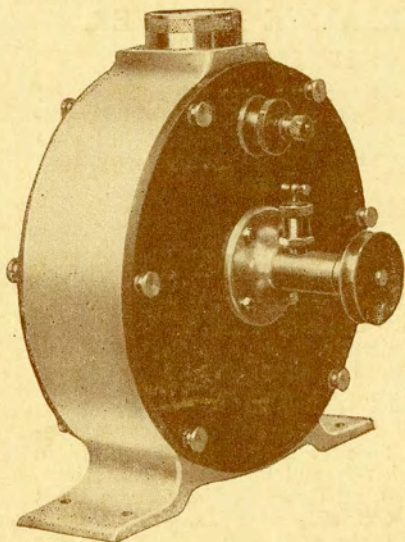


Let MI-KERM Help You Pound Through QRM

A Rotary Quenched Spark Gap of the Highest Order, Mechanically and Scientifically Constructed.



The Mi-Kerm Quenched Spark Gap Disk contains four rotors, making it unnecessary to buy extra rotors. It is a radiation booster, very clear note, airtight, practically noiseless and well insulated.

OUTSTANDING FEATURES.

Adjustable Spark Frequency.
Shortest possible leads.
Maximum Rotary Quenching.
Beautiful, yet business like appearance.
Convenience of Operator.
Perfect Mechanical Construction.
Practically Noiseless.
Clear Piercing note.

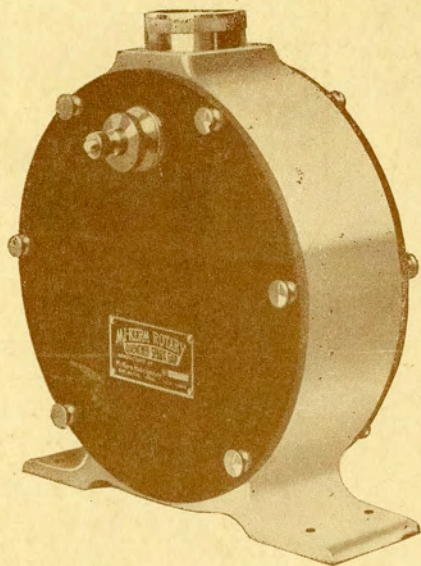
The Mi-Kerm Gap stands pre-eminently at the head of apparatus of this type and it adds greatly to the efficiency of any amateur station.

MI-KERM RADIO COMPANY

430 Harrison Ave.
BURLINGTON, IOWA



CENTRAL RADIO CO., Inc.
Distributor

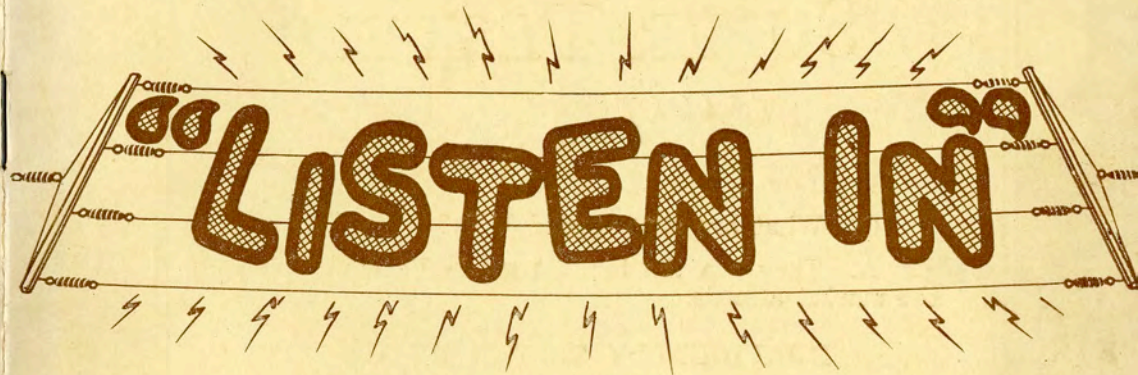


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Volume 1

Number 1



Chicago Convention Number



Published by the
Central Radio Company
(INCORPORATED)
Kansas City, Mo.

NEW ADDRESS
Corner Grand Ave., & 6th

SUPER-TESTED "V-Ts"

Q. What are super-tested VTs?

A. They are the highest grade Vacuum Tubes the market affords.

INDIVIDUALLY TESTED BY US.

Besides undergoing the tests of the manufacturer, they are individually tested by a vacuum tube expert who examines each tube for mechanical imperfections, determines the qualities of the filament, and tests it for sensitiveness (in case of power tubes for oscillating and power producing ability). The tube is then carefully packed in its individual carton ready for shipping. Every "Super-Tested" VT is guaranteed to reach you in perfect condition and to give absolute satisfaction.

See that every VT you buy is labeled "Super-Tested VT."

"Lightning Service" on "Super-Tested VTs," of course.

A-P Electron Relay (detector).....	\$ 5.00
A-P Amplifier-Oscillator VT.....	6.50
A-P Type T T Transmitter.....	7.50
Cunningham 300 Detector.....	5.00
Cunningham 301 Amplifier.....	6.50
Cunningham 302 5-Watt Power Tube.....	8.00
Cunningham 303 50-Watt Power Tube.....	30.00
Cunningham 304 250-Watt Power Tube.....	110.00
Radiotron UV 200.....	5.00
Radiotron UV 201.....	6.50
Radiotron UV 202.....	8.00
Radiotron UV 203.....	30.00
Radiotron UV 204.....	110.00
Kenotron UV 216.....	7.50
Double Filament Auditron.....	6.00

CENTRAL RADIO CO., Inc.

316 East Fourteenth Street
KANSAS CITY, MO.

Super-Tested VTs may also be obtained from the Mi-Kerm Radio Co., Burlington, Iowa, Rad Radio Service, Winfield, Kansas, Guy May, Florence, Kansas, C. Stewart Johnson, Oakland, Neb., and other Central Radio Agents.

LISTEN IN About Ourselves

We believe it fitting, in this the first issue of "Listen In," to tell you something of who and what the Central Radio Company of Kansas City is, and particularly about our President and General Manager, who is not only the head of this company but the Directing Head.

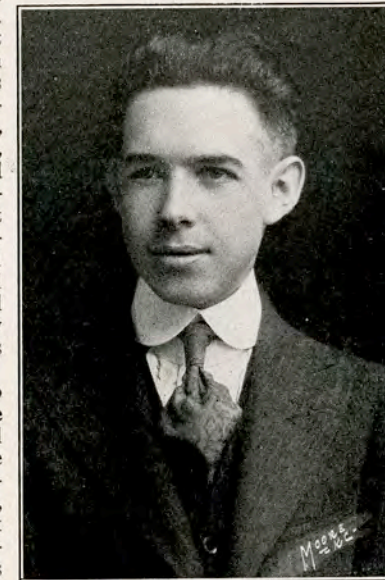
The Central Radio Company took its big step by moving to its present commodious quarters at 316 East 14th Street, Kansas City, from Independence, Mo., last May. While independence, where the Company was organized, held many advantages from the standpoint of a Radio School alone, from a merchandising viewpoint it presented many difficulties in service that had to be overcome. The one vital point in the distribution of radio apparatus is service, and convenient location, ample quarters, warehouse space and pleasant surroundings is no small part of it. Our President and General Manager had all these things in mind when the company moved to Kansas City.

The Central Radio Company carries one of the largest and most comprehensive stocks of radio apparatus in America, and while this stock is varied, only standard, approved lines are stocked. Not only does this large investment make "Central Radio Lightning Service" possible, but every order is handled with this thought uppermost, the result is that this company has established a reputation for service and square dealing in the comparatively short time that it has been in business that many concerns have failed to obtain in a score of years.

All things have a beginning, and we feel that a little sketch of the experience of our President is the best way to tell you of the growth

of an idea into a big institution.

Back in 1913 and 1914, Arthur B. Church became interested as a physics student in electricity. He took up amateur radio first as a hobby. An incident to this hobby is the fact that he at that time established himself as a "Wireless Specialist." The subject grew on him and in 1915 he attended the Dodge Radio Institute and passed the Government Examination for commercial Radio Operator. With the coming of Fall he found time to take on night classes in radio instruction and attended college during the regular school day. During this year he installed stations 9YO and 9ZH. He was elected secretary of



ARTHUR B. CHURCH
President and General Manager

the Hawkeye Radio Association (The official Iowa State Wireless organization). Was admitted to membership in the Institute of Radio Engineers. During the summer of 1916, took post graduate work in the Dodge Radio Institute. The same year conducted the Wireless Exhibit at the Iowa State Fair and conducted the first wireless news service in the state for a Des Moines newspaper. Was elected purchasing agent for the Hawkeye Radio Association. During the Fall installed the wireless station at the Iowa State College.

In 1917 became associated as Director of the Graceland Radio Institute and was placed in charge of local radio training for Vocational Board—War Work.

The next step—as you would naturally expect, was enlistment for the world war, and as instructor in the Signal Corps in the various important camps throughout the country, Mr. Church not only amassed a wonderful fund of the finest possible radio information and training, but was of unquestioned service to our

LISTEN IN



country when radio experts were exceedingly scarce. In 1919 he was honorably discharged from service.

In 1920 the Central Radio Company was organized with Mr. Church as President, first at Independence and as outlined before, later moving to Kansas City, Mo.

The point we wish to make in this sketch is the fact that the Central Radio Company is not merely a merchandising organization, but a company presided over by a man well versed in the needs of amateurs and commercial operators and with whom are associated men who stand at the very top of their chosen profession—wireless in all its ramifications.

The Central Radio Company realizes that education is the great essential in the establishment of radio use and to that end every help is extended to amateur operators. Every amateur can ask and get technical information on any point on which he is in doubt. Kansas City amateurs are given free instructions at weekly meetings and it is planned to extend this instruction this Fall through free lessons sent by wireless, to all sections of the Central West.

The Central Radio Company is expanding just as fast as its healthy growth permits, and that is mighty fast. Make free to use every part of its service, for it is founded on a real desire to serve you, and that desire is supplemented and reinforced by an expert knowledge of the requirements of the radio field.

The First National Radio Show at Chicago is the first great get-together meeting of those interested in Radio, and much good will be derived by those attending. Great credit is due the sponsors of this convention—for it is a giant undertaking, involving a great expenditure of money and time.

The Central Radio Company participates in this spirit and wishes to assure its readers that it stands ready to do everything possible to promote the progress of the greatest invention of the ages—Wireless. Let us help you—we are dead willing.

“Lightning Service” means Central Radio.

LISTEN IN

Jefferson City, Mo.
July 28, 1921.

Central Radio Co.,
Kansas City, Mo.
Gentlemen:

I received my order this morning and it was the best service I have ever received.

Hereafter you will receive all of my orders. You fellows have certainly got the spirit and the service and it is my belief that you will get the business.

73CUL
Bethel Brace,
403 E. Ashely St.

Edwin L. Early, well known to K. C. amateurs, writes from Ottawa, Kas., under date Aug. 20:

“With a one-step amplifier we hear you all over the house. We certainly enjoy and appreciate the music.”

Orene Cathcart of Ra's Radio Service, Winfield, Kansas, will be glad to have amateurs in his territory communicate with him regarding their problems. As a Central Radio agent he is with us strong on “service.”

Ottawa, Kans., July 23, 1921.

Dear Sir:

Does your phone set produce results in Ottawa? Well I'll say she has a super-human kick. Your voice modulation is very much louder than your music. But your music can be heard 8 inches from phone, using only one audiotron bulb and home constructed regenerative set. Keep the good work going, I am,

Your for concerts,
Vertice D. Wilson, 73.
128 N. Cedar.

The long winter evenings will soon make living indoors your greatest pleasure. A wireless telephone receiving set will enhance this pleasure. With no effort on your part, the best musical entertainment from every section of the country can be brought to your fireside. Write our Radioharmony Department for details.

The biggest stock—the best service—on the square methods make Central Radio what it is.



The Mi-Kerm Gap--Its Inventors and Manufacturers

The Bloomer Brothers of Burlington, Iowa Have Invented and Marketed Radio Product of Great Merit.

The World War emphatically demonstrated the fact that the young man thought and acted quicker than the "gray-beard," in other words, the young man came unto his own in the great struggle. What applies to war and its management so also applies in a great degree to business, and we can think of no more fitting comparison than the above statement as an opening statement in this article which has to do with young men, (both under twenty-five years of age) who have profited by their knowledge of radio gained through amateur experiments.

The product of these youthful inventors, the Mi-Kerm Rotary-Quenched Spark Gap, is considered by amateurs throughout the country as the best that can be obtained. It is not only scientifically correct, but a beautifully adjusted piece of machinery, carefully balanced construction and the finest machine work. It has a distribution throughout America where wireless apparatus of the highest order is demanded.

Kermit R. Bloomer, the younger of the brothers, has long been associated with amateur radio activities in Iowa, and last May he was elected

Treasurer of the Iowa Relay League in a convention held at Cedar Rapids.

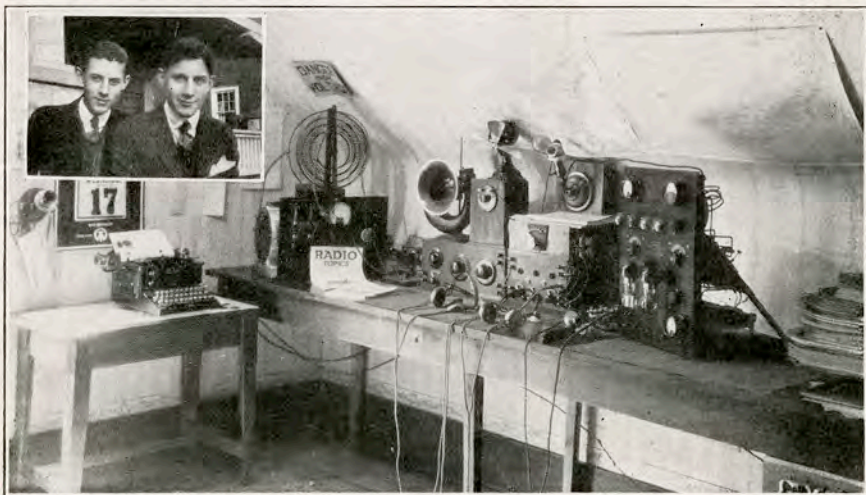
Milo A. Bloomer, the elder brother, associated with Kermit in the manufacture of their Rotary-Quenched Spark Gap is also a well posted radio operator, and his whole thought is research in the radio field.

We reproduce herewith a photo of their Radio station "9KQ" together with a description of same which we believe will be of interest to our readers. Here it is as these young men describe it:

Much DX work was done last winter and it is expecting to handle much of the traffic for Southeastern Iowa this season.

The above picture is the station used last winter with the exception of the phone set, which was just recently purchased.

The transmitter is a ½ KW Thordarson, 3 sections of Murdock condenser, Mi-Kerm Rotary Gap and homemade O. T. of the pancake type. With 3½ inches coupling the antenna current was 3 Jewell Thermo-Couple amperes. With this transmitter 900 miles were covered, signals being reported from Casper, Wyo., Baudette, Minn., Houston, Texas, New Orleans, La., and Pittsburg, Pa. Many stations within a distance of 500 miles were worked almost every evening.



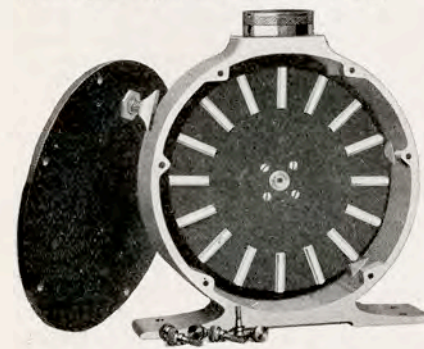
The receiving equipment consists of a Grebe CR-2 S. W. R. R. and a Grebe type RORD detector and 2 step a. f. amplifier. Two sets of Brandes Superior phones were used.

The aerial used up until about March 1st, consisted of a 4-wire, inverted L flat-top, 85 feet long, supported 43 feet above ground with a four-wire leadin 20 feet in length. The ground used was a zinc plate 2 feet by 10 feet buried about 5 feet beneath the surface.

A new and complete station is being installed and will be in operation about September 30. A complete description will then appear in "Listen In."

The Mi-Kerm Company are Central Radio representatives for Eastern Iowa and Illinois and have already built up a splendid reputation as the representatives of Central Radio "Lightning Service."

The Mi-Kerm Quenched Spark Gap will be on exhibit at the Chicago Convention in Booth No. 9 with Central Radio Company and should be seen by every amateur attending.



Wireless on the Farm

We asked Jack Stone of Warrensburg, Mo., to tell us about his Radio station and we reproduce herewith his letter in reply, and also some pictures of Jack and his station. He made his own pictures and while he knows a lot more about radio than he does photography, still the illustrations will give you a very good idea of how Jack has "built up" his wireless. It is such young men as Jack Stone of Warrensburg who will be in the front rank in the next few years in Radio.

"I became interested in wireless late in 1919. I got a practice set

consisting of buzzer, key and battery. Then Dad began to get interested. In fact, he got so interested that he purchased me a "beginners set," which consisted of Navy type receiving transformer, variable condenser, crystal detector, phones and aerial material. With this set I heard quite a few stations. Then in November got a transmitter which consisted of an Amrad spark coil and Amrad quenched gap. With this set I communicated with local radio enthusiasts. Then I bought an Acme detector unit, batteries and bulb, and increased my receiving range considerably. In January, I made application for, and received my operators and station license. Both of which I feel quite proud of. In February, I got a General Radio 2-step amplifier. With this added to my set, have frequently copied XDA at Mexico City, and most of the other high power stations in the U. S., together with a number of 1st, 3rd, 5th, 8th and 9th district stations. Beginning April 1, began "catching" market reports from KDEL (St. Louis, Mo.) and KDEF (Omaha, Neb.) Have copied them almost every day since, except KDEL, who has been operating on CW since June 1st. Have frequently given stock reports to the Shipping Assn., in Warrensburg.

In the photograph you will see my set as it is now. The transmitter consists of: Amrad spark coil, three Murdock condensers, Amrad quenched gap, Murdock Oscillation Transformer and Roller-Smith Hot Wire Ammeter. As I live eight miles in the country and have no electric lights; I have to depend on a six volt "used" car battery for sending power. For receiving, use Navy type receiving transformer, Murdock variable condenser, Acme audion unit, General Radio two-step amplifier, and Murdock 3000 ohm phones. The aerial is suspended from a 73-foot gas pipe pole and a 6-foot pole on a two story house. It is 70 feet long with a 25-foot leadin.

My average sending range is Sedalia, (30 miles), though have reached Independence several times. Once succeeded in reaching Cherokee, Kansas, (120 miles).

With everything working well I can get one ampere radiation.

JACK STONE, 9DAE.

R. F. D. No. 1, Warrensburg, Mo.

LISTEN IN

LISTEN IN

The Receiver You Have Been Waiting For

SHORT WAVE REGENERATIVE RECEIVER AND VACUUM TUBE UNIT

TYPE CR-8

Wave-length Range—150 to 1000 Metres

ABSOLUTE ELECTRICAL EFFICIENCY:

The circuit used in the Type CR-8 Receiver needs no introduction to the amateur. It is the familiar Armstrong regenerative tuned grid and plate circuit. The use of continuously variable inductances in the grid and plate circuits gives maximum selectivity, and a high degree of regenerative amplification. The wave-length range of the receiver is divided into three bands, viz.: 150-375, 280-650, 600-1000. The first of these ranges is covered entirely through inductance variation, the elimination of shunt capacity giving the greatest possible sensitivity. The high inductance value of the grid variometer makes it possible to obtain the second and third ranges by the addition of two very small mica condensers, mounted in the set and controlled by a selector-switch. These small capacities are in no way harmful to the efficient operation of the receiver on these ranges.

Coupling is increased from minimum to maximum in inductive relation in two directions; thus giving in one instance the additive electro-static coupling and in the other instance the subtractive electro-static coupling.

SHIELDING:

Each unit has been effectively shielded by grounded aluminum plates placed on the back of the panel, and inter-unit connections are made positive by the use of pig-tail connections rather than bearing contacts. The receiver has thus been freed from annoying external capacity effects and the "clicking" of loose connections.

In including the vacuum tube receptacle as an inherent part of the instrument, we have been actuated by a desire to give to amateur radio a short-wave regenerative receiver with a constant wave-length calibration. If 250 metres occurs on a certain setting of the grid variometer it will always be there, since there is no necessity for the addition or removal of external apparatus which would disturb the effective values of the circuit.

REGENERATIVE WAVE RANGE:

The shunt condensers used to shift the wave-length range are small, low resistance mica and copper condensers, and by-pass condensers have also been provided (controlled by the wave-change switch) to make regeneration possible throughout the entire wave-length range.

RUGGED MECHANICAL STRENGTH:

All the units of the receiver are secured to the main panel which is supported in a solid, quarter-oak cabinet, having a hinged cover. The variometers and the coupler rotor are made of moulded bakelite—built to last forever. These variometers are of special design, the stator windings being clamped into place by means of two

moulded cages. The patent tapered-grip dials, switch knobs, vernier, wave-change and rheostat control wheels are also of moulded bakelite. The shunt, grid and by-pass condensers are firmly secured to the Vacuum Tube Socket Base, which is of our standard design. Rigid wiring results from the use of bus copper wire, supplemented where necessary with flexible connections covered with varnished tubing.

EASE OF CONTROL:

The operation of the CR-8 consists essentially of bringing three circuits into resonance: primary or antenna circuit, secondary or grid circuit, and the oscillating or plate circuit.

A specially designed rheostat has been developed and the wheel operating it, in addition to being easy to operate, is directly calibrated in ohms, giving visual indication of the amount of resistance in circuit.

The adjustment of grid and plate variometers is made rapid, accurate and positive by the use of a specially designed "rubber-tired" vernier, operated by a wheel under each dial. We believe that this is the first real vernier adjustment developed. It is easy to operate, gives the finest possible adjustment and will not get out of order. The tuning-in of C. W. will no longer hold any terrors for the possessor of a CR-8. With these vernier attachments the dials may be moved for a hundredth part of an inch—and they will "stay put."

Change of wave-length range is effected merely by the movement of the selector-switch wheel, which, like the rheostat wheel, gives visual indication of the wave-length band in use.

Battery connections are made from the rear, through holes in the back of the cabinet—battery leads are therefore never in the way of the operator.

Two binding posts are provided in the upper right hand corner of the panel to which phones may be attached. These binding posts also serve to connect the instrument with the Grebe type RORK two stage amplifier. This amplifier unit has the Grebe automatic filament control system and the combination of the CR-8 and RORK is by far the easiest operating short-wave receiving equipment obtainable.

Nothing is left to the imagination. All controls are plainly marked. No necessary parts have been eliminated and no needless adjustments included. The CR-8 is a complete receiver and will almost operate itself.

PLEASING APPEARANCE:

Every real relay-man takes pride in the trim, efficient appearance of his station. In the CR-8 it has been found possible to so arrange the elements to give the set a pleasing, symmetrical appearance. And this has been done with increased electrical efficiency, mechanical strength and ease of control.

Wiring diagram and instructions with each instrument.



Points of Supremacy

- 1.—Finest tuning vernier adjustment.
- 2.—Body capacitive effects eliminated by shielding.
- 3.—Constant wave-length calibration.
- 4.—Regenerative through entire wave-length 120-1000.
- 5.—Highest electrical efficiency.
- 6.—Rugged mechanical strength.
- 7.—Beautiful "Thoroughbred" appearance.
- 8.—Admirably adapted for "CW" and phone.
- 9.—Convenience and ease of adjustment.
- 10.—A complete receiver.

TYPE CR-8—REGENERATIVE RECEIVER AND VACUUM TUBE UNIT—PRICE \$80.00

CENTRAL RADIO COMPANY

KANSAS CITY, MO.

First Radio Hike a Great Success

Now it's the "Radio Hike," not exactly a "hike" in the strictest sense, but a great successful, instructive "convention" held at Swope Park on Sunday, August 21st under the auspices of the Amateur Radio Classes of Kansas City. For the benefit of the readers of "Listen In" we reproduce herewith an account of the "hike" as spread upon the front page of the Kansas City Journal, Monday, August 22:

Amateurs Get German Radio Message Here

Local Wireless 'Fans' at Swope 'Listen in' on Waves Generated 6,000 Miles Away.

'P. O. Z.' FLASHED FROM NAUEN STATION.

Outing at Big Park Featured by Innovations Showing Progress of Science in Transmission.

A series of tiny electrical sparks, generated more than 6,000 miles away, yesterday afternoon hopped down five small wires suspended from the flag pole to the shelter house in Swope park.

"Di,da,da,di da,da,da da,da,di,di."

Three times the signal came. Then thrice more and again the "dots and dashes" which spelled out—

"Di,da,da,di (P) da,da,da (O) da,da,di (Z)."

A boy, seated before a small table with a nickel-plated head harness strapped around his head, came to life suddenly.

"'P. O. Z.' calling," shouted Harry Spoor, the operator. "It's Nauen, Germany."

Famous Station Calls.

Several spectators in the crowd at the annual picnic of Kansas City's wireless amateurs were handed receiver sets.

"Di,da,da,di da,da,da da,da,di,di." came the "call" signal of the famous Nauen radio station near Berlin.

They were "listening in" on a wireless message establishing a record

here. Using less electrical paraphernalia than is found in many modern homes, the radio amateurs had installed a station that was "picking up" messages from a wireless plant in Germany that formed the nucleus of Germany's wartime radio operations—one of the most powerful in the world.

"Spoor, ask 'em how the beer is over there," a man sighed as he adjusted the head set to "hear" Nauen. Messages were also received from both Atlantic and Pacific Coast stations.

A woman asked to "hear" Annapolis. She shoved the gobs of hair away from her ears and adjusted the head set.

"Ooo, it tickles," she cried. "It sounds like birds singing."

On another table sat a machine, apparently a new-fangled phonograph.

"Sure, it's a phonograph," the operators told neophytes. "Hear the music?"

Carries Music Eight Miles.

Through the instrument—a magnavox—came the strains of jazz. Eight miles away at 316 East Fourteenth street, a Ted Lewis record was being played on a phonograph set up before a wireless telephone set. Through eight miles of ether waves the jazz traveled and was "picked up" and "played" by the magnavox.

At the zoo the same jazz concert was in progress at another radio telephone station. Thousands of park visitors divided their attention between the zoo animals and the wireless jazz concert.

Out on the lagoon, Keith La Bar, rowed over the water with Floyd Barnes, 3747 Euclid avenue, in a canoe. Suspended between the bamboo poles at the fore and aft of the craft were five wires. In Keith's lap was a small box about the size of milady's vanity case. From it Keith "picked up" messages sent out from a small station on the shore.

Has "Wireless" Bicycle.

Alfred Heiser, 4224 South Benton boulevard, rode to the park on a bicycle. Above his head were suspended several wires and under the seat a receiving set "picked up" messages sent out from various stations in the park.

Herbert Brown, 12 years old, 3232 Garfield avenue, brought his wireless set to the park in a cigar box and attracted attention of hundreds of persons by picking up and translating messages sent hundreds of miles.

Throughout the afternoon grown-ups and children talked knowingly of variometers, inductance, regenerative sets, loading coils, carrier and modulated waves—words which, interpreted for the layman, mean that a new era has arrived in the transmission of signals and speech.



JACK STONE, WARRENSBURG, MO.

Get Dad interested—then he'll loosen up.

Wireless Progress

Have you any idea how many wireless stations there are in the United States? According to the best authorities, there are more than 700,000, ranging in age from 16 to 60 years with an average age of 21 years. The same authority states that there are more than 6,000 commercial stations. This gives you some idea of the immensity of radio and every day sees the installation of new stations, both amateur and commercial. Of the latter class such big commercial enterprises as the John Wanamaker Store, the Westinghouse Lamp Co., the Pennsylvania Railroad, the great Oil Companies, the Navigation Companies and many others use Radio in the transaction of their every-day business. Wireless is destined to come into complete universal use within the next very few years. The young man who early becomes familiar with its use and operation has many advantages—and a fund of pleasure that can be derived in no other way.



JACK STONE'S WIRELESS STATION
"Listen In" on our Radioharmony Concerts.

Your Magazine

"Listen In" is your publication and we want every wireless operator in the great Central West to become an associate editor. It is not to be a "high-brow" publication—on the contrary, it has definite, commonplace purpose—to put into print each month those things that are helpful to amateur operators—to furnish a medium for the interchange of ideas, helpful suggestions, questions and answers on both the operation and construction of apparatus and in general to be YOUR publication in every sense of the word. Send us your "radio news," ask us questions, and help us answer the questions of others.

SHOW HIM SOMETHING INTERESTING.

"That young man stayed late again Edith."

"Yes, Papa, I was showing him my picture cards."

"Well, the next time he wants to stay late show him the electric light bills."

In a crowded car, a stout woman vainly endeavored to get her fare out of the pocket of her coat, which was tightly buttoned. After she had worked in vain for some little time a gentleman on her left said, "Let me pay your fare, please." The lady declined and recommenced her efforts on the pocket. After these had continued for some further time, the gentlemen said, "You really must let me pay your fare, you have already unbuttoned my suspenders three times and I won't stand for it any longer."

LISTEN IN

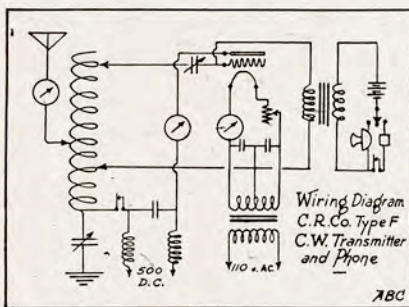
Make it at Home---Here's How

150 MILES—DAYTIME—WITH A 5-WATT PHONE SET.

Have You Heard 9AXJ's Concerts? Here's How to Construct a Successful Set.

"I want dope on single tube CW set which will give me a reliable working range of 25 to 50 miles. It must be inexpensive yet must be efficient and have a good appearance."—The average amateur.

At Central Radio we have been working on just such a set, and the results obtained seem to merit publication as the answer to the above problem. The apparatus described has been in operation for some time at 9AXJ, and the phone is consistently heard throughout a radius of 150 miles. With buzzer modulated telegraphy the signals are of course much stronger and are easily tuned. With straight CW maximum distance can be covered with the set, but the signals must be heterodyned at the receiving station.



DESCRIPTION

The photograph shows the general appearance of the panel with the complete set of necessary adjusting devices. The tubes, inductance, filter, modulation transformer, and filament heating transformer are mounted on suitable supports at the rear of the panel. Dimensions and mounting details are not given because the average amateur has more or less of the apparatus and parts which can be used for such a set, and the different makes of parts require special mounting consideration.

Several transmitting tubes can, of course, be connected in parallel to increase the power. In this case it would be advisable to put a closed circuit jack in each filament circuit so that the filament ammeter could be plugged into the desired circuit. The plate circuit ammeter (mounted in upper right hand corner) should also have a greater range, say 250 milliamperes.

It may be argued that a variable grid condenser is not necessary, but we have found that if best possible modulation is desired a variable capacity is essential. Moreover, the variable grid condenser eliminates the necessity of a critical value of grid leakage.

In some cases it may be found desirable to mount a voltmeter on the panel. The Jewell Type 33 matches perfectly with the General Radio Hot Wire instruments. Some may also prefer to eliminate all meters not absolutely necessary. The antenna meter is quite essential, but the plate current and filament current meters, although desirable and convenient, may be dispensed with.

All connection posts should be mounted on a formica or bakelite strip at the rear of the set. The radio frequency inductance can be constructed, if desired, and may consist of forty to fifty turns of large copper wire, copper tubing, or edge-wise wound copper strip, on bakelite supports or on threaded bakelite or formica tubing. The clip method of adjusting the inductance is best to use because it is most simple and has highest electrical efficiency. After the inductance adjustments are once made they need not be bothered with further, as the antenna variable condenser provides means for continuously variable wave length changing.

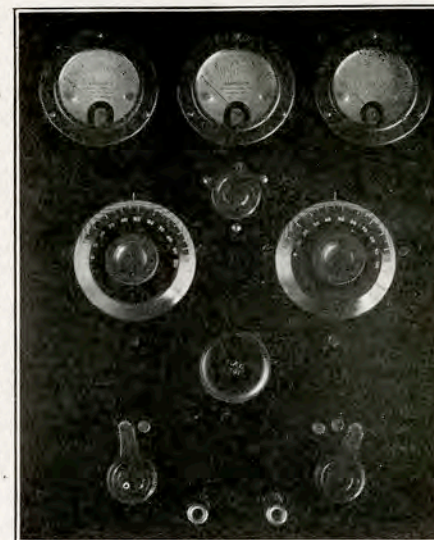
Assuming that a motor-generator of proper voltage (about 500 volts) is to be used as the source of power, its terminals are connected to the generator side of the filter. Other connections to the panel are, of course, also made. The switch at the lower left hand corner of the panel turns on the 110 volts A. C. to motor and filament heating transformer. Cut out resistance in filament rheostat until the filament ammeter reads the proper amount (2.35 for G. E. 5-watt

LISTEN IN

tube). The plate current meter should now read approximately the plate current rating of the tube. With 500 volts on the plate the reading will be about 70 m. a. Set grid condenser at maximum. With clips on inductance about as shown in wiring diagram adjust antenna condenser. If proper radiation is not indicated by the aerial ammeter readjust clips on inductance.

A critical grid condenser capacity helps to give maximum radiation, but this adjustment may not be the best one for modulation. Listening in on a wavemeter placed near the set, decreases the grid capacity until the modulation becomes scratchy and the antenna current suddenly falls off. Now increase the capacity slightly. A little experimenting will show up the "knack" of tuning up for best modulation.

With the Federal microphone a six-volt battery is recommended, although additional voltage is often used for greater modulation "cut-in." Many microphones require "seasoning-in" before they work efficiently, so don't be disappointed if you seem to be getting poor modulation during the first few hours of operation.



Radioharmony concerts will be held by Central Radio Co. this Fall and Winter. "Listen In" on the entertainment.

Right prices, Lightning Service—that's Central.

MODEL LIST OF MATERIALS.

1 C. R. Co. Inductance.....	\$ 8.50
1 Antenna Ammeter, General Radio Type 127 A, 2.5 Amps.....	7.75
1 Antenna Variable Condenser, Chelsea.....	4.25
1 Grid Variable Condenser, Chelsea.....	4.25
1 Modulation Transformer, General Radio.....	5.00
1 Grid Leak, 4000 ohms, Ward Leonard.....	.95
1 Hand Microphone, Federal.....	7.00
1 Filament Heating Transformer, Acme 75 watts, unmtd.....	9.00
1 Filament Heating Transformer, Anti-Hum Condenser.....	4.00
1 Filament Rheostat, General Radio.....	2.50
1 Tube Socket, General Radio.....	1.50
1 5-watt Power Tube, G. E.....	8.00
1 Acme Double Choke, 150 m. a.....	6.00
1 Filter Condenser, 1 mfd., 1000 volts.....	2.00
1 Modulator Buzzer, Federal.....	2.50
1 Panel, 12x15, 1/4" thick.....	5.40
2 Switch Levers, General Radio.....	1.90
5 Switch Contacts, General Radio.....	.25
2 Closed Circuit Jacks, Federal.....	1.70
1 Motor-Generator, Type FG-1.....	95.00

NOTE:—The Central Radio Company can promptly furnish any of the above material. Any special questions regarding the apparatus will be gladly answered.

LISTEN IN

The Buzzer



DAT SLEW FOOT BAN'.

From Our Radio Harmony Concerts.

Jes' listen, folks, to dat slew foot ban';
Da's de music, man, dat's de music, man!
Jes' listen to that oompah, oompah ho'n!
Oh! Ain't dat gran'? Oh! Ain't dat gran'?
Not uh mockin' bird kin beat dat song—
An' heah dem cymbals, Bim! Bim!
An' de bass drum waitin' to come out strong.
BOOM! Dere it goes! BOOM! Dere it goes!
An' cla'inets—Why, goodness knows—Dey's jes' ez fine! Dey jes ez fine!
An' see dem niggahs in p'radin' clo'es!
An' look uh-yonduh at de head—
Dat big buck niggah, all dressed in red,
Wid dat sumpt'ous cane wid de gilded ball
Uh-wavin' de way de music's led.
Ain't got no job, ain't got no money, Dere ain't no woman to call me "Honey"—
Ah got to die; but Ah can't cry—
Dat slidin' trombone sho is funny.
Heah! White folks, hol' me on de groun'
Ah'm ca'ied away wid lubly soun'
Mah soul is riz! Mah soul is riz!
Dat minstrel ban' done hit de town.

A REGULAR SWALLOW.

Some boys were being given instruction in diving. This particular lesson was on the swallow dive.

"Now, Jenkins," said the instructor to the most backward pupil, "you take a turn."

Jenkins made a hopeless attempt and created an alarming splash.

"That's not a swallow dive," said the instructor.

"Isn't it?" gurgled the unfortunate Jenkins. "Why, I thought I'd swallowed the whole pond!"

A grapefruit is a lemon that had a chance and took advantage of it.

The pleasantest way to kiss a girl is with her approval, but without her consent.

Service does not mean something for nothing; but the proper work at the proper time, at the proper price.

Service is responsible for Central Radio prosperity.

SAY IT SIMPLY.

When describing your wireless to your home folks do it simply, in other words, when promulgating your eosteric cogitations or articulating your superficial sentimentalities or philosophical observations, beware of platitudinous ponderosities—avoid all jejune babblements and asinne affectations—say it simply.

Business is spelled with a "U" and an "I" in it.

ILLITERATE.

Here's an Arkansaw story, but Arkansaw is not the only state that it applies to.

A newspaper man was calling on the farmers for subscriptions. He drove up to one field where a woman was plowing. On closer inspection he saw that she had her husband hitched up to the plow with a scrawny mule. She stopped the "team" and the solicitor began telling about his publication. A gust of wind came along, blew the paper against the old man's leg and he ran off and tore the plow up.

Courtesy—Square Dealing "Lightning Service"—all are contributing factors to the remarkable success of Central Radio. If you don't know all about this service, you are missing something.

No Job Too Big for this Receiver

TYPE CR-5 REGENERATIVE RECEIVER.

Wave-length Range: 150-3000 Meters

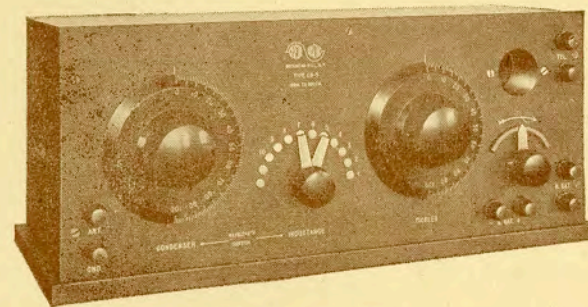
The CR-5 Regenerative Receiver was brought out to meet the demand for a highly efficient receiver having a wave-length range covering amateurs, Navy and commercial ship stations, special land stations, ship CW stations, Navy low-wave arcs, all radio phone work and "Time."

ADVANTAGES

1. It is a complete receiver.
2. It covers a broad range of wave lengths with highest efficiency.
3. It is the Ideal Jewellers' Time Receiver.
4. Designed for minimum body capacity effects.
5. Receives all types of radio signals.
6. In operation, it is the last word in simplicity.

THE CR-5's FINAL TEST.

"The CR-5 was connected to a make-shift antenna, consisting of 2 wires (20 DCC) 25 feet long and 15 feet high. Succeed in copying 1st, 2d, 3d, 8th and 9th District Stations, boats 1800 and 200 miles distant, all Coast Stations, from NAR to WST, Radio phone work, CW ship stations, special commercial shore stations, Navy press and time. Used detector only—no amplification."—Engineer's final test at New York.



Manufactured by
A. H. GREBE & CO., Inc.
Richmond Hill, New York

For Sale by
CENTRAL RADIO COMPANY, INC.
316 East 14th Street
KANSAS CITY, MISSOURI