

CHICAGO TRIBUNE  
**RADIO BOOK**

By **QUIN A. RYAN**

1926 - 27

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Chicago Tribune

THE WORLD'S GREATEST NEWSPAPER

RADIO  
BOOK

by QUIN A. RYAN

*W-G-N Announcer*

1926-1927



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*W*E may well be proud of this wonderful development (radio broadcasting), but in our self-congratulation let us not forget that the value of this great system does not lie primarily in its extent or even in its efficiency. Its worth depends on the use that is made of it. It is not the ability to transmit but the character of what is transmitted that really counts. Our telephone and telegraph systems are valuable only in so far as the messages sent from them contribute to the business and social intercourse of our people. For the first time in history we have available to us the ability to communicate simultaneously with millions of our fellow men, to furnish entertainment, instruction, widening vision of national problems, and national events. An obligation rests upon us to see that it is devoted to real service and to develop the material that is transmitted into that which is really worth while. For it is only by this that the mission of this latest blessing of science to humanity may be rightfully fulfilled.

—Herbert Hoover.

*Everyone of us has sensed the humanness of radio, its social, economic and political influence. To many it has come to be as great a boon as the discovery of the anaesthetic; to the blind, the isolated, the shut-in, and the deaf. Innumerable deaf persons are enabled to hear with radio ear-phones. Perhaps we have realized the universal charity of radio, bestowing its gifts on all sorts and conditions of people—the family in the farmhouse, the party in the drawing-room, the inmates of the hospital, the old souls in the almshouse, the boys in the fire station, and the lonely company in the far, icebound timber lands.*

*This will be a story of the Radio for the man who knows it only as a marvelous contrivance which can bring the world to his fireside by the fingering of a dial on the side of a box . . . A short and simple story set down for the Average Listener, for whom the radio has become a national pastime, a national institution, a public utility, a member of the family, or whatever it is . . . It will be for him who has wondered about this phenomenon that has suddenly bounced into his ken, and who has found, on inquiring, a maze of technical phraseology, patent claims and broadcasters' boastful diaries . . . Most of us, you and I, like to listen to the radio, but we don't know an ohm from a rheostat, and we don't care . . . In short, it will be a straightforward talk across the table to the man who "wants to know what it's all about."*



## The Story of Broadcasting

**R**ADIO, when we stop to consider it in the hollow of our hand, is only a form of human communication.

Visual communication, by means of the printed page or hieroglyphics in stone, extends dimly back into the centuries. But audible communication, speeding a message over a distance by mechanical process, is not a hundred years old.

Let's consider, for purposes of simplicity and a clear picture of the evolution of radio, four terms. Each term explains in itself a mode of audible communication familiar to all of us, and each represents a long stride in the development of our radio:

“Wire” telegraphy,  
“Wire” telephony,  
Wireless telegraphy,  
Wireless telephony (or radio).

Samuel F. B. Morse, on May 11, 1844, transmitted the first telegraph message from Washington to Baltimore.

And in 1876, at the Philadelphia Centennial, Alexander Graham Bell successfully demonstrated an application of the wire telephone.

Thus, during the high tide of the last century, we had learned to use wires for communication, first with dot and dash, and then with the spoken word.

But long before the introduction of the telephone, mind you, this same communication of impulses *without* wires was being tried, with good and bad results, over short distances. These early efforts of many inventors were not directed toward transmission through the air, but they depended upon tangible substances, land and water, for electrical conduction.

The primitive seeds of wireless communication were being sown in the dreams of scientists more than eighty years ago; but the story of our radio may as well begin in 1865, during our Civil War, when James Clerk Maxwell, of Edinburgh, proclaimed his theory of the existence of electrical waves, the electromagnetic theory of wave motion. Prof. Maxwell did not prove his theory except by mathematical deduction, but it became a spur to the delvings of the physicists.

The next high spot is the publication, in 1888, of the experiments of Heinrich Hertz, at Karlsruhe, Germany, bringing before the eyes of the scientific world the inspiring subject of the radiation of waves through space in all directions by means of ether.

In the decade following, scientists derived much new knowledge from the reproduction of Hertz's experiments. Sir Oliver Lodge and Edouard Branly, both disciples of Hertz, devised the “coherer” for the detection of electromagnetic waves. A scheme of extending electric rays between two metallic plates, one a transmitter and the other a receiver, both set high in air and quite far apart, was unfolded by Thomas A. Edison. Edison also produced a wireless system of communication between

railway stations and moving trains. Sir William Crookes, in 1892, prophesied the modern use of electromagnetic waves, "revealing a new and astonishing world, which is almost within the grasp of daily life . . . Here, then, is revealed the bewildering possibility of telegraphy without wires." Thus, the broadcasting we do today and the reception of it in your home.

Then, almost as sudden as a wireless impulse itself, the newspapers of the world flashed the story that on Dec. 13 and 14, 1901, an Irish-Italian inventor of twenty-seven had succeeded in receiving wireless signals across the Atlantic, a span of 1,800 miles, from Poldhu, in Great Britain, to St. John's, Newfoundland. That inventor was Guglielmo Marconi. According to pre-arranged plans, the signals--the "dit, dit, dit" of the letter S--were repeated twenty times and heard with whoopings of exultation. It was, in a manner of speaking, a click heard 'round the world.

Five years before, at the age of 22, Marconi had arrived in London from his home in Italy and applied for the first British patent for wireless telegraphy. By September he had transmitted a message 100 yards, and a year later had triumphed over an eight-mile span.

We must credit Marconi with bringing the wireless out of the laboratory and into the waiting room of commerce. Unlike Morse in wire telegraphy and Bell in wire telephony, Marconi was not a trail blazer, because the principles of radio had been promulgated by older scientists. And this he admitted. His only claim was that he had made "improvements in transmitting electrical impulses and signals, and the apparatus therefor" by employment of Hertzian waves.

Wireless naturally was utilized almost exclusively at first for communication at sea, where it was needed most. In 1897 the Italian navy adopted the Marconi system, and two years later the British admiralty was so satisfied with extensive tests as to introduce wireless on 32 warships and shore stations. By 1900, the wireless instruments had been installed by the navies or shipping companies of the United States, Germany, Belgium and France.

Wireless had gone down to the sea in ships, and there it originally proved its mettle, in giving aid to light-ships and in summoning rescuers to sinking vessels. The collision of the S.S. Republic and the S.S. Florida, in the winter of 1909, off Nantucket Light, brought a new epoch-making triumph to wireless, by proving how it may banish the tragic isolation of the ship in distress. It was not long before several nations had passed laws requiring ships carrying a minimum of passengers to be equipped with wireless sets and competent operators. Today, radio has discovered new fields of usefulness on the sea, in reporting distress signals, positions of icebergs, storm and time signals, direction finding, and many other ways of lessening the perils of ocean traffic.

Also, at the threshold of the century, the wireless was finding itself to be an arm of the press. The Kingstown regatta, in July, 1898, was reported from a steamer to a land station and thence by telephone to

a Dublin newspaper. Two weeks later, at the bidding of Queen Victoria, one hundred and fifteen messages were transmitted in sixteen days between Ladywood Cottage, Osborne, and the Royal Yacht Osborne, where the Prince of Wales lay ill. The publication of a newspaper on board ship, now an indispensable service to ocean travelers, was first attempted in the fall of 1899, the "Transatlantic Times," printed on the S.S. St. Paul. The first press message was shot across the Atlantic in 1904.

The inventors labored on, the scientists delved further, and wireless moved forward apace. Commerce had acquired a new instrument, and the boy in his 'teens had gained a new toy. That's when you and I began to take cognizance of wireless, when the lad in the attic was conversing with the kids in the next block, and using only a funny little dingus, without any wires er nuthin'.

Then came the word "radio" to be applied to wireless telegraphy, at the international wireless conference in London, in 1912, a word fashioned to illustrate the phenomenon that signals are "radiated" in all directions from most kinds of transmitters. This is usually explained by the example of a stone dropped into a smooth body of water and the ripples that dance away from it in concentric circles, a primer picture that is imperfect in that it illustrates only the radiation *horizontally*.

After the original invention of Marconi, the most notable progression in the ascendancy of radio was the discovery of the "audion tube," which we know as the "vacuum tube." This literally revolutionized the art.

It increased the sensitivity of the receiving sets, and expanded the range and decreased the cost of the transmitting sets. The three-element vacuum tube—if you don't mind my getting mildly technical—the kind of tube used in radio, containing filament, plate and grid, is the invention of Lee De Forest, who began experimenting with a new type of detector shortly after graduating from Yale, in 1899. Instead of the coherer of Lodge and Branly, which Marconi had been using, De Forest endeavored to work with a gas flame as a rectifier of radio currents, but he encountered small success. A two-element tube, in the meantime, had been developed and patented by an Englishman, Dr. J. Ambrose Fleming. Lee De Forest, working independently, came upon the same principle, and added a third, the grid, making the radio vacuum tube as you have seen it tucked away in your radio set.

And after the talking with code by wire, the talking with voice by wire, the talking with code without wires—came the flinging of the human voice without wires. Engineers of the Bell System broadcast spoken words to Mare Island, California, in 1915, and to Paris and Hawaii, transmitting from the gigantic naval station at Arlington, Virginia.

The World War boomed upon us then, and assisted in developing wireless telegraphy and telephony for its own uses. The United States government impressed into service practically all land and ship stations,

and established schools and laboratories for radio instruction and research. Radio saw further service, too, as an adjunct of the aircraft division, both in sending and receiving in the skies.

The first licenses for broadcasting stations in the United States were granted in September, 1921. Then and there, radio started its march into the American parlor. And the first "broadcasting"—the initial non-remunerative broadcasting of a program of public service to a known audience at large—may be said to have been the enterprise of Station KDKA, at East Pittsburgh, in dispatching into the night the election returns of November, 1920.

At this point in our contemplation of radio, I'm going to talk about some of the physical principles involved; so take notice, all ye who abhor technical jargon as much as I do, and detour for a few paragraphs.

A primary fact that we should set before our eyes is that all our atmosphere is filled with vibrations or oscillations, "waves." The air, the water, the land, and all solids—in fact, everything—is pervaded by an elastic, invisible, odorless and almost weightless substance that we call "ether." Man has known for a long, long time that heat and light are transmitted in waves by means of this ether; and it was when man discovered that electric or electromagnetic waves also travel through the ether that radio became possible.

Hopping back to the familiar example of the stone dropped into the water—the resultant waves, you will agree, have the power to move small substances that happen into their path. So waves possess energy as they move outward.

Waves, too, have a definite length, measured from the highest part of one to the highest part of the next. From this we derive our common term, "wave length." One complete vibration of a wave, from norm to crest to trough and back to norm again, is called a "cycle." If we watch these waves, we can see that a definite number of them pass a given point each second. Thus our term, "frequency," the number of times that waves vibrate in one second. Although the customary way of describing a wave has been by its length, many prefer to identify it by the frequency; and so it is that stations are listed according to both wave lengths and frequencies, the latter expressed in thousand-cycles, or kilo-cycles. Some waves are long and vibrate slowly, and some are short and vibrate fast. Radio waves travel in all directions at the same speed as light—186,000 miles a second, or 300,000,000 meters. A meter is a little longer than three feet.

Our radio waves travel out equally in all directions and are tossed into the ether by a batch of wires hung vertically or horizontally, called the "aerial." These electric waves are set in motion by vibratory electric currents made to see-saw to and fro in the aerial by the radio transmitter.

By means of the station control apparatus, these waves are radiated outward in the form of dots and dashes, or are made to fluctuate in strength by the sound waves that the human voice or musical instru-

ments bring into being. The sound waves generated by the voice or music are gathered in by the "microphone," and this, in its turn, advances or retards the volume of the electric wave radiated by the aerial, thus making the wave fluctuate in synchronism with the sound waves created in the studio by the speakers or musicians.

The waves, we'll take it, are now on their way, traveling so swiftly that they would make almost eight revolutions of the earth's surface in one second. They continue until they meet the aerial connected with the receiving set. These waves, set in motion by the sending apparatus, possess the property of starting oscillation in any conductor that they strike, but so faint and weak that they must be magnified. This magnifying is done by amplifying tubes which build their strength enough to start the detector to work.

The detector is the instrument which changes these electrical currents into audible sounds. It converts them into a form that will endow them with the same characteristics of the sound waves directed at the microphone in the radio studio. After being amplified again, these sound currents are eventually guided into the loud speaker. Then they are yours!

Now, it is evident that on any night the air is filled with radio waves from innumerable stations, all clamoring for a hearing at the same time, and the reason we do not hear them is this: Each radio station in the country broadcasts waves of a certain length and no other, and by "tuning" our receiving set to harmony with one of these, we should hear that one and remove the others. A good receiving set has the quality of "selectivity," the ability to take waves of a certain length, use them to operate the set, and reject all others. But when two stations have wave lengths not far apart, or when one station is geographically close to the listener, he encounters one form of "interference," with the signals from one station persistently crowding in upon the offerings of the other.

All broadcasting stations operate on wave lengths between 200 and 545 meters. The Secretary of Commerce has said, "Within this range (200-600) we have about seven possible bands for sending in any one community. The number of telephone or broadcasting stations that can be operated from any one place is, however, more limited than this because of interference of one locality with another . . . No doubt the number of available wave lengths will steadily increase with improvements in the art and better adjustment between different purposes." Wave lengths are assigned to stations by the government.

Oddly enough, this big new business of radio broadcasting has been controlled by an act passed long before anyone dreamed of its present gigantic scope and proportions—the Wireless Regulation Act of 1912. This law was aimed at regulating radio as it was at that time; it is evident that Congress had in mind the old-fashioned point-to-point communication and dot-and-dash broadcasting. The regulation of broadcasting has been effected from the first by a kind of gentlemen's agreement. The assigning of wave lengths, the granting of broadcasting

licenses and the general patrolling of the industry has been the work of the Department of Commerce, but in general the broadcasters have governed themselves.

Radio as a hobby of the nation is only as old as *your* interest in it. Six years ago it engrossed a portion of our youth, studious amateur operators who have contributed much to its growth, and whose boyhood exercises have fitted them for careers as radio engineers and research aids. The dot-and-dash business was but a matter for tinkering, and as such, of course, could never occupy a general public.

When radio telephony arrived, however, the big parade started. To prick our ears patiently for untranslated dots and dashes was one thing, but to sit comfortably in our living room and hear voices and music mysteriously wafted to us out of nowhere, through our very walls and bodies—that was an adventure to grip the staidest of us.

The war had eliminated the private broadcaster from the field for a time, and when the martial bans were lifted, radio needed a few electric sparks to set it off. These were supplied in the first announced broadcasts of news items and phonograph records, which brought long queues of inquiring customers to the electrical shops. Like the ancient evolution of the hen and her egg, the growth of the broadcasting stations was dependent upon the growth of the radio audience, and vice versa. When the night should be filled with music, the public must procure these contraptions for receiving it; and when there should be a widespread public eager and equipped to listen, the broadcasters, for one purpose or another, must offer it entertainment and service. So it has been ever since.

Few formalities are required for the establishment and maintenance of transmitting stations, and none for receiving sets. In contrast, in most foreign countries, the private use of radio is tightly restricted; and some nations have forbidden the private use of receiving sets. In our land, the air is as free as the open road, with naught but the necessary police regulations.

Dreams and scientific theories were becoming actualities; a great public was finding its castles in the air. Singers, actors, orchestras, lecturers, comedians, violinists, ministers, statesmen and story-tellers were summoned as if by magic to the farthest-flung hearths of the hinterland. There rose two types of radio stations: the metropolitan organizations, situated where professional and copious talent was available; and the smaller stations, issuing programs of local interest. A motley family went into the business of broadcasting—radio manufacturers; theatres, newspapers, department stores, universities, state experimental stations, churches, fraternal associations, railroads and hotels. Most stations are designed to promote good will and derive indirect advertising, some to further such special work as propagating police information and university extension courses, and some are conducted by individuals as a hobby.

In 1920, a little more than \$1,000,000 was expended in the industry; and in 1925, the total was approximately \$350,000,000. Six years ago

there was one broadcasting station in the United States maintained for the service of public programs; today there are over 600, with as many more institutions clamoring for wave lengths. Radio stations have sprung up and vanished soon after. Up to August, 1924, a total of 1,105 stations had been established and licensed in the United States; and the number of discontinuances during the same period was 572. More than half had dropped out. This has been due largely to unexpectedly high costs of operation after the original construction, and the intangibility of financial return from the indirect advertising received.

Canada has approximately 60 broadcasters, besides a large number of amateur, commercial, coastal and ship stations. About one-half of the stations are operated by companies interested in the manufacture and sale of wireless apparatus, and about one-half by newspapers, stores and others. As in the United States, the main purpose is advertising and the building up of good will.

The average broadcasting station costs about \$50,000 to build and equip, with a huge depreciation annually. Although the apparatus would actually provide good service for five years, the advances in the science are so rapid that a station not aiming to be up-to-the-minute in its methods of operating, will find itself antiquated in two years. More money was spent by the largest eastern station in its second year for special apparatus, new equipment and replacement of old than the original cost. The expense of running a medium-sized station, granting that nothing is paid for talent, will average around \$50,000 a year. Even with free talent, 150 stations in and around New York City cost \$150,000,000 a year for operation and depreciation.

The industry strode forward in its seven-league boots. The broadcasters tried taking their microphones away from the studios and picking up audible material from other sources, like the concert hall, the theatre and the ballroom floor. The microphone lines for fifty feet between the studio and transmitter were stretched to a few miles between the "remote control" and transmitter. In feature broadcasts, the announcer did his work at the distant end. And it was only a step to the broadcasting of news events from the scene of the happening.

The outpourings of the ethereal cornucopia came to be classified according to the hours of the day and the tastes of the listeners—children's hours, household periods, news reviews, classical concerts, church services, lecture times and such. Pop-eyed auditors were being borne on a magic carpet to pulpits, banquet tables, convention halls, theatre boxes, pugilistic ringsides, baseball diamonds and football stadia. The headlines of the world were made to pass in review before the humble cabins of the hills.

Radio as a medium for the instantaneous reporting of athletic contests and news events proved a sensation. A trained observer and graphic reporter can describe a spectacle or happening into a microphone so as to make it live before the eyes of the audience, while extra microphones hung about the scene may capture the attendant sounds and speeches.

Radio audiences have attended by proxy the world series, the national political conventions, a presidential inauguration, the Scopes "evolution trial" in Tennessee, the championship prize fights, the Kentucky Derby, the Eucharistic Congress, the Indianapolis 500-mile automobile race and the most important football games the country over. Of these, the football games by radio have been astoundingly the most popular. It has seemed to station proprietors that every human being who is not present at a game, regardless of age or inclination, spends the Saturday afternoons in autumn sitting before a receiving set gripped by the story and the tumult of a football game.

And more and more novelties were sought to feed to the expectant listener. We can remember offhand hearing from the loud speakers, a state fair, a Chinese opera, "The Miracle," the Liberty Bell, a bridge game, a rodeo, a five-ring circus, a wedding, a yacht race, a fashion show, Rin-Tin-Tin, a pre-arranged locomotive collision, the board of trade wheat pit and birdsong.

Radio's initial fascination for the listener was in its physical prowess, its knack of leaping a continent and snubbing all obstacles. Back in 1921, our radio sets were homely contrivances, operated with long outside aerials, heavy wet batteries and head phones, and supplying plenty of occupation for the tinkerer. Listeners were satisfied to snatch from the air a jabberwocky of music and screeches and talk and howls, provided it came from a distant enough source. Men left off telling of how far they motored on one set of tires, to boast of the distance they jumped about the country by radio in one evening.

As with the automobile and the phonograph, the squawk-age sets bared their innards to the gaze of the owner, laying themselves open to constant adjustments and toying, a privilege which the buyer rather expected. We had not yet arrived at the age of ease and convenience of operation, nor attained the receiving set adapted for fine selectivity, accuracy of tuning and elimination of static.

We have seen radio sets come to us in many stages, from the elementary crystal sets, on through the sets with increasing powers of selectivity and amplification, to the electrically operated combination of phonograph and radio receiver, with all mechanism and horn concealed. As radio sets have become more and more welcome in the home, the designers have made them more and more decorative and substantial.

The gold rush on the young radio market, of course, brought with it all of the camp followers and street fakirs that any boom would attract. Conscienceless manufacturers and get-rich-quick vendors cashed in on an untutored public's enthusiasm and for a time rode high. Every industry sees this, and many not so new. There were at one time in this country more than 3,000 makers of wireless supplies and equipment, and by the spring of 1925 the market was flooded with inadequate sets and inferior radio supplies. It went hard for a while on the consumer, and in turn on the industry, bringing the radio market into disrepute; but fortunately it taught a potential buying public to purchase with care.

The education of the public on the part of the newspapers and others effected a return of soundness to the radio business, and there came a filtration and stabilization in the industry. Radio had merely experienced its growing pains.

The number of receiving sets in this country is hard to estimate, because of the prevalence of so much home-made apparatus, but it is the reckoning of Secretary of Commerce Hoover that there are from three to five millions; and since there are about twenty-four million families in the United States, it appears that at the most not more than one out of six possess a radio set.

The engineers have been striving just as assiduously at the transmitting end of radio, in eliminating the early faults of the sending mechanisms, canceling the clumsiness of speech and music, routing overtones and the undesirable emphasis on certain letters and omission of others, and in increasing the power of the transmitters. A small fraction of one kilowatt was used by the first stations, then 500 to 750 watts, and at the present many transmitters are assuming 5,000 watts, or five kilowatts. "Superpower" stations are operating experimentally on power up to 50,000 watts.

In any discussion of radio there always pops up the old question of who is going to pay for it. Volumes have been spoken and written about means for the broadcasters to derive a direct return and thus further to improve their programs. Some have proposed a tax on all radio apparatus, with the income to be divided proportionately among the broadcasters. Some have suggested and put into practice the selling of annual box seats in an "invisible theatre." Some stations are organized to sell part of their time on the air to trade-mark advertisers, who pay from \$75 to \$1,000 an hour to present their entertainers on the radio; this, too, is indirect advertising, gained from the announcements between musical offerings, that "these are the So-and-So Entertainers (or this is the So-and-So Hour), sponsored by the So-and-So Company, makers of the So-and-So products." The rates of the charges for advertising time on the air vary with the hours of the day or evening, as it is known that the size of the audience changes with the different times of day. If the station is linked by special wires to other stations on a "radio chain," extra charges are made for each station on the chain, as each added station from which the advertising program is being broadcast obviously augments the advertiser's audience immensely.

Like the building of a house, the building of a radio station can be projected on any scale. In Chicago there is a radio station of good standing with a staff of three, that is housed—studio, transmitter, reception room and all—above a garage in the rear of an apartment building; and one in New York that occupies several floors of a skyscraper, with a staff of a few hundred, divided between the program, engineering, publicity, advertising and clerical departments, the latter a squad of stenographers employed to check and tabulate the mail from the listeners.

The new broadcaster must choose a site for his "station," or transmitting machinery, and a location for his studio and adjoining office and reception rooms. The studio may be located in the company's own plant, or in more cases, in a local hotel, where orchestra music is on tap and where the floor space and accommodations may be acquired in return for mention of the hotel name on the air. In the metropolitan centers some of the largest stations, while keeping their studios in town, close to the sources of entertainment and accessible to the performers, have moved their actual transmitting apparatus into the country 20 or 50 miles away, outside the zone of interference from tall buildings and other stations. The program is relayed by private telephone wires from the studio to the sending station in the country.

The common type of radio studio is a square room, the four walls hung with certain drapings, the ceiling hidden above a billowy canopy, and the floor padded with thick carpet. These furnishings have an important utilitarian purpose—the deadening of echo for the sensitive microphone. Special wall board of a sound absorbing quality is also used in some studios. In this sanctum are the announcer's desk, pianos, music stands, lamps, chairs and sofas, and the pedestals for the microphones.

Somewhere adjacent is the operating room, usually just behind a glass wall or window, to which lead the wires from the microphones and the switches on the announcer's table. Here at a desk the operator is absorbed in watching a number of dials on the electric board before him, in plugging in at this place, switching over there, signalling to the announcer through the window, and jiggling all manner of dials, meters, coils and red-glowing tubes. With the ear-phones on his head or the horn beside him he listens to the whole show and guides its delivery to the distant audience. If a speaker's voice is too soft, the operator will build it up with his amplifier; if an orchestral crash is too loud, he tones it down; if a singer or speaker is too close to, or to far from, the microphone, he motions to the announcer or signals by flashes of colored lights in the studio. Proper positions of microphones, whether lying on a pedestal in front of speakers and singers or hung over the heads of dance orchestras, have all been tested previously; so a change is rarely necessary. Microphone distances vary, but the usual position of a speaker or announcer is about one foot away, with singers or pianists five feet or more.

Added to these two rooms, there is usually a reception room, a lounging place for the entertainers and visitors. Visitors are admitted to most radio stations; if not in the studio itself, then in the reception room, where they watch the broadcasters in action through glass partitions, and hear the program through loud speakers. Many stations have made almost a rite of hospitality toward visitors, expending more money on elaborate furnishings and a reception committee in formal attire than they do on entertaining their greatest audience outside. Radio critics have often spoken of the overdressed studios that operate, seemingly, to be seen and not heard.

The newer stations are outfitting more than one studio, to obviate the traffic confusion in the broadcasting room. Sometimes an orchestra of twenty-five pieces is to follow on the heels of a mixed chorus of fifty voices, and to move one body and their cumbersome instruments silently in or out, while the other body is singing to an open microphone, is a great task. But by putting the two groups in two different studios and switching in an instant from one microphone to another at the conclusion of the first program, all the trouble is banished, and the second musical organization has the opportunity for tuning and a bit of rehearsal.

In one evening we may see in the reception room and studios of a large radio station a famous singer, a clergyman, a movie star, a jazz band, a Russian balalaika orchestra, a group of Hawaiian musicians and a church choir.

The staff of an average radio station may be the director, announcer (or one who is both), musical advisor or director, piano accompanist, one or two office workers, and the radio "engineer" or operator. This is the skeleton; additional persons merely take over some of their duties.

Because radio is forced to enlist talent who will entertain gratuitously, it has been most encouraging to beginners, and many of them have turned into stars overnight. It has been a stepping stone to numerous struggling artists and has brought to light many a flower born to blush unseen. The radio entertainers volunteer their services for a variety of reasons and nearly all for purposes of publicity. Their work gives publicity to schools of music and musical instructors, brings them theatrical and concert engagements and enhances their prestige. The public clamors and pays well to attend "personal appearances" of radio stars whom they have come to admire and love from performances on the air.

More and more the public is demanding, in addition to studio entertainment, the thrill of the "outside job," the special broadcast or the "remote control," in the engineer's parlance. Football games, church services, theatrical broadcasts and dance floor programs—these are all "remote controls." They cannot be brought to the studio; so the engineers take their microphones and amplifiers to the theatre, the concert hall, the church, the ringside or stadium, and send the event to the transmitter by telephone wire. The "remote control" programs are generally the most important in radio.

Where a group of stations unite to broadcast one event, the process is even more complicated. Consider an address by President Coolidge to be delivered in Washington. The entire nation is interested, and a chain of fourteen or more stations situated in various cities are linked to broadcast the address. These stations may be located in points as far apart as Dallas and Boston, with the other stations scattered between. Long distance telephone lines must be secured between Washington and each of these cities, and these lines must be absolutely clean—nothing else can be passing over them. (The ordinary long distance telephone line may carry several telephone conversations at one time.) A corps of

engineers and operators are sent out to "repeating" points between Washington and the other cities in the chain, where amplifiers are located, making tests and preparing circuits to secure good transmission. In addition to these telephone lines, telegraph circuits must be maintained between all points for communication between operators.

As the radio station increases in size there arise two more departments, publicity and clerical. It is the purpose of the first to keep newspapers and public informed concerning the activities of the station, while the major duty of the clerical department is to read and classify the oodles of mail which come to the station.

The radio station, depending on its size and the quality of its programs, receives daily 100 to 1,000 letters, postcards and telegrams of commendation, criticism and suggestion. Letters of applause are always more frequent than letters of disapproval, because in general if a listener does not like a program he won't listen to it, let alone writing to the station about it. Often there is a congratulatory letter of some length, written after a day or two of remembering a particular program, or commenting individually on all of the station's programs and features. But it is estimated that not more than one listener in ten writes to a station nowadays, because the good reception of good programs is becoming a matter of course.

The majority of radio stations solicit mail frequently, since it is the broadcaster's one way of learning the reaction of the listening public to his programs. And it should be the voluntary habit of the regular listener to reciprocate by writing to the broadcasters often. Some stations have organized groups of listeners which report daily, not only on program quality but on mechanical reception.

Mail approving the work of an artist who has appeared on a station's programs without pay is particularly gratifying and heartens the artist to appear again.

The director of the station is even more interested in this mail than the artist. It is his gauge for determining the varied tastes of his listeners. The engineer also takes an interest in the mail, not so much in the content as in the post mark. It shows how far the station is reaching and to what sections of the country the programs are going.

But by no means is all the mail devoted to applause and criticism of the station's programs. Much of it contains requests for radio appearances, and these letters are turned over to the director who shunts them to the booking department. If the writer is deemed worth trying, he is requested to come to the station for a tryout, or audition.

People write to a radio station in much the same manner that they write to a newspaper, with requests for all manner of things, suggestions for improving radio as a whole, and the customary crank letters denouncing some imaginary public ill. And in the good radio station all of this mail is carefully filed and answered.

The radio star has a mailbag which rivals that of the movie queen or public personage. There are perfumed, sentimental notes, requests for

public appearances, requests for pictures, requests for autographs, requests for advice on this or that, invitations to social functions, and packages containing gifts of every conceivable nature.

It is still too early to look for any deep-seated social, economic or political influence of radio. But it is undoubtedly making its mark in some degree as an aid to agriculture, religion, education and commerce.

Both in entertainment and instruction radio has been a decided boon to the farmer. No longer need he wheel out the flivver and drive to town for his information and amusement. More than railroad or highway, the radio has freed him from comparative isolation.

The United States Department of Agriculture, the American Farm Bureau Federation, other farm organizations, and the state agricultural colleges are using radio to supply the farmer with news of interest to him, with subjects of educational value, and with suggestions of benefit to him and his family.

Marketing news and weather reports have been broadcast since 1922. At the present time virtually every metropolitan center has at least one station which broadcasts such reports for the farmers. These market summaries, broadcast generally at noon, are of tremendous importance, and through radio are made available twenty-four to forty-eight hours earlier than they are obtainable through any other medium. They enable the farmer to sell his products most advantageously.

Many stations, notably those connected with the country's agricultural colleges, are devoting a portion of their time on the air to discussion of the farmer's production problems and modern farm practices. These latter include talks on cattle raising, control and elimination of pests, vegetable culture, farm crops, dairying, principles of feeding, farm cost accounting, modern machinery, agricultural engineering, drainage; etc.

The agricultural college stations also are aiding in the education of the farmer. The schools have organized radio home study courses, with lectures, lessons and examinations. The students are required to enroll regularly, and college credit is given for the courses. One of these radio students has already received a degree from Kansas State Agricultural College (the pioneer in radio education for the farmer), whose radio home study courses may be taken as typical of the subjects made available to listeners. The list includes General Psychology, Business English, Educational Sociology, Community Organization, English Literature, Economics, Agricultural Journalism and Vocational Education. Those colleges of agriculture which have not organized courses are paralleling this work by lectures.

While the little red schoolhouse is in no danger of being superseded by radio, the new means of communication is helping to increase the scope of education. Organized classes, while practical in theory, are acknowledged to be an impossibility except in scattered cases. There is a direct lack of contact between teacher and student, and obviously there will be a tendency to shirk. Where the reception of the subject has

been left wholly to the student and only those interested are thus made listeners, the broadcasting of educational subjects has been a success.

The lead in education by radio belongs to stations in the central states. Especially have they been active in organizing radio home study courses for the farmers, as noted previously. Many stations are broadcasting definite educational programs covering a wide range of college courses.

In the broadcasting of subjects of general interest to high school and elementary students, the mid-west is in the fore again, though no station has so definite a program as that shown by the agricultural college stations. A miscellany of subjects, including Public Speaking and Elocution, French lessons, piano lessons, grammar and arithmetic have been broadcast. Some stations, anxious to broadcast educational programs direct to the children in their classrooms, have met with but little co-operation from school officials and the schools are not properly equipped to handle such programs.

One of radio's definite contributions to education will be its power to bring to the student great events in our current history; it can offer lectures by masters of the arts, addresses by statesmen and leaders in the fields of finance, commerce and industry, and interviews with imposing celebrities. Educational lectures designed for a large audience are also practicable. Radio cannot hope to replace the classroom, but it does provide a splendid supplement.

Numerous churches throughout the country operate broadcasting stations, with their chief purpose the furtherance of interest in their sect or place of worship. The majority of the stations thus owned claim that the broadcasting of religious services regularly stimulates interest in the church and makes for a bigger attendance.

The transmission of photographs by radio is still in the realm of the experimental, but its actuality as a commercial medium seems only a few years away. Already some experimental photographs have been sent by wireless across the Atlantic, and the fact that the workers in this field have the results of the successful transmission of photographs by wire to guide them, should make the task easier. The chief difficulty at the present time is to obtain exactly the same conditions at the receiving point as at the transmitting station. Distortion, diminution of power, and other obstacles are still to be overcome.

Even further away in point of practicality is television, that process whereby a series of pictures transmitted by wireless may be made to take form before our eyes with sufficient rapidity to form a moving scene. Several scientists are experimenting with television at present and this last barrier to our witnessing a spectacle transpiring leagues away as well as hearing it, appears destined to fall eventually.

The transmission of power by radio seems extremely remote. When we consider that the power introduced into an ordinary receiving set by a single transmitting station would only light a common electric lamp for one second, provided that the receiving set were operated continu-

ously for one year, we can readily appreciate how far distant is the actuality.

Before it can become even a possibility science must first learn how to control radio waves to prevent their chaotic dissemination. Then will come the long tedious task of learning how best the power can be transmitted, and, secondly, of cheaply adapting this new method for commercial purposes.

Radio will proceed much further than it has come, but its progress will not seem so remarkable. The first five years will remain the most astounding. We are now rather accustomed to its miraculous feats.

Most of us cannot believe it yet. Man quickly accepted the steamboat and the locomotive, because he comprehended their predecessors, the sailing vessel and the horse-drawn vehicle; he easily accepted the electric light and the aeroplane, because they were artificial forms of the burning lamp and flying bird; the telephone was obvious, and the telegraph, too, because the wires explained the phenomenon. But the radio was without precedent. Its elements are intangible, invisible, uncanny. And we can only wonder—and blink our eyes.

Its further development will be beyond the everyday interest of the layman. It will affect him, but only by affecting the commerce and the science of the world. Now he hugs it to his heart because it is so human, because it is for the most part entertainment, because it has added to his enjoyment of life, and because it makes the whole world kin.

Cosmo Hamilton, the novelist and playwright, is one of the most fantastic prophets of the destiny of the radio. After being introduced to radio broadcasting by this writer, he said, in the course of friendly letter, his eye in a fine frenzy rolling:

“What, in Heaven’s name, as this is merely the beginning of these wonders, will be the end of them? To whom, eventually, will one be able to speak when the radio has grown up, has thrown aside its swaddling clothes and becomes a middle-aged and accepted fact. I personally believe that well within five years the audience of the person who sits in a broadcasting station will not be only on this earth, but on numerous earths. I feel sure that in time the radio will tune in to the beyond, and that one night, very soon, millions of astonished listeners will hear Caruso sing again from the plane to which he has been transferred by what is known as death, but which is and must be merely another and a somewhat higher form of life. The voices of long departed people will be heard again—Dickens, Thackeray, Oliver Wendell Holmes, Mark Twain, Lincoln, Alexander Hamilton, Gladstone, Salisbury—our fathers and mothers, brothers, sisters, friends, men with whom we served in the war, boys who were shot down in mid-air, and who knows who.

“It goes without saying, too, that anyone with imagination, and not too much of that, can see in the greater perfection of this miracle a series of silent revolutions which will do away with the novel, the newspaper, the theatre, and the concert room. It isn’t to be supposed, for instance, that even the most successful of living novelists will be con-

tented to be read by the merest smattering of English speaking people, when he can speak direct to billions, without any effort. Novels will soon be compressed into tabloid form and conveyed in thirty minutes, not merely to forty or fifty thousand people, which comprise at present the whole number of the intelligentsia which has remained sufficiently leisurely to be able to read at all, but to the whole number of those long since out of the habit of reading, who will tune in and listen.

"It isn't to be supposed that the newspaper can live when everyone may hear the voices of Mussolini, Lloyd George, Calvin Coolidge, Baldwin, Herriot, and all the other political leaders of the world, without waiting for the arrival of the morning edition which contains a cable summarizing the speeches of the previous night. Nor will any man, in the usual hurry of his breakfast, balance an unwieldy paper against the water bottle in order to read the headlines of the morning news, while he bolts his eggs and bacon, when they can be given over the radio without his making any effort at all."



# And Here Follows a Sheaf of Clippings from the Column, "Inside the Loud Speaker," in The Chicago Sunday Tribune

## Inside the Loud Speaker

By Quin A. Ryan, W-G-N Announcer

UNTIL this week did we learn how scrappingly loyal an unseen audience can be toward a radio person they've never met. The incident was quite trivial, but it stirred up a handsome rumpus during the broadcasting of the Chicago Northwestern game, with the Maroons biting the dust and watching Purple Raiders whizz by en route. His "Red" Grange and his Suzanne have been the easiest stars we have interviewed on the radio. They are not alarmed nor self-conscious; they answer questions handily, and they lend a light and airy tone to proceedings. "Mama" accompanied him placidly by while Suzanne flashed booms and

A radio station's mail, I sometimes think, is written by O. Henry. There is comedy, pathos, color, flattery, criticism, gratitude and much more in every day's mail bag. Last week brought two appropriate gifts: a box of nuts and a whiskbroom! But both were sent with no humorous intent. Radio makes the whole world kin—and warmer hearted. It is such a one-way enterprise; nightly we bombard you with this and that, and your only comeback is by the postman. Everybody writes to a radio station. People may keep mum about books and plays and their opinions of table d'hotes—but they tell us fulsomely about our radio programs. And that's what makes the daily mail such an enjoyable grab bag for we who broadcast.

The radio operators—who work unseen and unheard behind the scenes of the broadcasting stations—have nearly all been to sea at some time as ship operators, and it is they who are responsible for the nautical terms we use in radio.

"Stand by," the ancient bos'n's warning, is the most familiar of the maritime phrases that the operators have incorporated into the radio lingo.

The radio station's book recording the times of coming on the air and of "signing off" is still called the "log." "Signing off" is the ship operator's way of affixing the wireless signature to the end of the message.

The operators do not work day shifts or night shifts, but they "stand watch." The labyrinthian aerial they call the "antenna rigging." Their clock isn't a clock, but a chronometer, in the same little brown mahogany case you find on shipboard.

## Close-Ups of the Announcers

*What are they like, these radio announcers? What are their hobbies and pastimes? What are their little whimsicalities? And how did they come to enter the pearly profession? These are the questions that are rampant today, friends, the queries perched on every tongue.*

*So I have sought out a few of them and have observed them in their lairs; I have visited the boys and offer herewith my findings:*

*FRANK DAHM, one of the W-G-N announcers. We found Mr. Dahm at home. He was occupied with tacking things on the roof. He is an imposing and a merry figure, in a bumper beard and a smock hanging down to his elbows. Mr. Dahm welcomed us and put us at our ease immediately by pouring us a shot of imported vinegar.*

*"I was born," he said, "in DEL-aware, the MAI-n child of a large family, a family of explorers. At an early age I took up the exploring game, too, as I thought there was a better future in it than in groceries. I migrated WES-t, and was the first discoverer of the drainage CAN-al, which was later named after me.*

*"Because of my aptitude for spelling, my teacher advised me to take up radio announcing. I have been a radio announcer now since yesterday noon, and my public has been very gracious through all my endeavors."*

*Then we asked the big, jolly fellow, who is really only a boy at heart, if he autographs photos for his admirers, and he replied: "Yes, for one dollar I sign them, 'Your friend'; for two dollars I sign them 'With kisses,' and for three bucks, 'With love and kisses and take the whole darned farm.'"*

*And Mr. Dahm concluded his talk with the admission that his favorite hobby is climbing trees.*

*HENRY SELINGER, who announces the Drake concert ensemble for W-G-N. While we were waiting for the maid to summon Mr. Selinger, when we called upon him at his home, we strolled out on his lawn, leaving our hat and coat on the porch. When we returned from our short walk we found Mr. Selinger pouring catsup into our hat.*

*"I hope you won't mind my little greeting," laughed Mr. Selinger, as he prefers to be familiarly called. And as he spoke he flashed that famous Selinger smile and I was reminded of the slogan he originated, "The voice behind the smile wins."*

*Henry Selinger started his radio career as a bird fancier, but quit the day following. In his early teens he made his unforgettable decision that before he was fifty-three he would be able to heave a baseball as far with his left hand as with his right.*

*He has written two symphonies; one for the flute and phonograph and one for the money and two for the show.*

*On his twentieth birthday, while living at Latonia, he composed "The Star Spangled Banner," a pretty melody, which brought him some fame at the time.*

*And so, step by step, he has advanced to his present position. We spent a most pleasant hour with Mr. Selinger, listening raptly as he chatted so*

eagerly about himself. And it was only when he pushed us off the front porch that we departed.

LOGAN "STEVE" TRUMBULL, of Station WBBM, was formerly a reporter on a Chicago evening newspaper (Dem.), but looks 21.

In his time Steve has been all around the world, or somewhere; he was wounded in the battle of Chickamauga, and as a result speaks several languages feverishly.

He is fond of cracking peanuts, so he is unmarried and belongs to an exclusive club. He likes nothing better, when he has finished his day's labors in the radio studio and has trudged wearily homeward, than to part his hair.

In the past two years it has been the commendable practice of new radio stations to endeavor to get call letters that mean something, generally with the call indicating the initials of the station's owner. Thus in Chicago and the vicinity we have had:

W-G-N, denoting the subtitle of *The Chicago Tribune*, "The World's Greatest Newspaper."

WJJD, the initials of Secretary of Labor James J. Davis, founder of the Loyal Order of Moose, to which the station belongs.

WMBB, for the Trianon, which advertises itself, "the world's most beautiful ballroom."

The preface letters, W and K of the United States stations, and C of the Canadian stations, were assigned by the International Bureau at Bern, to cover all radio calls except the amateur and experimental stations. Of late the Department of Commerce has assigned W to stations east of the Mississippi and K to stations west, although many stations received their permanent call letters before this.

The station is doubly fortunate that can use the W or the K also in its name or slogan, as does W-G-N, WMBB, and KTHS for "Kum to Hot Springs," the slogan of the local Chamber of Commerce.

Sometimes whimsically appropriate letters are doled out accidentally to stations, such as KOP, the Detroit police department station, and KOB, the station of the New Mexico agricultural college.

## Radio Golf

Let's have a round of radio golf. What? Well, no better time to learn than now!

Now you and I sit right down here in front of your radio set. We drive and shoot and putt by turning the dials, one man at a time. Whatever we get is counted as our strokes. That's all, except you'd better jot down these ground rules:

You're clean down the fairway or making a sweet putt, if you get—

A male singer.

A dance orchestra.

A classic orchestra.

Or a quartet.

# Chicago Tribune

You're in the rough, or your putt is amiss, if you get—

A female singer.

A glee club.

A lecture.

A sermon.

Or a bedtime story.

You're in the sand pit, or your ball is in the water pond, if you get—

An Hawaiian guitar.

A piano solo.

A reading or a bit of elocution.

A weather bulletin.

Or an accordion.

And you've whiffed and missed the ball completely, if you get—

Interference.

Whistles.

Code messages.

Cat-calls.

Steam riveters.

Or announcers.

So now everything's ready. It's your set; so you allow me to drive off first. I drive blindly into the ether. I get cat-calls; didn't even hit it. I swing the dials again. Now I get a tenor singing "Roses of Picardy." That's a darb shot on the fairway. Two strokes for me.

You tee up to the dials now and twirl 'em. Wham!—a blacksmiths' quartet singing "Horses." Good drive—right down the lane!

Now I grab the midiron! 'Round go the dials, and—plunk!—a gal is reciting "Paul Revere's Ride." That ducks me square in the pond! Another ball and we're off again. A fine swing, and lo! a lecture on "The Art of Spinning Tops, and If So." Not so good—I sliced into the rough. That gives me four strokes to your one.

Your turn again. You'll try a brassie shot now. Twist the saucers, and—wow!—what whistling! Eight people must be calling their dogs in! Well, you just dug up the turf on that one.

You try again. Ah, a peachy, right on the green! You get a symphony orchestra.

Let's see, I was in the tall grass, wasn't I? Twirl the apples again, and—gee, a good tenor and baritone duet! Now we're both on the green, you in three and I in five. I'm off my game today. It must be a bum set.

Your putt. You get a basso. Good. Holed out in four. That's par on this hole on a five-tube course.

I putt. Doggone! A soprano! Missed the cup. I move the eggs again, and I hit some amateur code interference—didn't even touch the ball. Again—oh, a string quintet!—and I hole out in seven. It must be the weather.

That's the first hole. And maybe that's enough.

## Bryan—A Memory

*Do you remember, Microphone, the broad browed man, the broad smiling man, who sat in front of you in the courtroom at Dayton, Tennessee, during the evolution trial?*

*Remember, they called him Col. Bryan? He died yesterday, Mike.*

*Remember the morning we arrived in the courtroom? And after the forenoon session was adjourned we introduced ourselves to him—and we talked alone, for many minutes, and he agreed to give a special radio sermon on the night after the trial ended? And he took a paper and pencil and wrote down the text of it, and it said, "What Shall I Do with Jesus?" and the genial man said, "That is what Pontius Pilate asked, in the greatest trial in history."*

*And remember, Mike, the two old men who came up just then and edged us away? They were both a thousand years old, and their union soldier uniforms were white with dust. And remember, we guessed they must have driven a hundred miles over the mountains to shake the hand of Bryan.*

*And remember our little joshing every morning in the court when he came in and sat in front of us? Remember one morning I told you—loud enough that he might hear—"Mr. Bryan enters and sits at the prosecutor's table, and now from here his bald pate looks like a sunrise over Key West"—and he turned 'round to us and laughed. And the next morning, Mike, remember he stopped beside us to hear what I would tell you, "Mr. Bryan is entering the courtroom and stands beside us, looking more and more like his cartoons every day," and he laughed again and moved to his table.*

*Those were the only times he smiled during the day, Mike. He was always very serious—and sat, with his head cocked to the left, intently listening—and fanning himself. And then remember his speech that afternoon. You heard his last great speech, Mike. Too bad the trial ended so early and we had to leave and he couldn't give his radio sermon.*

*He was fighting for something then down there in the Cumberland Valley, Mike—and now it's all over. Today I've been thinking, Mike, of some lines of B. L. T.'s in his beautiful "Pipesmoke Carry"—*

*"Sundown and striding shadows. An evening of rare beauty descends on the valley; moonlight, and the mist rising from the river . . . Into the weaving of this tapestry some sober threads of thought may come. A man may reflect that his life is made up of many carries; that he sets out with a brave array of companions, who fall away with the years; and that middle age finds him footing the trail with a single comrade, sharing with her the good and the ill, the rough and the smooth, the sunlight and the shadow, the heat of the day and the cool of the evening. Then, if heaven be so unkind, he must make the last and longest carry alone. Happy the man who has so ordered his life that he can go this solitary way serene and unafraid.*

*"Now darkens even the western skyline. The mists rise and the stars show in the river. An owl hoots across the lake, a muskrat splashes in the river, the brook brawls under the hill.*

*"All's well in the valley."*

## Radiowocky

'Twas WOAF and the duoplugs  
Did WIP and WEBL in the grid.  
All W-G-N were the dial bugs,  
And so the oscillator did.

When dielectrics plan to WOR,  
The resonators cease to shine.  
He took his super-in-a-door  
And stabbed the paneled letusdyne.

Thus frequency the crystals WHAZ,  
'Though three condensers held them back;  
The duojacks are lurching as  
An amplifier coils WIAC.

WBZ! And WHAM! With ne'er a stop,  
"B" batteries circuit rheostat!  
WEBU may WEAH and hope to KOP,  
But WEW has only come to chat.

And so 'twas roxy when they WEAU—  
Sing heigh, bill-heigh, george-heigh, heigh-o!  
Detectors soon antenna knew  
KFI transformed the audio.

'Twas WOAF and the duoplugs  
Did WIP and WEBL in the grid.  
All W-G-N were the dial bugs,  
And so the oscillator did.

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*Applause cards seem to be vanishing. Applause cards were post cards issued free by advertisers for the use of listeners in commenting on broadcasters' programs. They were passed out by cigar stores, radio manufacturers and others, with one-half of the card covered with an advertisement and the other half with blank lines for the listeners' remarks. They were in great vogue in the early days of broadcasting, but they seem to be passing away.*

---

Harry Lauder says he was quite scared when facing the radio microphone. He probably thought it was a slot machine.

## Bands Across the Sea

International radio test week has come and gone once more. Its triumphal progress was again akin to an egg slipping down an elevator shaft.

Although statistics show that pillows are softer, blankets warmer, and mattresses comfier than ever before in bedtime annals, thousands of good citizens were asked to stick around and listen to the annual unfinished symphony of sea lions, wheat pits, bloop-the-bloops, and hardy steam riveters calling to their mates.

International test week comes but once a year, and when it comes it brings good cheer to the aspirin tablet magnates.

Nobody but Houdini could get out of Chicago last week. The only folks who heard Europe in this city were in Burton Holmes' audience.

It's as hard for us to get anything out of Europe as it is for Secretary Mellon.

The general flop of the international tests is blamed on the aurora borealis, sun spots, static, S.O.S. calls, storms at sea, the Democratic party, electricity in the hair, and the rotation of crops.

Blooming was brisk, screeching continued firm, and whistling advanced to a heavy close.

One man was sure he could hear a bullfight from Spain, but it was only the family across the hall.

It was a great week's show. Seven full hours of banshees and busy signals.

Squawks and wails and puppy dogs' tails; and that's what international tests are made of!

Even as early as sundown the bloopers began to darken the sky in great flocks, flapping their wings ghoulishly and uttering unutterable howls. Seven of them are known to have bitten south side residents, and one chased a radio set owner three blocks up an alley until he took refuge in a delicatessen.

"Bloopers", the experts tell us, are the howls, squeals and whistles caused by radiating receivers acting as miniature transmitters. In other words, radio sets talking back. Four out of every five have them. It used to be called colic.

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*Radio's weightiest problem is the elimination of static and "The Prisoner's Song."*

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The newest thing in delusions is the imaginary reception of radio signals with the naked ear. There are people who will tell you that they have picked up stations and signals at odd moments while going about their daily affairs—and the scientists will tell you that such is physiologically impossible. It may be only imagination, plus memory of broadcasting previously heard—or it may be only code in the head.

## Eddie

Somehow or other, I wish you knew Eddie.

Eddie is the nice boy who answers the phone, greets the visitors and does things at the radio studio. He has more troubles in the span of an evening than Brigham Young had grocery bills.

First of all, in the early evening, Eddie has to practice his bugle. We wanted to use a bugle occasionally in the programs, but none of the hired hands could tootle a bugle—until Eddie came along. Eddie used to recreate himself with a bugle during his war days, and he believes he still owns a certain deftness in the art of puffing into one. We told him he ought to practice a little bit first, before his radio debut, just for Elmer Douglass' sake; so now every evening—when the amber October sun is lingering tiptoe to bid goodnight to the homeward plodding ploughman, I think that's it—there comes into the twilight stillness the inspiring toots of Eddie's martial rehearsing. And while that's no fun for us, still it's no fun for Eddie either.

Then Eddie answers the phones, too. And nobody but St. Peter and Eddie will ever know what oddities are phoned to a radio station. Mrs. McWheeze has lost a baby blanket and wonders if we can't broadcast an announcement of the loss. Someone else wants to inquire if we're going to broadcast the bowling tournament at Little Rock tonight. Another gentleman would like to know the call letters of the radio station in Calcutta; he's been roaming around the dial and he just caught a word that sounded like Calcutta. Another query: "Can you tell me what's wrong with my set? Should I turn the little squimpus on the left first, or what?" Or "Say, how do we get your station? The papers say you're on 303 meters, and my dial only goes to 100."

Then, also, Eddie greets all the incomers. A lady visitor entered yesterday and told Eddie that she was a member of a fine trio that wanted to broadcast. Eddie asked what was the makeup of the trio. "Well", she said, "there's a violin, and a cello and a baritone." "O, you play the violin, do you?" asked Eddie. She said no. "Then you're the cellist—I see", granted Edward. She said nope. "O", quoth Eddie, "you're the manager." "No", replied the fair lady, "I'm the baritone."

The next visitor is from Wawahoola. He's alone in the city and would like to get his home on the radio and say hello to the wife and kiddies. Following him comes a band of one hundred delegates to the Confederate Meat Ball Rollers' convention who are hot to go through the institution. Then a kindly lady has a song of her own—words, music and typesetting are all hers—and she wants Eddie to sell the ballad for her on the radio; it's a lovely thing entitled "Mother, Roses and Ceresota."

Others whom Eddie stops at the portals are a young goofy fellow who has drawn pictures of the radio entertainers as he imagines them from listening to their wares, a maid who has written a sniffing sonnet to Henry Selinger's violin, and a zither quartet.

The stalwart Eddie must rebuff Mr. Wigglewutz who wants us to broadcast a typewriter speed contest. He must smile away little Miss Muffet, who would like to speak a piece or two. He must explain to Mr. Slapp that we don't know whether the Miss Inkwell who sang here a week ago is related to the Inkwells of Toledo or not.

The drummer has lost his keys, the soprano is looking for ice water, the contralto would like to Charleston, and who's got a match?—Eddie listens and serves them all.

He is butler, diplomat, hall tree, major domo, chef d'affaires, keeper of the light, and blue-eyed bat boy.

He is one of the unsung heroes of the night, keeping his fist in the leak in the dike, separating the wheat from the corn flakes, and remembering the Maine.

### And the Great Big Bear Said—

People wander into the radio stations all day with a museum look in their eyes and we attendants show them all around.

A little boy in knee breeches came up the other day while I was in the studio. He was a simple youth and there was a look of saffron fields of esmeralda in his eyes. He looked at this and that, and said never a word.

"Just looking around?" I asked, with that pleasant rising inflection.

"Uh-huh", he grunted.

"Well", I started, in my best words of one syllable, "this is the announcer's desk over here, where the announcer sits and talks. You see, the announcer is the man who tells you who has sung a song and who is going to sing the next song. The man who sings the song stands over there beside the piano. He sings into that little round thing, and we call that a mic-ro-phone. It's in a case made of wire screen, just like a squirrel cage (and here I laughed long in a juvenile way to put over my point), and we have it covered to keep out dust and fingers and things.

"And you see all this cloth on the walls and the ceiling. Those are the drapes and a canopy we have so the music won't echo in here. Flat walls make an echo, you know.

"And here is Uncle Walt's desk. This is where all the bedtime animals play (warming to my paternal theme), and where Uncle Walt reads the funnies to my little folks on Sunday morning. I suppose you know Uncle Walt's animals, don't you—Pal, the dog, and Junbo, the elephant, and Ducky-Lucky?"

"Yes, I do," replied the wee boy with the look of saffron fields of esmeralda in his eyes, "but tell me, what would be the circuit for reflexing the oscillator tube for one stage of audio-frequency amplification? Is it possible to combine the Tropadyne principle with a Super-Heterodyne employing crystal detectors? Would you mind if I went up on the roof to look at your counterpoise?"

"Not at all," I gurgled. I took him up there—and pushed him off.

*Radio programs, just a stone's throw back in years, used to be run in the same fill-time fashion as the early movie programs were. You recall the olden time movie pianist who rumbled on, one eye on the audience and one eye on the film, changing tempo for the cowboy chases and twittering the keys through the romantic scenes. Radio stations, only a while back, were like that.*

*We have been present in radio studios when the pianist-announcer-vocalist would run through two hours, alternating piano or vocal solos with orchestra groups, peering out the window all the while, like Bluebeard's sister-in-law, for some more talent to appear on the horizon and drop in.*

*Nowadays the radio stations have programs built weeks in advance, with all features timed to the minute. The orchestra accompaniment is timed and played according to "cue sheets," just as the movie orchestras change their melody or tempo with every change of scene. In the better concerts the announcer's introductions are written into a scenario, so that all announcements, music, and accompaniments run off like clockwork. Another musical or dramatic company is rehearsing in another room, ready to come on the air on the stroke of the hour.*

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The time honored superstition of the sea is still observed in ships' radio call letters. The call letters of an ill-fated vessel are never re-assigned to another—but nowadays they are given to a broadcasting station. Stations WWJ, KRE, KOB, KNX, WHN, KJS, WSB, KLZ, KGB and WGR all have calls that formerly belonged to ships and were later granted to the landlubbers.

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*One of many of Noah Webster's good old-fashioned words that are being grossly mistreated on the radio is "courtesy." And it is such a nice and well-meaning word, too!*

*Night after night we hear, "This recital is presented through the courtesy of the Excelsior Pants Matching Company—walk upstairs and save a dollar." And although it may be sweet and benevolent and philanthropic of the Excelsior people to give us this recital on the radio, there is no more "courtesy" about it than in my buying a locomotive from a locomotive manufacturer. It is publicity for the Excelsior firm, bought and paid for.*

*The radio station may be allowing this advertisement for the pants matching concern merely because the latter offers a good program, or the station may be charging the organization a round sum for the privilege of putting a program out with the advertisement appended. In either case the advertiser is expecting financial returns for his efforts or expenditure—all of which rather obscures the "courtesy" of his radio offering.*

*Occasionally entertainers may be loaned from a theatrical company to a radio station for the publicity involved, in which event it is true that "The program is presented through the 'courtesy' of the management of the Midnight Theater."*

*Advertising on the radio constitutes a sale or an exchange, not a "courtesy." The only merchant who extends a "courtesy" is the druggist who sells stamps.*

## When We Are Very Young

Everybody, mostly, knows our "Punch and Judy Time" for the children every evening, when I must masquerade as "Uncle Walt" for a half hour, but nobody knows the genuine pleasure there is in doing it. With a boxful of whistles, bells, and other stage properties to so delude thousands of little listeners that they actually send cakes, candies and letters addressed to my fictitious animals—"Jumbo," the baby elephant; "Cuckoo," the mischievous bird; "Rosie," the wobbly calf; "Pal," the Airedale dog; "Ducky-Lucky," and the others—I have more fun for every evening than the family Santa Claus has every Christmas.

The children listeners are more regular correspondents than their elders. Once I had them submitting their own original poems; then their very own stories; then their dreams; then original drawings of what we all looked like in the studio; and now I give them five words each evening with which they build their own "patchwork" stories. It leads their imagination and natural story-telling proclivities on rampant chases, with the result that my overflowing juvenile files are the most fascinating part of our radio station. If I could sit some evening and read the children's mail to you on the air for five hours, I am positive none of you would tune out during the entire time.

Let me read you a few, picked at random:

"A Good Deed," by a Gladys Avenue child: "It was a slipper day. A lady was walking down the street. She had a lot of bundles. It was so very slipper that she fell and all the bundles fell all over the sidewalk. Vincent saw her and he ran out to help her. He helped her and carried her bundles home she offered him a dine but he said no thanks."

Or "The Six Sillies," by a fourth grade boy: "Once upon a time there was a young girl who reached the age of thirty seven year without ever having a lower, for she was so foolish that no one want to marry her. One day however a young man arrived to pay his addresses to her, and her mother bringing with joy sent her to git some beer. As the girl did not come ten minnit she went downstairs and saw the girl sity on stairs and by her side the beer was run thinking Her Mother said the beer is run over and what are you thinking she said I am thinking what I call my first child after I am married to that young man. All the names in the calendar are take.

"Well I will help and so the husband who was up stairs he said what are you doing. We are thinking what we should call children that our girl is going marries. Well I will help you think. Up stairs was the lower who saw the three sitting on stairs. What are you doing. We are try to think if you marry our girl what to name child. Well good bye I am going away. When I shall have fund one sillier and than I will come back and marry your girl. So is journey went on He walking a long time he seen some people knocking down walnuts and try to throw them into cart with a fork. What are you doing there he asked. We want to load the cart with our walnuts but we can't manage to do it. The lower

advised them to git a basket and to put the walnut in it so as to turn them into the cart. Well he said to himself I have already found someone more foolish than those three. He went back to the girl and marry her and many year after they have children."

"A Sailor," by a little Wolfram Street miss: "A sailor was traveling on a ship. He saw a child fall in to the water so having pity on her he dived in to the water. In doing so he risked his own life."

And here's a sweet note that is typical of them all: "Dear Uncle Walt. My name is Edward Williams and I tune in every night. I like all the jokes, stories and songs, and I enjoy the animals. I have a bird, too, a canary, and he is a trained bird. He is not shut in his cage, goes all over, and when it 5.30 p.m. he comes to the radio and sings and sings. His name is Peedy. Well, Uncle Walt, wish you could see me. I got red hair and the worst is that it is all curls and the ladies just envy me and I wish I could get rid of my hair. I am big and very good. I am going to West Point and be a general, so I can win all the wars for the U. S. A. I am sending my love to Pal, and much love to you. Please shoot up a star in the sky for me."

Every one in the lovable scrawl, uphill and down, of the child under ten. Here's another by a young authoress: "Ruth got a rubber doll from her mother. The doll squeaked loudly when it was squeezed. One night Ruth left the doll lying on the floor. That night a burglar came into the house. He was tip-towing around when he stepped on the doll. It squeaked loudle. The burglar gave a jump and stepped on the doll again. By this time the people were awake and the burglar ran away."

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*The name of a new German radio station is Koenigswusterhausen— which is a whole concert in itself.*

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## Radio Widows

*The radio has widowed a lot of wives and orphaned a lot of young 'uns. In any home today your American family is glued to the ear phones, and so is your old man.*

*Radio keeps the married men home o' nights, and then takes them miles away for the whole evening. What good is a husband if he plugs up his ears all the time he is home?*

*The incurable and irrevocable radio cuckoo hides his head ostrich-like in the head phones right after dessert and stays there long past curfew, logging stations and leaping from Greenland's icy mountains to Florida's coral strand. He keeps a "log," a diary of his nocturnal adventurings, a record of his number of miles per hour.*

*Most radio logs are no more important than yesterday's flattery. They serve only to bore everybody the radio fan talks to. They should be carefully checked, filed, kept in a dry place and then fed to Absalom, the children's pet goat.*

*But, anyway, they keep us out of mischief.*

## American Radio Stations by Call Letters

Call Letters	Location	Operated By	Power (Watts)	Wave Length (Meters)	Frequency (Kilocycles)
KDKA	East Pittsburgh, Pa.	Westinghouse El. & Mfg. Co.	10,000	309.1	970
KDLR	Devils Lake, N. D.	Radio Elec. Co.	5	231	1300
KDYL	Salt Lake City, Utah	Newhouse Hotel	50	246	1220
KFAB	Lincoln, Neb.	Neb. Buick Auto Co.	1000	340.7	880
KFAD	Phoenix, Ariz.	Elec. Equip. Co.	100	273	1100
KFAF	San Jose, Cal.	Alfred E. Fowler	50	217.3	1380
KFAU	Boise, Idaho	Boise High School	750	280	1070
KFBB	Havre, Mont.	F. A. Buttrey & Co.	50	275	1090
KFBC	San Diego, Cal.	W. K. Azbill and Union League Club	100	380	789
KFBK	Sacramento, Cal.	Kimball-Upton Co.	100	535	560.4
KFBL	Everett, Wash.	Leese Brothers	100	224	1340
KFBS	Trinidad, Colo.	School District No. 1	15	238	1260
KFBU	Laramie, Wyo.	St. Mathews Cathedral	1000	374	800
KFCB	Phoenix, Ariz.	Nielsen Radio Supply Co.	100	238	1260
KFDD	Boise, Idaho	St. Michael's Cathedral	50	275.1	1090
KFDM	Beaumont, Tex.	Magnolia Petroleum Co.	500	315.6	950
KFDX	Shreveport, La.	First Baptist Church	500	236.1	1270
KFDY	Brookings, S. D.	South Dakota State College of Agriculture & Mechanic Art	500	305.9	980
KFDZ	Minneapolis, Minn.	Harry O. Iverson	10	231	1300
KFEC	Portland, Ore.	Meier & Frank Co.	50	248	1210
KFEL	Denver, Colo.	Eugene P. O'Fallon	250	254.1	1180
KFEQ	Oak, Neb.	Scroggin & Co. Bank	500	267.7	1120
KFEY	Kellogg, Idaho	Bunker Hill & Sullivan Mining & Concentrating Co.	10	233	1290
KFFP	Moberly, Mo.	First Baptist Church	50	242	1240
KFGQ	Boone, Iowa	Crary Hardware Co.	10	226	1330
KFH	Wichita, Kan.	Hotel Lassen	500	267.7	1120
KFHA	Gunnison, Colo.	Western State College of Colo.	50	252	1190
KFHL	Oakaloosa, wa.	Penn College	10	240	1250
KFI	Los Angeles, Cal.	Earl C. Anthony, Inc.	4000	467	645
KFIF	Portland, Ore.	Benson Polytechnic Inst.	100	248	1210
KFIO	Spokane, Wash.	No. Cent. High School	100	266	1130
KFIQ	Yakima, Wash.	First Methodist Church	100	256	1170
KFIU	Juneau, Alaska	Alaska Light & Pow. Co.	10	226	1330
KFIZ	Fond du Lac, Wis.	Fond du Lac Commonwealth Reporter	100	273	1100
KFJB	Marshalltown, Iowa	Marshall Elec. Co.	10	248	1210
KFJC	Junction City, Kan.	R. B. Fegan (auspices of the Episcopal church)	10	218.8	1370
KFJF	Oklahoma City, Okla.	National Radio Mfg. Co.	500	260.7	1150
KFJI	Astoria, Ore.	Liberty Theatre, E. E. Marsh	10	245.8	1220
KFJM	Grand Forks, N. D.	University of North Dakota	100	278	1080
KFJR	Portland, Ore.	Ashley C. Dixon & Son	100	263	1140
KFJY	Fort Dodge, Iowa	Tunwall Radio Co.	50	246	1220
KFJZ	Fort Worth, Tex.	W. E. Branch	50	254.1	1180
KFKA	Greely, Colo.	Colorado State Teachers' College	50	273	1100

# Chicago Tribune

KFKU	Lawrence, Kan.	University of Kansas	500	275.1	1090
KFKX	Hastings, Neb.	Weatinghouse El. & Mfg. Co.	5000	288.3	1040
KFKZ	Kirksville, Mo.	Kirksville Chamber of Commerce	10	225.4	1330
KFLR	Albuquerque, N. M.	University of New Mexico	100	254	1180
KFLU	San Benito, Tex.	San Benito Radio Club	10	236	1270
KFLV	Rockford, Ill.	Swedish Evan. Mission Church	100	229	1310
KFLX	Galveston, Tex.	George R. Clough	10	240	1250
KFMR	Sioux City, Iowa	Morningside College	100	261	1150
KFMX	Northfield, Minn.	Carleton College	500	336.9	890
KFNF	Shenandoah, Iowa	Henry Field Seed Co.	1000	461.3	650
KFOA	Seattle, Wash.	Rhodes Dept. Store	1000	454.3	660
KFOB	Burlingame, Cal.	KFOB, Inc.	50	225.4	1330
KFON	Long Beach, Cal.	Nichols & Warner, Inc.	500	232.4	1290
KFOO	Salt Lake City, Utah	Latter Day Saints University	250	236	1270
KFOR	David City, Neb.	David City Tire & Elec. Co.	100	226	1330
KFOT	Wichita, Kan.	College Hill Radio Club	50	231	1300
KFOX	Omaha, Neb.	Technical High School	100	248	1210
KFOY	St. Paul, Minn.	Beacon Radio Service	50	252	1190
KFPL	Dublin, Tex.	C. C. Baxter	15	252	1190
KFPM	Greenville, Tex.	New Furniture Co.	10	242	1240
KFPR	Los Angeles, Cal.	Los Angeles County Forestry Dept	500	231	1300
KFPW	Cartersville, Mo.	St. John's Church	20	258	1160
KFPY	Spokane, Wash.	Symons Investment Co.	250	273	1098
FQA	St. Louis, Mo.	The Principia	100	261	1150
KFQB	Fort Worth, Tex.	Searchlight Pub. Co.	1000	263	1140
KFQD	Anchorage, Alaska	Chovin Supply Co.	100	227.1	1320
KFQP	Iowa City, Iowa	George S. Carson, Jr.	10	224	1340
KFQU	Holy City, Cal.	W. E. Riker	100	230.6	1300
KFQW	North Bend, Wash.	C. F. Knierim Photo, Radio & Elec. Shop	50	215.7	1390
KFQZ	Hollywood, Cal.	Taft Radio Co.	50	226	1330
KFRB	Beeville, Tex.	Hall Bros.	250	248	1210
KFRC	San Francisco, Cal.	City of Paris Dry Goods Co.	50	267.7	1120
KFRU	Columbia, Mo.	Stephens' College	500	499.7	600
KFRW	Olympia, Wash.	Western Broadcasting Corp.	50	218.8	1370
KFSD	San Diego, Cal.	Airfan Radio Corp.	1000	245.8	1220
KFSG	Los Angeles, Cal.	Echo Park Evan. Assn.	500	275.1	1090
KFUL	Galveston, Tex.	Thomas Goggin & Bros. Music Co.	50	258	1160
KFUM	Colorado Springs, Colo.	W. D. Corley	100	239.9	1250
KFUO	St. Louis, Mo.	Concordia College	500	545.1	550
KFUP	Denver, Colo.	Fitzsimmons Gen. Hospital	50	234	1280
KFUR	Ogden, Utah	Peery Building Co., Inc.	50	224	1340
KFUS	Oakland, Cal.	Louis L. Sherman	50	256.2	1170
KFUT	Salt Lake City, Utah	U. of Utah	100	261	1150
KPUU	Oakland, Cal.	Colburn Radio Laboratories	50	220.4	1360
KFVD	Venice, Cal.	W. J. & C. I. McWhinnie	50	205.4	1460
KFVE	St. Louis, Mo.	Benson Broadcasting Corp.	5000	239.9	1250
KFVG	Independence, Kan.	First M. E. Church	15	236	1270
KFVI	Houston, Tex.	56th Cavalry	10	240	1250
KFVN	Fairmont, Minn.	Carl E. Bagley	50	227	1320
KFVR	Denver, Colo.	Moonlight Ranch	50	244	1230
KFVS	Cape Girardeau, Mo.	Cape Girardeau Battery Station	50	224	1340
KFVY	Albuquerque, N. M.	Radio Supply Co.	10	250	1200
KFWB	Hollywood, Cal.	Warner Bros. Pictures, Inc.	500	252	1190
KFWC	San Bernardino, Cal.	L. E. Wall	5	211.1	1420
KFWF	St. Louis, Mo.	St. Louis Truth Center	250	214.2	1400
KFWH	Eureka, Cal.	F. W. Morse, Jr.	100	254	1180
KFWI	San Francisco, Cal.	Radio Entertainments, Inc.	500	226	1300

# Radio Book

KFWM	Oakland, Cal.	Oakland Educ. Society	250	206.8	1450
KFWO	Avalon, Cal.	Lawrence Mott	500	211.1	1420
KFWU	Pineville, La.	Louisiana College	100	238	1260
KFWV	Portland, Ore.	KFWV Broadcast Studios	100	212.6	1410
KFXB	Big Bear Lake, Cal.	B. O. Heller	500	202.6	1480
KFXD	Logan, Utah	Service Radio	10	205.4	1460
KFXF	Colorado Springs, Colo.	Pike's Peak Broad. Co.	500	249.9	1200
KFXH	El Paso, Tex.	Bledsoe Radio Co.	50	242	1240
KFXJ	Near Edgewater, Colo.	R. G. Howell	15	215.7	1390
KFXR	Oklahoma City Okla.	Classen Film Co.	15	214.2	1400
KFXZ	Flagstaff, Ariz.	Harry M. Costigan	50	205.4	1460
KFYF	Oxnard, Cal.	Carl's Radio Den.	10	214.2	1400
KFYJ	Houston, Tex. (Port.)	Chronicle Publishing Co.	10	238	1260
KFYO	Texarkana, Tex.	Buchanan Vaughn Co.	10	209.7	1430
KFYR	Bismarck, N. D.	Hoskins-Meyer, Inc.	10	248	1210
KGAR	Tucson, Ariz.	Tucson Citizen	100	243.8	1230
KGBS	Seattle, Wash.	A. C. Dailey	10	227	1321
KGBU	Ketchikan, Alaska	R. R. Thornton	500	228.9	1310
KGBW	Joplin, Mo.	Martin Brotherson	250	282.8	1060
KGBX	St. Joseph, Mo.	J. R. Abercrombie	30	347.8	862
KGBY	Shelby, Neb.	A. C. Dunning	10	202.6	1480
KGBZ	York, Neb.	Federal Live Stock Remedy Co.	100	333.1	900
KGCA	Decorah, Iowa	C. W. Greenley	15	280.2	1070
KGCB	Oklahoma City, Okla.	Wallace Radio Inst.	50	331	906
KGCG	Newark, Ark.	Moore Mctor Co.	100	234.2	1280
KGCH	Wayne, Neb.	Wayne Hospital	500	450	663.3
KGCI	San Antonio, Tex.	International Radio Co.	15	239.9	1250
KGCL	Seattle, Wash.	Louis Wasmer	10	230.6	1300
KGCM	San Antonio, Tex.	R. B. Bridge	10	263	1140
KGCN	Concordia, Kan.	A. E. Smith	50	210	1428
KGDE	Bartlett, Minn.	Jaren Drug Co.	50	232.4	1290
KGDI	Seattle, Wash.	Northwest Radio Service Co.		416.4	720
KGDJ	Cresco, Iowa	R. Rathert		202.6	1480
KGO	Oakland, Cal.	General Electric Co.	5000	361.2	830
KGTT	San Francisco, Cal.	Glad Tidings Tab.	50	206.8	1450
KGU	Honolulu, Hawaii	Marion A. Mulrony	500	270.1	1110
KGW	Portland, Ore.	Morning Oregonian	1000	491.5	610
KGY	Lacey, Wash.	St. Martin's College	50	277.6	1080
KHJ	Los Angeles, Cal.	Times-Mirror Co.	500	405.2	740
KHQ	Spokane, Wash.	Louis Wasmer	1000	394.5	760
KICK	Anita, Iowa	Atlantic Auto Co.	100	272.6	1100
KJBS	San Francisco, Cal.	J. Brunton & Sons	5	220	1360
KJR	Seattle, Wash.	Northwest Radio Service Co.	1000	384.4	780
KLDS	Independence, Mo.	Reorganized Church of Jesus Christ of Latter Day Saints	1000	440.9	680
KLS	Oakland, Cal.	Warner Bros. Radio Sup. Co.	250	250	1200
KLX	Oakland, Cal.	Tribune Publishing Co.	500	508.2	590
KLZ	Denver, Colo.	Reynolds Radio Co.	500	265.3	1130
KMA	Shenandoah, Iowa	May Seed and Nursery Co.	500	461.3	650
KMJ	Fresno, Cal.	Fresno Bee	50	234.2	1280
KMMJ	Clay Center, Neb.	M. M. Johnson Co.	1000	228.9	1310
KMO	Tacoma, Wash.	K. M. O. Inc.	100	250	1200
KMOX	St. Louis, Mo.	Voice of St. Louis	1500	280.2	1070
KMTR	Los Angeles, Cal.	Echophone Mfg. Co.	500	238	1260
KNRC	Santa Monica, Cal.	C. B. Juneau	500	208.2	1440
KNX	Los Angeles, Cal.	Los Angeles Express	1000	336.9	890
KOA	Denver, Colo.	General Electric Co.	5000	322.4	930
KOAC	Corvallis, Ore.	Ore. Ag. College	500	280.2	1070

# Chicago Tribune

KOB	State College, N. M.	New Mexico Agricultural College	1000	348.6	860
KOCH	Omaha, Neb.	Omaha Central High School	250	258	1160
KOCW	Chickasha, Okla.	Oklahoma College for Women	200	252	1190
KOIL	Council Bluffs, Iowa	Mora Motor Oil Co.	500	305.9	1080
KOIN	Portland, Ore.	Koin, Inc.	1000	319	940
KOMO	Seattle, Wash.	B. F. Fisher	1000	305.9	980
KOWW	Walla Walla, Wash.	Frank A. Moore	500	285	1052
KPJM	Prescott, Ariz.	Wilburn Radio Service	15	215	1395
KPO	San Francisco, Cal.	Hale Bros.	1000	428.3	700
KPPC	Pasadena, Cal.	Pasadena Presby. Church	50	229	1310
KPRC	Houston, Tex.	Post Dispatch	500	296.9	1010
KPSN	Pasadena, Cal.	Pasadena Star-News	1000	315.6	950
KQV	Pittsburgh, Pa.	Doubleday-Hill Elec. Co.	500	275	1090
KQW	San Jose, Cal.	First Baptist Church	500	333.1	900
KRE	Berkeley, Cal.	Berkeley Daily Gazette	100	256	1170
KSAC	Manhattan, Kan.	Kansas State Agricultural College	500	340.7	880
KSBA	Shreveport, La.	W. G. Patterson	1000	312.6	959
KSD	St. Louis, Mo.	Post Dispatch	750	545.1	550
KSL	Salt Lake City, Utah	Radio Service Corp. of Utah	1000	299.8	1000
KSMR	Santa Maria, Cal.	S. M. Valley R. R.	100	209.7	1430
KSO	Clarinda, Iowa	A. A. Berry Seed Co.	500	405.2	740
KTAB	Oakland, Cal.	Associated Broadcasters	1000	302.8	990
KTBI	Los Angeles, Cal.	Bible Institute of Los Angeles	750	293.9	1020
KTBR	Portland, Ore.	Brown's Radio Shop	50	263	1140
KTHS	Hot Springs, Ark.	New Arlington Hotel Co.	500	374.8	800
KTNT	Muscatine, Iowa	Norman Baker	1000	333.1	900
KTUE	Houston, Tex.	Uhalt Elec. Co.	5	263	1140
KTW	Seattle, Wash.	First Presbyterian Church	1000	454.3	660
KUOA	Fayetteville, Ark.	Univ. of Arkansas	750	299.8	1000
KUOM	Missoula, Mont.	University of Montana	500	243.8	1230
KUSD	Vermillion, S. D.	University of South Dakota	100	278	1080
KUT	Austin, Tex.	University of Texas	500	231	1300
KVOO	Bristow, Okla.	Voice of Oklahoma	500	374.8	800
KWCR	Cedar Rapids, Iowa	H. F. Parr	500	278	1080
KWG	Stockton, Cal.	Portable Wireless Tel. Co.	50	248	1210
KWKC	Kansas City, Mo.	Wilson-Duncan Studio	100	236	1270
KWSC	Pullman, Wash.	State College of Washington	500	348.6	850
KWUC	Lemars, Iowa	Western Union College	50	252	1190
KWWG	Brownsville, Tex.	City of Brownsville	500	278	1080
KYW	Chicago, Ill.	Westinghouse Manufacturing Co.	3500	535.4	560
KZM	Oakland, Cal.	Preston D. Allen	100	240	1250
NAA	Arlington, Va.	U. S. Navy	1000	435	680
WAAD	Cincinnati, Ohio	Ohio Mechanics Institute	25	258	1160
WAAF	Chicago, Ill.	Chicago Daily Drivers Journal	250	277.6	1080
WAAM	Newark, N. J.	I. R. Nelson	500	263	1140
WAAT	Jersey City, N. J.	Frank V. Bremer	10	235	1276
WAAW	Omaha, Neb.	Omaha Grain Exchange	500	278	1080
WABB	Harrisburg, Pa.	Harrisburg Radio Co.	10	204	1470
WABC	Asheville, N. C.	Asheville Battery Co.	20	254	1180
WABI	Bangor, Me.	First Universalist Church	100	240	1250
WABO	Rochester, N. Y.	Hickson Elec. Co., Inc.	100	278	1080
WABQ	Haverford, Pa.	Haverford College Radio Club	100	261	1150
WABR	Toledo, Ohio	Scott High School	50	263	1140
WABW	Wooster, Ohio	College of Wooster	50	206.8	1450
WABX	Mount Clemens, Mich.	Henry B. Joy	500	245.8	1220
WABY	Philadelphia, Pa.	John Magaldi, Jr.	50	242.1	1240
WABZ	New Orleans, La.	Coliseum Place Baptist Church	50	275.1	1090
WADC	Akron, Ohio	Allen T. Simmons	500	258.5	1160

# Radio Book

WAFD	Port Huron, Mich. . . . .	Albert B. Parfet Co. . . . .	500	275.1	1090
WAGN	Royal Oak, Mich. . . . .	R. L. Miller . . . . .	50	275	1330
WAHG	Richmond Hill, N. Y. . . . .	A. H. Grebe & Co. . . . .	500	315.6	950
WAIT	Taunton, Mass. . . . .	A. H. Waite & Co. . . . .	10	229	1310
WAIU	Columbus, Ohio. . . . .	American Ins. Union. . . . .	500	293.9	1020
WAMD	Minneapolis, Minn. . . . .	Radisson Corp. . . . .	500	243.8	1230
WAPI	Auburn, Ala. . . . .	Alabama Polytechnic Institute . . . . .	1000	461.3	650
WARC	Medford, Mass. . . . .	Am. Radio & Research Corp. . . . .	100	261	1150
WASH	Grand Rapids, Mich. . . . .	Baxter Laundry Co. . . . .	500	256.3	1170
WATT	(Portable) Mass. . . . .	Edison Elec. Co. . . . .	100	243.8	1230
WBAA	West Lafayette, Ind. . . . .	Purdue University . . . . .	250	273	1100
WBAK	Harrisburg, Pa. . . . .	Pennsylvania State Police . . . . .	500	275.1	1090
WBAL	Baltimore, Md. . . . .	Consol. Gas & E. Co. . . . .	1000	245.8	1220
WBAO	Decatur, Ill. . . . .	James Millikin University . . . . .	100	270.1	1110
WBAP	Fort Worth, Tex. . . . .	Star Telegram . . . . .	1500	475.9	630
WBAW	Nashville, Tenn. . . . .	Braid Elec. Co. . . . .	100	236.1	1270
WBAX	Wilkes-Barre, Pa. . . . .	John H. Stenger, Jr. . . . .	100	256	1170
WBBC	Brooklyn, N. Y. . . . .	P. J. Testan . . . . .	100	249.9	1200
WBBL	Richmond, Va. . . . .	Grace Covenant Pres. Church . . . . .	100	228.9	1310
WBBM	Chicago, Ill. . . . .	Atlas Investment Co. . . . .	1500	226	1330
WBPP	Petoskey, Mich. . . . .	Petoskey High School. . . . .	200	238	1260
WBBR	Rossville, N. Y. . . . .	Peoples Pulpit Association . . . . .	500	416.4	720
WBBS	New Orleans, La. . . . .	First Baptist Church . . . . .	50	252	1190
WBBW	Norfolk, Va. . . . .	Ruffner Junior High School . . . . .	50	222	1350
WBBY	Charleston, S. C. . . . .	Washington Light Infantry . . . . .	10	268	1120
WBBZ	Chicago, Ill. (Portable) . . . . .	C. L. Carrell . . . . .	50	215.7	1390
WBCN	Chicago, Ill. . . . .	Foster & McDonnell . . . . .	500	265.3	1130
WBES	Takoma Park, Md. . . . .	Bliss Electrical School . . . . .	100	222	1350
WBNY	New York, N. Y. . . . .	Baruchrome Corp . . . . .	500	322.4	930
WBOQ	Richmond Hill, N. Y. . . . .	A. H. Grebe & Co., Inc. . . . .	100	236.1	1270
WBRC	Birmingham, Ala. . . . .	Birmingham Broadcasting Corp. . . . .	50	248	1210
WBRE	Wilkes-Barre, Pa. . . . .	Baltimore Radio Exchange . . . . .	100	231	1300
WBRS	Brooklyn, N. Y. . . . .	Universal Radio Mfg. Co. . . . .	100	394	761
WBT	Charlotte, N. C. . . . .	Charlotte Chamber of Com. . . . .	250	275	1090
WBZ	Springfield, Mass. . . . .	Westinghouse El. & Mfg. Co. . . . .	5000	333.1	900
WBZA	Boston, Mass. . . . .	Westinghouse El. & Mfg. Co. . . . .	250	333.1	1240
WCAC	Mansfield, Conn. . . . .	Connecticut Agricultural College. . . . .	500	275	1090
WCAD	Canton, N. Y. . . . .	St. Lawrence University . . . . .	250	263	1140
WCAE	Pittsburgh, Pa. . . . .	Kaufmann & Baer Co. . . . .	500	461.3	650
WCAJ	University Place, Neb. . . . .	Nebraska Wesleyan University . . . . .	500	254.1	1180
WCAL	Northfield, Minn. . . . .	St. Olaf College . . . . .	500	336.9	890
WCAM	Camden, N. J. . . . .	City of Camden . . . . .	250	336.9	890
WCAO	Baltimore, Md. . . . .	Monumental Radio, Inc. . . . .	100	275	1090
WCAR	San Antonio, Tex. . . . .	Southern Radio Corp. of Texas . . . . .	500	263	1140
WCAT	Rapid City, S. D. . . . .	South Dakota State School of Mines . . . . .	50	240	1250
WCAU	Philadelphia, Pa. . . . .	Universal Broadcasting Co. . . . .	500	278	1080
WCAX	Burlington, Vt. . . . .	University of Vermont . . . . .	100	250	1200
WCAZ	Carthage, Ill. . . . .	Carthage College . . . . .	50	245.8	1220
WCBA	Allentown, Pa. . . . .	Charles W. Heimbach . . . . .	15	254	1180
WCBD	Zion, Ill. . . . .	Wilbur G. Voliva . . . . .	5000	344.6	870
WCBE	New Orleans, La. . . . .	Uhalt Bros. Radio Co. . . . .	5	263	1140
WCBH	Oxford, Miss. (near) . . . . .	University of Mississippi . . . . .	50	242	1240
WCBM	Baltimore, Md. . . . .	Hotel Chateau . . . . .	50	229	1310
WCBR	Providence, R. I. (Portable) . . . . .	Charles H. Messter . . . . .	100	209.7	1430
WCBS	(Portable) . . . . .	H. L. Dewing . . . . .	250	242	1239
WCCO	Minneapolis, Minn. . . . .	Washburn Crosby Co. . . . .	5000	416.4	720

# Chicago Tribune

WCFL	Chicago, Ill.	Federation of Labor	1000	491.5	610
WCFT	Tullahoma, Tenn.	Knights of Pythias	10	252	1190
WCLO	Camp Lake, Wis.	C. E. Whitmore Sales Co.	50	231	1300
WCLS	Joliet, Ill.	WCLS, Inc.	150	214.2	1400
WCMA	Culver, Ind.	Culver Military Academy	500	258.5	1160
WCOA	Pensacola, Fla.	City of Pensacola	500	222.1	1350
WCRW	Chicago, Ill.	C. R. White	50	416.4	720
WCSH	Portland, Me.	H. P. Rines	500	256.3	1170
WCSO	Springfield, Ohio	Wittenberg College	100	248	1210
WCWK	Ft. Wayne, Ind.	Chester W. Keen	250	234.2	1280
WCWS	(Portable), Mass.	C. W. Salene	100	209.7	1430
WCX	Pontiac, Mich.	Detroit Free Press and Jewett Radio and Phono. Co.	5000	516.0	580
WDAD	Nashville, Tenn.	Dad's Auto Accessories	150	226	1330
WDAE	Tampa, Fla.	Daily Times	250	273	1100
WDAF	Kansas City, Mo.	Kansas City Star	1000	365.6	820
WDAG	Amarillo, Tex.	J. Laurence Martin	100	263	1140
WDAH	El Paso, Tex.	Trinity M. E. Church	50	267.7	1120
WDAY	Fargo, N. D.	Radio Equipment Corp.	50	260.7	1150
WDBJ	Atlanta, Ga.	Gilham-Schoen Elec. Co.	100	270	1110
WDBJ	Roanoke, Va.	Richardson-Wayland El. Corp.	50	228.9	1310
WDBK	Cleveland, Ohio	M. F. Broz Radio Store	100	227	1320
WDBO	Winter Park, Fla.	Rollins College	500	239.9	1250
WDBZ	Kingston, N. Y.	Kingston Radio Club	10	232.4	1290
WDEL	Wilmington, Del.	Wilmington Elec. Spec. Co.	100	266	1130
WDGY	Minneapolis, Minn.	Dr. Geo. W. Young	500	263	1140
WDOD	Chattanooga, Tenn.	Chattanooga Radio Co.	500	256.3	1170
WDRC	New Haven, Conn.	Doolittle Radio Corp.	500	267.7	1120
WDWF	Cranston, R. I.	D. W. Flint, Inc.	500	440.9	680
WDZ	Tuscola, Ill.	James L. Bush	100	278	1080
WEAF	New York, N. Y.	National Broadcasting Co., Inc.	5000	491.5	610
WEAI	Ithaca, N. Y.	Cornell University	500	254	1180
WEAM	North Plainfield, N. J.	Borough of North Plainfield	250	261	1150
WEAN	Providence, R. I.	Shepard Co.	500	367	817
WEAO	Columbus, Ohio	Ohio State University	750	293.9	1020
WEAR	Cleveland, Ohio	Willard Storage Battery Co.	750	389.4	770
WEAU	Sioux City, Iowa	Davidson Bros. Co.	100	275	1090
WEBC	Superior, Wis.	Walter C. Bridges	100	242	1240
WEBH	Chicago, Ill.	Edgewater Beach Hotel Co.	2000	370.2	810
WEBJ	New York, N. Y.	Third Avenue Railway Co.	500	273	1100
WEBL	(Portable)	Radio Corporation of America	100	226	1330
WEBQ	Harrisburg, Ill.	Tate Radio Co.	10	226	1330
WEBR	Buffalo, N. Y.	H. H. Howell	100	244	1230
WEBW	Beloit, Wis.	Beloit College	500	267.7	1120
WEBZ	Savannah, Ga.	Savannah Radio Corp.	50	263	1140
WEDC	Chicago, Ill.	Emil Denmark Co.	1000	422.3	710
WEEI	Boston, Mass.	Edison El. Illum. Co. of Boston	500	348.6	860
WEHS	Evanston, Ill.	Oliver G. Fordham	10	202.6	1480
WEMC	Berrien Springs, Mich.	Emmanuel Missionary College	500	285.5	1050
WENR	Chicago, Ill.	All American Radio Corp.	1000	265.3	1130
WEW	St. Louis, Mo.	St. Louis University	1000	360	833
WFAA	Dallas, Tex.	Dallas News & Journal	500	475.9	630
WFAM	St. Cloud, Minn.	Times Publishing Co.	10	273	1100
WFAV	Lincoln, Neb.	University of Nebraska	500	275	1090
WFBC	Knoxville, Tenn.	First Baptist Church	50	250	1200
WFBE	Cincinnati, Ohio	Garfield Place Hotel Co.		232.4	1290
WFBG	Altoona, Pa.	William F. Gable Co.	100	278	1080
WFBH	New York, N. Y.	Concourse Radio Corp.	500	272.6	1100

# Radio Book

WFBJ	Collegeville, Minn.	St. John's University	100	236	1270
WFBL	Syracuse, N. Y.	Onondaga Hotel	100	252	1190
WFBM	Indianapolis, Ind.	Merchants Heat & Light Co.	250	268	1120
WFBR	Baltimore, Md.	Fifth Inf. Md. Nat. Guard	100	254	1180
WFBZ	Galesburg, Ill.	Knox College	20	254	1180
WFCI	Pawtucket, R. I.	Frank Crook, Inc.	100	229	1309
WFDF	Flint, Mich.	Frank B. Fallain	100	234	1280
WFI	Philadelphia, Pa.	Strawbridge & Clothier	500	394.5	760
WFKB	Chicago, Ill.	Francis K. Bridgman	500	217.3	1380
WFRL	Brooklyn, N. Y.	R. N. Lacey	100	205.4	1460
WGAL	Lancaster, Pa.	Lancaster El. Sup. & Con. Co.	10	248	1210
WGBB	Freeport, N. Y.	Harry H. Carman	100	243.8	1230
WGBC	Memphis, Tenn.	First Baptist Church	10	278	1080
WGBF	Evansville, Ind.	Finke Furniture Co.	500	236.1	1270
WGBI	Scranton, Pa.	Scranton Broadcasters, Inc.	10	239.9	1250
WGBR	Marshfield, Wis.	Geo. S. Ives	10	229	1310
WGBS	New York, N. Y.	Gimbel Bros.	500	315.6	950
WGBU	Fulford-by-the-Sea	Florida Cities Finance Co.	500	278	1080
WGBX	Orono, Me.	University of Maine	500	234.2	1280
WGCP	Newark, N. J.	D. M. May, Inc.	500	252	1190
WGES	Chicago, Ill.	J. Louis Guyon	500	249.9	1200
WGHB	Clearwater, Fla.	Ft. Harrison Hotel	500	265.3	1130
WGHP	Detroit, Mich.	Geo. Harrison Phelps, Inc.	1500	270.1	1110
WGM	Jeannette, Pa.	Verne & Elton Spencer	10	372	806
WGMU	Richmond Hill, N. Y.	A. H. Grebe Co. (Portable)	100	236	1270
WGN	Chicago, Ill.	The Chicago Tribune	5000	302.8	990
WGR	Buffalo, N. Y.	Federal Tel. Mfg. Corp.	750	319	940
WGST	Atlanta, Ga.	Georgia School of Tech.	500	270.1	1110
WGY	Schenectady, N. Y.	General Electric Co.	5000	379.5	790
WHA	Madison, Wis.	University of Wisconsin	750	535.4	560
WHAD	Milwaukee, Wis.	Marquette University	500	275	1090
WHAM	Rochester, N. Y.	Eastman School of Music	100	278	1080
WHAP	New York, N. Y.	Wm. H. Taylor Finance Corp.	1000	431	696
WHAR	Atlantic City, N. J.	F. P. Cook's Sons	500	275.1	1090
WHAS	Louisville, Ky.	Courier-Journal & Times	500	399.8	750
WHAZ	Troy, N. Y.	Rensselaer Polytechnic Inst.	1000	379.5	790
WHB	Kansas City, Mo.	Sweeney School Co.	500	365.6	820
WHBA	Oil City, Pa.	Shaffer Music House	10	250	1200
WHBC	Canton, Ohio	Rev. E. P. Graham	10	254	1180
WHBD	Bellefontaine, Ohio	Chamber of Commerce	20	222.1	1350
WHBF	Rock Island, Ill.	Beardsley Specialty Co.	100	222.1	1350
WHBG	Harrisburg, Pa.	John S. Skane	20	231	1300
WHBL	Chicago, Ill. (Portable)	C. L. Carrell	50	215.7	1390
WHBM	Chicago, Ill. (Portable)	C. L. Carrell	20	215.7	1390
WHBN	St. Petersburg, Fla.	First Ave. Methodist Church	10	239	1260
WHBP	Johnstown, Pa.	Johnstown Auto Co.	100	256	1170
WHBQ	Memphis, Tenn.	St. John's M. E. Church	50	233	1290
WHBU	Anderson, Ind.	Riviera Theatre and Bing's Clothing	10	218.8	1370
WHBW	Philadelphia, Pa.	D. R. Kienzle	100	215.7	1390
WHBY	West DePere, Wis.	St. Norbert's College	50	249.9	1200
WHDI	Minneapolis, Minn.	Wm. Hood, Dunwoody, Ind., Inst.	500	278	1080
WHEC	Rochester, N. Y.	Hickson Electric Co.	100	258	1160
WHFC	Chicago, Ill.	Hotel Flanders	150	258.5	1160
WHK	Cleveland, Ohio	Radio Air Serv. Corp.	1000	272.6	1100
WHN	New York, N. Y.	George Schubel	500	361.2	830
WHO	Des Moines, Iowa	Bankers Life Co.	5000	526	570

# Chicago Tribune

WHT	Deerfield, Ill.	Radiophone Broadcasting Corp.	3500	399.8	750
				238	1260
WIAD	Philadelphia, Pa.	Howard R. Miller	100	250	1200
WIAS	Burlington, Iowa	Home Electric Co.	100	254	1180
WIBA	Madison, Wis.	Capital Times Studio	100	236.1	1270
WIBG	Elkins Park, Pa.	St. Paul's Episcopal Church	50	222	1350
WIBH	New Bedford, Mass.	Elite Radio Stores	30	209.7	1430
WIBI	Flushing, L. I., N. Y.	Frederick B. Gittell, Jr.	50	218.8	1370
WIBJ	Chicago, Ill. (Portable)	C. L. Carrell	50	215.7	1390
WIBM	Chicago, Ill.	Billy Maine	10	215.7	1390
WIBO	Chicago, Ill.	Nelson Bros.	1000	226	1330
WIBR	Weirton, W. Va.	T. A. Owings	50	246	1220
WIBS	Elizabeth, N. J.	Thos. F. Hunter	10	202.6	1480
WIBU	Poynette, Wis.	The Electric Farm	20	222	1350
WIBW	Logansport, Ind.	Dr. L. L. Dill	100	220	1360
WIBX	Utica, N. Y.	WIBX, Inc.	150	234.2	1460
WIBZ	Montgomery, Ala.	A. D. Trumm	10	230.6	1300
WICC	Bridgeport, Conn.	Bridgeport Broadcasting Stations		285	1052
WIL	St. Louis, Mo.	Benson Radio Co.	250	258	1162
WIOD	Miami, Fla.	Carl G. Fischer	1000	247.8	1210
WIP	Philadelphia, Pa.	Gimbel Bros.	500	508.2	590
WJAD	Waco, Tex.	Jackson's Radio Eng. Lab.	500	352.7	850
WJAF	Ferndale, Mich.	Fernberg Radio Co.	50	400	750
WJAG	Norfolk, Neb.	Norfolk Daily News	200	270	1110
WJAK	Kokomo, Ind.	Kokomo Tribune	50	254	1180
WJAM	Cedar Rapids, Iowa	D. M. Perham	100	268	1120
WJAR	Providence, R. I.	The Outlet Co.	500	305.9	980
WJAS	Pittsburgh, Pa.	Pittsburgh Radio Sup. House	500	275	1090
WJAX	Jacksonville, Fla.	City of Jacksonville	1000	336.9	890
WJAZ	Mt. Prospect, Ill.	Amer. Radio Corp.	1500	322.4	930
WJBA	Joliet, Ill.	D. H. Lentz, Jr.	50	206.8	1450
WJBB	St. Petersburg, Fla.	Financial Journal	10	254.1	1180
WJBC	La Salle, Ill.	Hummer Furniture Co.	100	234	1280
WJBI	Red Bank, N. J.	Robt. S. Johnson	250	218.8	1370
WJBK	Ypsilanti, Mich.	E. F. Goodwin	10	233	1290
WJBL	Decatur, Ill.	Wm. Gushard Dry Goods Co.	500	270.1	1110
WJBO	New Orleans, La.	Valdemar Jensen	100	267.7	1120
WJBR	Onro, Wis.	Onro Drug Store	50	227.1	1320
WJBT	Chicago, Ill.	John S. Boyd	500	468.5	640
WJBU	Lewisburg, Pa.	Bucknell University	100	211.1	1420
WJBV	Woodhaven, N. J.	Union Course Lab.	100	469.9	638
WJBW	New Orleans, La.	C. Carlson, Jr.	30	340.7	880
WJBX	Osterville, Mass.	Henderson & Ross	100	280	1071
WJBY	Gadaden, Ala.	Elec. Construction Co.	30	270.1	1110
WJJD	Mooseheart, Ill.	Supreme Lodge, Loyal Order of Moose	1000	370.2	810
WJR	Pontiac, Mich.	Jewett Radio and Detroit Free Press	5000	516.9	580
WJY	New York, N. Y.	Radio Corp. of America	1000	405.2	740
WJZ	New York, N. Y.	Radio Corp. of America, (Boundbrook, N. J.)	50,000	454.3	660
WKAF	Milwaukee, Wis.	WKAF Broadcasting Co.	500	260.7	1150
WKAQ	San Juan, P. R.	Radio Corp. of Porto Rico	500	340.7	880
WKAR	E. Lansing, Mich.	Michigan Agri. College	1000	285.5	1050
WKAU	Laconia, N. H.	(Portable) Laconia Radio Club	50	224	1340
WKBA	Chicago, Ill.	Arrow Battery Co.	200	209.7	1430
WKBB	Joliet, Ill.	Sanders Bros.	150	282.8	1060

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WKBC	Birmingham, Ala.	H. L. Ansley	50	225	1333
WKBE	Webster, Mass.	K. & B. Electric Co.	100	270.1	1110
WKBF	Indianapolis, Ind.	N. B. Watson	100	244	1229
WKBG	Chicago, Ill.	C. L. Carrell (Portable)	100	215.7	1390
WKBH	LaCrosse, Wis.	Callaway Music Co.	500	249.9	1200
WKBI	Chicago, Ill.	F. L. Schoenwolf	50	220.4	1360
WKBJ	St. Petersburg, Fla.	Gospel Tabernacle	250	280	1071
WKBL	Monroe, Mich.	Monrona Radio Mfg. Co.	15	262	1190
WKBM	Newburgh, N. Y.	John Wilbur Jones	23	215.7	1390
WKBN	Youngstown, Ohio	Radio Electric Service Co.		360	832.8
WKBO	Jersey City, N. J.	Camith Corp.	200	309.1	970
WKBP	Battle Creek, Mich.	Battle Creek Enquirer & News.		265	1131
WKBR	Auburn, N. Y.	Chas. J. Heister	225	225	1333
WKBS	Galesburg, Ill.	Permil & Nelson	200	361.2	830
WKBT	New Orleans, La.	First Baptist Church	50	252	1190
WKBV	Brookville, Ind.	Knox Battery & Electric Co.	75	236.1	1270
WKBW	Buffalo, N. Y.	Churchill Evangelistic Assn., Inc.	1000	362.5	827
WKBY	Danville, Pa.				
	(Portable)	Fernwood, Quick	50	220	1363
WKBZ	Ludington, Mich.	Karl L. Ashbacher	15	256.3	1170
WKDR	Kenosha, Wis.	E. A. Dato	10	428.3	700
WKJC	Lancaster, Pa.	Kirk Johnson & Co.	50	258.5	1160
WKRC	Cincinnati, Ohio	Kodel Radio Corp.	1000	422.3	710
WKY	Oklahoma, Okla.	E. C. Hull and H. S. Richards	100	275	1090
WLAL	Tulsa, Okla.	First Christian Church	100	250	1200
WLAP	Louisville, Ky.	W. V. Jordan	20	275	1090
WLB	Minneapolis, Minn.	U. of Minn.	500	278	1080
WLBC	Muncie, Ind.	D. A. Burton		223.7	1340
WLBE	Brooklyn, N. Y.	J. H. Fruitman		230.6	1300
WLBL	Stevens Point, Wis.	Wis. Dept. of Markets	500	278	1080
WLIB	Chicago, Ill.	Liberty Weekly, Inc.	5000	302.8	990
WLIT	Philadelphia, Pa.	Lit Brothers	500	394.5	760
WLS	Chicago, Ill.	Sears-Roebuck & Co.	5000	344.6	870
WLSI	Providence, R. I.	Lincoln Studios	500	440.9	680
WLTS	Chicago, Ill.	Lane Tech High School	100	258	1160
WLW	Cincinnati, Ohio	Crosley Radio Corp.	5000	422.3	710
WLWL	New York, N. Y.	Missionary Society of St. Paul	5000	384.4	780
WMAC	Cazenovia, N. Y.	Clive B. Meredith	100	275	1090
WMAF	Dartmouth, Mass.	Round Hills Radio Corp.	1000	440.9	680
WMAK	Lockport, N. Y.	Norton Laboratories	500	265.3	1130
WMAI	Washington, D. C.	M. A. Leese Optical Co.	100	212.6	1410
WMAN	Columbus, Ohio	Heskett Radio Station	50	278	1080
WMAQ	Chicago, Ill.	Chicago Daily News	1000	447.5	670
WMAY	St. Louis, Mo.	Kingshighway Presby. Church	100	248	1210
WMAZ	Macon, Ga.	Mercer University	500	260.7	1150
WMBB	Chicago, Ill.	American Bond & Mortgage Co.	500	249.9	1200
WMBC	Detroit, Mich.	Michigan Broadcasting Co.	100	256	1170
WMBF	Miami Beach, Fla.	Fleetwood Hotel	500	384.4	780
WMBI	Chicago, Ill.	Moody Bible Inst.	500	288.3	1040
WMC	Memphis, Tenn.	Commercial Appeal	1000	499.7	600
WMCA	Hoboken, N. J.	Greeley Square Hotel Co.	500	340.7	880
WMRJ	Jamaica, N. Y.	P. J. Prinz	5	227.1	1320
WMSG	New York, N. Y.	Madison Square Garden	500	302.8	990
WNAB	Boston, Mass.	Shepard Stores	100	280.2	1070
WNAC	Boston, Mass.	Shepard Stores	500	430.1	897
WNAD	Norman, Okla.	University of Oklahoma	500	254.1	1180
WNAL	Omaha, Neb.	Omaha Central High School	50	258	1160
WNAT	Philadelphia, Pa.	Lennig Brothers Co.	100	250	1200

# Chicago Tribune

WNAX	Yankton, S. D.	Dakota Radio Apparatus Co.	100	244	1230
WNBH	New Bedford, Mass.	New Bedford Hotel.	250	247.8	1210
WNJ	Newark, N. J.	Radio Shop of Newark.	500	252	1190
WNOX	Knoxville, Tenn.	People's Tel. & Tel. Co.	500	267.7	1120
WNRC	Greensboro, N. C.	W. M. Nelson.	10	224	1340
WNYC	New York, N. Y.	City of New York.	1000	526	570
WOAI	San Antonio, Tex.	Southern Equipment Co.	2000	394.5	760
WOAN	Lawrenceburg, Tenn.	Vaughn Conservatory of Music.	500	282.8	1000
WOAX	Trenton, N. J.	Franklyn J. Wolff.	500	230.9	1250
WOBB	Chicago, Ill.	Longacre Eng. & Const. Co.	5	555.2	540
WOC	Davenport, Iowa.	Palmer School of Chiropractic.	5000	483.6	620
WOCL	Jamestown, N. Y.	A. E. Newton.	15	275.1	1090
WODA	Paterson, N. J.	O'Dea Temple of Music.	250	390.9	767
WOI	Ames, Iowa.	Iowa State College.	750	270.1	1110
WOK	Homewood, Ill.	Neutrowound Radio Mfg. Co.	5000	217.3	1380
WOKO	Peekskill, N. Y.	Harold E. Smith.	50	233	1290
WOMT	Manitowoc, Wis.	Mikadow Theatre.		254.1	1180
WOO	Philadelphia, Pa.	John Wanamaker.	500	508.2	590
WOOD	Grand Rapids, Mich.	Grand Rapids Radio Co.	500	241.8	1240
WOQ	Kansas City, Mo.	Unity School of Christianity.	1000	278	1080
WOR	Newark, N. J.	L. Bamberger & Co.	500	405.2	740
WORD	Batavia, Ill.	Peoples Pulpit Assn.	5000	275.1	1090
WOS	Jefferson City, Mo.	State Marketing Bureau.	500	440.9	680
WOW	Omaha, Neb.	Woodmen of the World.	1000	526	570
WOWO	Fort Wayne, Ind.	Main Auto Supply.	500	227	1320
WPAK	Agricultural Col., N. D.	North Dakota Agri. College.	50	275	1090
WPAP	Cliffside, N. J.	Palisades Amusement Park.	500	361.2	830
WPCC	Chicago, Ill.	North Shore Cong. Church.	500	258.5	1190
WPDQ	Buffalo, N. Y.	H. L. Turner.	250	205.4	1460
WPG	Atlantic City, N. J.	Municipality of Atlantic City.	5000	299.8	1000
WPRC	Harrisburg, Pa.	Wilson Printing and Radio Co.	100	215.7	1390
WPSC	State College, Pa.	Penn. State College.	500	260.7	1050
WQAA	Parkersburg, Pa.	Horace A. Beale, Jr.	500	220	1360
WQAC	Amarillo, Tex.	Gish Radio Service.	100	234	1280
WQAE	Springfield, Vt.	Moore Radio News Station.	50	246	1220
WQAM	Miami, Fla.	Electrical Equipment Co.	750	285.5	1050
WQAN	Scranton, Pa.	Scranton Times.	100	250	1200
WQAO	New York, N. Y.	Calvary Baptist Church.	500	361.2	830
WQJ	Chicago, Ill.	Calumet-Rainbo Broadcasting Co.	500	447.5	670
WRAF	Laporte, Ind.	The Radio Club.	100	224	1340
WRAH	Providence, R. I.	S. N. Read.	150	235	1276
WRAK	Escanaba, Mich.	Economy Light Co.	100	256	1170
WRAM	Galesburg, Ill.	Lombard College.	100	244	1230
WRAV	Yellow Springs, Ohio.	Antioch College.	100	263	1140
WRAW	Reading, Pa.	Avenue Radio Elec. Shop.	10	238	1260
WRAX	Philadelphia, Pa.	Beracah Church, Inc.	500	267.7	1120
WRBC	Valparaiso, Ind.	Immanuel Lutheran Church.	500	278	1080
WRC	Washington, D. C.	Radio Corp. of America.	1000	468.5	640
WRCO	Raleigh, N. C.	Wynne Radio Co.	100	252	1190
WREC	Coldwater, Miss.	Wooten's Radio Co.	10	254	1180
WREO	Lansing, Mich.	Reo Motor Car Co.	500	285.5	1050
WRHF	Washington, D. C.	Radio Hosp. Fund.	50	256	1170
WRHM	Minneapolis, Minn.	Rosedale Hospital.	50	252	1190
WRK	Hamilton, Ohio.	Doren Bros. Elec. Co.	100	270	1110
WRM	Urbana, Ill.	University of Illinois.	500	272.6	1100
WRMU	Motor Yacht M. U. 1.	A. H. Grebe.	100	236	1270
WRNY	New York, N. Y.	Experimenter Pub. Co.	500	374.8	800

## Radio Book

WRR	Dallas, Tex.	City of Dallas	500	245.8	1220
WRST	Bay Shore, N. Y.	Radiotel Mfg. Co.	250	215.7	1390
WRVA	Richmond, Va.	Larus & Bros.	1000	256.3	1170
WSAI	Cincinnati, Ohio	U. S. Playing Card Co.	5000	325.9	920
WSAJ	Grove City, Pa.	Grove City College	250	229	1310
WSAN	Allentown, Pa.	Allentown Call Publishing Co.	100	229	1310
WSAR	Fall River, Mass.	Doughty & Welch Elec. Co.	100	254.1	1180
WSAV	Houston, Tex.	C. W. Vick	100	247.8	1210
WSAX	Chicago, Ill.	Zenith Radio Corp.	100	268	1120
WSAZ	Pomeroy, Ohio	Chase Electric Shop	50	244	1230
WSB	Atlanta, Ga.	Atlanta Journal	1000	428.3	700
WSBC	Chicago, Ill.	World Battery Co.	1000	268.3	1040
WSBF	St. Louis, Mo.	Stix, Baer & Fuller	250	273	1100
WSBT	South Bend, Ind.	South Bend Tribune	250	315	951.8
WSDA	New York, N. Y.	Seventh Day Adventist Church	250	263	1140
WSKC	Bay City, Mich.	World's Star Knitting Co.	100	261	1150
WSM	Nashville, Tenn.	National Life & Accident Ins. Co.	1000	282.8	1060
WSMB	New Orleans, La.	Saenger Amusement Co.	500	319	940
WSMH	Owosso, Mich.	Shattuck Music House	20	240	1250
WSMK	Dayton, Ohio	S. M. K. Radio Corp.	500	275.1	1090
WSOE	Milwaukee, Wis.	School of Engineering	500	245.8	1220
WSRO	Hamilton, Ohio	Harry W. Fahrlander	100	252	1190
WSSH	Boston, Mass.	Tremont Temple Baptist Church	100	260.7	1150
WSUI	Iowa City, Iowa	State University of Iowa	500	483.6	620
WSVS	Buffalo, N. Y.	Seneca Vocational School	50	218.8	1370
WSWS	Woodale, Ill.	Ill. Broadcasting Corp.	1000	275.1	1090
WTAB	Fall River, Mass.	Daily Herald Publishing Co.	100	266	1130
WTAD	Carthage, Ill.	R. E. Compton	50	236	1270
WTAG	Worcester, Mass.	Worcester Telegram	500	545.1	550
WTAL	Toledo, Ohio	Toledo Radio & Elec. Co.	10	252	1190
WTAM	Cleveland, Ohio	Willard Storage Battery Co.	3500	389.4	770
WTAQ	Eau Claire, Wis.	C. S. Van Gordon & Son	100	254.1	1180
WTAR	Norfolk, Va.	Reliance Elec. Co.	100	261	1150
WTAW	College Station, Tex.	Agric. & Mech. College	500	270	1110
WTAX	Streator, Ill.	Williams Hardware Co.	50	231	1300
WTAZ	Lambertville, N. J.	Thomas J. McGuire	15	261	1150
WTIC	Hartford, Conn.	Travelers' Insurance Co.	500	475.9	630
WWAE	Plainfield, Ill.	Electric Park	10,000	384.4	780
WWJ	Detroit, Mich.	Detroit News	1000	352.7	850
WWL	New Orleans, La.	Loyola University	100	275	1090
WWRL	Woodside, N. Y.	Woodside Radio Lab	100	258.5	1160

## Radio Stations—by Wave Length

(In this classification are included all stations of 500 watts and over)

Wave Length Meters	Call Letters	Location	Dial Readings		
			1	2	3
202.6....	KFXB....	Big Bear Lake, Cal.....			
208.2....	KNRC....	Hollywood, Cal.....			
211.1....	KFWO....	Avalon, Cal.....			
217.3....	WFKB....	Chicago, Ill.....			
217.3....	WOK....	Homewood, Ill.....	66	65	67
220....	WQAA....	Parquesburg, Pa.....			
222....	WCOA....	Pensacola, Fla.....			
226....	WBBM....	Chicago, Ill.....			
226....	WIBO....	Chicago, Ill.....			
226....	KFWI....	South San Francisco, Cal.....			
227.0....	WOWO....	Ft. Wayne, Ind.....			
228.9....	KGBU....	Ketchikan, Alaska.....			
228.9....	KMMJ....	Clay Center, Neb.....			
231....	KFPR....	Los Angeles, Cal.....			
231....	KUT....	Austin, Tex.....			
232.4....	KFON....	Long Beach, Cal.....			
234.2....	WGBX....	Orono, Me.....			
236.1....	WGBF....	Evansville, Ind.....			
236.1....	WBOQ....	Richmond Hill, N. Y.....			
236.1....	KFDX....	Shreveport, La.....			
238.0....	KMTR....	Los Angeles, Cal.....			
238.0....	WHT....	Deerfield, Ill.....	64	63	62
239.9....	KFVE....	St. Louis, Mo.....			
239.9....	WDBO....	Winter Park, Fla.....			
239.9....	WOAX....	Trenton, N. J.....			
241.8....	WOOD....	Grand Rapids, Mich.....			
243.8....	WAMD....	Minneapolis, Minn.....			
243.8....	KUOM....	Missoula, Mont.....			
245.8....	KFSD....	San Diego, Cal.....			
245.8....	WABX....	Mt. Clemens, Mich.....			
245.8....	WRR....	Dallas, Tex.....			
245.8....	WSOE....	Milwaukee, Wis.....			
245.8....	WBAL....	Baltimore, Md.....			
247.8....	WIOD....	Miami, Fla.....			
249.9....	WKBH....	La Crosse, Wis.....			
249.9....	KFXF....	Colorado Springs, Colo.....			
249.9....	WMBB....	Chicago, Ill.....			
249.9....	WGES....	Chicago, Ill.....			
252.0....	WGCP....	Newark, N. J.....			
252.0....	WNJ....	Newark, N. J.....			
252.0....	KFWB....	Hollywood, Cal.....			
254.1....	WCAJ....	University Place, Neb.....			
254.1....	WEAI....	Ithaca, N. Y.....			
254.1....	WNAD....	Norman, Okla.....			
256.3....	WCSH....	Portland, Me.....			
256.3....	WDOD....	Chattanooga, Tenn.....			
256.3....	WASH....	Grand Rapids, Mich.....			
256.3....	WRVA....	Richmond, Va.....			
258.5....	WADC....	Akron, Ohio.....	69	79	81
258.5....	WPCC....	Chicago, Ill.....			

# Radio Book

Wave Length Meters	Call Letters	Location	Dial Readings		
			1	2	3
258.5	WCMA	Culver, Ind			
260.7	WKAF	Milwaukee, Wis			
260.7	KFJF	Oklahoma City, Okla			
260.7	WPSC	State College, Pa			
260.7	WMAZ	Macon, Ga			
263	WDGY	Minneapolis, Minn			
263.0	WCAR	San Antonio, Tex			
263.0	WAAM	Newark, N. J			
265.3	WBCN	Chicago, Ill			
265.3	WENR	Chicago, Ill			
265.3	WGHB	Clearwater, Fla			
265.3	WMAK	Lockport, N. Y			
265.3	KLZ	Denver, Colo			
267.7	KFH	Wichita, Kan			
267.7	KFEQ	Oak, Neb			
267.7	WNOX	Knoxville, Tenn			
267.7	WEBW	Beloit, Wis			
267.7	WRAX	Philadelphia, Pa			
267.7	WDRC	New Haven, Conn			
268.3	WSBC	Chicago, Ill			
270.1	KGU	Honolulu, Hawaii			
270.1	WJBL	Decatur, Ill	36	24	24
270.1	WGHP	Detroit, Mich			
270.1	WGST	Atlanta, Ga			
270.1	WOL	Ames, Iowa			
272.6	WFBH	New York, N. Y			
272.6	WHK	Cleveland, Ohio			
272.6	WRM	Urbana, Ill			
275.1	WAFD	Port Huron, Mich			
275.1	WHAR	Atlantic City, N. J			
275.1	WORD	Batavia, Ill			
275.1	WSMK	Dayton, Ohio			
275.1	WBAK	Harrisburg, Pa			
275.1	KFKU	Lawrence, Kan			
275.1	KFSG	Los Angeles, Cal			
275.1	WFAV	Lincoln, Neb	56	56	52
275.1	WCAC	Mansfield, Conn			
275.1	WHAD	Milwaukee, Wis			
275.1	KQV	Pittsburgh, Pa			
275.1	WJAS	Pittsburgh, Pa			
275.1	WSWS	Woodale, Ill	35	34	36
277.6	KWWG	Brownsville, Tex			
277.6	WOQ	Kansas City, Mo			
277.6	WHDI	Minneapolis, Minn			
277.6	WCAU	Philadelphia, Pa			
277.6	WLBL	Stevens Point, Wis			
277.6	WRBC	Valparaiso, Ind			
277.8	WGBU	Fulford-by-the-Sea, Fla			
277.6	KWCR	Cedar Rapids, Iowa			
278	WAAW	Omaha, Neb			
280.2	KFAU	Boise, Idaho			
280.2	KMOX	St. Louis, Mo			
282.8	KOAC	Corvallis, Ore			

# Chicago Tribune

Wave Length Meters	Call Letters	Location	Dial Readings		
			1	2	3
282.8	WSM	Nashville, Tenn.	34	36	36 1/2
282.8	WOAN	Lawrenceburg, Tenn.			
285.0	KOWW	Walla Walla, Wash.			
285.5	WREO	Lansing, Mich.			
285.5	WEMC	Berrien Springs, Mich.			
285.5	WQAM	Miami, Fla.			
285.5	WKAR	East Lansing, Mich.			
288.3	KFKX	Hastings, Neb.	34	38	32 1/2
288.3	WMBI	Chicago, Ill.			
293.9	WEAO	Columbus, Ohio			
293.9	WAIU	Columbus, Ohio			
293.9	KTBI	Los Angeles, Cal.			
296.9	KPRC	Houston, Tex.			
299.8	KUOA	Fayetteville, Ark.			
299.8	KSL	Salt Lake City, Utah			
299.8	WPG	Atlantic City, N. J.			
302.8	WLIB	Chicago, Ill.	39	40	43
302.8	KTAB	Oakland, Cal.			
302.8	WGN	Chicago, Ill.	38	40	40
302.8	WMSG	New York, N. Y.	40	41	42 1/2
305.9	KOMO	Seattle, Wash.			
305.9	WJAR	Providence, R. I.			
305.9	KOIL	Council Bluffs, Iowa	40	41	45
305.9	KFDY	Brookings, S. D.			
309.1	KDKA	East Pittsburgh, Pa.	40	40	44 1/2
312.6	KSBA	Shreveport, La.			
315.6	WAHG	Richmond Hill, N. Y.			
315.6	KPSN	Pasadena, Cal.			
315.6	KFDM	Beaumont, Tex.			
315.6	WGBS	New York, N. Y.			
319.0	WGR	Buffalo, N. Y.			
319.0	KOIN	Portland, Ore.			
319.0	WSMB	New Orleans, La.	42	43	47
322.4	KOA	Denver, Colo.			
322.4	WJAZ	Mt. Prospect, Ill.			
322.4	WBNY	New York, N. Y.			
325.9	WSAI	Cincinnati, Ohio			
333.1	WBZ	Springfield, Mass.			
333.1	WBZA	Boston, Mass.			
333.1	KTNT	Muscatine, Iowa			
333.1	KQW	San Jose, Cal.			
336.9	KNX	Los Angeles, Cal.			
336.9	KFMX	Northfield, Minn.			
336.9	WJAX	Jacksonville, Fla.			
336.9	WCAL	Northfield, Minn.			
340.7	KFAB	Lincoln, Neb.	52	53	54
340.7	WKAQ	San Juan, P. R.			
340.7	KSAC	Manhattan, Kan.			
340.7	WMCA	New York City			
344.6	WLS	Chicago, Ill.	52	51	52
344.6	WCBD	Zion, Ill.	52	51	52
348.6	KOB	State College, N. M.			
348.6	KWSC	Pullman, Wash.			

# Radio Book

Wave Length Meters	Call Letters	Location	Dial Readings		
			1	2	3
248.6	WEEI	Boston, Mass.			
352.7	WWJ	Detroit, Mich.			
352.7	WJAD	Waco, Tex.			
360	WEW	St. Louis, Mo.			
351.2	KGO	Oakland, Cal.			
361.2	WHN	New York, N. Y.			
362.5	WKBW	Buffalo, N. Y.			
365.6	WDAF	Kansas City, Mo.			
365.6	WHB	Kansas City, Mo.			
367	WEAN	Providence, R. I.			
370.2	WEBH	Chicago, Ill.	5.7	5.6	5.9
370.2	WJJD	Mooseheart, Ill.	5.7	5.6	5.8
374.8	KFBU	Laramie, Wyo.			
374.8	KTHS	Hot Springs, Ark.			
374.8	WRNY	New York, N. Y.			
374.8	KVOO	Bristow, Okla.			
379.5	WGY	Schenectady, N. Y.			
379.5	WHAZ	Troy, N. Y.			
384.4	KJR	Seattle, Wash.			
384.4	WLWL	New York, N. Y.			
384.4	WMBF	Miami Beach, Fla.			
384.4	WWAE	Plainfield, Ill.			
389.4	WTAM	Cleveland, Ohio			
389.4	WEAR	Cleveland, Ohio			
394.5	KHQ	Spokane, Wash.			
394.5	WFI	Philadelphia, Pa.			
394.5	WLIT	Philadelphia, Pa.			
394.5	WOAL	San Antonio, Tex.			
399.8	WHAS	Louisville, Ky.			
399.8	WHT	Deerfield, Ill.	6.8	6.3	6.5
405.2	KSO	Clarinda, Iowa			
405.2	KHJ	Los Angeles, Cal.			
405.2	WOR	Newark, N. J.			
405.2	WJY	New York, N. Y.			
416.4	WCCO	Minneapolis, Minn.			
416.4	WBBR	Rossville, N. Y.			
422.3	WEDC	Chicago, Ill.			
422.3	WLW	Cincinnati, Ohio			
422.3	WKRC	Cincinnati, Ohio			
428.3	KPO	San Francisco, Cal.			
428.3	WSB	Atlanta, Ga.	6.8	6.9	7.0
430.1	WNAC	Boston, Mass.			
431.0	WHAP	New York, N. Y.			
434.5	NAA	Arlington, Va.			
440.9	WMAF	Dartmouth, Mass.			
440.9	WDWF	Cranston, R. I.			
440.9	KLDS	Independence, Mo.			
440.9	WOS	Jefferson City, Mo.			
447.5	WMAQ	Chicago, Ill.	7.1	7.2	7.3
447.5	WQJ	Chicago, Ill.	7.1	7.2	7.3
450	KGCH	Wayne, Neb.			
454.3	KFOA	Seattle, Wash.			
454.3	KTW	Seattle, Wash.			

# Chicago Tribune

Wave Length Meters	Call Letters	Location	Dial Readings		
			1	2	3
454.3	WJZ	New York, N. Y.			
461.3	WCAE	Pittsburgh, Pa.			
461.3	WAPI	Auburn, Ala.			
461.3	KMA	Shenandoah, Iowa			
461.3	KFNF	Shenandoah, Iowa			
467.0	KFI	Los Angeles, Cal.			
468.5	WJBT	Chicago, Ill.			
468.5	WRC	Washington, D. C.			
475.9	WBAP	Fort Worth, Tex.			
475.9	WFAA	Dallas, Tex.			
475.9	WTIC	Hartford, Conn.			
483.6	WSUI	Iowa City, Iowa			
483.6	WOC	Davenport, Iowa	79	82	83
491.5	KGW	Portland, Ore.			
491.5	WEAF	New York, N. Y.			
491.5	WCFL	Chicago, Ill.			
499.7	WMC	Memphis, Tenn.			
499.7	KFRU	Columbia, Mo.			
508.2	WOO	Philadelphia, Pa.			
508.2	WIP	Philadelphia, Pa.			
508.2	KLX	Oakland, Cal.			
516.9	WJR	Pontiac, Mich.			
516.9	WCX	Pontiac, Mich.			
526.0	WNYC	New York, N. Y.			
526.0	WHO	Des Moines, Iowa	87	87	87
526.0	WOW	Omaha, Neb.			
535.4	KYW	Chicago, Ill.	90	90	90
535.4	WHA	Madison, Wis.			
545.1	KSD	St. Louis, Mo.			
545.1	KFUO	St. Louis, Mo.			
545.1	WTAG	Worcester, Mass.			



# Radio Stations—Geographically

(In this classification are included all stations of 500 watts and over)

**ALABAMA**  
Auburn—Ala. Polytech. Inst. . . . . WAPI

**ALASKA**  
Ketchikan—R. R. Thornton . . . . . KGBU

**ARKANSAS**  
Fayetteville—Univ. of Arkansas . . . . . KUOA  
Hot Springs—Arlington Hotel . . . . . KTHS

**CALIFORNIA**  
Bakersfield—F. E. Siefert . . . . . KDZB  
Avalon—Lawrence Mott . . . . . KFWO  
Big Bear Lake—B. O. Heller . . . . . KFXB  
Hollywood—Warner Bros. . . . . KFWB  
Long Beach—Nichols & Warner, Inc. . . . . KFON  
Los Angeles—E. C. Anthony, Inc. . . . . KFI  
—Echophone Mfg. Co. . . . . KMTR  
—L. A. Co. Forest Dept. . . . . KFPR  
—Evan. Assoc. . . . . KFSG  
—Express . . . . . KNX  
—Bible Institute . . . . . KTBI  
—Times-Mirror Co. . . . . KHJ  
Oakland—General Elec. Co. . . . . KGO  
—Tribune Pub. Co. . . . . KLX  
—Baptist Church . . . . . KTAB  
Pasadena—Star News . . . . . KPSN  
San Diego—Air Fan Co. . . . . KFVW  
—Air Fan Radio Co. . . . . KFSD  
San Francisco—Hale Bros. . . . . KPO  
Santa Monica—C. B. Juneau . . . . . KNRC  
South San Francisco—Radio Entertainments, Inc. . . . . KFVI  
San Jose—1st Bap. Church . . . . . KQW

**COLORADO**  
Colorado Springs—Pike's Peak Broadcasting Co. . . . . KFXF  
Denver—General Elec. Co. . . . . KOA  
—Reynolds Radio Co. . . . . KLZ

**CONNECTICUT**  
Hartford—Trav. Ins. Co. . . . . WTIC  
Mansfield—Conn. Ag. College . . . . . WCAC  
New Haven—Doolittle Radio Co. . . . . WDRC

**DISTRICT OF COLUMBIA**  
Washington—R. C. A. . . . . WRC

**FLORIDA**  
Clearwater—G. H. Bowles . . . . . WGHB  
Fulford-by-the-Sea—  
Fla. Cities Fin. Co. . . . . WGBU  
Jacksonville—City of Jacksonville . . . . . WJAX  
Miami—Carl G. Fischer . . . . . WIOD  
—Elec. Equip. Co. . . . . WQAM  
Miami—Fleetwood Hotel . . . . . WMBF  
Pensacola . . . . . WCOA

Winter Park—Rollins College . . . . . WDBO

**GEORGIA**  
Atlanta—Ga. School of Tech . . . . . WGST  
—Journal . . . . . WSB  
Macon—Mercer Univ. . . . . WMAZ

**HAWAII**  
Honolulu—M. A. Mulrony . . . . . KGU

**IDAHO**  
Boise—Boise High School . . . . . KFAU

**ILLINOIS**  
Batavia—People's Pulpit Association . . . . . WORD  
Chicago—Westinghouse . . . . . KYW  
—Federation of Labor . . . . . WCFL  
—Atlas Inv. Co. . . . . WBBM  
—So. Town Economist . . . . . WBCN  
—Edgewater Beach . . . . . WEBH 57-56-59  
—Emil Denmark . . . . . WEDC  
—All-American Radio . . . . . WENR  
—F. K. Bridgeman . . . . . WFKB  
—Tribune . . . . . WGN 39-41-70  
—J. L. Guyon . . . . . WGES  
—Nelson Bros. . . . . WIBO  
—John S. Boyd . . . . . WJBT  
—Sears-Roebuck . . . . . WLS 50-57-53  
—Moody Bible Institute . . . . . WMBI  
—Daily News . . . . . WMAQ 71-72-74  
—Am. Bd. & Mtg. Co. . . . . WMBB  
—Calumet-Rainbo . . . . . WQJ 71-72-74  
—No. Shore. Con. Ch. . . . . WPCC  
—World Battery Co. . . . . WSCB  
—Liberty Weekly . . . . . WLIB 35-41-43  
Decatur—W. Gushard . . . . . WJBI 36-34-36  
Deerfield—Radio Broadcast Corp. . . . . WIIT 64-63-65  
Homewood—Neutrowound Co. . . . . WOK 66-65-69  
Mooseheart—L. O. Moose . . . . . WJJD 57-58-59  
Mt. Prospect—Zenith Radio Co. . . . . WJAZ 50-47-50  
Plainfield—J. L. Crowley . . . . . WWAE  
Urbana—University of Illinois . . . . . WRM  
Batavia—Ill. Broadcasting Corp. . . . . WSWS 35-34-36  
Zion—Voliva . . . . . WCBD

**INDIANA**  
Culver—Culver Mil. Academy . . . . . WCMA  
Evansville—Finke Furn. Co. . . . . WGBF  
Ft. Wayne—Wayne Auto Co. . . . . WOWO  
Valparaiso—Imm. Luth. Church . . . . . WRBC

**IOWA**  
Ames—Iowa State College . . . . . WOI  
Cedar Rapids—H. F. Parr . . . . . KWCR  
Clarinda—A. A. Berry Co. . . . . KSO  
Council Bluffs—Mona Motor Oil Co. . . . . KOIL  
Davenport—Palmer School . . . . . WOC  
Des Moines—Bankers Life . . . . . WHO

Radio Stations—Geographically

Iowa City—U. of Iowa.....WSUI  
 Muscatine—N. Baker.....KTNT  
 Shenandoah—H. Field Seed Co...KFNF  
 —May Seed Co.....KMA

KANSAS

Lawrence—University of Kan....KFKU  
 Manhattan—Agri. College.....KSAC  
 Wichita—Hotel Lassen.....KFH

KENTUCKY

Louisville—Courier Times.....WHAS

LOUISIANA

Shreveport—W. G. Patterson....KSBA  
 —First Baptist  
 Church.....KFDX

New Orleans—Saenger Amuse-  
 ment Co. 4-2-45-47-49-50-51-52-53-54-55-56-57-58-59-60-61-62-63-64-65-66-67-68-69-70-71-72-73-74-75-76-77-78-79-80-81-82-83-84-85-86-87-88-89-90-91-92-93-94-95-96-97-98-99-100-101-102-103-104-105-106-107-108-109-110-111-112-113-114-115-116-117-118-119-120-121-122-123-124-125-126-127-128-129-130-131-132-133-134-135-136-137-138-139-140-141-142-143-144-145-146-147-148-149-150-151-152-153-154-155-156-157-158-159-160-161-162-163-164-165-166-167-168-169-170-171-172-173-174-175-176-177-178-179-180-181-182-183-184-185-186-187-188-189-190-191-192-193-194-195-196-197-198-199-200-201-202-203-204-205-206-207-208-209-210-211-212-213-214-215-216-217-218-219-220-221-222-223-224-225-226-227-228-229-230-231-232-233-234-235-236-237-238-239-240-241-242-243-244-245-246-247-248-249-250-251-252-253-254-255-256-257-258-259-260-261-262-263-264-265-266-267-268-269-270-271-272-273-274-275-276-277-278-279-280-281-282-283-284-285-286-287-288-289-290-291-292-293-294-295-296-297-298-299-300-301-302-303-304-305-306-307-308-309-310-311-312-313-314-315-316-317-318-319-320-321-322-323-324-325-326-327-328-329-330-331-332-333-334-335-336-337-338-339-340-341-342-343-344-345-346-347-348-349-350-351-352-353-354-355-356-357-358-359-360-361-362-363-364-365-366-367-368-369-370-371-372-373-374-375-376-377-378-379-380-381-382-383-384-385-386-387-388-389-390-391-392-393-394-395-396-397-398-399-400-401-402-403-404-405-406-407-408-409-410-411-412-413-414-415-416-417-418-419-420-421-422-423-424-425-426-427-428-429-430-431-432-433-434-435-436-437-438-439-440-441-442-443-444-445-446-447-448-449-450-451-452-453-454-455-456-457-458-459-460-461-462-463-464-465-466-467-468-469-470-471-472-473-474-475-476-477-478-479-480-481-482-483-484-485-486-487-488-489-490-491-492-493-494-495-496-497-498-499-500-501-502-503-504-505-506-507-508-509-510-511-512-513-514-515-516-517-518-519-520-521-522-523-524-525-526-527-528-529-530-531-532-533-534-535-536-537-538-539-540-541-542-543-544-545-546-547-548-549-550-551-552-553-554-555-556-557-558-559-560-561-562-563-564-565-566-567-568-569-570-571-572-573-574-575-576-577-578-579-580-581-582-583-584-585-586-587-588-589-590-591-592-593-594-595-596-597-598-599-600-601-602-603-604-605-606-607-608-609-610-611-612-613-614-615-616-617-618-619-620-621-622-623-624-625-626-627-628-629-630-631-632-633-634-635-636-637-638-639-640-641-642-643-644-645-646-647-648-649-650-651-652-653-654-655-656-657-658-659-660-661-662-663-664-665-666-667-668-669-670-671-672-673-674-675-676-677-678-679-680-681-682-683-684-685-686-687-688-689-690-691-692-693-694-695-696-697-698-699-700-701-702-703-704-705-706-707-708-709-710-711-712-713-714-715-716-717-718-719-720-721-722-723-724-725-726-727-728-729-730-731-732-733-734-735-736-737-738-739-740-741-742-743-744-745-746-747-748-749-750-751-752-753-754-755-756-757-758-759-760-761-762-763-764-765-766-767-768-769-770-771-772-773-774-775-776-777-778-779-780-781-782-783-784-785-786-787-788-789-790-791-792-793-794-795-796-797-798-799-800-801-802-803-804-805-806-807-808-809-810-811-812-813-814-815-816-817-818-819-820-821-822-823-824-825-826-827-828-829-830-831-832-833-834-835-836-837-838-839-840-841-842-843-844-845-846-847-848-849-850-851-852-853-854-855-856-857-858-859-860-861-862-863-864-865-866-867-868-869-870-871-872-873-874-875-876-877-878-879-880-881-882-883-884-885-886-887-888-889-890-891-892-893-894-895-896-897-898-899-900-901-902-903-904-905-906-907-908-909-910-911-912-913-914-915-916-917-918-919-920-921-922-923-924-925-926-927-928-929-930-931-932-933-934-935-936-937-938-939-940-941-942-943-944-945-946-947-948-949-950-951-952-953-954-955-956-957-958-959-960-961-962-963-964-965-966-967-968-969-970-971-972-973-974-975-976-977-978-979-980-981-982-983-984-985-986-987-988-989-990-991-992-993-994-995-996-997-998-999-1000-1001-1002-1003-1004-1005-1006-1007-1008-1009-1010-1011-1012-1013-1014-1015-1016-1017-1018-1019-1020-1021-1022-1023-1024-1025-1026-1027-1028-1029-1030-1031-1032-1033-1034-1035-1036-1037-1038-1039-1040-1041-1042-1043-1044-1045-1046-1047-1048-1049-1050-1051-1052-1053-1054-1055-1056-1057-1058-1059-1060-1061-1062-1063-1064-1065-1066-1067-1068-1069-1070-1071-1072-1073-1074-1075-1076-1077-1078-1079-1080-1081-1082-1083-1084-1085-1086-1087-1088-1089-1090-1091-1092-1093-1094-1095-1096-1097-1098-1099-1100-1101-1102-1103-1104-1105-1106-1107-1108-1109-1110-1111-1112-1113-1114-1115-1116-1117-1118-1119-1120-1121-1122-1123-1124-1125-1126-1127-1128-1129-1130-1131-1132-1133-1134-1135-1136-1137-1138-1139-1140-1141-1142-1143-1144-1145-1146-1147-1148-1149-1150-1151-1152-1153-1154-1155-1156-1157-1158-1159-1160-1161-1162-1163-1164-1165-1166-1167-1168-1169-1170-1171-1172-1173-1174-1175-1176-1177-1178-1179-1180-1181-1182-1183-1184-1185-1186-1187-1188-1189-1190-1191-1192-1193-1194-1195-1196-1197-1198-1199-1200-1201-1202-1203-1204-1205-1206-1207-1208-1209-1210-1211-1212-1213-1214-1215-1216-1217-1218-1219-1220-1221-1222-1223-1224-1225-1226-1227-1228-1229-1230-1231-1232-1233-1234-1235-1236-1237-1238-1239-1240-1241-1242-1243-1244-1245-1246-1247-1248-1249-1250-1251-1252-1253-1254-1255-1256-1257-1258-1259-1260-1261-1262-1263-1264-1265-1266-1267-1268-1269-1270-1271-1272-1273-1274-1275-1276-1277-1278-1279-1280-1281-1282-1283-1284-1285-1286-1287-1288-1289-1290-1291-1292-1293-1294-1295-1296-1297-1298-1299-1300-1301-1302-1303-1304-1305-1306-1307-1308-1309-1310-1311-1312-1313-1314-1315-1316-1317-1318-1319-1320-1321-1322-1323-1324-1325-1326-1327-1328-1329-1330-1331-1332-1333-1334-1335-1336-1337-1338-1339-1340-1341-1342-1343-1344-1345-1346-1347-1348-1349-1350-1351-1352-1353-1354-1355-1356-1357-1358-1359-1360-1361-1362-1363-1364-1365-1366-1367-1368-1369-1370-1371-1372-1373-1374-1375-1376-1377-1378-1379-1380-1381-1382-1383-1384-1385-1386-1387-1388-1389-1390-1391-1392-1393-1394-1395-1396-1397-1398-1399-1400-1401-1402-1403-1404-1405-1406-1407-1408-1409-1410-1411-1412-1413-1414-1415-1416-1417-1418-1419-1420-1421-1422-1423-1424-1425-1426-1427-1428-1429-1430-1431-1432-1433-1434-1435-1436-1437-1438-1439-1440-1441-1442-1443-1444-1445-1446-1447-1448-1449-1450-1451-1452-1453-1454-1455-1456-1457-1458-1459-1460-1461-1462-1463-1464-1465-1466-1467-1468-1469-1470-1471-1472-1473-1474-1475-1476-1477-1478-1479-1480-1481-1482-1483-1484-1485-1486-1487-1488-1489-1490-1491-1492-1493-1494-1495-1496-1497-1498-1499-1500-1501-1502-1503-1504-1505-1506-1507-1508-1509-1510-1511-1512-1513-1514-1515-1516-1517-1518-1519-1520-1521-1522-1523-1524-1525-1526-1527-1528-1529-1530-1531-1532-1533-1534-1535-1536-1537-1538-1539-1540-1541-1542-1543-1544-1545-1546-1547-1548-1549-1550-1551-1552-1553-1554-1555-1556-1557-1558-1559-1560-1561-1562-1563-1564-1565-1566-1567-1568-1569-1570-1571-1572-1573-1574-1575-1576-1577-1578-1579-1580-1581-1582-1583-1584-1585-1586-1587-1588-1589-1590-1591-1592-1593-1594-1595-1596-1597-1598-1599-1600-1601-1602-1603-1604-1605-1606-1607-1608-1609-1610-1611-1612-1613-1614-1615-1616-1617-1618-1619-1620-1621-1622-1623-1624-1625-1626-1627-1628-1629-1630-1631-1632-1633-1634-1635-1636-1637-1638-1639-1640-1641-1642-1643-1644-1645-1646-1647-1648-1649-1650-1651-1652-1653-1654-1655-1656-1657-1658-1659-1660-1661-1662-1663-1664-1665-1666-1667-1668-1669-1670-1671-1672-1673-1674-1675-1676-1677-1678-1679-1680-1681-1682-1683-1684-1685-1686-1687-1688-1689-1690-1691-1692-1693-1694-1695-1696-1697-1698-1699-1700-1701-1702-1703-1704-1705-1706-1707-1708-1709-1710-1711-1712-1713-1714-1715-1716-1717-1718-1719-1720-1721-1722-1723-1724-1725-1726-1727-1728-1729-1730-1731-1732-1733-1734-1735-1736-1737-1738-1739-1740-1741-1742-1743-1744-1745-1746-1747-1748-1749-1750-1751-1752-1753-1754-1755-1756-1757-1758-1759-1760-1761-1762-1763-1764-1765-1766-1767-1768-1769-1770-1771-1772-1773-1774-1775-1776-1777-1778-1779-1780-1781-1782-1783-1784-1785-1786-1787-1788-1789-1790-1791-1792-1793-1794-1795-1796-1797-1798-1799-1800-1801-1802-1803-1804-1805-1806-1807-1808-1809-1810-1811-1812-1813-1814-1815-1816-1817-1818-1819-1820-1821-1822-1823-1824-1825-1826-1827-1828-1829-1830-1831-1832-1833-1834-1835-1836-1837-1838-1839-1840-1841-1842-1843-1844-1845-1846-1847-1848-1849-1850-1851-1852-1853-1854-1855-1856-1857-1858-1859-1860-1861-1862-1863-1864-1865-1866-1867-1868-1869-1870-1871-1872-1873-1874-1875-1876-1877-1878-1879-1880-1881-1882-1883-1884-1885-1886-1887-1888-1889-1890-1891-1892-1893-1894-1895-1896-1897-1898-1899-1900-1901-1902-1903-1904-1905-1906-1907-1908-1909-1910-1911-1912-1913-1914-1915-1916-1917-1918-1919-1920-1921-1922-1923-1924-1925-1926-1927-1928-1929-1930-1931-1932-1933-1934-1935-1936-1937-1938-1939-1940-1941-1942-1943-1944-1945-1946-1947-1948-1949-1950-1951-1952-1953-1954-1955-1956-1957-1958-1959-1960-1961-1962-1963-1964-1965-1966-1967-1968-1969-1970-1971-1972-1973-1974-1975-1976-1977-1978-1979-1980-1981-1982-1983-1984-1985-1986-1987-1988-1989-1990-1991-1992-1993-1994-1995-1996-1997-1998-1999-2000-2001-2002-2003-2004-2005-2006-2007-2008-2009-2010-2011-2012-2013-2014-2015-2016-2017-2018-2019-2020-2021-2022-2023-2024-2025-2026-2027-2028-2029-2030-2031-2032-2033-2034-2035-2036-2037-2038-2039-2040-2041-2042-2043-2044-2045-2046-2047-2048-2049-2050-2051-2052-2053-2054-2055-2056-2057-2058-2059-2060-2061-2062-2063-2064-2065-2066-2067-2068-2069-2070-2071-2072-2073-2074-2075-2076-2077-2078-2079-2080-2081-2082-2083-2084-2085-2086-2087-2088-2089-2090-2091-2092-2093-2094-2095-2096-2097-2098-2099-2100-2101-2102-2103-2104-2105-2106-2107-2108-2109-2110-2111-2112-2113-2114-2115-2116-2117-2118-2119-2120-2121-2122-2123-2124-2125-2126-2127-2128-2129-2130-2131-2132-2133-2134-2135-2136-2137-2138-2139-2140-2141-2142-2143-2144-2145-2146-2147-2148-2149-2150-2151-2152-2153-2154-2155-2156-2157-2158-2159-2160-2161-2162-2163-2164-2165-2166-2167-2168-2169-2170-2171-2172-2173-2174-2175-2176-2177-2178-2179-2180-2181-2182-2183-2184-2185-2186-2187-2188-2189-2190-2191-2192-2193-2194-2195-2196-2197-2198-2199-2200-2201-2202-2203-2204-2205-2206-2207-2208-2209-2210-2211-2212-2213-2214-2215-2216-2217-2218-2219-2220-2221-2222-2223-2224-2225-2226-2227-2228-2229-2230-2231-2232-2233-2234-2235-2236-2237-2238-2239-2240-2241-2242-2243-2244-2245-2246-2247-2248-2249-2250-2251-2252-2253-2254-2255-2256-2257-2258-2259-2260-2261-2262-2263-2264-2265-2266-2267-2268-2269-2270-2271-2272-2273-2274-2275-2276-2277-2278-2279-2280-2281-2282-2283-2284-2285-2286-2287-2288-2289-2290-2291-2292-2293-2294-2295-2296-2297-2298-2299-2300-2301-2302-2303-2304-2305-2306-2307-2308-2309-2310-2311-2312-2313-2314-2315-2316-2317-2318-2319-2320-2321-2322-2323-2324-2325-2326-2327-2328-2329-2330-2331-2332-2333-2334-2335-2336-2337-2338-2339-2340-2341-2342-2343-2344-2345-2346-2347-2348-2349-2350-2351-2352-2353-2354-2355-2356-2357-2358-2359-2360-2361-2362-2363-2364-2365-2366-2367-2368-2369-2370-2371-2372-2373-2374-2375-2376-2377-2378-2379-2380-2381-2382-2383-2384-2385-2386-2387-2388-2389-2390-2391-2392-2393-2394-2395-2396-2397-2398-2399-2400-2401-2402-2403-2404-2405-2406-2407-2408-2409-2410-2411-2412-2413-2414-2415-2416-2417-2418-2419-2420-2421-2422-2423-2424-2425-2426-2427-2428-2429-2430-2431-2432-2433-2434-2435-2436-2437-2438-2439-2440-2441-2442-2443-2444-2445-2446-2447-2448-2449-2450-2451-2452-2453-2454-2455-2456-2457-2458-2459-2460-2461-2462-2463-2464-2465-2466-2467-2468-2469-2470-2471-2472-2473-2474-2475-2476-2477-2478-2479-2480-2481-2482-2483-2484-2485-2486-2487-2488-2489-2490-2491-2492-2493-2494-2495-2496-2497-2498-2499-2500-2501-2502-2503-2504-2505-2506-2507-2508-2509-2510-2511-2512-2513-2514-2515-2516-2517-2518-2519-2520-2521-2522-2523-2524-2525-2526-2527-2528-2529-2530-2531-2532-2533-2534-2535-2536-2537-2538-2539-2540-2541-2542-2543-2544-2545-2546-2547-2548-2549-2550-2551-2552-2553-2554-2555-2556-2557-2558-2559-2560-2561-2562-2563-2564-2565-2566-2567-2568-2569-2570-2571-2572-2573-2574-2575-2576-2577-2578-2579-2580-2581-2582-2583-2584-2585-2586-2587-2588-2589-2590-2591-2592-2593-2594-2595-2596-2597-2598-2599-2600-2601-2602-2603-2604-2605-2606-2607-2608-2609-2610-2611-2612-2613-2614-2615-2616-2617-2618-

Radio Stations—Geographically

NEW YORK—Continued

- Experimenter Publ. WRNY
- Baruchrome Corp. WBNY
- Richmond Hill—Grebe . . . . . WAHG
  - Radio Eng. . . . . WBOQ
- Rossville—Peoples Pulpit Assn. . . . . WBBR
- Schenectady—Gen. El. Co. . . . . WGY
- Tarrytown—Radio & Res. Lab. . . . . WRW
- Troy—Rensselaer Poly. Inst. . . . . WHAZ

OHIO

- Akron—Allen Theatre . . . . . WADC
- Cincinnati—Kodel Radio Corp. . . . . WKRC
  - Crossley Mfg. Co. . . . . WLW
  - U. S. Playing Card. . . . . WSAI
- Cleveland—Westinghouse . . . . . KDPM
  - Goodyear . . . . . WEAR
  - Willard Bat. . . . . WTAM
  - Radio Air Service Corp. . . . . WHK
- Columbus—Amer. Ins. Union . . . . . WAIU
  - O. State Univ. . . . . WEAO
- Dayton—S. M. K. Radio Corp. . . . . WSMK

OKLAHOMA

- Bristow—Voice of Oklahoma . . . . . KVOO
- Norman . . . . . WNAD
- Oklahoma City . . . . . KFJF

OREGON

- Corvallis—Oregon Ag. College . . . . . KOAC
- Portland—Morning Oregonian . . . . . KGW
  - Koin Inc. . . . . KOIN
  - H. B. Read . . . . . KQP

PENNSYLVANIA

- 47-41-44 1/2 East Pittsburgh—Westinghouse . . . . . KDKA
- Harrisburg—Penn. State Police . . . . . WBAK
- Parkesburg—H. A. Beale, Jr. . . . . WQAA
- Pittsburgh—Pittsburgh Press K. & B. . . . . WCAE
  - Doubleday-Hill Elec. . . . . KQV

- Philadelphia—Universal Broadcasting Co. . . . . WCAU
  - Strawbridge . . . . . WFI
  - Gimbel . . . . . WIP
  - Lit Bros . . . . . WLIT
  - Pitt. Radio Supply . . . . . WJAS
  - Wanamaker . . . . . WOO
  - Beracah Church . . . . . WRAX
- State College—Penn. State Col. . . . . WPSC

PORTO RICO

- San Juan—Radio Corp. . . . . WKAQ

RHODE ISLAND

- Cranston—D. W. Flint, Inc. . . . . WDWF
- Providence—Shepard Co. . . . . WEAN
  - The Outlet Co. . . . . WJAR
  - Lincoln Studios . . . . . WLSI

SOUTH DAKOTA

- Brookings—S. D. State College of Agr. & Mech. Art. . . . . KFDY

TENNESSEE

- Chattanooga—Chat. Radio Co. . . . . WDOO
- Knoxville—Peoples T. & T. Co. . . . . WNOX
- Lawrenceburg—Vaughan . . . . . WOAN
- Memphis—Conn. Appeal . . . . . WMC
- Nashville—Nat'l Life & Acc. Ins. WSMI

TEXAS

- Austin—University of Texas . . . . . KUT
- Beaumont—Magnolia Pet. . . . . KFDM
- Brownsville—City of Brownsville . . . . . KWVG
- College Station—Agr. & Mech. . . . . WTAW
- Dallas—City of Dallas . . . . . WRR
  - Dallas News-Journal . . . . . WFAA
- Fort Worth—Star Telegram . . . . . WBAP
  - Searchlight Publ. . . . . KFQB
- Houston—Post-Dispatch . . . . . KPRC 40-40-41
- Orange—First Presb. Church . . . . . KFGX
- San Antonio—Southern Radio Corp. . . . . WCAR
  - So. Eq. Co. . . . . WOAI

- Waco—Jacksons . . . . . WJAD

UTAH

- Ogden—Browning Bros. Co. . . . . KFWA
- Salt Lake City—Radio Service Corp. of Utah . . . . . KSI.

WASHINGTON

- Pullman—State College . . . . . KWSC
- Seattle—Rhcdes Dept. Store . . . . . KFOA
  - B. F. Fischer . . . . . KOMO
  - Northwest Radio Co. . . . . KJR
  - First Presbyterian Ch. . . . . KTW
- Walla Walla—Frank Moore . . . . . KOWW
- Spokane—Louis Wasmer . . . . . KHQ

VIRGINIA

- Richmond . . . . . WRVA
- Arlington . . . . . NAA

WISCONSIN

- Beloit—Beloit College . . . . . WEBW
- La Crosse—Calloway Music Co. . . . . WKBB
- Madison—University of Wis. . . . . WHA 34-22-31
- Milwaukee—Marquette U.-Mil. Journal . . . . . WHAD
  - Milwaukee Eng. School . . . . . WSOE

- Milwaukee . . . . . WKAF
- Stevens Point—Wis. Dept. of Mkts. . . . . WLBL

WYOMING

- Laramie—St. Matthew's Cathedral . . . . . KFBU

## Radio Sets and Their Care

THE receiving sets you own are divided into six kinds: *the crystal circuit, the simple vacuum tube detector circuit, the regenerative circuit, the reflex circuit, the tuned radio-frequency circuit (known best as the neutrodyne), and the superheterodyne.* Housed in a home-made panel or a pretentious period cabinet though it may be, your radio set still must be one of these six types.

The germ of the radio receiver is the detector, which translates the radio waves into audible sounds. Your detector may be either a crystal or a vacuum tube. The crystal circuit is the simplest receiving set possible. It consists solely of a crystal detector and a tuning system. No internal power is needed and no vacuum tubes, so that its volume is limited by the amount of energy the aerial is capable of collecting.

While it possesses the best qualities of tone reproduction, the *crystal circuit* is the poorest type for selective purposes. Its range is only about twenty-five miles, and in districts where the number of broadcasting stations is great, the owner is necessarily limited to hearing the station closest to him. The crystal circuit is not possessed of sufficient selectivity and power to tune the neighbor out. The crystal circuit is very simple in operation and is the cheapest type of radio set to buy or build.

The second type of receiver, the *simple vacuum tube circuit*, differs from the crystal set only in the use of a vacuum tube and an internal source of power, to increase the strength of the signals collected by the aerial. The simple vacuum tube circuit is easy to operate and low in cost. Its range is about fifty per cent greater than that of the crystal circuit.

The *regenerative circuit* is a simple vacuum tube circuit into which some means has been introduced for feeding back energy from the plate circuit to the grid circuit for the purpose of strengthening the incoming signal. The sensitivity of a receiving set is greatly increased through the use of this circuit, the range improved, and the volume materially strengthened.

Fourth among the various types is the *reflex circuit*, in which the regenerative circuit is further aided by the introduction of an audio-frequency, by means of which a single vacuum tube is utilized as both radio and audio-frequency amplifier. With only one tube, the reflex circuit gives one stage of radio and one stage of audio-frequency amplification.

The *tuned radio-frequency circuit*, called the "neutrodyne," stands next in the list of receiving circuits. This circuit is a step forward in receivers, having greater sensitive and selective qualities than the reflex. With the neutrodyne it is possible to separate stations whose frequency is only 20 kilocycles away from that of a high powered local station. The neutrodyne is of great value in a city where there are numerous stations.

The tuned radio-frequency receiver consists of a series of amplifiers whose transformers also serve as station selectors. A trio of condensers enables the operator to vary the peak of amplification between 200 and 600 meters, and by means of this variation the signal from the desired station is amplified to the exclusion of all others. The range of this receiver is limited only by the range of the broadcasting station.

The sixth receiving circuit is the one listeners know affectionately as the "super-het." This is the *superheterodyne*, and its sensitivity is such that almost any station in the country can be heard, even if a high-powered local station be as close by as five miles. The superheterodyne is a multi-tube receiver, very sensitive to weak signals as well as interference. It is intended for use with a loop aerial, which has directional properties, and this is a great additional advantage. When in use close to a number of high-power stations, the superiority of the superhet is instantly discernable. The volume of an eight-tube superheterodyne, with two stages of audio-frequency amplification, is most noticeable in the reception of distant stations.

*Setting Up Your Receiver.* If you are purchasing a radio receiving set for the first time, there is still much to do after the set has been delivered to your home together with the tubes, batteries, aerial and ground wire, and various other accessories. You must erect your aerial, provided that your set is not equipped with an indoor or loop aerial. You must connect up a ground wire, and also connect the A and B batteries to the corresponding binding posts on your set. The vacuum tubes must be placed in the set, and your loud speaker plug can then be inserted into its jack on the set.

After all this is satisfactorily completed, your set can be started by turning on the battery switch and turning up the filament rheostats. If the loud speaker plug is in you will hear a faint whirring sound. Now twist the dials until you hear a station. If the station comes in loud and clear you can be certain that your set is working properly.

*How to Erect An Aerial.* In general there are three types of radio aerials or antennae. One is the outside, a second the inside, and the third the "loop" aerial. An outdoor aerial for greatest volume of reception should total about 150 feet in length. This figure includes the lead-in wire, the wire which runs from the aerial to the binding post marked "aerial" on your receiving set. However, if you are unable to erect an aerial 150 feet in length, good results can be obtained from one 75 feet in length. Aerials smaller than these also are common, but there is always a slight falling off in volume as the antenna becomes smaller.

The wire used in erecting an aerial can either be bare or insulated, but it is perhaps best to use a bare stranded wire of No. 14 B. & S. gauge for the aerial itself, and insulated wire for the lead-in, which should come to the set in as direct a line as possible. Your aerial should be stretched tightly and make certain that good insulators protect each strand. You should have also a lightning arrestor just outside the window where your aerial lead enters.

Your aerial, to secure the best reception, should be as high as possible, and as far as you can erect it from nearby objects such as trees and chimneys. It should not cross phone or lighting system wires. If you are forced to erect your aerial near a power line, build it at right angles to the line to eliminate induction and line noises.

The insulators protecting your aerial and the "lead-in" wire should be kept clean and watched carefully for cracks. Should a break be noticeable, immediately replace the shattered insulator with a new one. A layer of dirt on your insulator often causes it to lose its insulating value, as the dust collecting on it is liable to act as a conductor and the signals received are likely to be carried into the ground instead of to your receiving set.

Loop aeriels are seldom constructed by the home builder; generally they come as part of the receiving set for which they are designed. The loop aerial is most generally used with a superheterodyne where the loop's directional qualities are invaluable.

A good indoor aerial can be erected by extending a well-insulated wire along the top of the picture molding in your room, or through several rooms, or by stretching a wire the length of your attic. In the case of local stations, listeners will find the indoor every bit as good as the outdoor aerial. For long distance reception, however, the outdoor aerial is best.

*Connecting Up the Batteries.* Batteries are used in radio for two purposes. First, they supply energy, which the incoming signal does not bring with it, and, secondly, they are used to light the filament in the vacuum tube. Since something is necessary to "step-up" the weak incoming signal, and since the vacuum tubes, used for this purpose, must be heated before they operate, a second source of energy, the A battery, is used to heat the tubes. The first kind of energy comes from what is called the B battery. This latter may be either a wet or dry battery, consisting of a number of cells connected to obtain high voltage. The amperage of a B battery is very low, as there is but little flow of current. Only a high pressure is maintained.

Since the incoming signal is used to modify the flow of current from this battery, it is really the battery which causes our loud speakers or headphones to operate and reproduce the signals for us.

In the average modern receiver there is often a third battery called the C battery, which is used to improve tone quality.

*Cautions for Connecting.* The vacuum tubes are the most delicate part of your receiving set and they should receive constant care. When you connect up a new set, care should be used in order that tubes are not blown through defects in connecting or because of a short circuit within the set. According to approved radio engineering practice, the best thing to do is to connect up your A battery first. Insert a tube. If it burns properly, there are no defects in wiring. Then follow the same method with your B battery.

Before inserting all tubes in the set select an old one or one slightly defective, but not burned out, and try it in each socket with the filament current turned on. If the tube does not burn out, insert the rest of the tubes.

Never use pliers or screw driver to tighten screws or fasten nuts in the set when either A or B batteries are connected. This may burn out tubes. In removing tubes from the set be sure that the filament controls are turned off. And an important last caution with regard to tubes is to see that you burn them at their rated voltage if you are desirous of obtaining the maximum amount of service.

Before connecting your aerial to the set be sure that it is not lying across power or light lines . . . Do not use your set during a lightning storm. You may paralyze your tubes . . . Never lay anything on top of batteries; it may short them . . . It is best to turn off your filament switch before disconnecting your loud speaker, as neglecting to do so may endanger the windings of the audio-frequency transformers.

*Care of the Set.* Remember that your radio receiving set is a delicate piece of apparatus and requires constant attention to give continuous good service. This care must also be extended to the accessories, tubes and batteries.

It is a good thing to change your aerial at least once a year, and have some battery station give your storage battery the "breakdown voltage test."

If your set is not equipped with a voltmeter for the filaments of your vacuum tubes, have the tubes tested at least once every six months for filament emission. If you replace tubes too often, it is well to purchase a voltmeter in order that you can watch the filament voltage at which you burn your tubes. Often you will discover, if you possess a voltmeter, that the tubes burn satisfactorily as far as one volt below the required filament voltage. By keeping the filament control at the lowest operating point, the life and efficiency of the tubes can be lengthened considerably.

If you are close to a street or boulevard on which traffic is heavy, your set will soon develop a microphonic noise from the jarring. To overcome this a pad of some sort should be placed under the set.



## The Story of Station W-G-N

"W-G-N, *The Chicago Tribune* station on the Drake Hotel." The above announcement was first made to listeners on June 1, 1924, but in the two and one-half years that have elapsed, they have discovered it to be synonymous with entertainment of the highest order. Into those two years, W-G-N has crowded some of radio's most notable events, many of its finest features and most brilliant innovations.

*The Chicago Tribune* opened its broadcasting station early in 1924, sharing in the operation of the first W-G-N, which took its name from the newspaper's famous slogan: "World's Greatest Newspaper." But better service to the public, it was decided, could be assured only by exclusive possession of a station, so on June 1, 1924, WDAP, owned and operated by the Drake Hotel, was secured and renamed W-G-N. The studio remained in the hotel, where it is located today, but this original studio has now grown to four studios, and the 1,000-watt transmitter on the Drake has been recently supplanted by a modern 25,000-watt station near Elgin, Ill., the largest of its kind in the central states.

Public confidence and recognition have been the reasons for this tremendous growth, coupled with the *Tribune's* desire to furnish the finest entertainment available. Let us glance into history and see what W-G-N has done to merit this recognition and confidence.

W-G-N's entrance into the broadcasting field was marked by the presentation of what has since proved to be one of radio's greatest features, the national conventions of the Democratic and Republican parties, from New York and Cleveland, respectively. Here was a political spectacle equaled only by the station's later broadcast of the ceremonies attendant on the inauguration of Calvin Coolidge as president of the United States.

W-G-N started writing radio history in the fall of 1924, with its series of long-distance broadcasts of important mid-west football games, including most of the games in which "Red" Grange appeared. An intelligent, graphic and humorous handling of football by radio enlisted a host of followers for the station, while the gradual development of carefully planned regular programs made them constant patrons at its wave length.

A series of sensational broadcasts of current Chicago theatre attractions, notably those of "H.M.S. Pinafore," and "The Mikado," the Gilbert and Sullivan revivals in which DeWolf Hopper was scoring a triumph, ushered in the new year of 1925, and then the station loomed again with sensational broadcasts of two of America's most famous sport events—the Kentucky Derby and the Indianapolis auto race.

Came the dog days of radio—July and August—when listeners' sets become cobwebby, and station hands search vainly for novel ideas and

swelter in the heat of pent-up studios. Down in Tennessee a man named Scopes had been accused of teaching evolution in the schools, contrary to the laws of the state, and the nation's legal luminaries were rushing to the scene and gesturing in his defense and prosecution. The little mountain town of Dayton found itself illumined with the white light of publicity. Three hundred newspapermen were dispatched to the scene, magazines took up the issue, and the religion *vs.* science debate took the attention of the world.

Suddenly W-G-N astounded the country with the announcement of a feature unprecedented in radio. It would broadcast the trial direct from the courtroom! The cost was enormous—more than \$1,000 per day—and the mechanical difficulties almost insurmountable, but the thing was done, and brilliant descriptive announcing made the strange scene live in many a home.

With this and other unusual features, W-G-N kept radio interest at high pitch during the summer. In the fall of 1925, the station entered with enthusiasm into another successful season of football broadcasting. Many of the most sensational games were put on the air, from points as far from Chicago as Philadelphia in the east (for the Illinois-Pennsylvania game), and Lincoln, Neb., in the west (for the Notre Dame-Nebraska contest).

The radio production—an attempt to inject continuity and introduce dramatic effect into programs—had been originated at W-G-N, and a series of these playlets was strengthening the already popular daily broadcasts.

It was at this juncture that *Liberty Weekly* decided to enter radio. Station WTAS, accounted one of the most popular stations in the mid-west, was purchased. Its wave length was 303 meters. W-G-N, which had been operating on a broadcasting band of 370 meters, traded wave lengths with the station that had been sharing the wave with WTAS, and in co-operation with WLIB (as WTAS had been renamed), decided on a day-and-night program schedule that should make them the finest stations on the air.

The story of radio program progress becomes, from that time on, the story of W-G-N and its sister station, WLIB. Together they inaugurated a policy of program expansion and perfection that sent them hurtling to the forefront. Big events . . . big names . . . big ideas flourished. A list of regular features was developed and maintained that heightened public interest in radio. Special broadcasts were arranged, and during the heat of the World Court discussion in the United States Senate, listeners heard a debate especially staged in Washington and broadcast exclusively by W-G-N in which four United States senators, leaders of the contending factions, participated. When Prohibition became a national topic, a debate was especially staged between Clarence Darrow and Wayne B. Wheeler.

The doors of the theatre were opened again. W-G-N's broadcast of "The Miracle" was another milestone in radio progress. "The Student

## Chicago Tribune

Prince," "Blossom Time," "Carmencita and the Soldier" followed with great success.

In the field of regular radio features, if W-G-N had done nothing else, credit it with the creation of "Sam 'n' Henry," a pair who appear destined for the comic strip hall of fame, along with Andy Gump, Uncle Walt and Moon Mullins. Introduced to listeners as the first "radio comic strip," like their newspaper prototypes they have grown in popularity, because in each day's adventure there is a laugh or a tear or an incident that is in itself a complete epitome of bungling humanity.

But Sam 'n' Henry are only ten minutes of the long W-G-N day. Other items in the program have attained great popularity. Everyone knows about the Arabian Nights' Entertainment, the Music Box, the Play Shop, Great Moments from Grand Opera, Uncle Walt's Punch and Judy for the children, Paul Ash's Oriental Theatre radio frolic, the Phantom Violin, the Old-Fashioned Almanack, the Million Sing, the concerts by the Drake Concert Ensemble and the Blackstone String Quintet, and W-G-N's New York features.

W-G-N is also satisfying a great public need with its numerous public service periods. During the morning a digest of the day's news is presented; a special program that has to do with good health and training; a program of music and entertainment specially designed for the blind and shut-ins; a home management period for housewives, and special educational features. An afternoon feature that proves pleasing to women is the W-G-N Woman's Club.

Of the total number of hours during which it broadcasts each week, W-G-N devotes more than one-fifth of its time to an extensive educational and public service program. More than twenty hours per week are devoted to educational items, while W-G-N has organized classes in four subjects, with over 6,000 pupils. These subjects are piano lessons, English, Spanish and French. Nearly three thousand persons are learning to play the piano via W-G-N, the remainder of the student body dividing itself between the three languages. Each week thousands of lesson sheets are distributed to this large membership of the university of the air.

Other subjects about which the listener is well informed through W-G-N are Civics and Political Science, Home Economics and Household Administration, Hygiene, Literature, Philosophy and Current Events, History and Social Service. These latter consist of lecture courses and special features.

A popular feature with business men is W-G-N's stock and bond report, broadcast every evening at 6 o'clock. This report, prepared by the financial editor of *The Chicago Tribune*, covers the conditions of both Chicago and New York stock and bond markets, and is a comprehensive and authoritative review.

W-G-N's studios are located on the eleventh and twelfth floors of the Drake Hotel. Studio No. 1, the original studio, is on the eleventh floor, and is now used principally as a rehearsal and try-out room. On

the twelfth floor are the three modern studios, built during the summer of 1926. Ideal from a mechanical standpoint, they are being maintained in such physical condition as will make them perfect workshops for the many special broadcasts which the station constantly presents. Then, too, the extra studios assist in speeding up programs, a necessity where one feature must follow another in clocklike order. W-G-N presents so many orchestral novelties that minutes would be wasted clearing a studio of one group of musicians and admitting the others. With two studios, one orchestra is set up and ready to play while the other completes its program in the first studio. One studio is 20 by 40 feet, and the second 20 by 30 feet. The fourth studio, ten feet square, is used nightly by Sam 'n' Henry.

Between the two large studios, separated from each by glass partitions, is the control room, where station programs take form before they are sent to Elgin for transmission through the air. Four huge panels contain the control room equipment. One of these panels contains connections for the various "remote controls" (broadcasts which emanate from a point other than the studio) which W-G-N maintains; a second is for the amplification equipment, a third for the "fading panel," a device whereby sounds entering three or more microphones may be welded together. Such a panel is a necessity where it is desired to present voice and music in a dramatic whole. The fourth delivers W-G-N's various features that are brought by leased telephone wires from New York.

From this control room programs go to the huge Elgin transmitting station by telephone lines. Located thirty miles from Chicago, in the heart of country cornfields, is this modern engineering wonder, the most powerful radio station in the middle-west. To an unobserving passerby it might be merely a bungalow of Spanish type, but inside one will find one of the most completely equipped radio stations in the country. In addition to the rooms for the transmission equipment and power plant, the building also contains a small studio, a branch of the Tribune's Public Service Office, living quarters for engineers and operators, and a garage. It is a small community, self-contained, five miles from the nearest town.

Behind the station are the 250-foot steel towers, 500 feet apart, which support the 50-foot aerial which sends out the programs.

Still another portion of W-G-N is located in The Tribune Tower, where a staff of clerks opens and sorts the vast amount of mail that comes to the station each day. The publicity department also is situated here. Altogether fifty people are employed in the operation of Station W-G-N.

## Perfect Entertainment at 303 Meters

THE 24-HOUR WAVE LENGTH OF

W-G-N

THE CHICAGO TRIBUNE STATION ON THE DRAKE HOTEL,

and

WLIB

THE LIBERTY WEEKLY STATION ON THE DRAKE HOTEL,  
CHICAGO

### WEEK-DAY PROGRAM

- W-G-N 9:00 to 9:45 a.m.—Summary of day's news; discussion of events.
- W-G-N 10:00 to 10:15 a.m.—Good health and training period, except Saturday.
- W-G-N 10:15 to 11:00 a.m.—Entertainment for shut-ins.
- W-G-N 11:00 to 11:30 a.m.—Organ recital, except Monday.
- W-G-N 11:30 to 11:57 a.m.—Home management period.
- W-G-N 11:57 to 12:01 p.m.—Time signals.
- W-G-N 12:01 to 12:40 p.m.—Children's story period.
- W-G-N 12:40 to 2:30 p.m.—Luncheon concert by the Drake concert ensemble and the Blackstone string quintet.
- W-G-N 2:30 to 3:00 p.m.—Artist recital.
- W-G-N 3:00 to 3:30 p.m.—The W-G-N Woman's Club.
- W-G-N 3:30 to 4:15 p.m.—Tea-time music by the Marshall Field tea-room orchestra.
- W-G-N 4:30 to 5:00 p.m.—Organ recital.
- W-G-N 5:00 to 5:30 p.m.—Educational period: "Correct English," by Colletta M. Deignan on Monday; Spanish lesson by Prof. Angel A. Braschi on Tuesday; Algebra lesson by Howard Barry on Wednesday; French lesson by Prof. Henri Croizard on Thursday; piano lesson by Edward Barry on Friday.
- W-G-N 5:45 to 5:50 p.m.—The Million Sing, except Monday.
- W-G-N 5:56 to 6:01 p.m.—Time signals.
- W-G-N 6:01 to 6:10 p.m.—Closing stock and bond quotations.
- W-G-N 6:10 to 6:15 p.m.—Musical program.
- W-G-N 6:15 to 6:35 p.m.—Uncle Walt's Punch and Judy.
- W-G-N 6:35 to 6:50 p.m.—Drake concert ensemble. On Monday until 7:00 p.m.
- W-G-N 6:50 to 7:00 p.m.—The Old Fashioned Almanack, except Monday.

## R a d i o B o o k

- WLIB 7:00 to 7:30 p.m.—Dinner concert by the Drake concert ensemble and the Blackstone string quintet, except Wednesday.
- WLIB 7:30 to 8:00 p.m.—Paul Ash and his Oriental theater radio frolic on Wednesday; Musical program on Thursday; Hohner's Harmonicas on alternate Fridays; concert music on Saturday.
- W-G-N 8:00 to 9:00 p.m.—The Eveready Hour on Tuesday; Ipana Troubadours on Wednesday until 8:30 over WLIB; Clicquot Club Eskimos on Thursday; Musical program on Friday; Balkite Hour—Walter Damrosch with the New York Symphony orchestra on Saturday.
- W-G-N 9:00 to 10:00 p.m.—Auction bridge game on Tuesday to 9:30, "Songs of Romance," by W-G-N Male quartet until 10:00 p.m.; Arabian Nights' entertainment on Wednesday; Goodrich Zippers on Thursday; Whittall Anglo-Persians and the Phantom Violin on Friday; Great Moments from Grand Opera on Saturday.
- W-G-N 10:00 to 10:10 p.m.—"Sam 'n' Henry."
- W-G-N 10:10 to 10:20 p.m.—The Music Box.
- W-G-N 10:20 to 11:00 p.m.—Musical program.
- WLIB 11:00 p.m. to 1:00 a.m.—Musical program.

### SUNDAY PROGRAM

- W-G-N 11:00 a.m. to 12 m.—Sunday morning talk by Charles E. Erbstein.
- W-G-N 12 m. to 1:00 p.m.—Uncle Walt reads *The Tribune* comics to the children.
- W-G-N 1:00 to 2:00 p.m.—Organ recital.
- W-G-N 2:00 to 3:00 p.m.—Artist recital.
- W-G-N 3:00 to 5:00 p.m.—Concert by the Chicago Philharmonic orchestra.
- WLIB 5:00 to 6:15 p.m.—Musical program.
- W-G-N 6:15 to 6:45 p.m.—Uncle Walt's Punch and Judy for the children.
- W-G-N 6:45 to 7:00 p.m.—Blackstone string quintet.
- W-G-N 7:00 to 7:20 p.m.—The Million Sing.
- W-G-N 7:20 to 7:30 p.m.—The Old Fashioned Almanack.
- W-G-N 7:30 to 7:50 p.m.—Songs by Correll and Gosden.
- W-G-N 7:50 to 8:00 p.m.—The Blackstone string quintet.
- W-G-N 8:00 to 8:15 p.m.—Auld Sandy.
- W-G-N 8:15 to 9:15 p.m.—The Atwater Kent Hour.
- W-G-N 9:15 to 10:00 p.m.—"Our Music Room."
- W-G-N 10:00 to 10:10 p.m.—"Sam 'n' Henry."
- W-G-N 10:10 to 10:20 p.m.—Musical program.
- W-G-N 10:20 to 10:25 p.m.—Reading from the Bible.
- W-G-N 10:25 to 10:30 p.m.—Musical program.

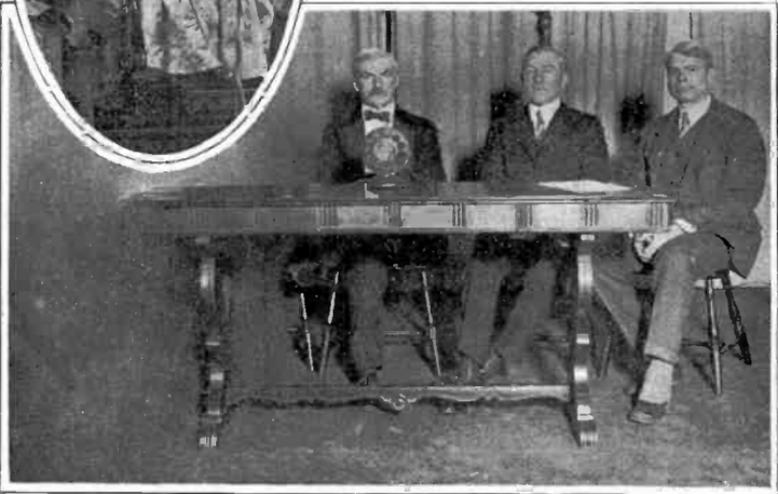
## Glimpses of W-G-N at Work



Wet and Dry! Clarence Darrow and Wayne B. Wheeler, nay and yea on prohibition, at the microphone. Their exclusive debate broadcast by W-G-N last spring was a radio sensation.



Cardinal Bonzano, papal legate to the Eucharistic Congress, at Holy Name Cathedral, Chicago. Before him hangs the microphone to catch his every word.



Down to Washington went W-G-N while the World Court fight last winter was at fever heat, and staged an exclusive debate in which four U. S. Senators figured. The picture shows one of the debaters, Senator Thomas J. Walsh of Montana with Representative Fred A. Britten of Illinois and Arthur Sears Benning, *Tribune* Washington correspondent, who gave listeners his expert story of the World Court battle. Britten told how he brought the Army-Navy football game to Chicago.



A corner of one of the three new W-G-N studios, located on the twelfth floor of the Drake Hotel. The three studios are modern in every detail. In the rear can be seen the entrance to the control room, where the programs take form before being sent to the Elgin transmitter for dissemination on the ether.



Above: The Drake Concert Ensemble, W-G-N's famous dinner orchestra. In oval at left: Henry Selinger, director of the Drake Ensemble.



Wherein the gang gets together and broadcasts a "hoss race" from the new Lincoln Fields track at Crete, Ill. In the group are (left to right) French Lane, racing editor of The Chicago Tribune; Quin Ryan, W-G-N feature announcer; Charles Correll and Freeman Gosden, who are Henry 'n' Sam, and Walter Hotz, engineer in charge. Races were broadcast from Lincoln Fields each Saturday during the meeting.



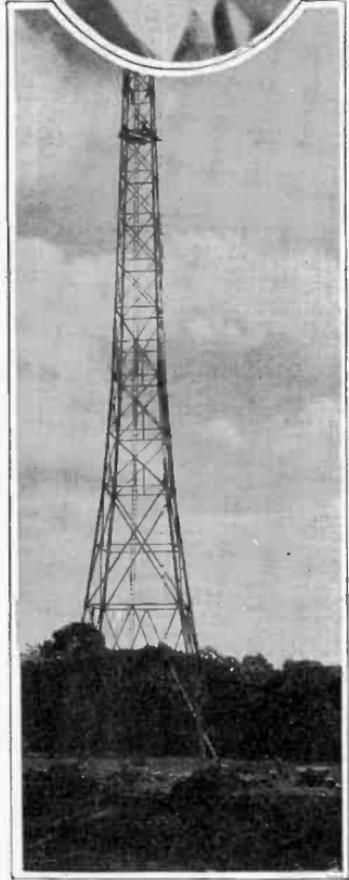
This unique little Spanish structure, 30 miles from Chicago, houses the powerful new W-G-N transmitter. The new station was opened this fall.

In oval at right: Carl Meyers, chief engineer of W-G-N, who designed W-G-N's new transmitting station.



Above: Bill Hay, golden voice of W-G-N's studio programs. Bill is one of radio's pioneers. Listeners remember him best for his classic and flawless announcing during W-G-N's broadcast of "The Miracle."

In oval: Charles E. Erbstein, beloved by thousands of radio fans, at the "make" during one of his characteristic "Sunday mornings at home," when he talks literature and philosophizes and jests in a likable home-spun manner.



Up in the clouds! One of the 250-foot steel towers that support the antenna of W-G-N's transmitter. Twenty-six tons of steel are contained in each tower, and cement blocks, 100 feet square, support each corner.



Quin Ryan, who has made W-G-N the favorite station of the sports lovers, broadcasts a football game! The picture shows him at the "mike" in his "shack" at Ferry Field, Ann Arbor, Mich., calling the plays and players as Michigan and Wisconsin battle it out on the five-yard line. Quin has also made his mark at the Kentucky Derby, the Indianapolis auto race, the World Series, and as the announcer for other feature events.



"Umn, umn, ain't that sumthin'!" So says Sam (right) of "Sam 'n' Henry," to his partner and nemesis, the irascible Henry. In less than a year, Correll and Gosden have made "Sam 'n' Henry" the most popular feature on the W-G-N card and the most popular feature on the air anywhere. Their human, homely dialogue each night at 10 o'clock keeps thousands of listeners up 'way past their bedtime.

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**TRAVEL & RESORT BUREAU**—Time tables and literature of all the larger railroads in the United States; of all the steamship lines operating on the Great Lakes; of all the oceanic lines whose ships sail from American ports. Also resort and hotel literature and information.

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