Souvenir of RADIO STATION W·O·K

HOMEWOOD ILLINOIS

A SUBURB OF CHICAGO

SUPER-POWER RADIO STATION

WOK

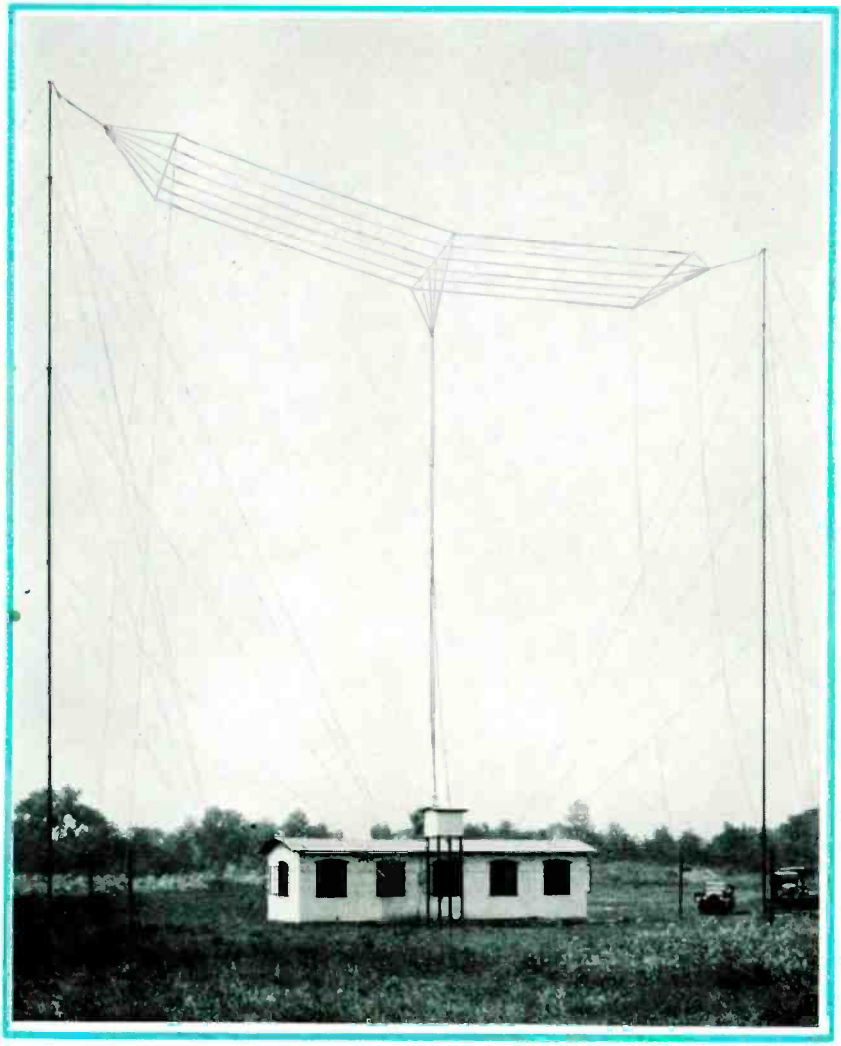
Wavelength 217.3 Meters

HOMEWOOD, ILLINOIS
A SUBURB OF CHICAGO

OWNED AND OPERATED BY

NEUTROWOUND RADIO MANUFACTURING CO.

HOMEWOOD, ILLINOIS



Radio Broadcasting Station WOK, at Homewood, Ill., showing station, "T" type Antenna and Steel Towers. The towers are 100 feet high. The station, which operates on a wavelength of 217.3 meters, is a pioneer among battery-operated stations.

THE STATION

WHEN Radio Station WOK went "on the air," broadcasting on a wavelength of 217.3 meters, it marked the beginning of a new era in radio.

This was true for two reasons. One, that it was the most powerful station operating on a low wavelength, and the other, that it was the largest and one of the few battery operated stations in the world.

The builders of Station WOK expected great things of it and they were not disappointed. Immediately after the opening, from all parts of the United States and Canada, came reports that the new station had come in clear and with volume and frequently it was stated that WOK was the only Chicago station whose signals were received. Then, under the highly-prized U. S. Government "Class B" License, the power under which the station was operating was advanced, increasing the carrying distance, with the result that Station WOK is now recognized as one of the most powerful stations in the Chicago super-power station group.

This means that Station WOK has achieved a triumph—confidently anticipated by its operators, but a surprise, at first, to a large part of the public, which had been educated to the belief that a high wavelength has more carrying power—an erroneous theory now discarded by anyone with the slightest knowledge of radio. It is an established radio principle that the low wavelength has greater carrying power because of its high frequency.

The satisfactory performance of Station WOK, however, is not entirely due to the fact that it operates on a wavelength

most favorable to clear, distance broadcasting, and that it is a battery operated station, but also to the skill and thoroughness with which it is constructed. Every part of the broadcasting equipment is adapted to obtain the utmost distance and clarity, and with few exceptions the entire layout was designed and constructed by the engineering division of the Neutrowound Radio Manufacturing Company, of Homewood, which owns and operates the station.

Station WOK is located at Homewood, Ill., just south of Chicago. The studio, where the artists perform, is in the Chicago Beach Hotel, at Hyde Park Boulevard and Lake Michigan.

The programs broadcast are in keeping with the high character of the station. In other words, they are among the best sent out from Chicago and to anyone who tunes in Station WOK an evening of real pleasure is assured. It is a source of deep gratification to the operators of Station WOK that they have been able to give this enjoyment to an ever-widening circle of discriminating radio enthusiasts.

The studio and the broadcasting station, which are 19 miles apart, are connected by direct wire, over which is carried the music from the studio to the station, where it passes through five stages of amplification before it goes "on the air." A direct wire also is used for telephonic inter-communication between the station and the studio. There are four wires all told. They are interchangeable, and if trouble should develop on one wire, it is a simple matter to switch to another.

The broadcasting station is in charge of a man who was formerly a United States Government expert, for several years the chief operator of one of the most important government stations. Together with two skilled assistants he is always "on the job" and he is responsible for keeping the broadcasting equipment in a high state of efficiency.

The first thing that strikes a visitor to the broadcasting station is the quietness, the calmness, the serenity of it all. Where one might expect the sparking and flaring of high voltage electrical equipment, or the hum of powerfully driven motors, all that is heard is pleasing music from a loud speaker and for the rest there is silence except when the quitness is broken by conversation. Nevertheless, the power is there and it would be dangerous to lay a hand on several parts of the equipment. In addition to the various meters and instruments at the station proper, the operator is always tuned in on a receiving set and by this means knows at all times just how our programs are going out.

Practically every recent development and modern improvement in radio broadcasting was utilized in building Station WOK. Included in the layout designed and constructed by the Neutrowound engineers are the antenna and masts, the elaborate ground system, the power plant, the pick-up and in-put amplifiers, the remote control and signal system, as well as the station building.

The fact that WOK has operated without interruption from the first time the current was turned on is worthy of note, as ordinarily in opening a new station there are long and vexatious delays while necessary adjustments are being made. WOK, however, had been so scientifically constructed that no adjustments were necessary.

No expense was spared to obtain perfection in every detail and it cost $10,000 more to equip Station WOK with batteries than if similarly rated motor generator equipment had been used.

The principal advantage to a broadcasting station of obtaining the potential energy from batteries instead of from a motor generator is that batteries deliver a pure, unadulterated direct current, with the result that greater clarity is secured. Although a motor generator delivers a fairly satis-

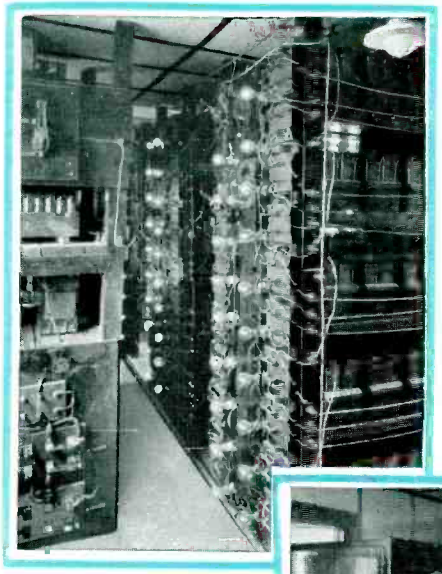


Fig. 1

Battery room in Station WOK. There are more than 5,000 cells of specially constructed large wet storage batteries in this room, from which is obtained the power for broadcasting.

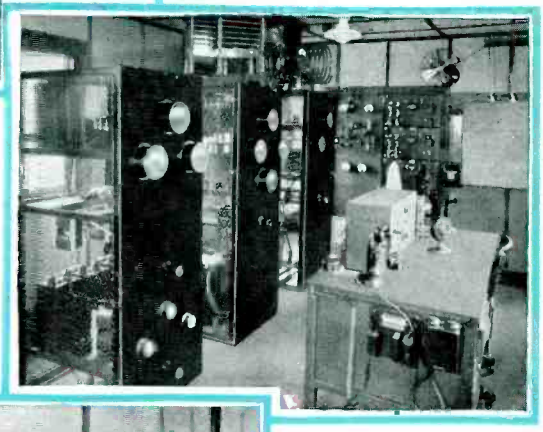


Fig. 2

WOK's modern and efficient broadcasting units. This equipment is the most scientific devised. The operato'rs desk also is shown.

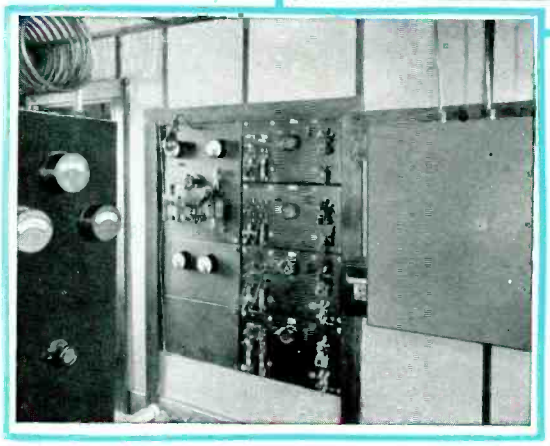


Fig. 3

The large circuit breaker, which automatically opens when trouble develops, is in the cabinet to the right of the unit for recharging batteries, against the wall.

factory current, it has been found difficult to smooth out entirely the audible ripple created by the commutator segments. When the ripple is present, it is necessary to modulte the carrier wave just that much above the disturbing noise, so as to place it well in the background.

Another great advantage which batteries have over motor generators is their immediate response to changes in the load, which is not the case with motor generators, because of their mechanical inertia. The responsiveness of the source of power to the continual carrying loads of the circuits is a determining factor of the tonal quality and the modulation. The use of batteries is a recent development in radio broadcasting, but it is probable that eventually all super-power stations will adopt this method of broadcasting. Station WOK, therefore, is a pioneer in this field.

The station building and the antenna system are situated in a clearing, well away from vegetation and other buildings, which often interfere with efficient transmission, as they absorb much of the energy.

The building is of bungalow type, finished in stucco. It is divided into two rooms, one of which contains the batteries and the other the radio units, controls and operating desk.

The supporting towers of the antenna rise one hundred feet above the ground and are of steel, blocked in concrete. The antenna is of the "T" type, with a flat top length of sixty feet. The reason the general dimensions appear relatively small is due to the fact that all equipment was designed exactly to fit the short wavelength of 217.3 meters at which the station is operated. The counterpoise, which is strung ten feet above the ground, has eighteen wires slightly larger than the aerial. A cage lead-in is brought directly into the small coop where is located the tuning inductance and the radiation meter. Thus, in this unusual layout the entire antenna system is suspended in mid-air, supported only by

a few highly efficient pyrex insulators, and none of the antenna system proper approaches the station building.

The result is a freely oscillating circuit, energized only by a single lead, having in series with itself a non-aperiodic impedance for the purpose of suppressing undesired harmonics and coupling at the other end the primary oscillator circuit.

To complete the external radiating system there is a ground of twenty-four wires, buried three feet deep and spreading out fanlike for one hundred feet in all directions.

The broadcasting units inside the building are the most modern and embody the most recent improvements, with the result that they are more efficient and give better service than the equipment in many other broadcasting stations. The individual units are completely shielded from each other, so as to prevent any possible interaction between them.

The unit farthest to the right in illustration No. 2 is the oscillator consisting of two 5,000 watt water cooled tubes and the allied parts. The Hartley oscillator circuit is employed, together with the most modern type of tank circuit. Vernier adjustment of this tank circuit, which incidentally governs the emitted carrier wave frequency, is accomplished with the huge variable condenser mounted above the large center unit. The big meter to the right of this condenser indicates the amount of current flowing in the tank circuit. By using the tank circuit, the antenna system does not directly enter into the tuning of the oscillator wavelength, with the result that much greater stability of the carrier frequency is obtained.

Contained in the large unit in the center are the two 5,000 watt modulator tubes and associated parts. None of these large power tubes are visible in the illustration, but it is interesting to note that they are not more than a few times larger than an ordinary receiving tube. In order to keep the terrific heat generated by such high power from burning up the

tubes, a continual flow of water passes through a jacket surrounding the plates of each tube. This water dissipates the heat and were it not for this cooling process, the tubes would burn up.

For the purpose of guarding against the water supply failing and accidently destroying the tubes, the Neutrowound engineers devised an automatic switch or safety control. It consists of a mercury pilot relay, which is only closed when the water is actually flowing through the jackets at the necessary rate of supply. Let the flow cease, or the pressure drop below the danger point, and the result is that the high voltage supply automatically opens and the current is broken, or if there is not sufficient water pressure when starting up the station, it is impossible to close the main circuit breaker.

In the third unit, at the left in illustration No. 2, are mounted the 250 watt and the 50 watt speech amplifiers, together with their plate impedances, grid isolation condensers and grid impedances. These are specially designed to stand up under the terrific strain occasioned by the surges that take place.

The main circuit breaker, shown in illustrations No. 2 and No. 3, is contained in the 350 pound steel, fireproof cabinet mounted on the wall to the right of the operator's desk. It is a specially constructed unit made for WOK's particular requirements. The instant trouble of any nature develops a hair-trigger release automatically opens all the supply lines. This breaker also may be operated by the single pushbutton on the operator's desk. In addition, there are numerous smaller circuit breakers protecting each individual circuit.

Everything about the units is mounted upon pyrex insulators. Pyrex is the only insulator which has been found to give satisfactory service, because of the high power of the high frequency of 1,380,000 cycles per second, which passes through bakelite, slate, etc., as if they were fair conductors,

while insulation of the moulded compound type boils and flows away under such power.

In the adjoining room, shown in illustration No. 1, are more than 5,000 cells of specially constructed large wet storage batteries, from which is obtained the high voltage used on the plates of the metal power tubes, as well as the smaller tubes and others for the lighting of the filaments of the tubes. Each of the "B" cells is almost a foot high and has a very large ampere hour capacity. The filament heating cells are unusually large and have a capacity of double or 2400 ampere hours. This may seem excessive, but it really is not, because the filament of each of the four five-kilowatt tubes draws twenty-five amperes.

There are ten smaller circuit breakers, one for each 1,000 volt bank of "B" cells. All of the cells are discharged in series and they are charged in a series parallel arrangement of 80 volts each. A 15 kilowatt motor generator for the purpose of charging the batteries is located in another building, 100 feet away, and the supply feeders are brought in under ground.

To one understanding the principles of radio, Station WOK, at Homewood, is a source of continued interest and delight. It operates so smoothly, so efficiently and silently, it is hard to conceive that the waves being sent out by the small, compact sending units are reaching thousands of persons in all parts of the civilized world and that the sweet strains of music broadcast from the studio are being heard and enjoyed by an immense, invisible host of "listeners in."

To the person who gives his imagination free rein there is something about it all that inspires a feeling of awe, as radio represents man's highest achievement in the utilization of the great electrical force about which we know so little, but wonder so much. And as Station WOK is the ultimate, or topmost peak in radio, this station must continue to be a source of interest and inspiration to radio enthusiasts.

THE STUDIO

THOSE who tune in Station WOK are assured of enjoying a pleasant evening. Our studio artists are the best obtainable and great care is observed in making up the programs so that they will furnish the maximum enjoyment. The studio programs are interspersed with music by famous dance orchestras which play nightly.

The director of our broadcasting studio is ever on the lookout for new talent and features. As a result of the central location of the studio, and because of the satisfaction it gives them to broadcast from a station of exceptional carrying power and clarity, the best muscians who come to Chicago and the leading theatrical artists welcome an invitation to broadcast from Station WOK. This means that Station WOK is giving its audience, in all parts of the civilized world, vocal and instrumental programs by artists not only of national reputation, but in many instances of world wide recognition.

Think of the enjoyment WOK is thus giving to thousands who do not have the opportunity of attending the opera or the plays where these artists appear—the great host of music lovers who reside far from the large centers of population and to whom the artists would be merely names appearing in the newspapers were it not for the fact that they can hear them on the air. Now this widely scattered audience, even though living far from Chicago, may actually hear the music these artists are producing at the time it is being produced, in all the purity and clarity of tone made possible by the broadcasting methods of Station WOK.

Variety that will please all classes of listeners is the aim in making up the programs, but at the same time it is remembered that Americans are natural music lovers and have discriminating tastes in music. Therefore, every effort is made, whatever the kind of program being given, to maintain the highest possible standard, so that only the best music may be broadcast from Station WOK.

Our general studio at the CHICAGO BEACH HOTEL, from which we broadcast, is conveniently located on the Mezzanine floor, making it most accessible for the guests of the hotel as well as for the artists broadcasting over WOK.

The studio at the Chicago Beach Hotel was built and equipped at no small cost and very tastefully furnished. The reception room walls are of French gray; the woodwork and furniture are of Chinese red; the draperies and cushions of mouse gray velour faced in Chinese red. The studio is a "thing of beauty and a joy forever." Visualize a room 16 feet square, the walls, ceiling and floor first being covered with sound absorbent wool, then the walls are completely draped with mouse gray velour, box-pleated at the top so it hangs in graceful folds to the floor. The wall drape is faced with Chinese red velour. A scalloped valance of gray velour 18 inches deep, edged with a four-inch red fringe and appliqued with red medallions, hangs from the ceiling. The ceiling is entirely covered with this mouse gray velour made in a sunburst which is drawn to the center and held in place by a centerpiece covered with Chinese red, from which is attached the lighting fixture equipped with rosebud lights.

The carpets for the studio and reception room are of Wilton velvet in Chinese red and mouse gray squares. The furnishings in the studio outside of the piano are of Chinese red and gray, including a beautiful basket of electrically lighted artificial flowers.

Five microphones, in all, are in service, each controlled by a switch on the announcer's desk. Two are in the studio, two outside in the Peacock Room and the fifth is used by the announcer. One of the studio microphones is placed by the specially designed Baldwin broadcasting piano, at which the accompanist sits. The other is on a movable, adjustable, upright stand, behind which, and at the correct distance, the artist stands while singing, playing a musical instrument, tell-

ing a story, making a speech or whatever the form of entertainment may be.

The announcer's room is a unique and attractive little compartment, with a plate-glass partition separating it from the studio, through which the announcer can observe what is taking place in the "music room." He sits at a desk, listening to the music through head phones and in this way is enabled to tell if it is going out properly. If the artist is standing too close or too far away from the microphone to produce the best effect, the announcer signals and the mistake is promptly corrected. As soon as the artist is through, the announcer switches on his microphone and makes the customary announcement of the name of the station, the artist, the selection just heard and the next number on the program. At the conclusion of the announcement he signals again and the next number begins.

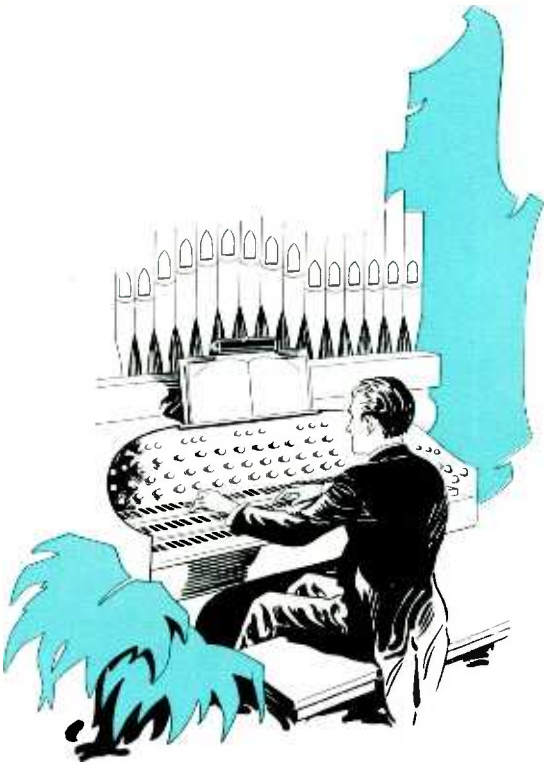
The announcer talks into the microphone in a conversational tone. To be a success he must speak distinctly and have a pleasing personality, which is manifest in what he has to say and the tone of his voice. In consequence of his nightly announcements he becomes known to many thousands through the land, invisible friends, who wait for the sound of his voice on the air and who visualize the personality behind the voice. Station WOK has been particularly fortunate in the selection of its announcers.

The mechanism on the announcer's desk includes an input amplifier similar in construction to the one at the station.

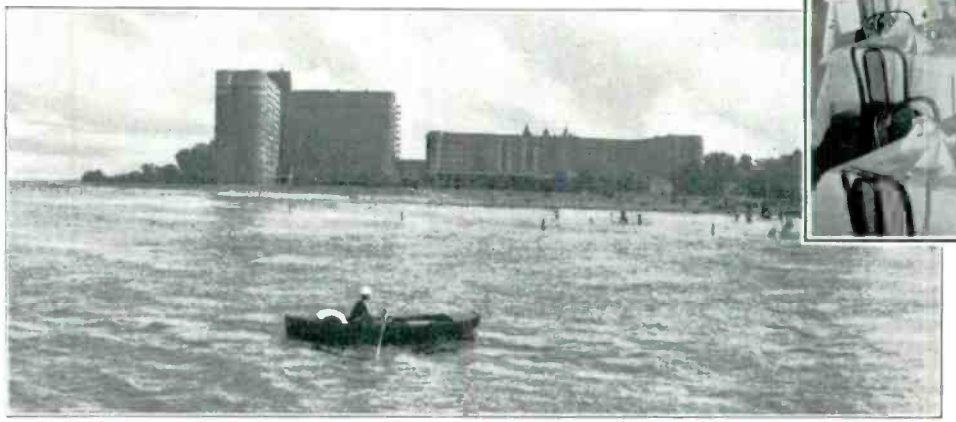
It is at the left of the panel containing the switches for changing from one microphone to another.

A large reception room, with comfortable chairs and divans, and an office for the transaction of business, such as sending out programs, handling correspondence and interviewing artists, complete the studio arrangements.

In addition to the programs furnished from the studio station, WOK picks up programs from some of Chicago's

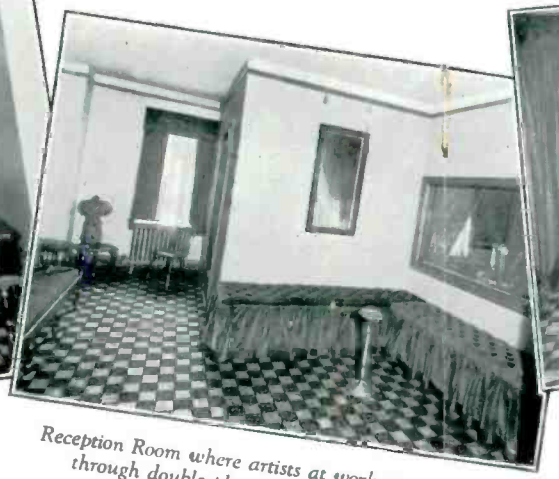


Chicago Beach Hotel—Home of WOK
General Studio



Peacock Room—Chicago Beach Hotel

A Corner in the Office of Studio WOK



Reception Room where artists at work may be seen through double plate glass window at right

General Studio

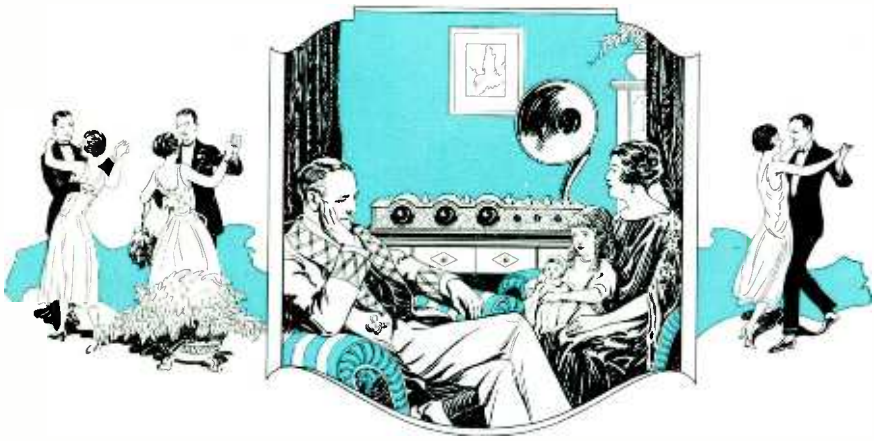
Operating and Control Room—
Station WOK

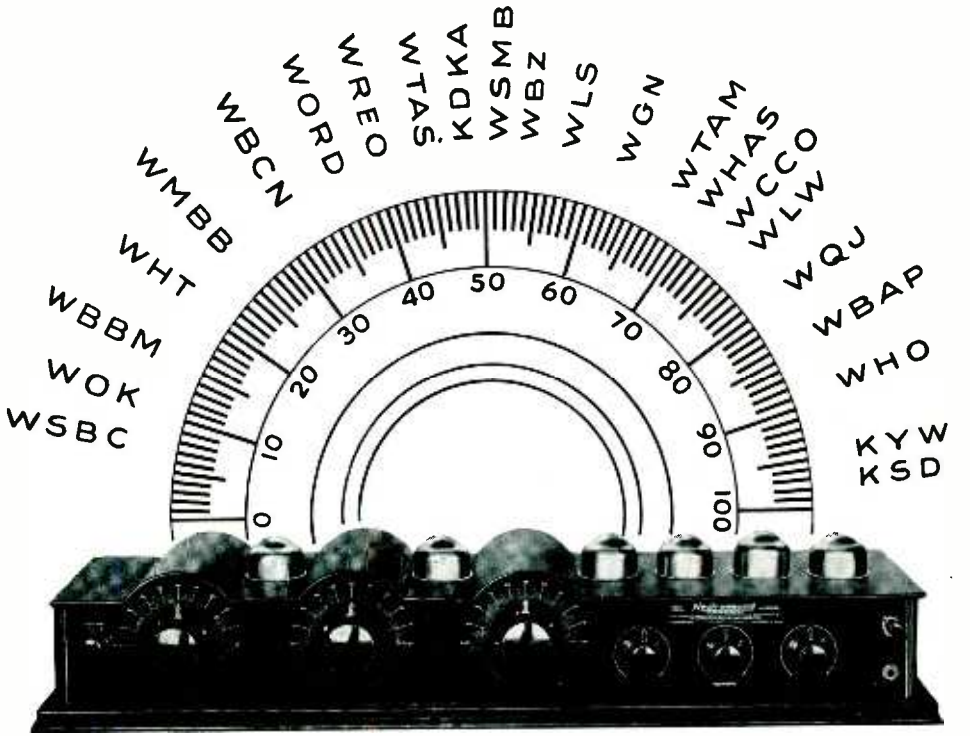
finest restaurants and theatres. These are called "pick-ups" and are handled as follows:

One or more microphones are placed at advantageous points in the restaurant or theatre, near the organ or orchestra. Two wires lead from the microphone to an in-put amplifier, where any music entering the microphone is amplified and then carried from the restaurant or theatre to the studio by means of telephone wires, which enter a second amplifier at the studio and is, in turn, sent over other telephone wires to the station, where the program goes on the air.

The switching arrangement for our "pick-ups" is handled by an operator at the restaurant or theatre and also by the operator in our general studio.

That the WOK programs are enjoyed by a vast multitude of people is evidenced by the many letters of appreciation received at the studio. These letters, coming from radio enthusiasts and music lovers throughout the country, are a continued incentive to the operators of Station WOK to broadcast programs of only the highest character.



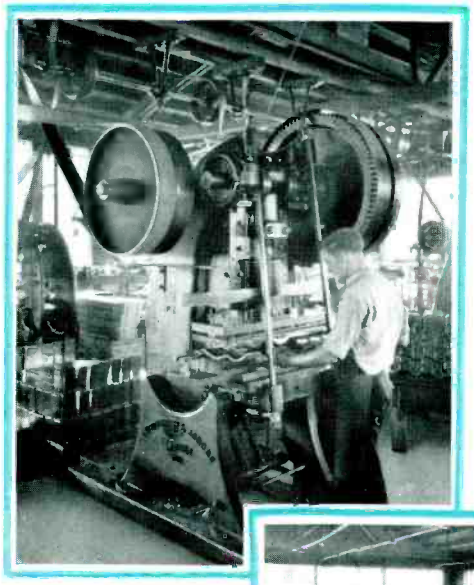


The Miracle of the Air

MODERN science has produced scores of miracles—scientific discoveries in chemistry, biology, electricity and metallurgy—and many new inventions have been perfected which have revolutionized life. Many of these discoveries and inventions, such as radium, the electric light, the telephone, the automobile and scores of others, would have been regarded as amazing miracles only fifty years ago.

But of all the miracles of modern science radio is unquestionably the supreme achievement of the human mind.

No discovery in all the annals of time has been so important as that of radio, with the possible exception of the printing press. Within the short space of five years the entire



Press forming the metal cabinet tops for Neutrowound Radio Receiving Sets.

View showing a part of Neutrowound assembly department.

Another view of Neutrowound assembly and inspection.

world has been revolutionized, distance has been annihilated and countries, separated by thousands of miles of ocean, can now talk with each other directly over the radio.

The old philosopher who prophesied that in the years to come men from New Zealand would walk among the ruins of London and sit on the broken arches of London Bridge had no conception of the possibilities of invention and scientific discovery. He had no vision of the little old gray mother sitting in her quiet home in England and listening over the radio to the voice of her son, who was over seas, far away in New Zealand, building his fortune and waiting for the time when he could send for his mother to come and live in the new home.

The science of radio is so new that it is impossible to forecast its future, but its development has been so rapid that it is not unreasonable to believe that within a very few years anyone will be able to talk over the radio with another person wherever he may be in any country on earth.

The greatest handicap to the world's progress has been the lack of a universal language by which men and women could communicate with each other, and it is altogether probable that one of the greatest results of the discovery of radio will be the adoption of one universal language by all the nations of the earth, and that men and women in Europe, Asia, Africa, the Americas, Australia and New Zealand will be able to talk over the radio directly with their relatives, friends, and business associates, wherever they may be on earth, in one universal tongue.

But until that time comes, music will continue to be the only universal medium of communication between the people of this earth—as it has been throughout all the centuries—since music appeals directly to the human heart and needs no language or interpreter to make it understood.

Final test and inspection. Every Neutrowound Set is tuned on at least three stations before being shipped.

First inspection and electrical test.

Packing Neutrowounds for shipment.

In designing the Neutrowound Radio Receiving Set, our radio engineers held before them the vision of producing a radio set so scientifically designed, simple in construction and positively efficient in operation that the average person would be able to obtain perfect radio reception, without interference and free from the usual howls and distortion.

Our engineers were inspired by a great ideal, and their sole aim was to produce the most practical, scientific, sensitive and efficient radio receiving set that it is possible to produce in accordance with the latest principles and most approved practices of radio engineering.

The assigning of the low wavelength by the United States Government made it necessary for our engineers to design a receiving set that would tune the entire wave band from 200 to 550 meters.

The Super-Six Neutrowound Radio Receiving Set is an achievement of which we are justly proud. It is the result of nearly two years of laboratory work by our engineering staff, and was subjected to the most rigid tests, under the most exacting conditions, during a period of one and one-half years before it was finally approved by our engineers and offered to the general public. The Neutrowound is in no sense experimental, since it was continuously tested in our laboratory to ascertain if it had a single defect. Day after day, in summer and winter, under all weather conditions, it cut right through the fourteen high power radio stations in Chicago without interference, and gave perfect radio reception. In comparative tests with practically every other radio receiving set on the market, it out-tuned them all and brought in **distant stations** with clarity and volume, and without the howls, screeches and distortions usually found in other radio receiving sets. In addition to this the Neutrowound tuned the entire wave band from 200 to 550 meters, whereas but few of the many other sets which were subjected to comparative tests were able to tune any stations below 250 meters.

Radio engineers and U. S. Government officials recognize that the many broadcasting stations which operate on wavelengths below 250 meters have greater carrying power than the stations which operate on high wavelengths, due to the fact that the low wavelength stations operate at a higher frequency.

This means that any radio receiving set which cannot tune in the high power stations which are operating on wavelengths below 250 meters is obsolete.

You would not want an automobile that functioned efficiently on a level concrete highway, but which could not climb a hill. The discovery—at our laboratory in Chicago—of the entirely new Neutrowound principle created a sensation among radio engineers throughout the world and made it possible to obtain the maximum selectivity with no sacrifice of volume—enabling the operator to tune in **distant stations** as easily as those nearby—with the same volume, richness of tone, and with entire freedom from the usual howls and squeals.

The accomplishment of this result has been the goal of radio engineers since the inception of tuned radio frequency amplifications.

The Neutrowound Radio Receiving Set is entirely different in design, construction, appearance and operation from any other radio receiving set ever invented.

The invention of the Neutrowound Straight Line Frequency Variable Condenser marks a great advance in Radio engineering.

The type of condenser in general use today is known as a "*straight line capacity condenser,*" because its capacity varies in direct relation to the dial setting.

There is another type, wherein a poor effort has been made to correct the present tuning difficulties, known as the

"*straight line wavelength condenser,*" with which the changes in dial setting give an equal change in wavelength, at all settings.

Anyone who has ever tuned a radio set knows, however, that the various broadcasting stations are very much crowded together at the lower dial settings, and spread out at the upper range. This is due to the condenser design, and not because the stations are operating close to each other, since all stations are separated the same distance from each other, the separation being 10,000 cycles or 10 kilocycles. It is therefore the Frequency difference—and not the Wavelength difference—that is of importance in tuning a radio receiving set.

With these facts in mind, a new type of *straight line frequency variable condenser* was designed by our engineers, which gives a similar change in frequency, in relation to the dial movement throughout the entire scale, thus insuring absolutely straight line frequency dial calibration, preventing the piling up or crowding of stations broadcasting on low wavelengths, and making it possible to tune right on down to 200 meters, with ideal tuning conditions.

There is at least one station to be found, every one and one-quarter degrees on the dials. The separation is the same throughout—and there are no stations in between, therefore you hear them all, but just one at a time. Each station comes in clearly and distinctly, without interference from any other station.

The Neutrowound is the first receiving set ever made with an all-metal case. Radio engineers have frequently endeavored to apply the shielding principle, but without obtaining satisfactory results.

Our engineers have been successful in developing and perfecting this principle, and have designed an all-metal case that not only serves as a sturdy protection for the vital parts

of the receiving set, but also acts as an electro-magnetic shielding against outside interference

The Neutrostat—designed and perfected in our laboratory and used exclusively in the Neutrowound Radio Receiving Set—is one of the most remarkable devices ever invented.

This unit actually makes it possible to build up weak signals from distant stations, having sufficient intensity to be detected, to such proportions that they equal local reception.

The Neutrostat enables the operator to tune the Neutrowound Receiving Set—just below the point of oscillation—the most efficient point for operating a radio receiving set.

The Neutrostat varies the effective plate potential which governs the output energy, and makes it possible to obtain the maximum radio amplification—consistent distant reception—unusual selectivity—clarity and volume—all far beyond anything that has ever before been obtained by any radio receiving set.

Three Stages of audio-amplification are sucessfully employed in the Neutrowound Radio Receiving Set to give absolutely perfect, solid, audio volume—a volume that makes the very air vibrate with a full toned resonance. There is volume to spare on most all reception—yet it can be modulated to a whisper.

Another achievement of our engineers is the economy of current from both A and B batteries, which materially reduces the cost of operation. The Neutrowound is a large, 6Tube Receiving Set—yet it consumes less current from both A and B batteries than the average receiving set, which employs from three to five tubes. When you consider that the average consumption of current by the Neutrowound 6 Tube Set is only 12 milliamperes, whereas the average 5 Tube Set draws from 25 to 30 milliamperes, the real battery economy of the Neutrowound is very apparent.

The Neutrowound Radio Receiving Set is furnished in but one model—a precision instrument of the finest quality, handsomely finished in brown and nickel. In this one model is contained *all the "Radio" that it is possible to buy at any price.*

The Neutrowound is manufactured under our own patents—and under a Reciprocal License from the Navy Department of the United States Government.

It is Supreme in efficiency—unequalled for its precision—a dependable, scientifically designed instrument—manufactured by a reliable company and sold at the remarkably low price of $85. (Without tubes, batteries, etc.)

Descriptive circulars which give complete detailed information, and a copy of our helpful Instruction Book, will be mailed free—on request.

THE NEUTROWOUND RADIO MANUFACTURING CO.
Homewood, Illinois.

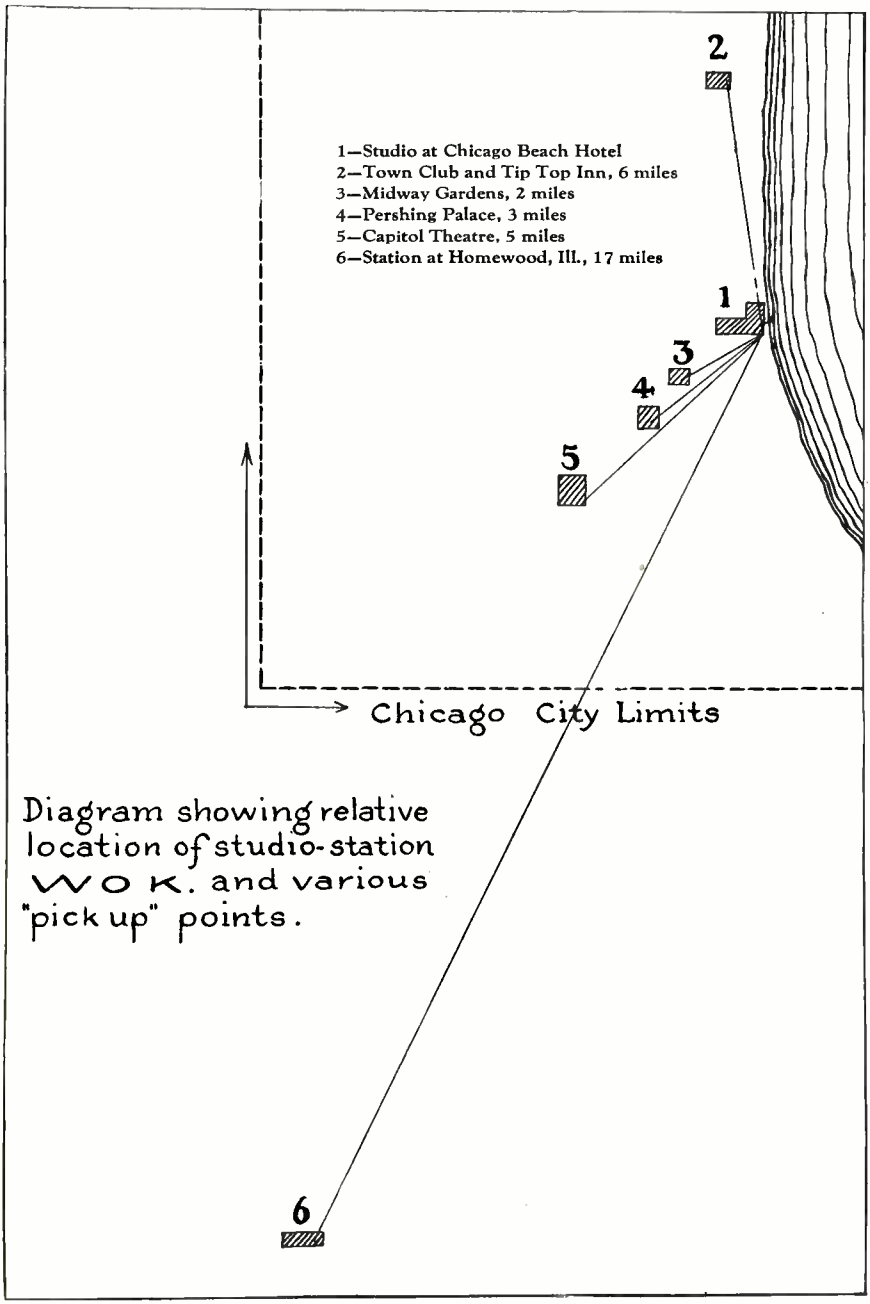


Diagram showing relative location of studio-station WOK. and various "pick up" points.

RADIO LOG

Date	Station	Wave-length	Location	Time	DIAL SETTING		
					No. 1	No. 2	No. 3

RADIO LOG

Date	Station	Wave-length	Location	Time	DIAL SETTING		
					No. 1	No. 2	No. 3
	WOK	217.3	Chicago				

RADIO LOG

Date	Station	Wave-length	Location	Time	DIAL SETTING		
					No. 1	No. 2	No. 3

RADIO LOG

Date	Station	Wave-length	Location	Time	DIAL SETTING		
					No. 1	No. 2	No. 3