.8	690	RW35	Astrakhan	Russia	671	447	LKN	Notodden	Norway
441	680	.....	Lausanne	Switzerland	671	447	LKR	Rjukan	Norway
444.4	675	RW22	Oufa	Russia	673	445.9	IBO	Bolzano	Italy
461.5	650	RW45	Orenbourg	Russia	675	444	VOWR	St. Johns	Newfound'ld
468.7	640	RW29	Petrozavodsk	Russia	676	443.8	RW23	Groznyi	Russia
471.7	636	RW44	Omsk	Russia	680	441	JOLK	Fukuoka	Japan
500					680	441	IRO	Rome	Italy
_____					684.9	437	HJN	Bogota	Colombia
511	587.1	RW30	Dnepropetrovsk	Russia	686.5	437	RW46	Petropavlovsk	Russia
521.7	575	RW16	Samara	Russia	689	435	SBA	Stockholm	Sweden
527	569	.....	Freiburg Breisgau	Germany	689	435	SCN	Malmberget	Sweden
527	569	LKH	Hamar	Norway	690	434.7	JODK	Keiji	Japan
530	566	SP3	Krakow	Poland	690	434.7	SP5	Wilno	Poland
531	565	RW24	Smolensk	Russia	690	434.7	6WF	Perth	Australia
536	560	.....	Augsburg	Germany	700				
536	560	.....	Hanover	Germany	_____				
550	545	HAL	Lakihegy	Hungary	700	428.5	JOKK	Okayama	Japan
550.5	545	RW17	Kazan	Russia	700	428.5	VPB	Colombo	Ceylon
554	542	SBD	Sundsvall	Sweden	704.2	426	RW20	Kharok	Russia
560	535.7	RW41	Veliki Oustug	Russia	710	423	JOJK	Kanazawa	Japan
563	533	.....	Munchen	Germany	710	423	LS1	Buenos Aires	Argentina
572	524.6	YLZ	Riga	Latvia					

Keys.	Meters	Call	City	Country	Keys.	Meters	Call	City	Country
710	423	SP4	Katowice	Poland					
716	419	.....	Berlin	Germany					
720	416.7	2YA	Wellington	New Zealand					
720	416.7	5AD	Adelaide	Australia					
729.9	411	RW55	Pokrovsk	Russia	900	333.3	1YA	Auckland	New Zealand
730	411	CK10	Montevideo	Uruguay	905	331.4	INA	Napoli	Italy
730	411	5CL	Adelaide	Australia	910	330	LR6	Buenos Aires	Argentina
738	406.5	ZTD	Durban	South Africa	914	328.2	.....	Grenoble	France
743	403	.....	Berne	Switzerland	919	326	.....	Petit Parisien	France
747.5	401	.....	Tallinn	Estonia	920	326	PRAD	Pelotas	Brazil
748.1	401	RW51	Nal'tchek	Russia	923	325	.....	Breslau	Germany
750	400	.....	Mont de Marsan	France	930	322.6	CX20	Montevideo	Uruguay
750	400	JOBK	Osaka	Japan	930	322.6	3UZ	Melbourne	Australia
750	400	LR7	Buenos Aires	Argentina	932	322	SBB	Goteborg	Sweden
750	400	PRAA	Rio de Janeiro	Brazil	932	322	SCC	Falun	Sweden
750	400	PRAL	Sao Paulo	Brazil	934.3	320	PRAB	Rio de Janeiro	Brazil
750	400	PRAP	Recife	Brazil	934.3	320	PRAO	Sao Paulo	Brazil
750	400	6CK	Cork	Ireland	937.5	320	HSP3	Saladeng Bangkok	Siam
752	399	5SC	Glasgow	Great Britain	937.5	320	KZRC	Cebu	Philippine Is.
760	395	JOAK	Dairen	Japan	937.5	320	XGAI	Shanghai	China
760	395	4QG	Brisbane	Australia	940	319	KGU	Honolulu	Hawaii
761	394.2]	.....	Bucuresti	Roumania	940	319	2RN	Dublin	Ireland
769	390	VUM	Madras	British India	941	319	.....	Dresden	Germany
770	390	.....	Frankfurt, Main	Germany	950	315.8	.....	Marseilles	France
770	390	CX12	Montevideo	Uruguay	950	315.8	.....	Bremen	Germany
770	390	JOHK	Sendai	Japan	950	315.8	LR3	Buenos Aires	Argentina
770	390	RW36	Arkhaugelsk	Russia	950	315.8	VONA	St. Johns	Newfoundl'd
778	386	JOJK	Shizuoka	Japan	950	315.8	2GB	Sydney	Australia
779	385.1	SP6	Lwow	Poland	950	315.8	NKS	Shanghai	China
779	385.1	IGE	Genoa	Italy	960	312.5	5DN	Adelaide	Australia
788	380.7	.....	Toulouse	France	963	311.5	.....	Agen	France
790	380	JOJK	Kumamoto	Japan	968	310	5WA	Cardiff	Great Britain
790	380	LR1	Buenos Aires	Argentina	970	309.3	CX22	Montevideo	Uruguay
790	380	OAX	Lima	Peru	971	309	.....	Vitus	France
792.5	378.5	RW37	Moskva Mosps	Russia	980	306.1	3YA	Christchurch	New Zealand
792.5	378.5	RW39	Moskva	Russia	986	304.3	.....	Bordeaux	France
795.8	377	RW27	Makhatch Kala	Russia	990	303	LR4	Buenos Aires	Argentina
797	377	ZZY	Manchester	Great Britain	995	301	2BD	Aberdeen	Great Britain

800

Keys.	Meters	Call	City	Country
800	375	ZTC	Capetown	South Africa
800	375	3LO	Melbourne	Australia
806	372	.....	Hamburg	Germany
809.9	370.4	VUC	Calcutta	British India
810	370	CX14	Montevideo	Uruguay
810	370	JOCK	Nagoya	Japan
810.8	370	RW26	Stalino	Russia
815	368.1	LKF	Fredrikstad	Norway
820	366	2ZP	Wairoa	New Zealand
824	364.1	LKB	Bergen	Norway
825	363.7	.....	Alger	France
830	361	JOJK	Sapporo	Japan
830	361	LR5	Buenos Aires	Argentina
833	360	.....	Stuttgart	Germany
833.3	360	PRAC	Rio de Janeiro	Brazil
838	358	RW57	Tiraspol	Russia
840	357.1	VUB	Bombay	British India
842	356	2LO	London	Great Britain
850	353	CX16	Montevideo	Uruguay
850	353	JOFK	Hiroshima	Japan
851	352.5	.....	Graz	Austria
855	350.8	2BL	Sydney	Australia
857	350	ZBW	Hongkong	China
857.1	350	HSP1	Bangkok	Siam
857.1	350	PRAE	Sao Paulo	Brazil
857.1	350	PRAH	Bahia	Brazil
857.1	350	PRAJ	Juiz de Fora	Brazil
864.5	347	RW24	Piatigorsk	Russia
869	345.2	.....	Strasbourg	France
869.5	345	.....	Shanghai	China
870	345	JOAK	Tokio	Japan
870	345	LR2	Buenos Aires	Argentina
875	342.9	SP2	Poznan	Poland
878	342	.....	Brno	Czechoslovakia
882	340	PRAN	Curitiba	Brazil
882	340	VUL	Lahore	British India
890	337	CX18	Montevideo	Uruguay
890	337	VOGT	Bell Island	Newfoundl'd
890	337	7HO	Hobart	Australia

Keys.	Meters	Call	City	Country
1000	300	GEC	Tientsin	China
1000	300	PRAS	Santos	Brazil
1000	300	PRAY	Mogy das Cruzes	Brazil
1004	298.8	.....	Hilversum	Holland
1010	297	6ML	Perth	Australia
1016.9	295	PRAR	Sao Paulo	Brazil
1020	294	4GR	Toowoomba	Australia
1022	293	.....	Kosice	Czechoslovakia
1022	293	.....	Limoges	France
1025	292.6	2UE	Sydney	Australia
1030	291.3	LR9	Buenos Aires	Argentina
1035	290	EB4BQ	Keups Marchienne-Docherie	Belgium
1040	288.5	2DE	Dundee	Great Britain
1040	288.5	2EH	Edinburgh	Great Britain
1040	288.5	2LS	Bradford	Great Britain
1040	288.5	5PY	Plymouth	Great Britain
1040	288.5	5SX	Swansea	Great Britain
1040	288.5	6BM	Bournemouth	Great Britain
1040	288.5	6FL	Sheffield	Great Britain
1040	283.5	6KH	Hull	Great Britain
1040	288.5	6LV	Liverpool	Great Britain
1040	288.5	6ST	Stoke on Trent	Great Britain
1049	286	.....	Montpelier	France
1050	285.7	.....	Tartu	Estonia
1050	285.7	CX26	Montevideo	Uruguay
1050	285.7	2ZF	Palmerston	New Zealand
1051	285.8	.....	Lyon	France
1052.6	285	RW54	Khabarovsk	Russia
1058	284	.....	Innsbruck	Austria
1058	284	.....	Berlin	Germany
1058	284	.....	Magdeburg	Germany
1058	284	.....	Stettin	Germany
1058	284	.....	Uddevalla	Sweden
1058	284	SCR	Varberg	Sweden
1058	284	SCU	Kobenhavn	Denmark
1067	281.2	.....	Kobenhavn	Denmark
1070	280	EB4RW	Liege	Belgium
1070	280	LS5	Buenos Aires	Argentina

Keys.	Meters	Call	City	Country	Keys.	Meters	Call	City	Country
1070	280	2KY	Sydney	Australia	1229	233.8	SP7	Lodz	Poland
1071	280	XXG	Shanghai	China	1230	243.9	LS8	Buenos Aires	Argentina
1076	279	.....	Bratislova	Czechoslovakia	1230	243.9	2YB	New Plymouth	New Zealand
1080	277.8	4ZB	Dunedin	New Zealand	1238	242	2BE	Belfast	Great Britain
1080	277.8	..ZM	Dunedin	New Zealand	1245	241	2NC	Newcastle	Australia
1080	277.8	4ZO	Dunedin	New Zealand	1247	240	.....	Nimes	France
1080	277.8	7LA	Launceston	Australia	1247	240	LKS	Stavanger	Norway
1083	277	KSMS	Shanghai	China	1250	240	CX36	Montevideo	Uruguay
1090	275	EB4RG	Gand	Belgium	1256	239	.....	Nurnberg	Germany
1090	275	PRAQ	Bello Horizonte	Brazil	1260	238.1	CW36	Salto	Uruguay
1090	275	1ZB	Auckland	New Zealand	1260	238.1	CZH	Napier	New Zealand
1090.9	275	PRAG	Porto Alegre	Brazil	1264	237.2	3WR	Wangaratta	Australia
1094	273.2	1TO	Torino	Italy	1264	237	SCV	Sud Ouest	France
					1265	237	.....	Orebro	Sweden
					1270	236.2	LS3	Buenos Aires	Argentina
					1274	235.5	LKK	Kristiansand	Norway
					1370	235.5	.....	Shanghai	China
					1276.5	235	.....	Montevideo	Uruguay
					1290	232.6	CX38	Brisbane	Australia
					1290	232.6	4BK	.....	Australia
					1292	232	.....	Kiel	Germany

1100

Keys.	Meters	Call	City	Country
1100	272.7	7LA	Launceston	Australia
1103	272	.....	Rennes	France
1110	270.3	KZKA	Manila	Philippine Is.
1111	270	PRAZ	Franca	Brazil
1112	270	.....	Kaiserslautern	Germany
1112	270	SCF	Hudiksvall	Sweden
1112	270	SCO	Norrkoping	Sweden
1112	270	SCQ	Trollhattan	Sweden
1125	266.6	2UW	Sydney	Australia
1130	265.5	.....	Lille	France
1130	265.5	CX30	Montevideo	Uruguay
1139	263	.....	Moravska Ostrava	Czechoslovakia
1140	263.2	CW30	Tacuarembó	Uruguay
1145	262	4BC	Brisbane	Australia
1148	261	5NO	Newcastle-on-Tyne	Great Britain
1150	260	EB4GT	Brussels	Belgium
1150	260.9	LR8	Buenos Aires	Argentina
1150	260.9	2ZM	Gisborne	New Zealand
1153	260	KZIB	Manila	Philippine Is.
1153.8	260	PRAI	Ribeirao Preto	Brazil
1153.8	260	PRAK	Rio de Janeiro	Brazil
1155	260	2MK	Bathurst	Australia
1157	259	.....	Leipzig	Germany
1160	258	4ZI	Invercargill	New Zealand
1160	258	4ZP	Invercargill	New Zealand
1160	258	7HO	Hobart	Australia
1166	257	SBH	Horby	Sweden
1170	256	CX32	Montevideo	Uruguay
1175	255.3	.....	Toulouse	France
1180	254.2	CW32	Salto	Uruguay
1180	254.2	2ZD	Masterton	New Zealand
1180	254.2	2ZQ	Masterton	New Zealand
1180	254.2	3DB	Melbourne	Australia
1180	254.2	6ML	Perth	Australia
1184	253	.....	Gleiwitz	Germany
1190	252.1	LS2	Buenos Aires	Argentina
1190	252.1	1ZQ	Auckland	New Zealand
1195	250.1	.....	Montpelier	France

1200

Keys.	Meters	Call	City	Country
1200	250	EB4ED	DeCaluwe	Belgium
1200	250	3ZC	Christchurch	New Zealand
1200	250	5KA	Adelaide	Australia
1206	248	.....	Juan les Pins	France
1210	247.9	CX34	Montevideo	Uruguay
1210	247.9	1ZM	Manurewa	New Zealand
1210	247.9	2ZE	Eketahuna	New Zealand
1211	247.7	1TR	Trieste	Italy
1220	246	.....	Linz Donau	Austria
1220	246	.....	Kassel	Germany
1220	246	.....	Bloemendaal	Holland
1220	246	CW34	Salto	Uruguay
1220	246	SCB	Eskilstuna	Sweden
1220	246	SCI	Kalmar	Sweden
1220	246	SCJ	Kiruna	Sweden
1220	246	SCP	Saffle	Sweden
1220	246	2MV	Moss Vale	Australia
1220	246	4ZL	Dunedin	New Zealand

1300

Keys.	Meters	Call	City	Country
1300	230.8	CW38	Salto	Uruguay
1300	230.8	KZRC	Cebu	Philippine Is.
1300	230.8	3BA	Ballarat	Australia
1301	231	SCA	Boras	Sweden
1301	231	SBC	Malmo	Sweden
1301	231	SCG	Halsingborg	Sweden
1301	231	SCS	Umea	Sweden
1304	230	PRAM	Sao Paulo	Brazil
1305	230	EB4FO	Schaerbeek Brussels	Belgium
1310	229	5AD	Adelaide	Australia
1319	227	.....	Aachen	Germany
1319	227	.....	Koln	Germany
1319	227	.....	Munster	Germany
1320	227.3	KGMB	Honolulu	Hawaii
1320	227.3	ZAY	Albury	Australia
1330	225.6	CX40	Montevideo	Uruguay
1330	225.6	ZZI	Hastings	New Zealand
1330	225.6	ZZL	Hastings	New Zealand
1335	225	EB4EX	Houboen Ottomont	Belgium
1340	223.9	CW40	Paysandu	Uruguay
1340	223.9	2XN	Lismore	Australia
1350	222.2	LS6	Buenos Aires	Argentina
1350	222.2	3KZ	Melbourne	Australia
1363.6	220	PRAF	Belem Para	Brazil
1364	220	PRAX	Rio de Janeiro	Brazil
1365	220	EB4CE	Lucas Chatelineau	Belgium
1373	218	.....	Flensburg	Germany
1373	218	SCK	Karlstad	Sweden
1373	218	SCW	Ornskoldsvik	Sweden
1382	217	.....	Konigsberg	Germany
1390	215.8	LS	Buenos Aires	Argentina
1391	216	SCE	Halmstad	Sweden
1395	215	EB4CF	Masson Verviers	Belgium
1395	215	EB4RC	Schaerbeek Brussels	Belgium

1400

Keys.	Meters	Call	City	Country
1400	214	SP8	Warsaw	Poland
1400	214	VOX	St. Johns	Newfound[Pd]
1400	214	3GL	Geelong Victoria	Australia
1408	213.5	.....	Normandie	France
1410	212.8	CX44	Montevideo	Uruguay
1410	212.8	1PA	Palermo	Italy
1413	212	.....	Beziers	France
1415	212	2HD	Newcastle	Australia
1420	211.3	CW44	Paysandu	Uruguay
1430	210	EB4FG	Andre Dampremy	Belgium
1450	209.6	CX46	Montevideo	Uruguay
1460	205.4	2MV	Moss Vale	Australia
1470	204.1	SCD	Gavle	Sweden

(Continued on page 67)

INDEX BY FREQUENCIES AND DIAL NUMBERS

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KEY

Frequency in kilocycles. Wave lengths in meters. Second column symbols: * Verifies receptions 2c; sends station stamp 10c; † Verifies 2c; no stamp; ‡ Sends stamp but does not verify otherwise; † Does not verify; § Did not reply. \$ Verification 25c, reply card 10c. Third column shows night power in watts. Fourth column symbols: D, daytime only; S, Sunday only; Stations dividing time have same small figures; X means station has been granted permit to increase power; † means station has greater power during day; CP indicates station has construction permit only; Some Cuban and Mexican stations have odd frequencies; Correct kilocycles shown in small figures; N means NBC chain; C means Columbia chain; Z has been granted permit to change frequencies; Y given permit to move to another city. Dn — This daylight station may use evening hours under certain conditions. □ These stations operate simultaneously. Dashes (..) have no meaning.

540 kilocycles 555.6 meters

CKX	†	500	---	Brandon, Manitoba
XEY	--	101	547	Merida, Mexico

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Manitoba Telephone System
Partido Socialista Surt

550 kilocycles 545.1 meters

KFDY	†	500	1+	Brookings, S. D.
KFYU	*	500	2+	St. Louis, Mo.
KFYR	†	1000	1+N	Bismarck, N. D.
KOAC	†	1000	---	Corvallis, Ore.
KSD	†	500	2N	St. Louis, Mo.
WGR	*	1000	C	Buffalo, N. Y.
WKRC	†	1000	C	Cincinnati, Ohio

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S. D. State College
Concordia Theological Seminary
Meyer Broadcasting Co.
State Agricultural College
Pulitzer Publishing Co.
Buffalo Broadcasting Co.
WKRC Incorporated

560 kilocycles 535.4 meters

KFDM	*	500	X+	Beaumont, Texas
KLZ	*	1000	C	Denver, Colo.
KTAB	*	1000	---	San Francisco, Cal.
WFI	*	500	1N	Philadelphia, Pa.
WIBO	*	1000	3+N	Chicago, Ill.
WLIT	†	500	1N	Philadelphia, Pa.
WNOX	*	1000	X+C	Knoxville, Tenn.
WPCC	*	500	3S	Chicago, Ill.
WQAM	*	1000	C	Miami, Fla.

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Magnolia Petroleum Co.
Reynolds Radio Co., Inc.
Associated Broadcasters
Strawbridge & Clothier
Nelson Bros. Bond & Mortgage Co.
Lit Brothers
WNOX, Inc.
North Shore Congregational Church
Miami Broadcasting Co.

570 kilocycles 526.0 meters

KGKO	*	250	+	Wichita Falls, Texas
KMTR	*	500	---	Hollywood, Cal.
KXA	*	500	---	Seattle, Wash.
TGW	--	50	---	Guatemala
WEAO	†	750	1	Columbus, Ohio
WKBN	*	500	1C	Youngstown, Ohio
WMAC	--	250	2	Syracuse, N. Y.
WMCA	*	500	3	New York City
WNAX	*	1000	C	Yanckton, S. D.
WNYC	†	500	3	New York City
WSYR	--	250	2	Syracuse, N. Y.
WWNC	*	1000	N	Asheville, N. C.

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Wichita Falls Broadcasting Co.
KMTR Radio Corp.
American Radio Tel. Co.

Ohio State University
WKBN Broadcasting Corp.
Clive B. Meredith
Knickerbocker Broadcasting Co., Inc.
House of Gurney, Inc.
Dept. of Plants and Structures
Clive B. Meredith
Citizens Broadcasting Co., Inc.

580 kilocycles 516.9 meters

CFCL	--	500	3S	Toronto, Ont.
CFCY	*	500	---	Charlottetown, P. E. I.
CHMA	--	250	4S	Edmonton, Alta.
CKCL	*	500	3	Toronto, Ont.
CKUA	†	500	4	Edmonton, Alta.
KGFX	--	200	D	Pierre, S. D.
KSAC	†	500	2+	Manhattan, Kans.
WIBW	*	1000	2+C	Topeka, Kansas
WOBU	*	250	1+	Charleston, W. Va.
WSAZ	*	250	1	Huntington, W. Va.
WTAG	*	250	N	Worcester, Mass.

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Dominion Battery Co.
The Island Radio Co.
Christian and Missionary Alliance
The Dominion Battery Co.
University of Alberta
Dana McNeil
State Agricultural College
Topeka Broadcasting Assn., Inc.
WOBU, Inc.
WSAZ, Inc.
Telegram Publishing Co.

INDEX BY FREQUENCIES AND DIAL NUMBERS

680 kilocycles 440.9 meters

KFEQ	*	2500	D	St. Joseph, Mo.
KPO	†	5000	N	San Francisco, Cal.
WPTF	*	1000	N Dn	Raleigh, N. C.
XETF	--	500	---	Veracruz, Mexico

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Scroggin & Co., Bank
Hale Bros. & The Chronicle
Durham Life Insurance Co.
Manuel Angel Fernandez & Cia

690 kilocycles 434.5 meters

CFAC	--	500	1	Calgary, Alta.
CFRB	*	5000	2C	Toronto, Ont.
CHCA	*	500	1	Calgary, Alta.
CJ CJ	*	500	1	Calgary, Alta.
CNRC	--	500	1	Calgary, Alta.
CPR Y	--	5000	2	Toronto, Ont.
NAA	--	1000		Arlington, Va.
VAS	†	10000	685	Glace Bay, N. S.
XET	†	500	---	Monterrey, Mexico

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The Calgary Herald
Rogers-Majestic Corp., Ltd.
The Western Farmer
Albertan Publishing Co., Ltd.
Canadian National Railways
Canadian Pacific Railways
U. S. Navy
Canadian Marconi Co.
Mexico Music Co., S. A.

700 kilocycles 428.3 meters

WLW	*	50000	N	Cincinnati, Ohio
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Crosley Radio Corp.

710 kilocycles 422.3 meters

KMPC	*	500	Dn	Beverly Hills, Cal.
WOR	*	5000		Newark, N. J.
XEN	†	1000	711	Mexico City

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R. S. MacMillan
Bamberger Broadcasting Service, Inc
Cia. Civil de Inversiones

720 kilocycles 416.4 meters

WGN	†	25000	C	Chicago, Ill.
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Chicago Tribune

730 kilocycles 410.7 meters

CHLS	--	50	1	Vancouver, B. C.
CHYC	*	5000	2S	Montreal, Que.
CKAC	*	5000	2C	Montreal, Que.
CKCD	--	50	1	Vancouver, B. C.
CKFC	†	50	1	Vancouver, B. C.
CKMO	--	100	1	Vancouver, B. C.
CKWX	†	100	1	Vancouver, B. C.
CMK	--	3150	---	Havana, Cuba
CNRM	*	5000	2	Montreal, Que.
XEM	†	500		Tampico, Mexico
XER	--	100000	735	Villa Acuna, Mex.

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W. G. Hassell
Northern Electric Co., Ltd.
La Presse Publishing Co., Ltd.
Vancouver Daily Province
United Church of Canada
Sprout-Shaw Radio Co.
A. Holstead & Wm. Hanlon
Cuban Broadcasting Co., Hotel Plaza
Canadian National Railways
Herbert H. Denny y Cia.
Dr. John R. Brinkley

740 kilocycles 405.2 meters

KMMJ	*	1000	Dn	Clay Center, Nebr.
WSB	--	5000	N	Atlanta, Ga.

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

750 kilocycles 399.8 meters

WJR	†	5000	N	Detroit, Mich.
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WJR, The Goodwill Station, Inc.

760 kilocycles 394.5 meters

KVI	*	1000	C Dn	Tacoma, Wash.
WBAL	*	1000	N □	Baltimore, Md.
WEW	*	1000	D	St. Louis, Mo.
WJZ	†	30000	N □	New York City

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Puget Sound Broadcasting Co., Inc.
Consolidated Gas, Elec. & Power Co.
St. Louis University
National Broadcasting Co., Inc.

770 kilocycles 389.4 meters

KFAB	*	5000	1N	Lincoln, Nebr.
WBBM	*	25000	1C	Chicago, Ill.
WJBT	--	25000	1S	Chicago, Ill.

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KFAB Broadcasting Co.
WBBM Broadcasting Corp.
WBBM Broadcasting Corp.

780 kilocycles 384.4 meters

CKY	--	5000	3	Winnipeg, Manitoba
CNRW	--	5000	3	Winnipeg, Manitoba
KELW	*	500	2	Burbank, Cal.
KTM	*	500	2+	Los Angeles, Cal.
WEAN	*	250	+C	Providence, R. I.
WMC	--	500	+N	Memphis, Tenn.
WPOR	--	500	1	Norfolk, Va.
WTAR	*	500	1C	Norfolk Va.

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Manitoba Telephone System
Canadian National Railways
Magnolia Park, Ltd.
Pickwick Broadcasting Corp.
Shepard Broadcasting Service, Inc.
Memphis Commercial-Appeal, Inc.
WTAR Radio Corp.
WTAR Radio Corp.

INDEX BY FREQUENCIES AND DIAL NUMBERS

790 kilocycles 379.5 meters

CMBS	--	150	---	Havana, Cuba
CMBT	--	150	---	Havana, Cuba
CMHC	--	100	---	Tuinucu, Cuba
KGO	†	7500	N	San Francisco, Cal.
WGY	†	50000	N	Schenectady, N. Y.

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Enrique Artalejo
Emilio Perera
Frank H. Jones
National Broadcasting Co., Inc.
General Electric Co.

800 kilocycles 374.8 meters

WBAP	†	10000	IXN	Fort Worth, Texas
WFAA	‡	50000	1N	Dallas, Texas
XEU	--	101	---	Veracruz, Mexico
XFC	--	350	805	Aguascalientes, Mexico

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Carter Publications, Inc.
News & Journal
Fernando Pazos
Gobierno del Estado de Aguascalientes

KCYS.
880

810 kilocycles 370.2 meters

WCCO	*	5000	C	Minneapolis, Minn.
WPCH	*	500	D	New York City

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Northwestern Broadcasting, Inc.
Eastern Broadcasters, Inc.

MTRS.
340.7

820 kilocycles 365.6 meters

WHAS	†	10000	N	Louisville, Ky.
XFI	--	1000	818	Mexico City

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Courier-Journal & Times
Sria. de Ind., Comercio y Trabajo

DIAL

830 kilocycles 361.2 meters

CMGA	--	100	834	Colon, Cuba
KOA	†	12500	N	Denver, Colo.
WEEU	--	1000	DCP	Reading, Pa.
WHDH	--	1000	D	Boston, Mass.
WRUF	*	5000	Dn	Gainesville, Fla.

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Leopoldo V. Figueroa
National Broadcasting Co., Inc.
Berks Broadcasting Co.
Matheson Radio Co., Inc.
University of Florida

840 kilocycles 356.9 meters

CHCT	--	1000	2	Red Deer, Alta.
CKGW	*	5000	1N	Toronto, Ont.
CKLC	†	1000	2	Red Deer, Alta.
CMC	--	500	---	Havana, Cuba
CNRD	†	1000	2	Red Deer, Alta.
CNRT	--	500	1	Toronto, Ont.

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G. F. Tull & Ardern, Ltd.
Gooderham & Worts, Ltd.
Alberta Pacific Grain Co., Ltd.
Cuban Telephone Co.
Canadian National Railways
Canadian National Railways

850 kilocycles 352.7 meters

KWKH	*	10000	1	Shreveport, La.
WWL	*	5000	1	New Orleans, La.

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Hello World Broadcasting Corp.
Loyola University

860 kilocycles 348.6 meters

CMJE	--	20	856	Camaguey, Cuba
KMO	†	500	+ Dn	Tacoma, Wash.
WABC	*	50000	C	New York City
WBOQ	--	50000	---	New York City
WHB	*	500	D	Kansas City, Mo.
XEJ	--	101	857	Juarez, Mexico
XFX	--	500	---	Mexico City, Mexico

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Manuel Fernandez
KMO, Inc.
Atlantic Broadcasting Corp.
Atlantic Broadcasting Corp.
WHB Broadcasting Co.
Juan Buttner
Secretaria de Educacion Publica

870 kilocycles 344.6 meters

WENR	--	50000	1N	Chicago, Ill.
WLS	†	50000	1N	Chicago, Ill.

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National Broadcasting Co., Inc.
Agricultural Broadcasting Co.

880 kilocycles 340.7 meters

CHML	*	50	4	Hamilton, Ont.
CJCB	*	50	---	Sydney, N. S.
CKCV	†	50	3	Quebec, Que.
CKPC	†	50	4	Preston, Ont.
CNRQ	†	50	3	Quebec, Que.
KFKA	†	500	2+	Greeley, Colo.
KLX	†	500	---	Oakland, Cal.
KPOF	*	500	2	Denver, Colo.
WCOC	*	500	+	Meridian, Miss.
WGBI	*	250	1	Scranton, Pa.
WQAN	*	250	1	Scranton, Pa.
WSUI	*	500	---	Iowa City, Iowa

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Maple Leaf Radio Co., Ltd.
N. Nathanson
G. A. Vandry
Metal Shingle & Siding Co.
Canadian National Railways
Midwestern Radio Corp.
Tribune Publishing Co.
Pillar of Fire, Inc.
Mississippi Broadcasting Co., Inc.
Scranton Broadcasters, Inc.
Scranton Times
University of Iowa

CUT OUT ON DOTTED LINES

INDEX BY FREQUENCIES AND DIAL NUMBERS

890 kilocycles 336.9 meters

CFBO	*	500	---	St. John, N. B.
CKCO	†	100	3	Ottawa, Ont.
CKPR	*	50	3	Port Arthur, Ont.
CMCF	†	250	---	Havana, Cuba
CMX	*	500	---	Havana, Cuba
KFNF	*	500	2+	Shenandoah, Iowa
KGJF	*	250	---	Little Rock, Ark.
KUSD	*	500	2	Vermillion, S. D.
WGST	*	250	+C	Atlanta, Ga.
WILL	*	250	2+	Urbana, Ill.
WJAR	*	250	+N	Providence, R. I.
WKAQ	*	250	---	San Juan, P. R.
WMMN	*	250	+	Fairmount, W. Va.
XES	\$	500	---	Tampico, Mexico

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C. A. Munro, Ltd.
Dr. G. M. Geldert
Dougall Motor Car Corp.
Raoul Karman
Francisco Lavin
Henry Field Co.
Church of the Nazarene
University of South Dakota
Georgia School of Technology
University of Illinois
The Outlet Co.
Radio Corp. of Porto Rico
Holt-Rowe Broadcasting Co.
Difusora Portena XES

900 kilocycles 333.1 meters

KGBU	†	500	---	Ketchikan, Alaska
KHJ	*	1000	C	Los Angeles, Cal.
KSEI	*	250	---	Pocatelli, Idaho
TIC	--	50	---	San Jose, Costa Rica
WBEN	*	1000	N	Buffalo, N. Y.
WJAX	*	1000	N	Jacksonville, Fla.
WKY	*	1000	N	Oklahoma City
WLBL	*	2000	D	Stevens Point, Wis.

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Alaska Radio & Service Co.
Don Lee, Inc.
Radio Service Corp.

Buffalo Evening News
City of Jacksonville
WKY Radiophone Co.
Wisconsin Dept. of Markets

910 kilocycles 329.6 meters

CFQC	--	500	1	Saskatoon, Sask.
CHNS	*	500	3Z	Halifax, N. S.
CJGC	*	5000	2	London, Ont.
CNRH	--	500	3Z	Halifax, N. S.
CNRL	*	500	2	London, Ont.
CNRS	--	500	1	Saskatoon, Sask.
XEW	†	5000	---	Mexico City

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The Electric Shop, Ltd.
Halifax Herald, Ltd.
Free Press Printing Co., Ltd.
Canadian National Railways
Canadian National Railways
Canadian National Railways
Mexico Music Co.

920 kilocycles 325.9 meters

HHK	*	1000	---	Port au Prince, Haiti
KFEL	†	500	1	Denver, Colo.
KFXF	*	500	1	Denver, Colo.
KOMO	†	1000	N	Seattle, Wash.
KPRC	*	1000	+N	Houston, Texas
WAAF	--	500	D	Chicago, Ill.
WBSO	--	500	D	Needham, Mass.
WWJ	†	1000	N	Detroit, Mich.
XFF	--	250	915	Chihuahua, Mexico

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Republic of Haiti
Eugene P. O'Fallon, Inc.
Colorado Radio Corp.
Fisher's Blend Station, Inc.
Houston Printing Co.
Drovers' Journal Publishing Co.
Babson Statistical Organization, Inc.
The Detroit News
Gobierno del Estado de Chihuahua

930 kilocycles 322.4 meters

CFCH	--	100	3	North Bay, Ont.
CFLC	*	50	3	Prescott, Ont.
CFRC	--	50	3+	Kingston, Ont.
CJCA	*	500	---	Edmonton, Alta.
CMCD	--	250	925	Havana, Cuba
CMCN	--	250	925	Havana, Cuba
CMJF	--	50	---	Camaguey, Cuba
KFVJ	†	500	1	San Francisco, Cal.
KGBZ	--	500	2+	York, Nebr.
KMA	--	500	2+	Shenandoah, Iowa
KROW	*	500	1+X	Oakland, Cal.
WBRC	*	500	+C	Birmingham, Ala.
WDBJ	*	250	+C	Roanoke, Va.
WIBG	*	25	S	Elkins Park, Pa.

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Northern Supplies, Ltd.
Radio Association
Queen's University
The Edmonton Journal, Ltd.
Angel Bertemay
Antonio Ginard
John L. Stowers
Radio Entertainments, Inc.
Dr. George R. Miller
May Seed & Nursery Co.
Educational Broadcasting Corp.
Birmingham Broadcasting Co., Inc.
Times-World Corp.
St. Paul's P. E. Church.

940 kilocycles 319.0 meters

KGU	†	1000	---	Honolulu, Hawaii
KOIN	*	1000	C	Portland, Oregon
WAAT	--	300	D	Jersey City, N. J.
WCSH	*	1000	N	Portland, Maine
WDAY	*	1000	N	Fargo, N. D.
WFIW	*	1000	C	Hopkinsville, Ky.
WHA	--	750	D+	Madison, Wis.
XEO	--	5000	---	Mexico City

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Marion A. Mulrony
KOIN, Inc.
Bremer Broadcasting Corp.
Congress Square Hotel Co.
WDAY, Inc.
WFIW, Inc.
University of Wisconsin
National Revolucionario Party

950 kilocycles 315.6 meters

CMHD	--	250	---	Caibarien, Cuba
KFWB	*	1000	---	Hollywood, Cal.
KGHL	--	1000	---	Billings, Mont.

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Manuel Alvarez
Warner Bros. Broadcasting Corp.
Northwestern Auto Supply Co., Inc.

INDEX BY FREQUENCIES AND DIAL NUMBERS

KMBC * 1000 C
 T14NRH -- 75 948
 WRC † 500 N

Kansas City, Mo.
 Heredia, C. R.
 Washington, D. C.

Midland Broadcasting Co., Inc.
 Armando Cespedes
 National Broadcasting Co., Inc.



960 kilocycles 312.3 meters

CHWC * 500 3
 CJBR -- 500 3
 CKCK † 500 3
 CKNC * 500 2
 CMBC -- 150 965
 CMBD -- 150 965
 CNRR -- 500 3
 CNRX * 5000 2
 XED * 10000 965

Regina, Sask.
 Regina, Sask.
 Regina, Sask.
 Toronto, Ont.
 Havana, Cuba
 Havana, Cuba
 Regina, Sask.
 Toronto, Ont.
 Reynosa, Mexico

R. H. Williams & Sons, Ltd.
 Cooperative Wheat Producers, Ltd.
 Leader Publishing Co., Ltd.
 Canadian National Carbon Co., Ltd.
 Domingo Fernandez
 Luis Perez Garcia
 Canadian National Railways
 Canadian National Railways
 International Broadcasting Co.

970 kilocycles 309.1 meters

CMGF -- 50 977
 KJR * 5000 N Dn
 WCFL -- 1500 N Dn

Matanzas, Cuba
 Seattle, Wash.
 Chicago, Ill.

Bernabe R. de la Torre
 Northwest Broadcasting System, Inc.
 Chicago Federation of Labor



980 kilocycles 305.9 meters

CFCN -- 10000 985
 KDKA -- 50000 N
 XEFE -- 101 ---

Calgary, Alta.
 Pittsburgh, Pa.
 Laredo, Mexico

Western Broadcasting Co.
 Westinghouse Elec. & Mfg. Co.
 Rafael T. Carranza



990 kilocycles 302.8 meters

WBZ-A † 15000 1N
 XEK -- 101 ---

Springfield-Boston
 Mexico City

Westinghouse Elec. & Mfg. Co.
 Arturo Martinez



1000 kilocycles 299.8 meters

KFVD * 250 Dn
 WHO * 5000 1N □
 WOC * 5000 1N □
 XEI * 101 ---

Culver City, Cal.
 Des Moines, Iowa
 Davenport, Iowa
 Morelia, Mexico

Los Angeles Broadcasting Co.
 Central Broadcasting Co.
 Central Broadcasting Co.
 Carlos Gutierrez M.



1010 kilocycles 296.8 meters

CHCK -- 100 ---
 CHCS -- 500 3+
 CKIC -- 50 ---
 CKOC * 500 3+
 CMBW -- 150 ---
 CMBZ -- 150 ---
 KGGF † 500 2
 KQW * 500 ---
 WHN * 250 1
 WIS * 500 +N
 WLAP † 250 C
 WNAD * 500 2
 WPAP * 250 1
 WQAO -- 250 1
 WRNY -- 250 1
 XEQ -- 1000 1015

Charlottetown, P. E. I.
 Hamilton, Ont.
 Wolfville, N. S.
 Hamilton, Ont.
 Havana, Cuba
 Havana, Cuba
 S. Coffeyville, Okla.
 San Jose, Cal.
 New York City
 Columbia, S. C.
 Louisville, Ky.
 Norman, Okla.
 New York City
 New York City
 New York City
 Juarez, Mexico

W. E. Burke
 The Hamilton Spectator
 Acadia University
 Wentworth Radio Broadcasting Co.
 Modesto Alvarez
 Manual y G. Salas
 Powell & Platz
 Pacific Agricultural Foundation, Ltd.
 Marcus Loew Booking Agency
 South Carolina Broadcasting Co., Inc.
 American Broadcasting Corp. of Ky.
 University of Oklahoma
 Palisades Amusement Park
 Calvary Baptist Church
 Aviation Radio Station, Inc.
 Feliciano Lopez Islas



1020 kilocycles 293.9 meters

CMJH -- 15 1017
 KFKX * 10000 1N
 KYW * 10000 1N
 WRAX † 250 D

Ciego de Avila, Cuba
 Chicago, Ill.
 Chicago, Ill.
 Philadelphia, Pa.

Luis Marauri
 Westinghouse Elec. & Mfg. Co.
 Westinghouse Elec. & Mfg. Co.
 WRAX Broadcasting Co.



1030 kilocycles 291.1 meters

CFCF -- 500 N
 CMKC -- 150 1034
 CNRV † 500 ---
 XEB † 1000 ---
 XEV -- 101 1034

Montreal, Que.
 Santiago de Cuba
 Vancouver, B. C.
 Mexico City, Mexico
 Puebla, Mexico

Canadian Marconi Co.
 M. P. Martinez
 Canadian National Railways
 El Buen Tono, S. A.
 Ciro Molina



1040 kilocycles 288.3 meters

KRLD * 10000 1C
 KTHS † 10000 1N
 WKAR * 1000 D
 WMAK * 1000 Dn

Dallas, Texas
 Hot Springs, Ark.
 East Lansing, Mich.
 Buffalo, N. Y.

KRLD Radio Corp.
 Chamber of Commerce
 Michigan State College
 Buffalo Broadcasting Corp.



KCYS.
 1040
 MTRS.
 288.3
 DIAL

CUT OUT ON DOTTED LINES

INDEX BY FREQUENCIES AND DIAL NUMBERS

1050 kilocycles 285.5 meters

KFBI * 5000 Dn Milford, Kansas
KNX * 5000 --- Hollywood, Cal.

Farmers & Bankers Life Insurance Co.
Western Broadcast Co.

1060 kilocycles 282.8 meters

KWJJ * 500 Dn Portland, Ore.
WBAL * 1000 1N Baltimore, Md.
WJAG * 1000 Dn Norfolk, Nebr.
WTIC * 5000 1N Hartford, Conn.

KWJJ Broadcast Co., Inc.
Consolidated Gas Elec. & Pwr. Co.
Norfolk Daily News
Travelers Broadcasting Service Corp.

1070 kilocycles 280.2 meters

CMBG -- 150 --- Havana, Cuba
CMCB -- 150 --- Havana, Cuba
KJBS * 100 D San Francisco, Cal.
WCAZ * 50 D Carthage, Ill.
WDZ † 100 D Tuscola, Ill.
WTAM * 5000 N Cleveland, Ohio

Francisco Garrigo
Antonio Capablanca
Julius Brunton & Sons Co.
Superior Broadcasting Service
James L. Bush
National Broadcasting Co., Inc.

1080 kilocycles 277.6 meters

WBT * 5000 C Charlotte, N. C.
WCBD * 5000 1 Dn Zion, Ill.
WMBI * 5000 1 Dn Chicago, Ill.

Station WBT, Inc.
Wilbur Glenn Voliva
Moody Bible Institute

1090 kilocycles 275.1 meters

KMOX * 50000 C St. Louis, Mo.
XEL -- 10 1091 Saltillo, Mexico

Voice of St. Louis, Inc.
Antonio Garza Castro

1100 kilocycles 272.6 meters

KGDM * 250 DX Stockton, Cal.
WLWL * 5000 1 New York City
WPG * 5000 1C Atlantic City, N. J.

E. F. Peffer
Missionary Society of St. Paul
WPG Broadcasting Corp.

1110 kilocycles 270.1 meters

CMHI -- 15 --- Santa Clara, Cuba
KSOO * 2500 Dn Sioux Falls, S. D.
WRVA * 5000 N Richmond, Va.

Laviz y Paz
Sioux Falls Broadcasting Assn., Inc.
Larus & Bros. Co., Inc.

1120 kilocycles 267.7 meters

CFCA † 500 --- Toronto, Ont.
CFJC -- 100 --- Kamloops, B. C.
CHGS * 100 --- Summerside, P. E. I.
CJOC † 100 --- Lethbridge, Alta.
KFIO † 100 D Spokane, Wash.
KFSG * 500 3 Los Angeles, Cal.
KMCS * 500 3Y Inglewood, Cal.
KRSC † 50 D Seattle, Wash.
KTRH * 500 2C Houston, Texas
WBEO * 500 +C Orlando, Fla.
WDEL † 250 +X Wilmington, Del.
WHAD * 250 1 Milwaukee, Wis.
WISN † 250 1C Milwaukee, Wis.
WTAW * 500 2 College Station, Texas

Star Pub. & Ptg. Co.
N. S. Dalglish & Sons
R. T. Holman, Ltd.
Harold R. Carson
Spokane Broadcasting Corp.
Echo Park Evang. Assn.
Dalton's, Inc.
Radio Sales Corp.
Rice Hotel
Orlando Broadcasting Co., Inc.
WDEL, Inc.
Marquette University
Evening Wisconsin Co.
Agricultural & Mech. College

1130 kilocycles 265.3 meters

KSL * 5000 N Salt Lake City
WJJD * 20000 C Dn Mooseheart, Ill.
WOV -- 1000 D New York City
XEE * 105 --- Oaxaca, Mexico
XEI -- 5000 1132 Monterrey, Mexico

Radio Service Corp. of Utah
Loyal Order of Moose
International Broadcasting Corp.
Alfonso Zorilla B.
Tarnava y Cia.

1140 kilocycles 263.0 meters

KVOO * 5000 1N Tulsa, Okla.
WAPI * 5000 1N Birmingham, Ala.
XETA -- 500 --- Mexico City

Southwestern Sales Corp.
Alabama Polytechnic Institute
Manuel Espinosa Tagle

1150 kilocycles 260.7 meters

CMCQ -- 600 --- Havana, Cuba
CMQ † 250 --- Havana, Cuba
WHAM * 5000 N Rochester, N. Y.

Andres Martinez
Jose Fernandez
Stromberg-Carlson Tel. Mfg. Co.

INDEX BY FREQUENCIES AND DIAL NUMBERS

1160 kilocycles 258.5 meters

WOWO * 10000 1C
 WWVA * 5000 1C

Ft. Wayne, Ind.
 Wheeling, W. Va.

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Main Auto Supply Co.
 West Virginia Broadcasting Corp.

1170 kilocycles 256.3 meters

WCAU * 10000 C

Philadelphia, Pa.

--	--	--

Universal Broadcasting Co.

1180 kilocycles 254.1 meters

KEX * 5000 2
 KOB * 20000 2
 WDGY * 1000 1 Dn
 WGBS † 500 ---
 WMAZ † 500 ---

Portland, Ore.
 State College, N. M.
 Minneapolis, Minn.
 New York City
 Macon, Ga.

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Western Broadcasting Co.
 College of Agriculture & Mech. Arts
 Dr. George W. Young
 General Broadcasting System, Inc.
 Southeastern Broadcasting Co., Inc.

1190 kilocycles 252.0 meters

WOAI * 50000 N

San Antonio, Texas

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Southern Equipment Co.

1200 kilocycles 249.9 meters

CKOV -- 100 ---
 CMGB -- 7.5 1205
 CMJA -- 30 ---
 KBTM -- 100 D
 KFJB † 100 +
 KFVW † 100 5+
 KGDE * 100 +
 KGDY † 100 ---
 KGEK † 100 9-
 KGEW † 100 9
 KGFI † 100 ---
 KGHI * 100 ---
 KGY † 10 +
 KMLB -- 100 D
 KSMR -- 100 ---
 KVOS * 100 ---
 KWG * 100 ---
 WABI † 100 ---
 WABZ * 100 1
 WBBZ * 100 ---
 WBHS -- 50 10CP
 WCAT † 100 ---
 WCAX * 100 2-
 WCLO † 100 ---
 WCOD † 100 3-
 WEPS † 100 7
 WFAM * 100 8
 WFBC * 50 10
 WFBE -- 100 +
 WHBC † 10 4S
 WHBY † 100 ---
 WIBX * 100 5+
 WIL * 100 6
 WJBC * 100 6
 WJBL † 100 1
 WJBW † 100 3
 WKJC * 100 +
 WLBG * 100 4
 WNBO * 100 ---
 WNBW † 10 ---
 WNBX * 10 7CX
 WORC * 100 ---
 WRBL † 50 ---
 WWAE * 100 8
 XEA -- 101 ---

Kelowna, B. C.
 Matanzas, Cuba
 Camaguey, Cuba
 Paragould, Ark.
 Marshalltown, Iowa
 St. Louis, Mo.
 Fergus Falls, Minn.
 Huron, S. D.
 Yuma, Colo.
 Fort Morgan, Colo.
 Los Angeles, Cal.
 Little Rock, Ark.
 Lacey, Wash.
 Monroe, La.
 Santa Maria, Cal.
 Bellingham, Wash.
 Stockton, Cal.
 Bangor, Maine
 New Orleans, La.
 Ponca City, Okla.
 Huntsville, Ala.
 Rapid City, S. D.
 Burlington, Vt.
 Janesville, Wis.
 Harrisburg, Pa.
 Worcester, Mass.
 South Bend, Ind.
 Knoxville, Tenn.
 Cincinnati, Ohio
 Canton, Ohio
 Green Bay, Wis.
 Utica, N. Y.
 St. Louis, Mo.
 La Salle, Ill.
 Decatur, Ill.
 New Orleans, La.
 Lancaster, Pa.
 Petersburg, Va.
 Washington, Pa.
 Carbondale, Pa.
 Springfield, Vt.
 Worcester, Mass.
 Columbus, Ga.
 Hammond, Ind.
 Guadalajara, Mexico

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J. W. B. Browne
 Jose Anorga
 Pedro Nogueras
 W. J. Beard's Temple of Music
 Marshall Electric Co., Inc.
 St. Louis Truth Center, Inc.
 Jaren Drug Co.
 Voice of South Dakota
 Beehler Elec. Equipment Co.
 City of Fort Morgan
 Ben S. McGlashan
 Berean Bible Class
 St. Marten's College
 J. C. Liner
 Santa Maria Radio
 KVOS, Inc.
 Portable Wireless Tel. Co., Inc.
 Pine Tree Broadcasting Corp.
 Samuel D. Reeks
 C. L. Carrell
 The Hutchens Co.
 State School of Mines
 Burlington Daily News
 WCLO Radio Corp.
 Keystone Broadcasting Corp.
 Alfred Frank Kleindienst
 South Bend Tribune
 First Baptist Church
 Post Publishing Co.
 St. John's Catholic Church
 St. Norbert's College
 WIBX, Inc.
 Missouri Broadcasting Corp.
 Kaskaskia Broadcasting Co.
 Commodore Broadcasting, Inc.
 Charles C. Carlson, Jr.
 Lancaster Brdcastg. Service Inc.
 WLBG, Inc.
 John Brownlee Spriggs
 Home Cut Glass & China Co.
 First Congregational Church
 Alfred Frank Kleindienst
 WRBL Radio Station, Inc.
 Hammond-Calumet, Broad. Corp.
 Alberto Palos Sauza

KCYCS.
 1210
 MTRS.
 247.8
 DIAL

CUT OUT ON DOTTED LINE

1210 kilocycles 247.8 meters

CFCO -- 100 8
 CFNB * 100 ---
 CJOR * 500 ---
 CKMC -- 100 8
 CKPC † 50 8+
 KDFN † 100 ---

Chatham, Ont.
 Fredericton, N. B.
 Sea Island, B. C.
 Cobalt, Ont.
 Preston, Ont.
 Casper, Wyo.

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Western Ontario "Better Radio" Club
 James S. Neill & Sons, Ltd.
 G. C. Chandler
 R. L. MacAdam
 Metal Shingle & Siding Co.
 Donald Lewis Hathaway

INDEX BY FREQUENCIES AND DIAL NUMBERS

KDLR	†	100	---	Devil's Lake, N. D.	KDLR, Inc.
KFOR	*	100	+	Lincoln, Nebr.	Howard A. Shuman
KFVS	*	100	6	Cape Girardeau, Mo.	Hirsch Battery & Radio Co.
KFXM	†	100	9	San Bernardino, Cal.	J. C. & E. W. Lee
KGCR	†	100	---	Watertown, S. D.	Greater Kampeska Radio Corp.
KGNO	*	100	---	Dodge City, Kansas	Dodge City Broadcasting Co.
KMJ	*	100	---	Fresno, Cal.	James McClatchy Co.
KPPC	§	50	9	Pasadena, Cal.	Pasadena Presbyterian Church
KWEA	*	100	---	Shreveport, La.	Hello World Broadcasting Corp.
WALR	*	100	---	Zanesville, Ohio	Roy W. Waller
WBAX	*	100	1	Wilkes-Barre, Pa.	John H. Stenger, Jr.
WBLL	†	100	7S	Richmond, Va.	Grace Covenant Pres. Church
WBBS	*	100	2	Springfield, Ill.	H. L. Dewing & Chas. Messter
WCOH	*	100	3	Yonkers, N. Y.	Westchester Broadcasting Corp.
WCRW	*	100	4	Chicago, Ill.	Clinton R. White
WDWF	--	100	5	Providence, R. I.	Cherry & Webb Broadcasting Co.
WEBQ	*	100	6	Harrisburg, Ill.	First Trust & Savings Bank
WEDC	--	100	4	Chicago, Ill.	Emil Denmark, Inc.
WGBB	*	100	3	Freeport, N. Y.	Harry H. Carman
WGCM	*	100	---	Gulfport, Miss.	Great Southern Land Co., Inc.
WHBF	*	100	---	Rock Island, Ill.	Beardsley Specialty Co.
WHBU	†	100	---	Anderson, Ind.	Citizens Bank
WIBU	*	100	---	Poynette, Wis.	Wm. C. Forrest
WJBI	--	100	3	Red Bank, N. J.	Monmouth Broadcasting Co.
WJBU	*	100	1	Lewisburg, Pa.	Bucknell University
WJBY	*	100	3	Gadsden, Ala.	Gadsden Broadcasting Co., Inc.
WJW	*	100	---	Mansfield, Ohio	Mansfield Broadcasting Assn.
WLCI	*	50	---	Ithaca, N. Y.	Lutheran Assn. of Ithaca
WMBG	*	100	7	Richmond, Va.	Havens & Martin, Inc.
WMRJ	*	100	3	Jamaica, N. Y.	Peter J. Prinz
WOCL	*	25	---	Jamestown, N. Y.	A. E. Newton
WOMT	*	100	---	Manitowoc, Wis.	Francis M. Kadow
WPAW	*	100	5	Pawtucket, R. I.	Shartenburg & Robinson Co.
WPRO	*	100	5	Providence, R. I.	Cherry & Webb Broadcasting Co.
WQDX	*	100	---	Thomasville, Ga.	Stevens Luke
WRBQ	†	100	+	Greenville, Miss.	J. Pat. Scully
WSBC	*	100	4	Chicago, Ill.	World Battery Co., Inc.
WSEN	†	100	---	Columbus, Ohio	Columbus Broadcasting Co.
WSIX	*	100	---	Springfield, Tenn.	638 Tire & Vulcanizing Co.
WSOC	†	100	---	Gastonia, N. C.	WSOC, Inc.
WTAX	†	100	2	Springfield, Ill.	WTAX, Inc.
XEX	--	500	---	Mexico City	Excelsior, Cia Editorial S. A.

1220 kilocycles 245.8 meters

CMBY	--	350	1225	Havana, Cuba
CMCA	--	150	1225	Havana, Cuba
KFKU	*	500	1	Lawrence, Kansas
KTW	--	1000	---	Seattle, Wash.
KWSC	--	1000	---	Pullman, Wash.
WCAD	*	500	D	Canton, N. Y.
WCAE	*	1000	N	Pittsburgh, Pa.
WDAE	*	1000	C	Tampa, Fla.
WREN	*	1000	1N	Lawrence, Kansas

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Callejas-Cosculhuela
Manuel Cruz
University of Kansas
First Presbyterian Church
State College of Washington
St. Lawrence University
WCAE, Inc.
Tampa Publishing Co.
Jenny Wren Co.

1230 kilocycles 243.8 meters

KFQD	--	100	---	Anchorage, Alaska
KGGM	†	250	+	Albuquerque, N. Mex.
KYA	*	1000	---	San Francisco, Cal.
WBIS	*	1000	2	Boston, Mass.
WFBM	*	1000	1C	Indianapolis, Ind.
WNAC	*	1000	2C	Boston, Mass.
WPSC	*	500	D	State College, Pa.
WSBT	†	500	1	South Bend, Ind.

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Anchorage Radio Club
New Mexico Broadcasting Co.
Pacific Broadcasting Corp.
Shepard Broadcasting Service, Inc.
Indianapolis Power & Light Co.
Shepard Broadcasting Service, Inc.
Pennsylvania State College
South Bend Tribune

1240 kilocycles 241.8 meters

CMAB	--	20	1249	Pinar del Rio, Cuba
KGCU	--	250	3	Mandan, N. D.
KLPM	†	250	3	Minot, N. D.
KTAT	†	1000	1	Ft. Worth, Texas
WACO	†	1000	1C	Waco, Texas
WXYZ	†	1000	C	Detroit, Mich.

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Francisco Martinez
Mandan Radio Assn.
John B. Cooley
S. A. T. Broadcast Co.
Central Texas Broadcasting Co., Inc.
Kunsky-Trendle Broadcasting Corp.

1250 kilocycles 239.9 meters

KFMX	†	1000	2	Northfield, Minn.
KFOX	*	1000	---	Long Beach, Cal.

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Carleton College
Nichols & Warinner, Inc.

INDEX BY FREQUENCIES AND DIAL NUMBERS

KIDO	†	1000	---	Boise, Idaho
WAAM	*	1000	1+X	Newark, N. J.
WCAL	*	1000	2	Northfield, Minn.
WDSU	†	1000	C	New Orleans, La.
WGCP	--	250	1	Newark, N. J.
WLB	†	1000	2	St. Paul, Minn.
WODA	--	1000	1	Paterson, N. J.
WRHM	*	1000	2	Minneapolis, Minn.
XEFA	--	250	---	Mexico City

Boise Broadcasting Station
 WAAM, Inc.
 St. Olaf College
 Jos. H. Uhalt
 May Radio Broadcast Corp.
 University of Minnesota
 Richard E. O'Dea
 Minnesota Broadcasting Corp.
 Luis F. Murguia

1260 kilocycles 238.0 meters

KOIL	*	1000	C	Council Bluffs, Iowa
KRGV	*	500	1	Harlingen, Texas
KVOA	†	500	D	Tucson, Arizona
KWWG	*	500	1	Brownsville, Texas
WLBW	*	500	C+	Oil City, Pa.
WTOC	*	500	C	Savannah, Ga.

Mona Motor Oil Co.
 KRGV, Inc.
 Robert M. Riculfi
 Herald Pub. Co.
 Radio-Wire Program Corp.
 Savannah Broadcasting Co.

1270 kilocycles 236.1 meters

KGCA	†	50	2D	Decorah, Iowa
KOL	†	1000	C	Seattle, Wash.
KVOR	*	1000	C	Colorado Springs, Colo.
KWLC	*	100	2D	Decorah, Iowa
WASH	*	500	1	Grand Rapids, Mich.
WEAI	*	1000	D	Ithaca, N. Y.
WFBR	--	500	N	Baltimore, Md.
WJDX	--	1000	N	Jackson, Miss.
WOOD	†	500	1	Grand Rapids, Mich.

Charles W. Greenley
 Seattle Broadcasting Co., Inc.
 Reynolds Radio Co., Inc.
 Luther College
 WASH Broadcasting Corp.
 Cornell University
 Baltimore Radio Show, Inc.
 Lamar Life Insurance Co.
 Kunsky-Trendle Broadcasting Corp.

1280 kilocycles 234.2 meters

CMCU	--	150	1285	Havana, Cuba
CMCW	--	150	1285	Havana, Cuba
KFBB	*	1000	+	Great Falls, Mont.
WCAM	*	500	1	Camden, N. J.
WCAP	*	500	1	Asbury Park, N. J.
WDOD	*	1000	+C	Chattanooga, Tenn.
WIBA	*	500	+N	Madison, Wis.
WOAX	--	500	1	Trenton, N. J.
WRR	‡	500	C	Dallas, Texas

Jorge Garcia Serra
 Jose Lorenzo
 Buttrey Broadcast, Inc.
 City of Camden
 Radio Industries Broadcast Co.
 WDOD Broadcasting Corp.
 Badger Broadcasting Co.
 WOAX, Inc.
 City of Dallas

1290 kilocycles 232.4 meters

KDYL	†	1000	C	Salt Lake City
KFUL	--	500	1	Galveston, Texas
KLCN	--	50	D	Blytheville, Ark.
KTSA	†	1000	1+C	San Antonio, Texas
WEBC	*	1000	+N	Superior, Wis.
WJAS	*	1000	C+	Pittsburgh, Pa.
WNBZ	--	50	D	Saranac Lake, N. Y.

Intermountain Broadcasting Corp.
 News Publishing Co.
 C. L. Lintzenich
 Lone Star Broadcast Co.
 Head of Lake Broadcasting Co.
 Pittsburgh Radio Supply House
 Smith & Mace

KCYS.
1310
 MTRS.
228.9
 DIAL

1300 kilocycles 230.6 meters

KFAC	*	1000	4	Los Angeles, Cal.
KFH	*	1000	2C	Wichita, Kansas
KFJR	*	500	3	Portland, Ore.
KGEF	*	1000	4	Los Angeles, Cal.
KTBR	--	500	3	Portland, Ore.
WBRR	*	1000	1	Brooklyn, N. Y.
WEVD	*	500	1	New York City
WHAP	*	1000	1	New York City
WHAZ	*	500	1	Troy, N. Y.
WIOD	*	1000	N	Miami, Fla.
WOQ	*	1000	2	Kansas City, Mo.
XETY	--	2000	---	Mexico City

Los Angeles Broadcasting Co.
 Radio Station KFH Co.
 Ashley C. Dixon & Son
 Trinity Methodist Church
 M. E. Brown
 People's Pulpit Association
 Debs Memorial Radio Fund, Inc.
 Defenders of Truth Society, Inc.
 Rensselaer Polytechnic Institute
 Isle of Dreams Broadcasting Corp.
 Unity School of Christianity
 Juan Gutierrez, Jr.

1310 kilocycles 228.9 meters

KCRJ	†	100	---	Jerome, Arizona
KFBK	†	100	---	Sacramento, Cal.
KFGQ	†	100	7	Boone, Iowa
KFJY	*	100	7	Ft. Dodge, Iowa
KFPL	†	100	---	Dublin, Texas
KFPM	*	15	---	Greenville, Texas
KFUP	--	100	8	Denver, Colo.
KFXJ	†	100	8	Grand Junction, Colo.

Chas. C. Robinson
 Jas. McClatchy Co.
 Boone Biblical College
 C. S. Tunwall
 C. C. Baxter
 The New Furniture Co.
 Fitzsimmons General Hospital
 Western Slope Broadcasting Co.

INDEX BY FREQUENCIES AND DIAL NUMBERS

KFXR	†	100	+	Oklahoma City	
KGBX	*	100	---	St. Joseph, Mo.	Exchange Ave. Baptist Church
KGCX	†	100	+	Wolf Point, Minn.	KGBX, Inc.
KGEZ	†	100	---	Kalispell, Mont.	First State Bank of Vida
KGFV	†	100	Y	Ravenna, Nebr.	Treloar-Church Broadcasting Co.
KIT	†	50	---	Yakima, Wash.	Central Nebraska Broadcasting Corp.
KMED	†	100	---	Medford, Ore.	Carl E. Haymond
KRMD	†	50	9	Shreveport, La.	Mrs. W. J. Virgin
KTLC	*	100	---	Houston, Texas	Robert M. Dean
KTSL	†	100	9Y	Shreveport, La.	Houston Broadcasting Co.
KTSM	---	100	2	El Paso, Texas	G. A. Houseman
KWCR	†	100	7	Cedar Rapids, Iowa	W. S. Bledsoe & W. T. Blackwell
KXRO	†	100	---	Aberdeen, Wash.	Cedar Rapids Broadcast Co.
WBEO	---	100	CP	Marquette, Mich.	KXRO, Inc.
WBOW	*	100	---	Terre Haute, Ind.	Lake Superior Broadcasting Co.
WBRE	---	100	---	Wilkes-Barre, Pa.	Banks of Wabash, Inc.
WCLS	---	100	1	Joliet, Ill.	Louis G. Baltimore
WDAH	†	100	2	El Paso, Texas	WCLS, Inc.
WEBR	†	100	+	Buffalo, N. Y.	Bledsoe & Blackwell
WEXL	†	50	---	Royal Oak, Mich.	Howell Broadcasting Co., Inc.
WFBG	†	100	3X	Altoona, Pa.	Royal Oak Broadcasting Co.
WFDV	†	100	---	Flint, Mich.	Wm. F. Gable Co.
WGAL	†	100	D	Rome, Ga.	Frank D. Fallain
WGH	*	100	5	Lancaster, Pa.	Rome Broadcasting Corp.
WHAT	†	100	---	Newport News, Va.	WGAL, Inc.
WJAC	†	100	4	Philadelphia, Pa.	Hampton Roads Broadcasting Corp.
WJAK	*	50	3	Johnstown, Pa.	Independence Broadcasting Co.
WKAV	*	100	6Y	Marion, Ind.	Johnstown Automobile Co.
WKBB	*	100	1	Laconia, N. H.	Truth Publishing Co., Inc.
WKBC	*	100	---	Joliet, Ill.	Laconia Radio Club
WKBS	*	100	---	Birmingham, Ala.	Sanders Bros. Radio Station
WLBC	†	50	6	Galesburg, Ill.	R. B. Broyles Furniture Co.
WMBO	†	100	---	Muncie, Ind.	Permil N. Nelson
WNBH	†	100	---	Auburn, N. Y.	Donald A. Burton
WOL	*	100	---	New Bedford, Mass.	Radio Service Laboratories
WRAW	*	100	5X	Washington, D. C.	New Bedford Broadcasting Co.
WROL	†	100	---	Reading, Pa.	American Broadcasting Co.
WSAJ	†	100	---	Knoxville, Tenn.	Reading Broadcasting Co.
WSJS	*	100	---	Grove City, Pa.	Stewart Broadcasting Co.
WTFL	*	100	4	Winston-Salem, N. C.	Grove City College
WTJS	†	100	+	Philadelphia, Pa.	Winston-Salem Journal Co.
				Jackson, Tenn.	Foulkrod Radio Engineering Co.
					Sun Publishing Co.

1320 kilocycles 227.1 meters

KGFH	†	250	+	Pueblo, Colo.	
KGMB	†	250	---	Honolulu, Hawaii	
KID	†	250	1+	Idaho Falls, Idaho	
KTFI	---	250	1+	Twin Falls, Idaho	
WADC	†	1000	C	Akron, Ohio	
WSMB	*	500	N	New Orleans, La.	

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C. P. Ritchie & J. E. Finch
 Honolulu Broadcasting Co., Ltd.
 KID Broadcasting Co.
 Radio Broadcasting Corp.
 Allen T. Simmons
 Saenger Theatre & Maison Blanche Co.

1330 kilocycles 225.4 meters

KGB	*	500	C	San Diego, Cal.	
KSCJ	*	1000	1+C	Sioux City, Iowa	
WDRG	*	500	C	Hartford, Conn.	
WSAI	*	500	N	Cincinnati, Ohio	
WTAQ	*	1000	1C	Eau Claire, Wis.	
XEC	---	50	1333	Toluca, Mexico	

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Don Lee, Inc.
 Perkins Bros. Co.
 WDRG, Inc.
 Crosley Radio Corp., Lessee
 Gillette Rubber Co.
 Jesus R. Benavides

1340 kilocycles 223.7 meters

CMCG	---	30	1345	Havana, Cuba	
CMGR	---	150	1345	Havana, Cuba	
CMCY	---	15	1345	Havana, Cuba	
KFPW	†	50	D	Fort Smith, Ark.	
KFPY	*	1000	C	Spokane, Wash.	
WCOA	*	500	---	Pensacola, Fla.	
WSPD	*	1000	C	Toledo, Ohio	

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Jose Justo Moran
 Aurelio Hernandez
 M. D. Aufran
 Southwestern Hotels Co.
 Symons Broadcasting Co.
 City of Pensacola
 Toledo Broadcasting Co.

1350 kilocycles 222.1 meters

KWK	*	1000	N	St. Louis, Mo.	
WAWZ	*	250	1	Zarephath, N. J.	
WBNX	---	250	1	New York City	
WCDA	*	250	1	New York City	
WEHC	*	500	D	Emory, Va.	
WMSG	---	250	1	New York City	

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Greater St. Louis Broadcasting Corp.
 Pillar of Fire
 Standard Cahill Co., Inc.
 Italian Educ. Broadcasting Co., Inc.
 Emory & Henry College
 Madison Sq. Garden Brdctg. Corp.

INDEX BY FREQUENCIES AND DIAL NUMBERS

WMBD	*	500	3+	Peoria Heights, Ill.	Peoria Broadcasting Co.
WSAN	*	250	1	Allentown, Pa.	Allentown Call Publishing Co., Inc.
WTAD	†	500	3	Quincy, Ill.	Illinois Medicine Broadcasting Corp.

1450 kilocycles 206.8 meters

KTBS	*	1000	---	Shreveport, La.	Tri-State Broadcasting System, Inc.
WBMS	*	250	1	Hackensack, N. J.	WBMS Broadcasting Corp.
WGAR	†	500	N	Cleveland, Ohio	WGAR Broadcasting Co.
WHOM	*	500	1	Jersey City, N. J.	New Jersey Broadcasting Corp.
WKBO	*	250	1	Jersey City, N. J.	Camith Corp.
WNJ	*	250	1	Newark, N. J.	Radio Investment Co.
WSAR	*	250	---	Fall River, Mass.	Doughty & Welch Electric Co., Inc.
WTFI	--	500	Y	Toccoa, Ga.	Toccoa Falls Broadcasting Co.

1460 kilocycles 205.4 meters

KSTP	*	10000	N	St. Paul, Minn.	National Battery Broadcasting Co.
WJSV	*	10000	---	Alexandria, Va.	Independent Publishing Co.

1470 kilocycles 204.0 meters

KGA	†	5000	---	Spokane, Wash.	Northwest Broadcasting System, Inc.
WLAC	*	5000	C	Nashville, Tenn.	Life & Casualty Insurance Co.

1480 kilocycles 202.6 meters

KFJF	*	5000	C	Oklahoma City	National Radio Mfg. Co.
WKBW	*	5000	C	Buffalo, N. Y.	Buffalo Broadcasting Co., Lessees

1490 kilocycles 201.2 meters

TJW	--	7.5	---	Hamilton, Bermuda	People's Pulpit Association
WCHI	*	5000	1	Chicago, Ill.	L. B. Wilson, Inc.
WCKY	*	5000	1N	Covington, Ky.	Zenith Radio Corp.
WJAZ	--	5000	1	Chicago, Ill.	

1500 kilocycles 199.9 meters

CMBL	--	20	---	Havana, Cuba	Julio C. Hidalgo
CMBQ	--	50	---	Havana, Cuba	Gali-Sardinas
CMBR	--	15	---	Havana, Cuba	Tomas Basail
KDB	*	100	---	Santa Barbara, Cal.	Santa Barbara Broadcasters, Ltd.
KGFI	*	100	+	Corpus Christi, Texas	Eagle Broadcasting Co., Inc.
KGFK	†	50	---	Moorhead, Minn.	Red River Broadcasting Co., Inc.
KGIZ	†	100	---	Grant City, Mo.	Grant City Park Corp.
KGKB	--	100	---	Tyler, Texas	Eagle Publishing Co.
KGKY	*	100	---	Scottsbluff, Nebr.	Hilliard Co., Inc.
KPJM	*	100	---	Prescott, Arizona	A. P. Miller
KPQ	†	50	---	Wenatchee, Wash.	Wescoast Broadcasting Co.
KREG	†	100	---	Santa Ana, Cal.	J. S. Edwards
KUT	†	100	---	Austin, Texas	Driskill Hotel
KXO	*	100	---	El Centro, Cal.	E. R. Irey and F. M. Bowles
WDLX	--	100	---	Tupelo, Miss.	North Mississippi Broadcasting Corp.
WKBV	†	100	+	Connersville, Ind.	Knox Battery & Electric Co.
WKBZ	†	50	---	Ludington, Mich.	K. L. Ashbacher
WLBX	*	100	1	Long Island City, N. Y.	John N. Brahy
WLOE	*	100	+	Boston, Mass.	Boston Broadcasting Co.
WMBA	†	100	---	Newport, R. I.	LeRoy Joseph Beebe
WMBQ	*	100	1	Brooklyn, N. Y.	Paul J. Gollhofer
WMIL	--	100	1	Brooklyn, N. Y.	Arthur Faske
WMPF	†	100	---	Lapeer, Mich.	First M. P. Church
WNBF	*	100	---	Binghamton, N. Y.	Howitt, Wood Radio Co., Inc.
WOPF	*	100	---	Bristol, Tenn.	Radiohone Brdcstg. Station, Inc.
WPEN	*	100	+	Philadelphia, Pa.	Wm. Penn Broadcasting Co.
WRDW	*	100	---	Augusta, Ga.	Musicoev, Inc.
WSYB	†	100	---	Rutland, Vt.	Philip Weiss Music Co.
WRRL	*	100	1	Woodside, N. Y.	Long Island Broadcasting Corp.
WWSW	--	100	---	Pittsburgh, Pa.	William S. Walker

KCYS.
1500
MTRS.
199.9
DIAL

INDEX BY LOCATIONS WITH MAP KEY

ALABAMA		Watts	Kcys.			
Anniston O-22	100	WFDW	1420	San Jose J-1	500	KOW 1010-
Birmingham O-21	5000	WAPI	1140-	Santa Ana M-3	100	KREG 1500
	500	WBRC	930-	Santa Barbara M-2	100	KDB 1500
	100	WKBC	1310-	Santa Maria L-2	100	KSMR 1200
Gadsden O-21	100	WJBY	1210	Stockton J-2	250	KGDM 11.0
Huntsville N-21	50	WBHS	1200		100	KWG 1200
Mobile Q-20	500	WODX	1410	COLORADO		
Montgomery P-21	500	WSFA	1410	Colorado Springs K-11	1000	KVOR 1270-
				Denver K-11	500	KFEL 920-
					100	KFUP 1310
					500	KFXF 920-
					1000	KLZ 560-
					12500	KOA 830-
					500	KPOF 880
				Fort Morgan J-11	100	KGEW 1200
				Grand Junction K-9	100	KFXJ 1310
				Greeley J-11	500	KFKA 880-
				Pueblo L-11	250	KGHF 1320
				Trinidad L-11	100	KGIW 1420
				Yuma J-12	100	KGEK 1200
				CONNECTICUT		
				Bridgeport H-27	250	WICC 600
				Hartford H-27	500	WDRG 1330
					50000	WTIC 660-1060-
				Storrs H-28	250	WCAC 600
				DELAWARE		
				Wilmington J-26	250	WDEL 1120
					100	WILM 1420
				DISTRICT OF COLUMBIA		
				Washington J-26	250	WMAL 630
					500	WRC 950
					100	WOL 1310
				FLORIDA		
				Clearwater R-24	1000	WFLA 620-
				Gainesville Q-24	5000	WRUF 830-
				Jacksonville Q-24	1000	WJAX 900
				Miami T-25	1000	WIOD 1300
					1000	WQAM 560
				Orlando R-24	500	WDBO 1120
				Pensacola Q-21	500	WCOA 1340-
				St. Petersburg S-24	1000	WSUN 620
				Tampa R-24	1000	WDAE 1220
					100	WMBR 1370
				GEORGIA		
				Atlanta O-22	250	WGST 890
					5000	WSB 740-
				Augusta O-23	100	WRDW 1500
				Columbus O-22	50	WRBL 1200
				Macon O-23	500	WMAZ 1180
				Rome N-22	100	WFDV 1310
				Savannah O-24	500	WTOC 1260
				Thomasville Q-22	100	WODX 1210
				Tifton P-23	100	WJTL 1370
				Toccoa N-23	500	WTFI 1450-
				HAWAII		
				Honolulu	250	KGMB 1320
					1000	KGU 940
				IDAHO		
				Boise G-5	1000	KIDO 1250
				Idaho Falls G-7	250	KID 1320-
				Nampa G-5	50	KFXD 1420
				Pocatello H-7	250	KSEI 900
				Sand Point D-6	100	KGKX 1420
				Twin Falls H-6	250	KTFI 1320

INDEX BY LOCATIONS WITH MAP KEY

ILLINOIS

	Watts	WCAZ	Kcys.
Carthage J-18	50	WCAZ	1070
Chicago I-20	10000	KFKX	1020
	10000	KYW	1020+
	500	WAAF	920
	25000	WBBM	770+
	1500	WCFL	970+
	5000	WCHI	1490+
	100	WCRW	1210
	100	WEDC	1210
	50000	WENR	870+
	500	WGES	1360+
	25000	WGN	720+
	1000	WIBO	560+
	5000	WJAZ	1490
	25000	WJBT	770
	50000	WLS	870+
	5000	WMAQ	670+
	5000	WMBI	1080
	500	WPCC	560
	100	WSBC	1210+
	100	WEHS	1420
	100	WHFC	1420+
	100	WKBI	1420
	100	WJBL	1200
	100	WKBS	1310
	100	WEBQ	1210
	100	WCLS	1310
	100	WKBB	1310
	100	WJBC	1200
	20000	WJJD	1130+
	500	WMBD	1440+
	500	WTAD	1440
	500	KFLV	1410
	100	WHBF	1210
	100	WCBS	1210
	100	WTAX	1210
	100	WDZ	1070
	250	WILL	890
	5000	WCBD	1080+

INDIANA

Anderson J-21	100	WHBU	1210-
Connerville K-21	100	WKBV	1500
Culver I-20	500	WCMA	1400-
Evansville L-20	500	WGBF	630-
Fort Wayne J-21	100	WGL	1370
	10000	WOWO	1160-
Gary I-20	1000	WJKS	1360-
Hammond I-20	100	WVAE	1200
Indianapolis J-21	1000	WFBM	1230-
	500	WKBF	1400-
Lafayette J-20	500	WBAA	1400
Marion J-21	50	WJAK	1310
Muncie J-21	50	WLBC	1310
South Bend I-20	100	WFAM	1200
	500	WSBT	1230
Terre Haute K-20	100	WBOW	1310+

IOWA

Ames I-17	5000	WOI	640-
Boone I-17	100	KFGO	1310
Cedar Rapids I-18	100	KWCR	1310
Clarinda J-16	500	KSO	1380-
Council Bluffs J-16	1000	KOIL	1260-
Davenport I-18	5000	WOC	1000-
Decorah H-18	50	KGCA	1270
	100	KWLC	1270
Des Moines I-17	5000	WHO	1000-
Fort Dodge I-16	100	KFJY	1310
Iowa City I-18	500	WSUI	880-
Marshalltown I-17	100	KFJB	1200
Ottumwa J-17	100	WIAS	1420
Red Oak J-16	100	KICK	1420

Shenandoah J-16	500	KFNF	890-
	500	KMA	930-
Sioux City I-15	1000	KSCJ	1330-
Waterloo I-17	500	WMT	600-

KANSAS

Dodge City L-13	100	KGNO	1210
Kansas City K-16	100	WLBF	1420-
Lawrence K-16	500	KFKU	1220-
	1000	WREN	1220-
Manhattan K-15	500	KSAC	580-
Milford K-14	5000	KFBI	1050-
Topeka K-16	1000	WIBW	580-
Wichita L-15	1000	KFH	1300-

KENTUCKY

Covington K-22	5000	WCKY	1490-
Hopkinsville M-20	1000	WFIW	940-
Hopkinsville L-21	10000	WHAS	820-
	250	WLAP	1010-
Paducah M-19	100	WPAD	1420-

LOUISIANA

Monroe P-18	100	KMLB	1200
New Orleans R-19	100	WABZ	1200
	1000	WDSU	1250-
	100	WJBO	1420-
	100	WJBW	1200
	500	WSMB	1320-
	5000	WWL	850-
Shreveport P-17	50	KRMD	1310
	1000	KTBS	1450-
	100	KTSL	1310
	100	KWEA	1210-
	10000	KWKH	850-

MAINE

Augusta F-28	100	WRDO	1370
Bangor F-29	100	WABI	1200
	500	WLBZ	620
Portland F-28	1000	WCSH	940
Presque Isle D-29	100	WAGM	1420

MARYLAND

Baltimore J-26	10000	WBAL	760-1060-
	250	WCAO	600
	100	WCBM	1370
	500	WFBR	1270
Cumberland J-25	100	WTBO	1420

MASSACHUSETTS

Boston G-28	500	WAAB	1410
	1000	WBIS	1230
	1000	WBEI	590
	1000	WHDH	830
	100	WLOE	1500
	1000	WNAC	1230
Fall River H-28	250	WSAR	1450
Lexington G-28	100	WLEY	1370
Needham G-28	500	WBSO	920
New Bedford H-28	100	WNBH	1310
Springfield H-27	15000	WBZ-A	990-
Worcester G-28	100	WEPS	1200
	100	WORC	1200
	250	WTAG	580

MICHIGAN

Battle Creek I-21	50	WELL	1420
Bay City H-22	500	WBCM	1410
Calumet E-19	100	WHDF	1370
Detroit H-22	50	WJBK	1370
	5000	WJR	750-
	100	WMBC	1420

INDEX BY LOCATIONS WITH MAP KEY

Detroit H-22	1000	WWJ	920-	NEVADA			
	1000	WXYZ	1240	Las Vegas L-5	100	KGIX	1420
East Lansing H-21	1000	WKAR	1040	Reno I-3	500	KOH	1380
Flint H-22	100	WFDF	1310				
Grand Rapids H-21	500	WASH	1270	NEW HAMPSHIRE			
	500	WOOD	1270-	Laconia G-28	100	WKAU	1310
Ironwood F-18	100	WJMS	1420	Manchester G-28	500	WFEA	1430
Jackson I-21	100	WBIM	1370				
Kalamazoo I-21	1000	WKZO	590	NEW JERSEY			
Lapeer H-22	100	WMPC	1500	Asbury Park I-27	500	WCAP	1280
Ludington H-20	50	WKBZ	1500	Atlantic City J-27	5000	WPG	1100-
Marquette F-19	100	WBEO	1310	Camden I-26	500	WCAM	1280
Royal Oak H-22	50	WEXL	1310	Hackensack I-27	250	WBMS	1450
				Jersey City I-27	300	WAAT	940
MINNESOTA					500	WHOM	1450
Fergus Falls F-15	100	KGDE	1200	Newark I-27	250	WKBO	1450
Minneapolis G-17	5000	WCCO	810-		1000	WAAM	1250
	1000	WDGY	1180		250	WGGP	1250
	1000	WRHM	1250-	Paterson I-27	250	WNJ	1450
Moorhead F-15	50	KGFK	1500-	Red Bank I-27	5000	WOR	710
Northfield G-17	1000	KFMX	1250	Trenton I-26	1000	WODA	1250
	1000	WCAL	1250	Zarephath I-27	100	WJBI	1210
St. Paul G-17	1000	WLB	1250		500	WOAX	1280
	10000	KSTP	1460-		250	WAWZ	1350
				NEW MEXICO			
MISSISSIPPI				Albuquerque N-7	250	KGGM	1230-
Greenville O-18	100	WRBQ	1210	Raton M-11	50	KGFL	1370
Gulfport Q-19	100	WGCM	1210	State College P-9	20000	KOB	1180-
Hattiesburg Q-19	10	WRBJ	1370				
Jackson P-19	1000	WJDX	1270	NEW YORK			
Meridian P-20	500	WCOC	880	Albany H-27	500	WOKO	1430
Tupelo N-20	100	WDIX	1500	Auburn H-25	100	WMBO	1310
Vicksburg P-18	500	WQBC	1360	Binghamton H-26	100	WNBF	1500
				Brooklyn I-27	500	WBBC	1400
MISSOURI					1000	WBRR	1300-
Cp. Girardeau L-19	100	KFVS	1210-		500	WCGU	1400
Columbia K-17	500	KFRU	630-		500	WFOX	1400
Grant City J-16	100	KGJZ	1500-		500	WLTH	1400
Jefferson City L-17	500	WOS	630-		100	WMBQ	1500
Joplin M-16	100	WMBH	1420		100	WMIL	1500
Kansas City K-16	1000	KMBC	950-	Buffalo H-24	1000	WBEN	900
	100	KWKC	1370-		100	WEER	1310
	1000	WDAF	610-		1000	WGR	550
	500	WHB	860-		5000	WKBW	1480-
	1000	WOQ	1300-		1000	WMAK	1040
St. Joseph K-16	2500	KFEQ	680-		50	WSVS	1370
	100	KGBX	1310-	Canton F-26	500	WCAD	1220
St. Louis L-18	500	KFUO	550-	Freeport I-27	100	WGBB	1210
	100	KFWF	1200	Glens Falls G-27	50	WBGF	1370
	50000	KMOX	1090-	Ithaca H-25	1000	WEAI	1270
	500	KSD	550-		50	WLCI	1210
	1000	KWK	1350-	Jamaica H-27	100	WMRJ	1210
	1000	WEW	760	Jamestown H-24	25	WOCL	1210
	100	WIL	1200	Long Island City I-27	100	WLBX	1500
				New York City I-27	50000	WABC	860-
MONTANA					250	WBNX	1350
Billings F-9	1000	KGHL	950		50000	WBOQ	860
Butte F-7	500	KGIR	1360		250	WCDA	1350
Great Falls E-8	1000	KFBB	1280		50000	WEAF	660-
Kalispell D-7	100	KGEZ	1310		500	WEVD	1300
Missoula E-7	100	KGVO	1420		500	WGBS	1180
Wolf Point E-11	100	KGCX	1310		1000	WHAP	1300
					250	WHN	1010
NEBRASKA					30000	WJZ	760-
Clay Center J-14	1000	KMMJ	740-		5000	WLWL	1100
Lincoln J-15	5000	KFAB	770-		500	WMCA	570
	100	KFOR	1210-		250	WMSG	1350
	500	WCAJ	590		500	WNYC	570
Norfolk I-15	1000	WJAG	1060-		1000	WOV	1130
North Platte J-13	500	KGNF	1430		250	WPAP	1010
Omaha J-15	500	WAAW	660-		500	WPCH	810
	1000	OWW	590-		250	WQAO	1010
Ravenna J-14	100	KGFV	1310		250	WRNY	1010
Scottsbluff I-11	100	KGKY	1500				
York J-15	500	KGBZ	930-				

INDEX BY LOCATIONS WITH MAP KEY

Patchogue I-27	100	WPOE	1370
Rochester G-25	5000	WHAM	1150
	500	WHEC	1430
Saranac Lake F-26	50	WNBZ	1290
Schenectady G-27	5000	WGY	790
Syracuse G-25	1000	WFBL	1360
	250	WMAC	570
	250	WSYR	570
Troy G-27	500	WHAZ	1300
Utica G-26	100	WIBX	1200
Woodside I-27	100	WWRL	1500
Yonkers I-27	100	WCOH	1210

NORTH CAROLINA

Asheville M-23	1000	WWNC	570
Charlotte M-24	5000	WBT	1080
Gastonia M-24	100	WSOC	1210
Greensboro M-24	500	WBIG	1440
Raleigh M-25	1000	WPTF	680
Wilmington N-26	100	WRAM	1370
Winston-Salem M-24	100	WSJS	1310

NORTH DAKOTA

Bismarck F-13	1000	KFYR	550
Devils Lake E-14	1000	KDLR	1210
Fargo F-15	1000	WDAY	940
Grand Forks E-15	100	KFJM	1370
Mandan F-13	100	KGCU	1240
Minot E-13	100	KLPM	1240

OHIO

Akron I-23	1000	WADC	1320
Canton I-23	10	WHBC	1200
Cincinnati K-22	100	WBFE	1200
	1000	WKRC	550
	5000	WLW	700
Cleveland I-23	500	WSAI	1330
	500	WGAR	1450
	1000	WHK	1390
	500	WJAY	610
Columbus J-22	5000	WTAM	1070
	500	WAIU	640
	500	WCAH	1430
	750	WEO	570
	100	WSEN	1210
Dayton J-22	200	WSMK	1380
Mansfield J-22	100	WJW	1210
Mount Orab K-22	100	WHBD	1370
Steubenville J-23	50	WIBR	1420
Toledo I-22	1000	WSPD	1340
Youngstown I-23	500	WKBN	570
Zanesville J-23	100	WALR	1210

OKLAHOMA

Chickasha N-14	250	KOCW	1400
Enid M-14	100	KCRC	1370
Norman N-15	500	WNAD	1010
Oklahoma N-15	5000	KFJF	1480
	100	KFXR	1310
	100	KGFG	1370
	1000	WKY	900
Ponca City M-15	100	WBBZ	1200
S. Coffeyville M-15	500	KGFF	1010
Shawnee N-15	100	KGFF	1420
Tulsa M-15	5000	KVOO	1140

OREGON

Astoria D-2	100	KFJI	1370
Corvallis E-2	1000	KOAC	550
Eugene F-2	100	KORE	1420
Marshfield F-1	100	KOOS	1370

Medford G-2	100	KMED	1310
Portland E-3	5000	KEX	1180
	100	KBPS	1420
	500	KFJR	1300
	1000	KGW	620
	1000	KOIN	940
	500	KTBR	1300
	500	KWJJ	1060
	100	KXL	1420

PENNSYLVANIA

Allentown I-26	250	WCBA	1440
	250	WSAN	1440
Altoona I-25	100	WFBG	1310
Carbondale H-26	10	WNBW	1200
Elkins Park I-26	25	WIBG	930
Erie H-24	100	WEDH	1420
Grove City I-24	100	WSAJ	1310
Harrisburg I-25	500	WBAK	1430
	100	WCOD	1200
	500	WHP	1430
Johnstown J-24	100	WJAC	1310
Lancaster I-26	100	WGAL	1310
	100	WKJC	1200
Lewisburg I-26	100	WJBU	1210
Oil City I-24	500	WLBW	1260
Philadelphia I-26	10000	WCAU	1170
	100	WELK	1370
	500	WFAN	610
	500	WFI	560
	100	WHAT	1310
	500	WIP	610
	500	WLIT	560
	100	WPEN	1500
	250	WRAX	1020
	100	WTEL	1310
Pittsburgh J-24	50000	KDKA	980
	500	KQV	1380
	1000	WCAE	1220
	1000	WJAS	1290
	100	WWSW	1500
Reading I-26	1000	WEEU	830
	100	WRAW	1310
Scranton H-26	250	WGBI	880
	250	WQAN	880
State Collège I-25	500	WPSC	1230
Washington J-24	100	WNBO	1200
Wilkes-Barre I-26	100	WBAX	1210
	100	WBRE	1310
Williamsport I-25	100	WRAK	1370

PHILIPPINES

Cebu	500	KZRC	1300
Manila	1000	KZKA	1110
	500	KZRM	625

PORTO RICO

San Juan W-34	250	WKAQ	890
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RHODE ISLAND

Newport H-28	100	WMBA	1500
Pawtucket H-28	100	WPAW	1210
Providence H-28	100	WDWF	1210
	250	WEAN	780
	250	WJAR	890
	100	WPRO	1210

SOUTH CAROLINA

Charleston O-25	500	WCSC	1360
Columbia N-24	500	WIS	1010
Spartanburg N-23	100	WSPA	1420

INDEX BY LOCATIONS WITH MAP KEY

Edmonton A-8	250	CHM/	580	QUEBEC	Watt	Kcys.	
	500	CJCA	930	Montreal E-26	500	CFCF 1030	
	500	CKUA	580		5000	CHYC 730	
Lethbridge C-8	100	CJOC	1120		5000	CKAC 730	
Red Deer A-8	1000	CHCT	840	Quebec D-27	5000	CNRM 730	
	1000	CKLC	840		100	CHRC 645	
	1000	CNRD	840		100	CKCI 645	
					50	CKCV 880	
					50	CNRQ 880	
BRITISH COLUMBIA				SASKATCHEWAN			
Chilliwack B-3	100	CHWK	665	Fleming C-13	500	CJRW 665-	
Kamloops B-5	100	CFJC	1120	Moose Jaw C-11	500	CJRM 665	
Kelowna C-5	100	CKOV	1200	Regina C-12	500	CHWC 960	
Sea Island	500	CJOR	1210		500	CJBR 960	
Vancouver B-3	50	CHLS	730		500	CKCK 960	
	50	CKCD	730	Saskatoon B-11	500	CNRR 960	
	50	CKFC	730		500	CFQC 910	
	100	CKMO	730	Yorkton B-13	500	CNRS 910	
	100	CKWX	730		500	CJGX 630	
	500	CNRV	1030				
Victoria C-3	50	CFCT	630				
MANITOBA				CENTRAL AMERICA			
Brandon D-14	500	CKX	540	COSTA RICA			
Winnipeg D-15	5000	CKY	780	Heredia FF-23	75	T14NRH 948	
	5000	CNRW	780	San Jose FF-23	50	TIC 900	
NEW BRUNSWICK				GUATAMALA			
Fredericton D-29	100	CFNB	1210	Guatamala CC-19	50	TGW 570	
Moncton D-30	500	CNRA	630	HONDURAS			
St. John D-30	500	CFBO	890	Tegucigalpa CC-21	2300	HRB 1370	
NEWFOUNDLAND				SALVADOR			
St. Johns A-35	500	VOWR	675	Salvador CC-19	500	RUS 664	
NOVA SCOTIA				MEXICO			
Glace Bay C-32	10000	VAS	685	AGUASCALIENTES			
Halifax E-31	500	CHNS	910	Aguascalientes W-10	350	XFC 805	
	500	CNRH	910	CHIHUAHUA			
Sydney C-32	50	CJCB	880	Chihuahua, Chih. R-9	250	XFF 915-	
Wolville D-31	50	CKIC	1010	COAHUILA			
ONTARIO				Juárez P-9	101	XEJ 857	
Chatham H-22	100	CFCO	1210		1000	XEQ 1015	
Cobalt E-23	100	CKMC	1210	Saltillo, Coah. U-12	10	XEL 1091	
Hamilton H-24	500	CHCS	1010	Villa Acuna R-12	100000	XER 735-	
	50	CHML	880	D. F.			
	500	CKOC	630	Mexico City Y-13	1000	XEB 1030	
Kingston G-25	50	CFRC	930		250	XEFA 1250	
London H-23	5000	CJGC	910		101	XEK 990	
	500	CNRL	910		1000	XEN 711-	
North Bay E-23	100	CFCH	930		5000	XEO 940	
Ottawa F-25	100	CKCO	890		500	XETA 1140	
	500	CNRO	600		100	XETO 1360	
Port Arthur E-19	50	CKPR	890		2000	XETY 1300	
Prescott F-25	50	CFLG	930		500	XEX 1210	
Preston H-23	50	CKPC	880		5000	XEW 910-	
Toronto G-24	500	CFCA	1120		500	XEZ 588	
	500	CFCL	580		2000	XFG 638	
	5000	CFRB	690-		1000	XFI 818	
	500	CKCL	580		500	XFX 860	
	5000	CKGW	840-		50	XEC 1333	
	500	CKNC	960	Toluca. Y-12			
	500	CNRT	840				
	5000	CNRX	960	JALISCO			
	5000	CPRY	690	Guadalajara, Jal. X-10	101	XEA 1200	
Waterloo G-23	50	CKCR	645				
PRINCE EDWARD ISLAND							
Charlottetown C-31	500	CFCY	580				
	100	CHCK	1010				
Summerside C-31	100	CHGS	1120				

CFAC 690	CJRW 665	CMBZ 1010	CNRC 690
Calgary, Alta.	Fleming, Sask.	Havana, Cuba	Calgary, Alta.
CFBO 890	CKAC 730	CMC 840	CNRD 840
St. John, N. B.	Montreal, Que.	Havana, Cuba	Red Deer, Alta.
CFCA 1120	CKCD 730	CMCA 1225	CNRH 910
Toronto, Ont.	Vancouver, B. C.	Havana, Cuba	Halifax, N. S.
CFCF 1030	CKCI 645	CMCB 1070	CNRL 910
Montreal, Que.	Quebec, Que.	Havana, Cuba	London, Ont.
CFCH 930	CKCK 960	CMCD 925	CNRM 730
North Bay, Ont.	Regina, Sask.	Havana, Cuba	Montreal, Que.
CFCL 580	CKCL 580	CMCF 890	CNRO 600
Toronto, Ont.	Toronto, Ont.	Havana, Cuba	Ottawa, Ont.
CFCN 985	CKCO 890	CMCG 1345	CNRQ 880
Calgary, Alta.	Ottawa, Ont.	Havana, Cuba	Quebec, Que.
CFCO 1210	CKCR 645	CMCH 1405	CNRR 960
Chatham, Ont.	Waterloo, Ont.	Havana, Cuba	Regina, Sask.
CFCT 630	CKCV 880	CMCJ 620	CNRS 910
Victoria, B. C.	Quebec, Que.	Havana, Cuba	Saskatoon, Sask.
CFCY 580	CKFK 730	CMCM 1405	CNRT 840
Ch'lottet'n, P.E.I.	Vancouver, B. C.	Havana, Cuba	Toronto, Ont.
CFJC 1120	CKGW 840	CMCN 925	CNRY 1030
Kamloops, B. C.	Toronto, Ont.	Havana, Cuba	Vancouver, B. C.
CFLC 930	CKIC 1010	CMCO 660	CNRW 780
Prescott, Ont.	Wolfville, N. S.	Havana, Cuba	Winnipeg, Man.
CFNB 1210	CKLC 840	CMCQ 1150	CNRX 960
Fredericton, N.B.	Red Deer, Alta.	Havana, Cuba	Toronto, Ont.
CFQC 910	CKMC 1210	CMCR 1345	CPRY 690
Saskatoon, Sask.	Cobalt, Ont.	Havana, Cuba	Toronto, Ont.
CFRB 690	CKMO 730	CMCU 1285	HHK 920
Toronto, Ont.	Vancouver, B. C.	Havana, Cuba	Port au Prince, H.
CFRC 930	CKNC 960	CMCW 1285	HIX 669
Kingston, Ont.	Toronto, Ont.	Havana, Cuba	Santo Domingo
CHCA 690	CKOC 630	CMCY 1345	HRB 1370
Calgary, Alta.	Hamilton, Ont.	Havana, Cuba	Tequigalpa
CHCK 1010	CKOV 1200	CMDC 660	KABC 1420
Ch'lottet'n, P.E.I.	Kelowna, B. C.	Havana, Cuba	San Antonio, Tex.
CHCS 1010	CKPC 880	CMGA 834	KBPS 1420
Hamilton, Ont.	Preston, Ont.	Colon, Cuba	Portland, Ore.
CHCT 840	CKPR 890	CMGB 1205	KBTM 1200
Red Deer, Alta.	Port Arthur, Ont.	Matanzas, Cuba	Paragould, Ark.
CHGS 1120	CKUA 580	CMGE 1375	KCRC 1370
Sum'rside, P.E.I.	Edmonton, Alta.	Cardenas, Cuba	Enid, Okla.
CHLS 730	CKWX 730	CMGF 977	CKRJ 1310
Vancouver, B. C.	Vancouver, B. C.	Matanzas, Cuba	Jerome, Ariz.
CHMA 580	CKX 540	CMGH 1370	KDB 1500
Edmonton, Alta.	Brandon, Man.	Matanzas, Cuba	S. Barbara, Cal.
CHML 880	CKY 780	CMHC 790	KDFN 1210
Hamilton, Ont.	Winnipeg, Man	Tuinucu, Cuba	Casper, Wyo.
CHNS 910	CMAB 1249	CMHD 950	KDKA 980
Halifax, N. S.	Pinar del Rio, Cu	Caibarien, Cuba	Pittsburgh, Pa.
CHRC 645	CMAC 1375	CMHI 1110	KDLR 1210
Quebec, Que.	Pinar del Rio, Cu	Santa Clara, Cu	Devils Lake, N. D.
CHWC 960	CMBC 965	CMHJ 645	KDYL 1290
Regina, Sask.	Havana, Cuba	Cienfuegos, Cuba	Salt Lake City
CHWK 665	CMBD 965	CMJA 1200	KECA 1430
Chilliwack, B. C.	Havana, Cuba	Camaguey, Cuba	Los Angeles, Cal.
CHYC 730	CMBG 1070	CMJC 1382	KELW 780
Montreal, Que.	Havana, Cuba	Camaguey, Cuba	Burbank, Cal.
CJBR 960	CMBI 1405	CMJE 856	KEX 1180
Regina, Sask.	Havana, Cuba	Camaguey, Cuba	Portland, Ore.
CJCA 930	CMBL 1500	CMJF 930	KFAB 770
Edmonton, Alta.	Havana, Cuba	Camaguey, Cuba	Lincoln, Nebr.
CJCB 880	CMBN 1405	CMJH 1017	KFAC 1300
Sydney, N. S.	Havana, Cuba	Ciego de Avila, C.	Los Angeles, Cal.
CJCI 690	CMBQ 1500	CMK 730	KFBZ 1280
Calgary, Alta.	Havana, Cuba	Havana, Cuba	Great Fls., Mont.
CJGC 910	CMBR 1500	CMKC 1034	KFBI 1050
London, Ont.	Havana, Cuba	Santiago, Cuba	Milford, Kans.
CJGX 630	CMBS 790	CMQ 1150	KFBK 1310
Yorkton, Sask.	Havana, Cuba	Havana, Cuba	Sacramento, Cal.
CJOC 1120	CMBT 790	CMW 588	KFBL 1370
Lethbridge, Alta.	Havana, Cuba	Havana, Cuba	Everett, Wash.
CJOR 1210	CMBW 1010	CMX 890	KFDM 560
Sea Island, B. C.	Havana, Cuba	Havana, Cuba	Beaumont, Tex.
CJRM 665	CMBY 1225	CNRA 630	KFDY 550
Moose Jaw, Sask.	Havana, Cuba	Moncton, N. B.	Brookings, S. D.

KFEL 920
 Denver, Colo.
 KFEG 680
 St. Joseph, Mo.
 KFGQ 1310
 Boone, Iowa
 KFH 1300
 Wichita, Kansas
 KFI 640
 Los Angeles, Cal.
 KFIO 1120
 Spokane, Wash.
 KFIZ 1420
 Fond du Lac, Wis.
 KFJB 1200
 Marshalltown, Ia.
 KFJF 1480
 Oklahoma City
 KFJI 1370
 Astoria, Ore.
 KFJM 1370
 Grd. Forks, N.D.
 KFJR 1300
 Portland, Ore.
 KFJY 1310
 Fort Dodge Ia.
 KFJZ 1370
 Ft. Worth, Tex.
 KFKA 880
 Greeley, Colo.
 KFKU 1220
 Lawrence, Kans.
 KFKX 1020
 Chicago, Ill.
 KFLV 1410
 Rockford, Ill.
 KFLX 1370
 Galveston, Tex.
 KFMX 1250
 N'thfield, Minn.
 KFNF 890
 Shenandoah, Ia.
 KFOR 1210
 Lincoln, Nebr.
 KFOX 1250
 Long Beach, Cal.
 KFPL 1310
 Dublin, Texas
 KFPM 1310
 Greenville, Texas
 KFPW 1340
 Ft. Smith, Ark.
 KFPY 1340
 Spokane, Wash.
 KFDQ 1230
 Anchorage, Alas.
 KFQU 1420
 Holy City, Cal.
 KFQW 1420
 Seattle, Wash.
 KFRC 610
 San F'nisco, Cal.
 KFRU 630
 Columbia, Mo.
 KFSD 600
 San Diego, Cal.
 KFSG 1120
 Los Angeles, Cal.
 KFUL 1290
 Galveston, Texas
 KFUO 550
 St. Louis, Mo.
 KFUP 1310
 Denver, Colo.
 KFVD 1000
 Culver City, Cal.

KFVS 1210
 Cape Gir'rd'u, Mo
 KFWB 950
 Hollywood, Cal.
 KFWF 1200
 St. Louis, Mo.
 KFWI 930
 San F'nisco, Cal.
 KFXD 1420
 Nampa, Idaho
 KFXF 920
 Denver, Colo.
 KFXJ 1310
 Grand Junc., Col.
 KFXM 1210
 San Ber'd no, Cal.
 KFXR 1310
 Oklahoma City
 KFXY 1420
 Flagstaff, Ariz.
 KFYO 1420
 Abilene, Texas
 KFYR 550
 Bismarck, N. D.
 KGA 1470
 Spokane, Wash.
 KGAR 1370
 Tucson, Arizona
 KGB 1330
 San Diego, Cal.
 KGBU 900
 Ketchikan, Al'ka
 KGBX 1310
 St. Joseph, Mo.
 KGBZ 930
 York, Nebr.
 KGCA 1270
 Decorah, Iowa
 KGCR 1210
 Watertown, S. D.
 KGCU 1240
 Mandan, N. D.
 KGCX 1310
 Wolf P't, Mont.
 KGDA 1370
 Mitchell, S. D.
 KGDE 1200
 Fergus Falls, Minn
 KGDM 1100
 Stockton, Cal.
 KGDY 1200
 Huron, S. D.
 KGEF 1300
 Los Angeles, Cal.
 KGEK 1200
 Yuma, Colo.
 KGER 1360
 Long Beach, Cal.
 KGEW 1200
 Ft. Morgan, Colo.
 KGEZ 1310
 Kalispell, Mont.
 KGFF 1420
 Shawnee, Okla.
 KGFG 1370
 Oklahoma City
 KGFI 1500
 Corp's Ch'sti, Tex
 KGfJ 1200
 Los Angeles, Cal.
 KGFK 1500
 Moorhead, Minn.
 KGFL 1370
 Raton, N. M.
 KGFW 1310
 Ravenna, Nebr.

KGFX 580
 Pierre, S. D.
 KGGC 1420
 San F'nisco, Cal.
 KGGF 1010
 Coffeyville, Okla.
 KGGM 1230
 Albuquerque, N.M.
 KGHF 1320
 Pueblo, Colo.
 KGHI 1200
 Little Rock, Ark.
 KGHL 950
 Billings, Mont.
 KGIR 1360
 Butte, Mont.
 KGIW 1420
 Trinidad, Colo.
 KGIX 1420
 Las Vegas, Nev.
 KGIZ 1500
 Grant City, Mo.
 KGJF 890
 Little Rock, Ark.
 KGKB 1500
 Tyler, Texas
 KGKL 1370
 San Angelo, Tex.
 KGKO 570
 Wichita P'ls., Tex.
 KGKX 1420
 Sand Point, Idaho
 KGKY 1500
 Scottsbluff, Nebr.
 KGMB 1320
 Honolulu, T. H.
 KGNF 1430
 No. Platte, Nebr.
 KGNO 1210
 Dodge City, Kas.
 KGO 790
 San F'nisco, Cal.
 KGRS 1410
 Amarillo, Texas
 KGU 940
 Honolulu, Hawaii
 KGVO 1420
 Missoula, Mont.
 KGW 620
 Portland, Ore.
 KGY 1200
 Lacey, Wash.
 KHJ 900
 Los Angeles, Cal.
 KHQ 590
 Spokane, Wash.
 KICK 1420
 Red Oak, Iowa
 KID 1320
 Idaho Falls, Ida.
 KIDO 1250
 Boise, Idaho
 KIT 1310
 Yakima, Wash.
 KJBS 1070
 San F'nisco, Cal.
 KJR 970
 Seattle, Wash.
 KLCN 1290
 Blytheville, Ark.
 KLO 1400
 Ogden, Utah
 KLPM 1240
 Minot, N. Dak.
 KLRA 1390
 Little Rock, Ark.

KLS 1440
 Oakland, Cal.
 KLLX 880
 Oakland, Cal.
 KLZ 560
 Denver, Colo.
 KMA 930
 Shenandoah, Ia.
 KMAC 1370
 San Antonio, Tex.
 KMBC 950
 Kan. City, Mo.
 KMCS 1120
 Inglewood, Cal.
 KMED 1310
 Medford, Ore.
 KMJ 1210
 Fresno, Cal.
 KMLB 1200
 Monroe, La.
 KMMJ 740
 Clay Ctr., Nebr.
 KMO 860
 Tacoma, Wash.
 KMOX 1090
 St. Louis, Mo.
 KMPC 710
 Beverly Hills, Cal
 KMTR 570
 Hollywood, Cal.
 KNX 1050
 Los Angeles, Cal.
 KOA 830
 Denver, Colo.
 KOAC 550
 Corvallis, Ore.
 KOB 1180
 State Coll., N.M.
 KOCW 1400
 Chickasha, Okla.
 KOH 1380
 Reno, Nevada
 KOIL 1260
 Council Bluffs, Ia.
 KOIN 940
 Portland, Ore.
 KOL 1270
 Seattle, Wash.
 KOMO 920
 Seattle, Wash.
 KONO 1370
 San Antonio, Tex.
 KOOS 1370
 Marshfield, Ore.
 KORE 1420
 Eugene, Ore.
 KOY 1390
 Phoenix, Arizona
 KPCB 650
 Seattle, Wash.
 KPJM 1500
 Prescott, Ariz.
 KPO 680
 San F'nisco, Cal.
 KPof 880
 Denver, Colo.
 KPCC 1210
 Pasadena, Cal.
 KPQ 1500
 Wenatchee, Wash
 KPRC 920
 Houston, Texas
 KQV 1380
 Pittsburgh, Pa.
 KQW 1010
 San Jose, Cal.

KRE 1370
Berkeley, Cal.
KREG 1500
Santa Ana, Cal.
KRGV 1260
Harlingen, Texas
KRLD 1040
Dallas, Texas
KRMJ 1310
Shreveport, La.
KROW 930
Oakland, Cal.
KRSC 1120
Seattle, Wash.
KSAC 530
Manh'tt'n, Kans.
KSCJ 1330
Sioux City, Ia.
KSD 550
St. Louis, Mo.
KSEI 900
Pocatello, Idaho
KSL 1130
Salt Lake City
KSMR 1200
Santa Maria, Cal.
KSO 1380
Clarinda, Iowa
KSOO 1110
Sioux Falls, S. D.
KSTP 1460
St. Paul, Minn.
KTAB 560
San F'nisco, Cal.
KTAR 620
Phoenix, Ariz.
KTAT 1240
Ft. Worth, Tex.
KTRB 1300
Portland, Ore.
KTBS 1450
Shreveport, La.
KTFF 1320
Twin Falls, Ida.
KTHS 1040
Hot Spgs., Ark.
KTLC 1310
Houston, Texas
KTM 780
Los Angeles, Cal.
KTRH 1120
Houston, Texas
KTTA 1290
San Antonio, Tex.
KTSJ 1310
Shreveport, La.
KTSM 1310
El Paso, Texas
KTW 1220
Seattle, Wash.
KUJ 1370
Walla Wall, Wash.
KUOA 1390
Fayetteville, Ark.
KUSD 890
Vermilion, S. D.
KUT 1500
Austin, Texas
KVI 760
Tacoma, Wash.
KVL 1370
Seattle, Wash.
KVOA 1260
Tucson, Arizona
KVOO 1140
Tulsa, Okla.

KVOR 1270
Col. Sp'gs, Colo.
KVOS 1200
Bellingh'm, Wash.
KWCF 1310
Cedar Rapids, Ia.
KWEA 1210
Shreveport, La.
KWG 1200
Stockton, Cal.
KWJJ 1060
Portland, Ore.
KWK 1350
St. Louis, Mo.
KWKC 1370
Kansas City, Mo.
KWKH 850
Shreveport, La.
KWLC 1270
Decorah, Iowa
KWSC 1220
Pullman, Wash.
KWWG 1260
Brownsville, Tex.
KXA 570
Seattle, Wash.
KXL 1420
Portland, Ore.
KXO 1500
El Centro, Cal.
KKRO 1310
Aberdeen, Wash.
KXYZ 1420
Houston, Texas
KYA 1230
San F'nisco, Cal.
KYW 1020
Chicago, Ill.
NAA 690
Arlington, Va.
RUS 664
Salvador
TGW 570
Guatamala
TIC 900
San Jose, C. R.
TIANRH 948
Heredia, C. R.
VAS 585
Glace Bay, N. S.
VOWR 675
St. Johns, N. F.
WAAB 1410
Boston, Mass.
WAFF 920
Chicago, Ill.
WAAM 1250
Newark, N. J.
WAAT 940
Jersey City, N. J.
WAAW 660
Omaha, Nebr.
WABC 860
New York City
WABI 1200
Bangor, Maine
WABZ 1200
New Orleans, La.
WACO 1240
Waco, Texas
WADC 1320
Akron, Ohio
WAGM 1420
Presque Isle, Me.
WAIU 640
Columbus, Ohio

WALR 1210
Zanesville, Ohio
WAPI 1140
Birmingham, Ala.
WASH 1270
Gr. Rapids, Mich.
WAWZ 1350
Zarephath, N. J.
WBAA 1400
Lafayette, Ind.
WBAK 1430
Harrisburg, Pa.
WBAL 760-1060
Baltimore, Md.
WBAP 800
Fort Worth, Tex.
WBAX 1210
Wilkes-Barre, Pa.
WBBC 1400
Brooklyn, N. Y.
WBBL 1210
Richmond, Va.
WBBM 770
Chicago, Ill.
WBRR 1300
Brooklyn, N. Y.
WBZZ 1200
Ponca City, Okla.
WBCM 1410
Bay City, Mich.
WBEN 900
Buffalo, N. Y.
WBEO 1310
Marquette, Mich.
WBGF 1370
Glens Falls, N. Y.
WBHS 1200
Huntsville, Ala.
WBGJ 1440
Greensboro, N.C.
WBIS 1230
Boston, Mass.
WBMS 1450
Hackensack, N.J.
WBNI 1350
New York City
WBOQ 860
New York City
WBOW 1310
Terre Haute, Ind.
WBRC 930
Birmingham, Ala.
WBRE 1310
Wilkes-Barre, Pa.
WBSO 920
Needham, Mass.
WBT 1080
Charlotte, N. C.
WBTM 1370
Danville, Va.
WBZ-A 990
Springfield, Mass.
WCAC 600
Storrs, Conn.
WCAD 1220
Canton, N. Y.
WCAE 1220
Pittsburgh, Pa.
WCAH 1430
Columbus, Ohio
WCAJ 590
Lincoln, Nebr.
WCAL 1250
Northfield, Minn.
WCAM 1280
Camden, N. J.

WCAO 600
Baltimore, Md.
WCAP 1280
Asbury Pk., N. J.
WCAT 1200
Rapid City, S. D.
WCAU 1170
Philadelphia, Pa.
WCAX 1200
Burlington, Vt.
WCAZ 1070
Carthage, Ill.
WCBX 1440
Allentown, Pa.
WCBD 1080
Zion, Ill.
WCBM 1370
Baltimore, Md.
WCBS 1210
Springfield, Ill.
WCCO 810
Minneapolis, Minn.
WCDA 1350
New York City
WCFL 970
Chicago, Ill.
WCGU 1400
Brooklyn, N. Y.
WCHI 1490
Chicago, Ill.
WCKY 1490
Covington, Ky.
WCLO 1200
Janesville, Wis.
WCLS 1310
Joliet, Ill.
WCMA 1400
Culver, Ind.
WCOA 1340
Pensacola, Fla.
WCOG 880
Meridian, Miss.
WCOD 1200
Harrisburg, Pa.
WCOH 1210
Yonkers, N. Y.
WCRW 1210
Chicago, Ill.
WCSC 1360
Charleston, S. C.
WCSH 940
Portland, Maine
WDAA 1220
Tampa, Fla.
WDAF 610
Kansas City, Mo.
WDAG 1410
Amarillo, Texas
WDAH 1310
El Paso, Texas
WDAY 940
Fargo, N. D.
WDBJ 930
Roanoke, Va.
WDBO 1120
Orlando, Fla.
WDEL 1120
Wilmington, Del.
WDEV 1420
Waterbury, Vt.
WDGY 1180
Minneapolis, Minn.
WDIX 1500
Tupelo, Miss.
WDOD 1280
Chattanooga, Tenn.

WDRC 1330 Hartford, Conn.	WFIW 940 Hopkinsville, Ky.	WHIS 1410 Bluefield, W. Va.	WJBW 1200 New Orleans, La.
WDSU 1250 New Orleans, La.	WFLA 620 Clearwater, Fla.	WHK 1390 Cleveland, Ohio	WJBY 1210 Gadsden, Ala.
WDWF 1210 Providence, R. I.	WFOX 1400 Brooklyn, N. Y.	WHN 1010 New York City	WJDX 1270 Jackson, Miss.
WDZ 1070 Tuscola, Ill.	WGAL 1310 Lancaster, Pa.	WHO 1000 Des Moines, Ia.	WJDD 1130 Mooseheart, Ill.
WEAF 660 New York City	WGAR 1450 Cleveland, Ohio	WHOM 1450 Jersey City, N. J.	WJKS 1360 Gary, Ind.
WEAI 1270 Ithaca, N. Y.	WGBB 1210 Freeport, N. Y.	WHP 1430 Harrisburg, Pa.	WJMS 1420 Ironwood, Mich.
WEAN 780 Providence, R. I.	WGBC 1430 Memphis, Tenn.	WIAS 1420 Ottumwa, Iowa	WJR 750 Detroit, Mich.
WEAO 570 Columbus, Ohio	WGBF 630 Evansville, Ind.	WIBA 1280 Madison, Wis.	WJSV 1460 Alexandria, Va.
WEBC 1290 Superior, Wis.	WGBI 880 Scranton, Pa.	WIBG 930 Elkins Park, Pa.	WJTL 1370 Tifton, Ga.
WEBQ 1210 Harrisburg, Ill.	WGBS 1180 New York City	WIBM 1370 Jackson, Mich.	WJW 1210 Mansfield, Ohio
WEBR 1310 Buffalo, N. Y.	WGCM 1210 Gulfport, Miss.	WIBO 560 Chicago, Ill.	WJZ 760 New York City
WEDC 1210 Chicago, Ill.	WGCP 1250 Newark, N. J.	WIBR 1420 Steubenville, O.	WKAQ 890 San Juan, P. R.
WEDH 1420 Erie, Pa.	WGES 1360 Chicago, Ill.	WIBU 1210 Poynette, Wis.	WKAR 1040 E. Lansing, Mich.
WEEI 590 Boston, Mass.	WGH 1310 Newp't News, Va.	WIBW 580 Topeka, Kansas	WKAV 1310 Laconia, N. H.
WEEU 830 Reading, Pa.	WGL 1370 Ft. Wayne, Ind.	WIBX 1200 Utica, N. Y.	WKBB 1310 Joliet, Ill.
WEHC 1350 Emory, Va.	WGN 720 Chicago, Ill.	WICC 600 Bridgeport, Conn	WKBC 1310 Birmingham, Ala.
WEHS 1420 Cicero, Ill.	WGR 550 Buffalo, N. Y.	WIL 1200 St. Louis, Mo.	WKBF 1400 Indianapolis, Ind.
WELK 1370 Philadelphia, Pa.	WGST 890 Atlanta, Ga.	WILL 890 Urbana, Ill.	WKBH 1380 La Crosse, Wis.
WELL 1420 Battle C'k, Mich.	WGY 790 Schene'cy, N. Y.	WILM 1420 Wilmington, Del.	WKBI 1420 Cicero, Ill.
WENR 870 Chicago, Ill.	WHA 940 Madison, Wis.	WIOD 1300 Miami, Fla.	WKBN 570 Youngstown, O.
WEPS 1200 Worcester, Mass.	WHAD 1120 Milwaukee, Wis.	WIP 610 Philadelphia, Pa.	WKBO 1450 Jersey City, N. J.
WEVD 1300 New York City	WHAM 1150 Rochester, N. Y.	WIS 1010 Columbia, S. C.	WKBS 1310 Galesburg, Ill.
WEW 760 St. Louis, Mo.	WHAP 1300 New York City	WISN 1120 Milwaukee, Wis.	WKBV 1500 Connerville, Ind.
WEXL 1310 Royal Oak, Mich.	WHAS 820 Louisville, Ky.	WJAC 1310 Johnstown, Pa.	WKBW 1480 Buffalo, N. Y.
WFAA 800 Dallas, Texas	WHAT 1310 Philadelphia, Pa.	WJAG 1060 Norfolk, Nebr.	WKBZ 1500 Ludington, Mich.
WFAM 1200 So. Bend, Ind.	WHAZ 1300 Troy, N. Y.	WJAK 1310 Marion, Ind.	WKJC 1200 Lancaster, Pa.
WFAN 610 Philadelphia, Pa.	WHB 860 Kansas City, Mo.	WJAR 890 Providence, R. I.	WKRC 550 Cincinnati, Ohio
WFBC 1200 Knoxville, Tenn	WHBC 1200 Canton, Ohio	WJAS 1290 Pittsburgh, Pa.	WKY 900 Oklahoma City
WFBE 1200 Cincinnati, Ohio	WHBD 1370 Mt. Orab, Ohio	WJAX 900 Jacksonville, Fla.	WKZO 590 Kalamazoo, Mich.
WFBG 1310 Altoona, Pa.	WHBF 1210 Rock Island, Ill.	WJAY 610 Cleveland, Ohio	WLAC 1470 Nashville, Tenn.
WFLB 1360 Syracuse, N. Y.	WHBL 1410 Sheboygan, Wis.	WJAZ 1490 Chicago, Ill.	WLAP 1010 Louisville, Ky.
WFBM 1230 Indianapolis, Ind.	WHBQ 1370 Memphis, Tenn.	WJBC 1200 La Salle, Ill.	WLB 1250 St. Paul, Minn.
WFBR 1270 Baltimore, Md.	WHBU 1210 Anderson, Ind.	WJBI 1210 Red Bank, N. J.	WLBC 1310 Muncie, Ind.
WFDF 1310 Flint, Mich.	WHBY 1200 Green Bay, Wis.	WJBK 1370 Detroit, Mich.	WLBF 1420 Kansas City, Ks.
WFDV 1310 Rome, Ga.	WHDF 1370 Calumet, Mich.	WJBL 1200 Decatur, Ill.	WLBG 1200 Ettrick, Va.
WFDW 1420 Anniston, Ala.	WHDH 830 Boston, Mass	WJBO 1420 New Orleans, La.	WLBL 900 Stevens Pt., Wis.
WFEA 1430 Manchester, N.H.	WHEC 1430 Rochester, N. Y.	WJBT 770 Chicago, Ill.	WLBW 1260 Oil City, Pa.
WFI 560 Philadelphia, Pa.	WHFC 1420 Cicero, Ill.	WJBU 1210 Lewisburg, Pa.	WLBX 1500 L. I. City, N. Y.

WLBZ 620 Bangor, Maine	WNBR 1430 Memphis, Tenn.	WPTF 680 Raleigh, N. C.	WSJS 1310 Winst.-Sal., N. C.
WLCI 1210 Ithaca, N. Y.	WNBW 1200 Carbondale, Pa.	WQAM 560 Miami, Fla.	WSM 650 Nashville, Tenn.
WLEY 1370 Lexington, Mass.	WNBX 1200 Springfield, Vt.	WQAN 880 Scranton, Pa.	WSMB 1320 New Orleans, La.
WLIT 560 Philadelphia, Pa.	WNBZ 1290 Saratoga, N.Y.	WQAO 1010 New York City	WSMK 1380 Dayton, Ohio
WLOE 1500 Boston, Mass.	WNJ 1450 Newark, N. J.	WQBC 1360 Vicksburg, Miss.	WSOC 1210 Gastonia, N. C.
WLS 870 Chicago, Ill.	WNOX 560 Knoxville, Tenn.	WQDM 1370 St. Albans, Vt.	WSPTA 1420 Spartanburg, S.C.
WLTH 1400 Brooklyn, N. Y.	WNYC 570 New York City	WQDX 1210 Thomasville, Ga.	WSPD 1340 Toledo, Ohio
WLVA 1370 Lynchburg, Va.	WOAI 1190 San Antonio, Tex.	WRAK 1370 Williamsport, Pa.	WSUI 880 Iowa City, Iowa
WLW 700 Cincinnati, Ohio	WOAX 1280 Trenton, N. J.	WRAM 1370 Wilmington, N.C.	WSUN 620 St. Petersburg, Fla.
WLWL 1100 New York City	WOBU 580 Charleston, W.Va.	WRBW 1310 Reading, Pa.	WSVS 1370 Buffalo, N. Y.
WMAC 570 Syracuse, N. Y.	WOC 1000 Davenport, Iowa	WRAX 1020 Philadelphia, Pa.	WSYB 1500 Rutland, Vt.
WMAK 1040 Buffalo, N. Y.	WOCL 1210 Jamestown, N. Y.	WRBJ 1370 Hattiesburg, Miss.	WSYR 570 Syracuse, N. Y.
WMAL 630 Washington, D.C.	WODA 1250 Paterson, N. J.	WRBL 1200 Columbus, Ga.	WTAD 1440 Quincy, Ill.
WMAQ 670 Chicago, Ill.	WODX 1410 Mobile, Ala.	WRBQ 1210 Greenville, Miss.	WTAG 580 Worcester, Mass.
WMAZ 1180 Macon, Ga.	WOI 640 Ames, Iowa	WRBX 1410 Roanoke, Va.	WTAM 1070 Cleveland, Ohio
WMBA 1500 Newport, R. I.	WOKO 1430 Albany, N. Y.	WRC 950 Washington, D.C.	WTAQ 1330 Eau Claire, Wis.
WMBC 1420 Detroit, Mich.	WOL 1310 Washington, D.C.	WRDO 1370 Augusta, Maine	WTAR 780 Norfolk, Va.
WMBD 1440 Peoria Hghts., Ill.	WOMT 1210 Manitowoc, Wis.	WRDW 1500 Augusta, Ga.	WTAW 1120 College Sta., Tex.
WMBG 1210 Richmond, Va.	WOOD 1270 Gr. Rapids, Mich.	WREC 600 Memphis, Tenn.	WTAX 1210 Springfield, Ill.
WMBH 1420 Joplin, Mo.	WOPI 1500 Bristol, Tenn.	WREN 1220 Lawrence, Kans.	WTB 1420 Cumberland, Md.
WMBI 1080 Chicago, Ill.	WOQ 1300 Kansas City, Mo.	WRHM 1250 Minneapolis, Minn.	WTEL 1310 Philadelphia, Pa.
WMBO 1310 Auburn, N. Y.	WOR 710 Newark, N. J.	WRJN 1370 Racine, Wis.	WTFI 1450 Toccoa, Ga.
WMBQ 1500 Brooklyn, N. Y.	WORC 1200 Worcester, Mass.	WRNY 1010 New York City	WTIC 660-1060 Hartford, Conn.
WMBR 1370 Tampa, Fla.	WOS 630 Jeff's'n City, Mo.	WROL 1310 Knoxville, Tenn.	WTJS 1310 Jackson, Tenn.
WMC 780 Memphis, Tenn.	WOV 1130 New York City	WRR 1280 Dallas, Texas	WTMJ 620 Milwaukee, Wis.
WMCA 570 New York City	WOW 590 Omaha, Nebr.	WRUF 830 Gainesville, Fla.	WTOC 1260 Savannah, Ga.
WMIL 1500 Brooklyn, N. Y.	WOWO 1160 Ft. Wayne, Ind.	WRVA 1110 Richmond, Va.	WWAE 1200 Hammond, Ind.
WMMN 890 Fairmont, W. Va.	WPAD 1420 Paducah, Ky.	WSAI 1330 Cincinnati, Ohio	WWJ 920 Detroit, Mich.
WMPC 1500 Lapeer, Mich.	WPAP 1010 New York City	WSAJ 1310 Grove City, Pa.	WWL 850 New Orleans, La.
WMRJ 1210 Jamaica, N. Y.	WPAW 1210 Pawtucket, R. I.	WSAN 1440 Allentown, Pa.	WWNC 570 Asheville, N. C.
WMSG 1350 New York City	WPCC 560 Chicago, Ill.	WSAR 1450 Fall River, Mass.	WWRL 1500 Woodsides, N. Y.
WMT 600 Waterloo, Iowa	WPCB 810 New York City	WSAZ 580 Huntington, W.Va.	WWSW 1500 Pittsburgh, Pa.
WNAC 1230 Boston, Mass.	WPEN 1500 Philadelphia, Pa.	WSB 740 Atlanta, Ga.	WWVA 1160 Wheeling, W. Va.
WNAD 1010 Norman, Okla.	WPG 1100 Atlantic City, N.J.	WSBC 1210 Chicago, Ill.	WXYZ 1240 Detroit, Mich.
WNAX 570 Yankton, S. D.	WPOE 1370 Patchogue, N. Y.	WSBT 1230 South Bend, Ind.	XEA 1200 Guadalupe, Mex.
WNBF 1500 Binghamton, N.Y.	WPOR 780 Norfolk, Va.	WSEN 1210 Columbus, Ohio	XEB 1030 Mexico City
WNBH 1310 New Bedford, Mass.	WPRO 1210 Providence, R. I.	WSFA 1410 Montgomery, Ala.	XEC 1333 Toluca, Mexico
WNBO 1200 Washington, Pa.	WPSK 1230 State College, Pa.	WSIX 1210 Springfield, Tenn.	XED 965 Reynosa, Mexico

XEE 1132 Oaxaco, Mexico	XEM 730 Tampico, Mexico	XETA 1140 Mexico City	XEY 547 Merida, Mexico
XEFA 1250 Mexico City	XEN 711 Mexico City	XETF 680 Veracruz, Mex.	XEZ 588 Mexico City
XEFE 980 Laredo, Mexico	XEO 940 Mexico City	XETO 1360 Mexico City	XFC 805 Aguascal'tntes, M.
XEH 1132 Monterrey, Mex.	XEP 1400 Laredo, Mexico	XETY 1300 Mexico City	XFF 915 Chihuahua, Mex.
XEI 1000 Morelia, Mexico	XEQ 1015 Juarez, Mexico	XEU 800 Veracruz, Mex.	XFG 638 Mexico City
XEJ 857 Juarez, Mexico	XER 735 Villa Acuna, Mex.	XEV 1034 Puebla, Mexico	XFI 818 Mexico City
XEK 990 Mexico City	XES 890 Tampico, Mexico	XEW 910 Mexico City	XFX 860 Mexico City
XEL 1091 Saltillo, Mexico	XET 690 Monterrey, Mex.	XEX 1210 Mexico City	

INDEX BY LOCATIONS WITH MAP KEY

(Continued from page 59)

	Watts		Kcys.				
MICHOACAN				Havana W-23	50	CMBQ	1500
Morelia, Mich. Y-12	101	XEI	1000		15	CMBR	1500
					150	CMSB	790
NEUVO LEON					150	CMBT	790
Laredo, N. L. S-13	101	XBFE	980		150	CMBW	1010
	2500	XEP	1400		350	CMBY	1225
Monterrey N. L. U-13	5000	XEH	1132		150	CMBZ	1010
	500	XET	690		500	CMC	840
OAXACA					150	CMCA	1225
Oaxaca, Oak. AA-14	105	XEE	1132		150	CMCB	1070
					250	CMCD	925
PUEBLA					250	CMCF	890
Puebla Z-13	101	XEV	1034		30	CMCG	1345
					15	CMCH	1405
TAMAULIPAS					250	CMCJ	620
Reynosa, Tams. T-14	10000	XED	965		15	CMCM	1405
Tampico, Tams. W-14	500	XEM	730		250	CMCN	925
	500	XES	890		225	CMCO	660
VERA CRUZ					600	CMCQ	1150
Veracruz, Ver. Z-14	500	XETF	680		150	CMCR	1345
	101	XEU	800		150	CMCU	1285
YUCATAN					150	CMCW	1285
Merida, Yuc. X-19	105	XEY	547		15	CMCY	1345
					500	CMDC	660
WEST INDIES					3150	CMK	730
BERMUDA					250	CMQ	1150
Hamilton M-35	7.5	TJW	1490		1400	CMW	588
					500	CMX	890
CUBA				Matanzas W-24	7.5	CMGB	1205
Caibarien W-25	250	CMHD	950		50	CMGF	977
Cardenas W-24	30	CMGE	1375		150	CMGH	1370
Camaguey W-26	30	CMJA	1200	Pinar del Rio W-22	20	CMAB	1249
	150	CMJC	1382		30	CMAC	1375
	20	CMJE	856	Santa Clara W-25	15	CMHI	1110
	50	CMJF	930	Santiago X-28	150	CMKC	1034
Ciego de Avila W-26	15	CMJH	1017	Tuinucu	100	CMHC	790
Cienfuegos W-25	40	CMHJ	645				
Colon W-24	100	CMGA	834	DOMINICAN REPUBLIC			
Havana W-23	150	CMBC	965	Santo Domingo X-31	1000	HIX	669
	150	CMBD	965				
	150	CMBG	1070	HAITI			
	30	CMBI	1405	Port au Prince X-30	1000	HHK	920
	20	CMBL	1500				
	30	CMBN	1405				

THE CUBAN EXPERIMENTALS

<i>Call</i>	<i>Owner</i>	<i>Address</i>	<i>Location</i>	<i>Kcys.</i>	<i>Meters</i>	<i>Watts</i>
CM-1FM	Julian Machado	Aramburu numero 5	Gua ajay	13950	21.5	100
CM-2AR	Alfredo Rosell	Campanario numero 145	Habana	14347	20.9	7.5
CM-2AY	Cesar Fernandez	Real 101	Marianao	7220	41.5	7.5
CM-2CF	Victor Coullard	Camp, Columbia 30-B	Marianao	7257	41.2	7.5
CM-2FC	Fernando Capestany	Godinez "E" Buena Vista	Marianao	7152	41.9	7.5
CM-2GR	Gustavo Rodriguez	19 numero 494, Vedado	Habana	7220	41.5	7.5
CM-2GU	Luis Guyon	Santa Emilia 112, Santos Suarez	Habana	7135	42	20
CM-2GZ	Jorge L. Gonzalez	Maximo Gomez 49, altos	Habana	7300	41	7.5
CM-2IQ	Jose Fernandez	Real 89	Marianao	7257	41.2	7.5
CM-2JM	Justo Mahja	Sitios numero 65	Habana	7152	41.9	7.5
CM-2JT	Jose A. Terry	B entre 18 y Fuentes	Marianao	14277	21	75
CM-2KW	Carlos Alburquerque	Goicuria numero 24, Vibora	Habana	7152	41.9	7.5
CM-2LA	Enrique Lasanta (C.L.R.)	8 entre 21 y 23, Vedado	Habana	7000	42.8	250
CM-2MD	Marino Diaz Quinones	Padre Varela numero 120	Habana	7300	41	20
CM-2MK	R. V. Watters	Avenida de Italia 29	Habana	7170	41.8	100
CM-2MM	Antonio Sarasola	Emilio Sola 5, Pogolotti	Marianao	7135	42	30
CM-2QY	Alberto Giro	3a entre 14 y 16	Marianao	7220	41.5	15
CM-2RA	Rigoberto Alvarez	San Jose numero 216	Habana	14277	21	7.5
CM-2RC	Radio Club de Cuba	Genios 23 altos	Habana	7220	41.5	15
CM-2RZ	Nestor Rodriguez	Cardenas numero 55	Habana	7152	41.9	7.5
CM-2SC	Jose del Salto	General Suarez numero 126	Habana	13950	21.5	250
CM-2SF	Eusebio Solis	Artes 93, Casa Blanca	Habana	7207	41.6	7.5
CM-2SH	Silvio Hernandez	H numero 184, Vedado	Habana	7170	41.8	7.5
CM-2SV	Sergio Valdes Rodriguez	Aguar numero 19-A	Habana	7135	42	10
CM-2VM	Elicier Valdes Mayo	Factoria numero 27, altos	Habana	7220	41.5	7.5
CM-2WA	Ezequiel Santos	Cristina numero 12	Habana	14140	21.2	7.5
CM-2WD	Pedro Madiedo	Santa Rosa A	Marianao	7135	42	10
CM-2WV	Amadeo Saenz de Calahorra	Marina numero 2	Habana	7120	42.1	50
CM-2XA	Alfredo Rosell	Campanario numero 145	Habana	7292	41.1	150
CM-2XC	Alexander Strang	M. F. de Castro s-n	Habana	7220	41.5	5
CM-2XK	Raul Karman	Rayo 67	Habana	7135	42	15
CM-5AZ	Ernesto V. Figueroa	Independencia 130	Matanzas	7257	41.2	7.5
CM-5CX	Jose Alfonso	Diago numero 73	Colon	14277	21	50
CM-5EA	Elezazar A. Togoress	Domingo Mu ica numero 61	Matanzas	7220	41.5	7.5
CM-5EN	Escuela Normal	Tello Lamar 41	Matanzas	7257	41.2	7.5
CM-5FC	Felix U. Casas	Emilio Blanchet numero 19	Matanzas	7207	41.6	7.5
CM-5FL	Francisco Diaz Agramonte	Santa Catalina 16	Pedro Betancourt	7170	41.8	7.5
CM-5IM	Felix U. Casas	Tello Lamar 60	Matanzas	7257	41.2	7.5
CM-5NI	Julio C. Oyarzabal	Marti numero 52	Pedro Betancourt	7300	41	15
CM-5PM	Pastor Morejon	Maceo numero 101	Matanzas	7135	42	10
CM-5RY	Bernabe R. de la Torre	General Betancourt numero 105	Matanzas	14277	21	7.5
CM-6BX	Luis D. Elizondo	Hourruitiner numero 23	Cienfuegos	7292	41.1	10
CM-6CP	Carlos M. Carbonell	Gacel numero 41	Cienfuegos	7135	42	20
CM-6DW	Eduardo Terry	San Carlos 197	Cienfuegos	7300	41	10
CM-6SG	Remberto Sanchez	Candelaria numero 16	Santa Clara	7220	41.5	7.5
CM-7CX	Leonard B. Fox	Central Florida	Florida	7220	41.5	15
CM-7DW	M. L. de Quintana	Central Tacajo	Tacajo	7207	41.6	10
CM-7JQ	Leonard B. Fox	Central Florida	Florida	14277	21	5
CM-7SH	Domingo Caymares	Augusto Arango 31	Nuevitas	7257	41.2	15
CM-8AZ	James Connor Blume	Estacion Naval	Guantanamo	7135	42	150
CM-8BY	Alberto Ravelo	Ave. Manduley ent. 1 y 3	Santiago de Cuba	7300	41	30
CM-8HS	Guillermo Polanco	M. Corona, Baja 16	Santiago de Cuba	7000	42.8	100
CM-8MN	Melchor Agüero	General Escario numero 111	Santiago de Cuba	7135	42	50
CM-8OL	Luis C. Greco	San Bartolme 32	Santiago de Cuba	7300	41	50
CM-8UF	Earle D. Byer	Estacion Naval	Guantanamo	14277	21	300
CM-8YB	B. V. Greer	Estacion Naval	Guantanamo	7300	41	100

CANADIAN HIGH FREQUENCY BROADCASTING

<i>Call</i>	<i>Owner</i>	<i>Location</i>	<i>Kcyl.</i>	<i>Meters</i>
VE9AK	Alberta Pacific Grain Company	Red Deer, Alta.	2830	105.9
VE9BA	Candian National Railways	Montreal, Que.	6130-11705	48.9-25.6
VE9BJ	C. A. Munro, Ltd.	St. John, N. B.	6090	49.23
VE9CA	Western Broadcasting Co., Ltd.	Calgary, Alta.	6030-11860	49.75-25.3
VE9CF	Borrett for CHNS	Halifax, N. S.	6050	49.50
VE9CG	Calgary Herald, Limited	Calgary, Alta.	6110	49.10
VE9CL	James Richardson & Sons	Middlechurch, Manitoba	6150	48.8
VE9CS	United Church of Canada	Vancouver, B. C.	6070	49.42
VE9DN	Canadian Marconi Co.	Montreal, Que.	6005-9580	49.9-31.3
VE9DR	Canadian Marconi Co.	Drummondville, Quebec	11780	25.47
VE9GW	Gooderham & Worts, Limited	Bowmanville, Ontario	6095	49.22

CANADIAN STATIONS TELEVISION

<i>Call</i>	<i>Owner</i>	<i>Location</i>	<i>Kcyl.</i>	<i>Meters</i>
VE9AF	Jas. A. Ogilby's, Ltd.	Montreal, Que.	2850-2950	105.3-101.7
VE9AR	A. R. MacKenzie	Saskatoon, Sask.	2850-2950	105.3-101.7
VE9BZ	Radio Service Engineers	Vancouver, B. C.	2750- 850	109.1-105.3
VE9DS	Canadian Marconi Co.	Montreal, Que.	2100-2200	142.9-136.3
VE9ED	LaPresse Publishing Co., Ltd.	Montreal, Que.	2004-2100	149.7-142.9
VE9EC	Dr. Jos. L. P. Landry	Mont Joli, Que.	2850-2950	105.3-101.7
VE9RM	Rogers Majestic Corp., Limited	Toronto, Ont.	2004-2100	149.7-142.9

AMATEUR BROADCAST STATIONS IN CANADA

Call	Owner of Station	Location of Station	Keys.	Meters	Watts
10 AK	Classic Radio Club	151 Ontario St., Stratford, Ont.	1200	250	10
10BU	Canora Radio Association	Railway Ave., East Canora. Saskatchewan	1200	250	15
10BP	Wingham Radio Club	Brunswick Hotel Bldg., Wingham, Ont.	1200	250	15
10BI	Prince Albert Radio Club	331 20th St. West, Prince Albert, Saskatchewan	1200	250	25
10AB	Moose Jaw Radio Association	338 Main St., North Moose Jaw, Saskatchewan	1200	250	25
10BQ	Telephone City Radio Asso.	12 Terrace Hill, Brantford, Ont.	1200	250	5

THE POLICE BROADCASTERS

Call	Location	Keys.	Meters	Call	Location	Keys.	Meters
KGJX	Pasadena, Calif.	1712	175.1	WNDA	Miami, Florida	2446	122.9
KGOY	San Antonio, Texas	1712	175.1	WPDA	Tulare, Calif.	2416	124.1
KGOZ	Charlotte, N. C.	2470	121.4	WPDB	Chicago, Ill.	1712	175.1
KGPA	Seattle, Wash.	1596-2452	187.9-122.2	WPDC	Chicago, Ill.	1712	175.1
KGPB	Minneapolis, Minn.	2416	124.1	WPDD	Chicago, Ill.	1712	175.1
KGPC	St. Louis, Mo.	1712	175.1	WPDE	Louisville, Ky.	2440	122.9
KGPD	San Francisco, Calif.	1596-2410	187.9-124.4	WPDF	Flint, Mich.	2440	122.9
KGPE	Kansas City, Mo.	2422	123.8	WPDG	Youngstown, Ohio	2458	122.0
KGPG	Vallejo, Calif.	2410	124.4	WPDH	Richmond, Va.	2416	124.1
KGPH	Oklahoma City, Okla.	2452	122.2	WPDJ	Passaic, N. J.	2416	124.1
KGPI	Omaha, Neb.	2470	121.4	WPDK	Milwaukee, Wis.	2452	122.2
KGPJ	Berkeley, Calif.	2410	124.4	WPDL	Lansing, Mich.	2440	122.0
KGPK	Sioux City, Iowa	2470	121.4	WPDM	St. Petersburg, Florida	2440	122.9
KGPL	Los Angeles, Calif.	1712	175.1	WPDN	Beaumont, Texas	1712	174.9
KGPM	San Jose, Calif.	2410	124.4	WPDO	Auburn, N. Y.	1712	174.9
KGPN	Davenport, Iowa	2470	121.4	WPDP	Philadelphia, Pa.	2440	122.9
KGPO	Tulsa, Okla.	2452	122.2	WPDR	Rochester, J. Y.	1712	175.1
KGPP	Portland, Ore.	2452	122.2	WPDS	St. Paul, Minn.	2416	124.1
KKPF	El Paso, Texas	2416	124.1	WPDT	Kokomo, Ind.	2470	121.4
KSW	Buffalo, N. Y.	2422	123.8	WPDU	Pittsburgh, Pa.	1712	175.1
KVP	Dallas, Texas	1712	175.1	WPDV	Akron, Ohio	2458	122.0
WBA	Harrisburg, Pa.	257	1167.0	WPDX	Detroit, Mich.	2410	124.4
WBR	Cedar Rapids, Iowa	2458	122.0	WPDZ	Fort Wayne, Ind.	2470	121.9
WCK	Detroit, Mich.	2410	124.4	WPEA	Syracuse, N. Y.	1712	175.1
WDX	Wyoming, Pa.	257	1167.0	WPEC	Memphis, Tenn.	2470	121.4
WFEB	Grand Rapids, Mich.	2440	122.9	WPGW	Washington, D. C.	2410	124.4
WJL	Greensburg, Pa.	257	1167.0	WPY	New York, N. Y.	438-500	684.5-509.6
WKDT	Detroit, Mich.	1596	187.9	WRBH	Cleveland, Ohio	2452	122.2
WKDU	Cincinnati, Ohio	1712	175.1	WRDQ	Toledo, Ohio	2470	121.4
WMDZ	Indianapolis, Ind.	1712	175.1	WRDR	Grosse Pt. Village, Mich.	2410	124.4
WMJ	Butler, Pa.	257	1167.0	WRDS	Ingham, Mich.	1662	121.4
WMO	Highland Park, Mich.	2410	124.4				

Principal World Stations

(Continued from page 39)

Keys.	Meters	Call	City	Country
1480	202.7	SCM	Kristinehamn	Sweden
1480	202.7	2AY	Albury	Australia
1490	201.3	CX48	Montevideo	Uruguay
1490	201.3	SCH	Jonkoping	Sweden

1500

Keys.	Meters	Call	City	Country
1500	200	2LS	Leeds	Great Britain
1530	196	SCJ	Karlskrona	Sweden
4273.5	70.2	RW15	Khabarovsk	Russia
5000	60	XCTE	Shanghai	China
5514.7	54.4	RW38	Moskva Mosps	Russia
6000	50	RW59	Moskva Stichelkovo	Russia
6072	49.41	UOR2	Wien	Austria
6250	48	HKC	Bogota	Colombia
7300	41	HSP2	Bangkok	Siam
9520	31.51	.....	Lyngby	Denmark
9520	31.51	OXZ	Skamlebak	Denmark
9590	31.28	PCJ	Hilversum	Holland
11750	25.5	5SW	Chelmsford	Great Britain
14991	19.84	HVJ	Rome	Italy
17775	16.88	PHI	Huizen	Holland
51724	5.8	RW61	Moskva Vei	Russia

An Observation Test

If you think you are observant, read the following sentence over and count the number of "f's" as you go along:

"Federal filters are the result of years of scientific study combined with the experience of years."

Did you find three "f's" in the first reading? If so, you have the average observation powers. If you found four or more, you are above the average. Actually there are six "f's" in the sentence. Try this on your friends.

Writes Charles J. LaVoie, 1813 Ninth St., Port Huron, Mich.: "I now have 315 verifications from U.S. stations, 32 from Canada, three from Cuba, two from Mexico. My best are SRB, Brussels, Belgium; 6LV, Liverpool, England; 5NO, New Castle, Wales; 2LO, London, England, and 2BD, Aberdeen, Scotland.

In the December Issue:

What is New in Radio Sets as Demonstrated at the Chicago and New York Shows

HOW TO TUNE A SET CORRECTLY

Read This Page Carefully and You Can Set Your Dials Accurately for Any Station in America

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

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

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

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

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

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

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 three dials. Use as many of three spaces provided as you need. The set used in the illustration had two dials. In this case we entered the dial readings for 660 kilocycles as 69-67.

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

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

clear that if we reset our dials at 71-69 our set will be tuned to 640 keys, and at that point KF1 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 station 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 hearing. 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. When two stations in the same locality have the same frequency, they are required to divide the

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 provided 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.

The Index by Frequencies is now printed with marginal tabs. If you will fill in under the word "dial" your reading for this particular frequency, you can then turn instantly to any frequency desired. Take a pair of shears and cut along the dotted line, as shown.

INDEX BY FREQUENCIES AND DIAL NUMBERS

590 kilocycles 508.2 meters

EHO 1900 Spokane, Wash.
WCAJ 500 Lincoln, Neb.
WEXL 500 Boston, Mass.
WOW 1000 Omaha, Neb.
WTC 500 Hartford, Conn.

76 74

Lehigh Valley Inc.
Nebraska Wesleyan University
Edison Elec. Illuminating Co.
Woodmen of the World
Emmott's Ministry College

600 kilocycles 499.7 meters

CFCH 350 Iroquois Falls, Ont.
EPIB 500 Laramie, Wyo.
KFSD 500 San Diego, Calif.
WCAO 500 Baltimore, Md.
WESW 500 Toledo, Wis.
WCAZ 500 Lawrenceburg, Tenn.
WTC 500 Memphis, Tenn.
WTC 500 Hartford, Conn.

75 73

Abilotti Power & Paper Co.
Bishop N. S. Thomas
Alford Radio Corp.
Monterey Radio Co., Inc.
Bellet College
Yale Univ. School of Music
WRRC, Inc.
Travelers Insurance Co.

610 kilocycles 491.5 meters

ERFC 1000 San Francisco, Calif.
WPAZ 500
WYAN 500 Philadelphia, Pa.
WIP 500 Philadelphia, Pa.
WOO 500 Kansas City, Mo.

74 72

Don Lee, Inc.
Kansas City Star Co.
Krystone Broadcasting Co., Inc.
Columbia, Inc., Inc.
City School of Christianity

620 kilocycles 483.6 meters

EPAD 500 Phoenix, Ariz.
KCV 500 Portland, Ore.
WDAE 1000 Tampa, Fla.
WOSB 1000 Orlando, Fla.
WELZ 500 Dover-Francist, Me.
WTLA 1000 Milwaukee, Wis.

73 71

Electrical Equipment Co.
Owens-Illinois Co.
Tampa Publishing Co.
Edging College, Inc.
Thompson L. Gunnsey
Milwaukee Journal

630 kilocycles 475.9 meters

CFJX 500 Victoria, B. C.
CJIB 500 Toronto, Ont.
CJR 250 Maxton, Mass.
EPIB 500 Laramie, Wyo.
WCAZ 500 Lawrenceburg, Tenn.
WOS 500 Jefferson City, Mo.

72 70

Victoria Broadcasting Ass'n
Winthrop Grain Exchange
Canadian National Railway
Canton, Mass.
Stephen College
Evangelical Soc. of the Air, Inc.
State Marketing Bureau

640 kilocycles 468.5 meters

EPI 500 Los Angeles, Calif.
WALD 500 Columbus, Ohio

71 69

Earle C. Anthony, Inc.
American Insurance Union

650 kilocycles 461.3 meters

WSM 5000 Nashville, Tenn.

70 68

National Life & Accident Ins. Co.

660 kilocycles 454.3 meters

WJAZ 500 Omaha, Neb.
WEAF 50000 New York City

69 67

Omaha Grain Exchange
National Broadcasting Co., Inc.

670 kilocycles 447.5 meters

WMAQ 500 Chicago, Ill.

68 66

Chicago Daily News, Inc.

680 kilocycles 440.9 meters

ERFC 1000 San Francisco, Calif.
WPTF 500 Raleigh, N. C., Cal.

67 65

Maritime Life Insurance Co.

Trained Radio Man Reports Earnings of \$5,000 Last Year

Former School Teacher Learned Radio at Home And More Than Doubled His Income

Read This Letter

"I am now engaged in sound picture work—have 25 theatres in Cincinnati to take care of and it is very fascinating. When I made application for my present position, I had to pass a technical examination which included many questions on vacuum tubes and Radio circuits. I was able to do this successfully chiefly because I had just completed the course with the National Radio Institute. I know I would never have obtained the job had it not been for your course—I give your Institute credit for training me in the amplification work involved in our systems. Within the past year I have made approximately \$5,000. Since my salary in my old position as a teacher was only \$2,000, I credit \$3,000 of my present income to N. R. I. training and am much happier in my work than I have ever been. So you see why I am an enthusiastic booster for N. R. I."



PAUL V. WOOLLEY
948 Sunset Avenue
Cincinnati, Ohio

Free Book is Showing Many How to Get Into Radio-Television-Talking Movies

Mr. J. E. Smith, President of the National Radio Institute, will be glad to send his 64-page book, "Rich Rewards in Radio," to any interested man or young man. It tells about the many opportunities for trained men to make as much as \$50 to \$100 a week in the various fields of Radio. It also explains how this easily mastered home study training fits you to begin making extra money on the side almost at once. Many students earn \$200 to \$1,000 in spare time while learning.

"Learn at Home in Spare Time" says Mr. Smith

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4. Broadcast, Commercial and Ship Radio Stations.
5. Advanced Radio Servicing and Merchandising.

J. E. SMITH, President,
National Radio Institute,
Dept. 1MO, Washington, D. C.

Please send your free book, giving information about the opportunities in Radio. I understand this request places me under no obligation and that no salesman will call.

Name

Address

City

State