

What Radio Can Do for the Country

By FLORENCE T. HARPER

TO you lucky ones who possess radio sets, I just want to deliver a message of a little country town down in the South Central part of Pennsylvania that is representative of the many country districts throughout our land, even to the detail that its chief claim to recognition is the remembrance of a glorious past.

As country towns go, this one did not follow the prescribed formula of developing into a small industrial center. Whether it was because it was too far from the main railroad line, or because of its previous scholastic precepts, is hard to say, but it refused to change as time went on. And so, to a casual observer, things remained about the same, except that there developed a shrinking tendency both in its younger set and to some extent in the character of its remaining population.

Of course there were store keepers, doctors, lawyers and the like, but the majority were farmers. Spasmodic interest developed about the village post office when the morning mail arrived, after which there would be nothing further to look forward to until the evening train would return its cargo of a few extravagant friends who had the courage to journey to the nearest city on a shopping expedition. The housewife's duties went wearily on with accustomed regularity, and if by chance an hour or so of unoccupied time was discovered on one's hands, it was a terrible problem to devise a way to utilize it.

Sons and daughters, at an early age, conceived the idea that the best alternative for them was to get away to college or to the city as soon as they were out of school, for this environment offered a more proper sedative to their famished spirits.

So the elder folks found themselves quite alone to continue the duties of home and farm, and the many other occupations that fell to their lot, saying nothing of the dreary evenings they were compelled to spend alone with consequent ingrowing dispositions and a shrinking interest in most things worth while. They were out of touch with the rest of the busily interested world and their



The Pleasure and Benefit Derived from Radio in the Homes of City Residents Are Indisputable. Radio is a Most Satisfactory Source of Diversion. The Tired Business-Man and Housewife Can Sit Back at Ease and Enjoy 57 Varieties of Amusement.

conversations usually turned to the small matter of personalities and noisy gossip as their chief diversions.

That poor little country town away off there in the rolling hills found itself lonely and neglected. Of course in the summer time it was somewhat better, not so lonely and confining. One could get out, go fishing, swimming, camping, picknicking and to the meeting house once a week, or the church socials and the movies. But in the winter

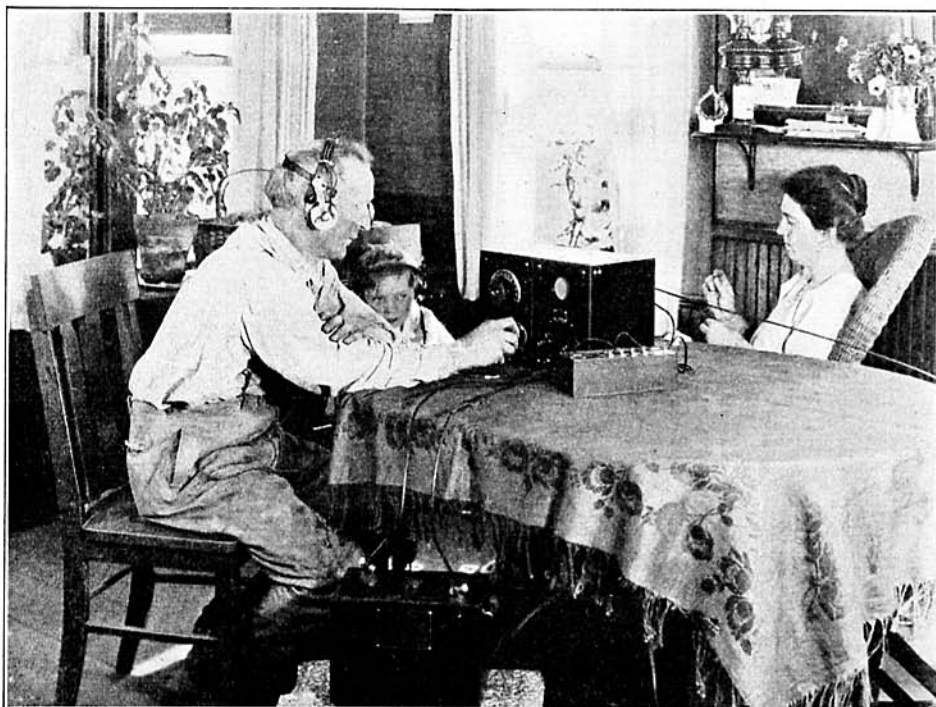
time, it meant being shut in by the glistening snow drifts, and the crisp frosty nights, when a cold, steel-blue sky warns of the need of an extra armful of wood by the stove and the crunching footsteps in the snow outside tell the good wife that everything is being made snug for the night, even if the mercury does drop below zero. The family auto-mo-bile (Ford of course) that once went to New York City is safely tucked away in its winter covers, and jacked up high until the roads become passable again.

But to a youngster it is only six o'clock, and there are three hours of boredom ahead, with nothing to do but finger over the much read books or magazines, and maybe to be tortured a little with some very stale phonograph music. Sister Nan has exhausted her wits in contriving some novelty in the way of entertainment that would tempt her neighbors to face the cold and spend another sociable evening about the big open fire-place.

Time passes heavily on with almost maddening monotony. I have often wondered what the matter was. Now I know; we were out of touch with the rest of the world; out of step. You need someone bigger than you to give you new and better things to think about, good music, lectures, song and laughter and to keep in touch with the world in general.

It is the divine urge in each and every one of us to improve our minds and to progress; nothing can stand still. If we do not go forward, then we go backwards, but the law demands that we "move." A strong desire for the enjoyment of new sensations comes along with education and knowledge. The saddest thing in the world is ignorance; it keeps us in the dark corners and our thoughts are of poverty, unhappiness and all that goes with negative thinking. But with the coming of the biggest discovery of the age, radio, come also light, knowledge,

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However, the City Dwellers Can Little Imagine the Enjoyment the People of the Country Derive from Radio. Far Away from all Activities, These Isolated People Hunger for Something to Break the Monotony of Their Existence. Radio is the Solution.

What do you want to know about fibre?



RADIO builders everywhere are using vulcanized fibre in their products. They know that it is a perfect non-conductor, that it is non-corrosive, that it is more easily worked than rubber. They know that it is much less costly than any of the materials for which it is substituted.

But often a manufacturer will refrain from using vulcanized fibre because he is not sure of all of its qualities. He knows exactly what rubber, or metal or wood will do—how he can work it and what it will cost him.

Can't we clear up these questions—make plain just what fibre is, just what it will do and just how you can use it to advantage in your product?

The National Vulcanized Fibre Company has three-fold facilities for the production and delivery of Vul-Cot Fibre—fibre with a nation-wide reputation. Each step of its manufacture is under such close supervision that we can guarantee it to be pure—free from foreign material.

The experience of years in the manufacture of Vul-Cot Fibre and Vul-Cot fibre parts for many of the nation's greatest manufacturers is at your disposal. Write today.

**National Vulcanized
Fibre Company**
Wilmington, Del.

Book Review

101 RECEIVING CIRCUITS (The Green Book). By M. B. Sleeper. 6"x9", 47 pages. Published by M. B. Sleeper, Inc., Technical Publisher, 88 Park Place, New York City.

For a person who likes to experiment with different receiving circuits, or for one who is undecided as to what type of circuit he wishes to use, this little book becomes invaluable. Diagrams, covering various types of regenerative, super-regenerative, super-heterodyne, reflex, radio frequency, Reinartz, Flewelling and neutrodyne sets, are included, as well as circuits of simple crystal receivers, etc. A list of radio symbols is contained in the front of the book for the convenience of those who are unfamiliar with conventional diagrams. Many helpful hints are included in the text, which should assist the reader in perfecting his own receiving set.

SIX SUCCESSFUL RADIO SETS (The Red Book). By M. B. Sleeper. 6"x9", 47 pages. Published by M. B. Sleeper, Inc., Technical Publisher, 88 Park Place, New York City.

Six Successful Radio Sets is a little book describing in detail the construction and operation of five different types of receiving sets, and a two-stage audio frequency amplifier. These sets have been especially selected as the most practical and efficient types of those of the present time. The design, data and instructions for building are complete. The panel layout dimensions and the means of wiring are given in connection with the description of each set. Nothing is left to the imagination.

AMATEUR RADIO CALL-BOOK. 6 $\frac{3}{4}$ " x 9 $\frac{3}{4}$ ", 159 pages. Published by Radio Directory and Publishing Company, 45 Vesey Street, New York City.

The Amateur Radio Call-Book fills the want for a complete radio directory of existing radio stations. The list includes the call-letters and locations of amateurs, special amateurs, technical and training stations, radiophone broadcasting stations of the United States and Canada, commercial land stations and Army and Navy land stations of the United States; also the principal high-powered trans-oceanic stations of the world, with their respective work wave-lengths, type of transmitters and press schedules.

A detailed description of the construction and operation of the well known Reinartz receiver, in conjunction with a one-stage audio-frequency amplifier, is included in the front pages of this book.

The most attractive feature of this directory is the two-color map of the United States and Canada, 3x3 feet, showing radio district boundaries, standard time lines and geographical locations of broadcasting stations. An alphabetical list of broadcasting stations is contained on the map, as well as in the book. The map is of such size that there is ample room for the insertion of call letters of new broadcasting stations.

LISTEN-IN RADIO RECORD. Arranged by Roy C. Baker. 5 $\frac{1}{2}$ "x8 $\frac{1}{2}$ ". Flexible fabrikoid binding. Gold stamping, 160 pages. Printed on bond paper to take ink. Published by Lothrop, Lee & Shepard Company, 275 Congress Street, Boston, 9, Mass.

The advance in the quality and quantity of radio broadcasting during the past year and the variety of programs offered have led to a demand by the public for a means of keeping permanent records of such broadcasts. The Listen-In has been compiled for this purpose, and will enable radio enthusiasts to record the programs of various stations heard. This little book contains as well a complete list of broadcasting stations and a double-page map of the United States, showing locations of all the principal stations. Space is provided for an additional recording of new broadcasting stations, this space being so arranged that the corresponding dial adjustments on the receiving set may be noted after the stations' call-letters.

The introductory article—"How to Receive Radio Broadcasts," by Lloyd C. Greene, Radio Editor of the Boston Globe—covers the construction and operation of a simple and efficient type of regenerative receiving set. This is followed by a page of radio tips, which prove invaluable as reference.

GETTING ACQUAINTED WITH RADIO RECEIVERS. By Paul Godley. 6"x9". 32 pages. Published by Adams-Morgan Company, Upper Montclair, N. J.

Mr. Godley has well succeeded in explaining the operation of radio receivers, in non-technical language, so that the novice should find it easily understandable.

Although the book is concerned mostly with the operation of the Paragon RA-10 and RD-5 receivers, the information given in the book is written in such a manner that it could be applied to any type of receiving set.

Of general interest are the chapters covering the vacuum tube, tuning and resonance, regeneration, antennae systems, body-capacity effects, and the faults of receiving sets and their remedies.

A glossary is included in the rear of the book, giving the simplified definitions of the most widely used radio terms.

RADIO TELEPHONY FOR AMATEURS. By Stuart Ballantine. 5 $\frac{1}{2}$ "x 8 $\frac{1}{2}$ ", cloth bound, 296 pages, fully illustrated. Published by David McKay Company, Philadelphia.

Starting with the fundamental principles of electricity, upon which radio telephony is based, Mr. Ballantine well prepares the reader for the following chapters, covering its more complicated actions. The book is written in such a comprehensible form that the word "wading" cannot be applied to the reading of its contents. The entire subject of radio telephony is boiled down to the point of conciseness, yet nothing of importance is left out.

The action of the vacuum tube is explained in the forefront of the book, followed by its applications to numerous types of circuits. Much helpful data is given on antennae systems, this including as well the construction of aerials and grounds for both transmitting and receiving. Of particular interest is the information covering the construction and operation of radiophone transmitters and receivers.

RADIO HOOK-UPS. Published by the Rauland Manufacturing Co., 200 No. Jefferson St., Chicago, Ill.

A small booklet, containing 22 hook-ups of receiving sets in conjunction with radio and audio-frequency amplifiers. Much helpful data on radio and audio-frequency transformers, especially the "All American" manufacture, is included in the forefront of the booklet, as well as a page of symbols. This pamphlet will be sent to anyone upon the receipt of two cents to cover the postage.

DER FUNKTELEGRAPHISCHE WETTERUND ZEITZEICHENDIENST. By H. Thurn. Published by M. Krayn, Verlagsbuchhandlung, Berlin W. 10.

In its 82 pages this little work gives an excellent presentation of two phases of wireless work.

The first phase treated of is the prediction of weather changes by radio. The practice, as far as developed before the World War, is given and the subsequent operations in recent days, in Germany and abroad, are treated of. A list of stations of the German radio weather service is supplied, with their code letters. The stations are 21 in number and a further list gives the same information of the International European Stations—37 in number.

It may not seem ungenerous to express the hope that the weather predictions abroad run higher in percentage of accuracy than they do here.

The second subject treated is time service and, within the limits of some 40 pages, the matter is quite fully described, with a number of illustrations and diagrams. Time service is not only a very definite thing, but is of the greatest importance to navigation at sea. An error in time gives a ship the wrong longitude and, as the ocean is crossed eastward and westward, this error is the worst and most dangerous.

We commend the book to our readers.

What Radio Can Do for the Country

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music and education. Radio broadcasts the world's best treasures.

Go to the four corners of the globe, and you will not be isolated if you have your radio set with you. Just like Aladdin's lamp, the marvelous, bounteous gift of radio broadcasting comes to you through unknown space, with gifts that are beyond your wildest dreams. It so happened that in this little country town there lived an estimable citizen known to all as "Uncle George." He had spent most of his life in the steel industry, had retired from active work and had settled down to a quiet, sedate existence in that very quiet country com-

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munity. To one who had so far found plenty of uses for all his time, the long days of inactivity added nothing to his native good nature, which developed a longing for something to occupy his time.

Now, Uncle George had two sons who were very diligently following in Father's footsteps out in the great steel mills. One day these thoughtful boys sent him a first-class radio receiver and in due time, with not a little skepticism, the father erected an aerial and installed the set in his study.

Of course it did not work perfectly at first, but with a little perseverance that clinched the old gentleman's interest, reception came in quite clearly from many of the Eastern and Western broadcasting stations. I have seen the most delightful twinkle creep into Uncle George's blue eyes when he succeeded in tuning in some particularly distant station; yes, a twinkle and a fire that his old friends thought had died out many years before. So in Uncle George's household an entirely new era began. His house became the popular evening rendezvous for young and old. He began with three tubes in the receiver, and headphones; these satisfied him for a time, then he wanted to share his great joy with his neighbors, so he next added an amplifier and a loud speaker, and then there was fun for all; the results were amazing.

A thing that worried them was that perhaps some time when he was listening in (as one does on the party telephone line) he might pick up something that was going on in their own homes and that would never do. But a new sociability had been created; a new topic of conversation had come into the community and to its credit, he it said, replaced much of the former small talk of the town gossips that smoldered around the stove of the village grocery store, or the postoffice, or any of the chief gossiping centers.

Dances were given to music that came from well nigh a hundred miles away, wonderfully clear, living music that had never been heard in that part of the world before. Lectures by famous orators, talks on health, education, thrift, politics and little journeys into the homes of the great. Sketches from the "hits" of Broadway, and big musical productions; fine sermons on Sunday from city churches with music from the choir that made his old heart throb the faster. Talks to the farmer were broadcast on better farms, and a general market report of the day; with these and the weather forecast and time signals, he had about every thing he could possibly desire.

"Uncle George" certainly was popular; some farmer friends miles out in the hills came in to see and hear the new *Radiator*, as they called it, and very soon they heard "This is WJZ, broadcasting from the Waldorf-Astoria studio, New York City," words could not express their surprise and astonishment. One old farmer recollected that 15 years before he had been in that same old Waldorf-Astoria Hotel.

There was a general consultation about this radio, in which most of them expressed their doubts. Their farmer friend said, "They do great stunts in New York City," and went on to tell his experiences when he stopped at that same hotel, but they were not going to take his word, and there was an earnest inquiry as to what was what. So, after many evenings of listening in, each one said he would have one of those things if it took the last cow on the farm to buy it.

Now, fancy what a miracle had happened to these farmers, who had never really been to a big city, and whose thoughts were never permitted to wander any further away than the pig pen, or cow stable, to suddenly come in from the fields, switch on the current in a radio receiver, get the price of wheat, the farm and market report direct, and then the

WESTINGHOUSE

Radio "A," "B" and "C"

BATTERIES

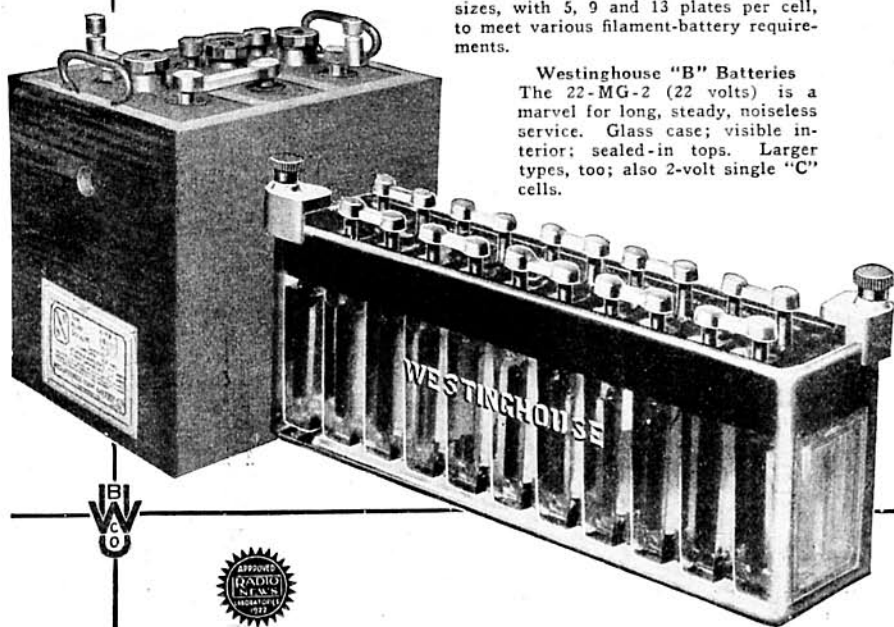
How often has your triumph in getting a distant signal been short-lived because of your inability to *hold* the signal? The batteries—have you looked there for the trouble? Get the best. Fine tuning requires batteries that are *even-powered* as well as full-powered. Westinghouse Batteries are built with that very important point in mind. They are as steady, even-discharging, noiseless as the highest radio and battery engineering can make them. And once you're equipped with Westinghouse Batteries your battery expense is virtually ended; they'll last indefinitely—can be easily, repeatedly and economically re-charged.

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Write for illustrated folder.

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Westinghouse "A" Batteries are full-capacity, slow-discharge, long-life batteries. Made in 4, 6 and 8 volt sizes, with 5, 9 and 13 plates per cell, to meet various filament-battery requirements.

Westinghouse "B" Batteries The 22-MG-2 (22 volts) is a marvel for long, steady, noiseless service. Glass case; visible interior; sealed-in tops. Larger types, too; also 2-volt single "C" cells.



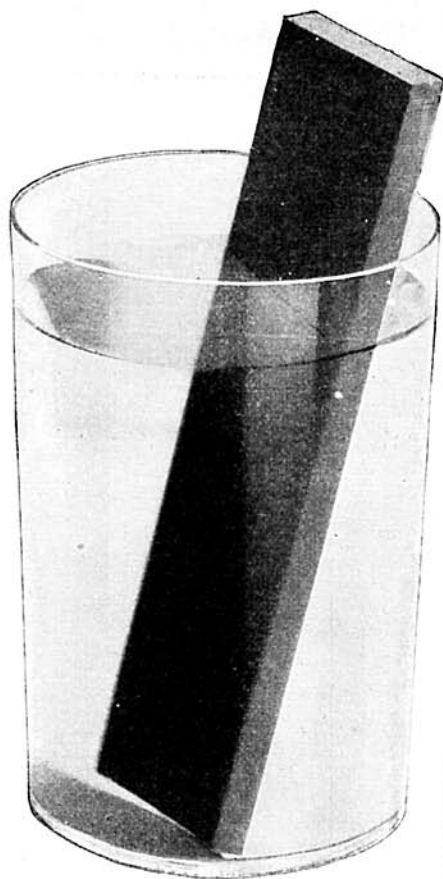
Give Your Crystal Set A Fair Chance

A Crystal set, when properly equipped, is the ideal method of radio reproduction—clear, musical, economical. But the best crystal set ever made will not reproduce properly with a poor crystal.

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has made the Crystal Set successful. Unsolicited testimonials are constantly being received, reporting records up to 1200 miles. Don't discard your Crystal Set until you have given "M.P.M." a trial. Send 25c and name of your radio dealer for sample unmounted crystal. 35c for mounted. Insist upon M.P.M.

M. P. M. SALES CO., Dept. N., 247 So. Central Ave., Los Angeles, Calif.



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Water is a good conductor of electrical currents. When a panel absorbs moisture it loses a good part of its insulation value—it permits leaks and short circuits—it damages reception.

Radion Panels are impervious to water. Even if immersed in water they positively could not absorb enough moisture to injure reception results. That's one of several reasons why Radion is the supreme insulation for wireless use.

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Panels, Dials, Knobs, V. T. Sockets, Antenna Insulators, Phone Caps, Etc.

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RADION

"The Supreme Insulation"

weather forecast for the next 48 hours. This last was a valuable bit of information; hundreds of crops could be saved with this advanced knowledge. It meant that they should plant or should not plant the following day. I tell you, when a farmer has been at work all day in the fields, he needs a complete relaxation in the evening; his mental faculties just itch for some diversion, something to listen to. He wants to hear the news of the day, to get in closer touch with the world. We all grow tired of routine. The local newspaper is soon read and the small gossip of the supper table is usually exhausted with the desert.

In the city when our day's work is done and we want amusement and diversion, we can very easily buy it; we are within a stone's throw of the "gay white way," where tickets may be bought for the movies, the latest Broadway hits, concerts, and lectures. We have such a variety to choose from. I sometimes feel we have lost the ancient grace of creating our own amusements. We have the preference of listening in, or going out direct to the places from which they are broadcasting. So you see it is not only a luxury in the country to have Radio, but a real necessity. If we are to remain one of the leading agricultural countries of the world, we must keep the farmer and the old homestead a living reality; together they are the meal ticket of the country and without their efforts we cannot live.

"How can you keep them down on the farm?" There is more truth than poetry in this old song. We are not going to do it entirely by giving the farmers more credit, and bigger profits on their crops, which would satisfy them for a while. The younger generation is looking at it from another point of view. Maybe it was spring time when you passed along and the tinkle of a bell arrested your attention as you observed a prim little school ma'am gather her flock to their studies, 30 or 40 of them, fine healthy to-morrow's citizens; little tots, and fine stalwart chaps, who could handle a plow as well as their fathers. Maybe you wondered as you drove on past the widely

scattered farms why it was that out there, where everything was so fresh and fine, and so much profitable work was to be done, there was always a lack of hands to do it?

Where are those same school boys and girls of five years ago? You can look for most of them in some congested manufacturing center, such as the steel mills of Pittsburgh, or the cotton mills on the coast, or in some big city floating along with the masses, eking out a mere existence. They have traded their birthright for a meager day to day existence, and for what? For just one thing and that is to be in touch with the world. That means life, music, theaters, dances, concerts, and associating with people of mutual interests. Man is a social animal and can not bear to live alone any great length of time.

This wonderful gift of Radio, together with the cheap and practicable automobile, will do more to correct the above mentioned condition than anything else in the world. I believe it is particularly for those away out in the silent hills, and small country districts. Radio reception is more nearly perfect there and access is had to a far greater distance and selection. I represent myself as one who has enjoyed radio reception both in the heart of New York and in the rolling hills, and let me tell you my Radio set was worth 100 per cent more to me in the hills than when I was within rifle-shot range of a broadcasting station. And it is to this point of view that I wish to call your attention; to where this vast field of Radio is most needed, and I am sure it will be appreciated and will accomplish a world of good. This great land of ours will always continue to be great so long as its agrarian population, as in the past, remains the backbone of America.

Now you Sons and Daughters of the farm who have long ago drifted away from the old homestead, and left the old folks in utter loneliness, don't you think it would be a fine surprise to deny yourself a few pleasures, and with money thus saved buy them one of those Radiators that Uncle George and his friends are enjoying to-night?

Short Wave Directive Radio Transmission

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and stone construction. Although a large deflection was obtained on the galvanometer just before entering the doorway, the deflection became zero as soon as the apparatus was placed inside the door. Quite a reduction in the received current was noticed whenever any large object was in the path of the transmitted waves.

Telephony of very good quality was accomplished by using the circuit shown in Fig. 13. This circuit employs constant current modulation and was found to give excellent results. The use of telephony facilitated the making of observations at a distance.

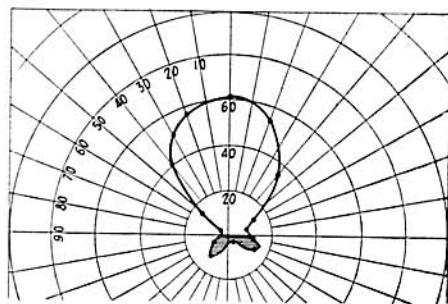


Fig. 12

Fig. 13. Showing Effect of Removing the 10 Reflecting Wires Nearest the Vertex of the Parabola. A Schematic Drawing of a 10-Meter Radiophone Transmitting Set is Shown on the Right.

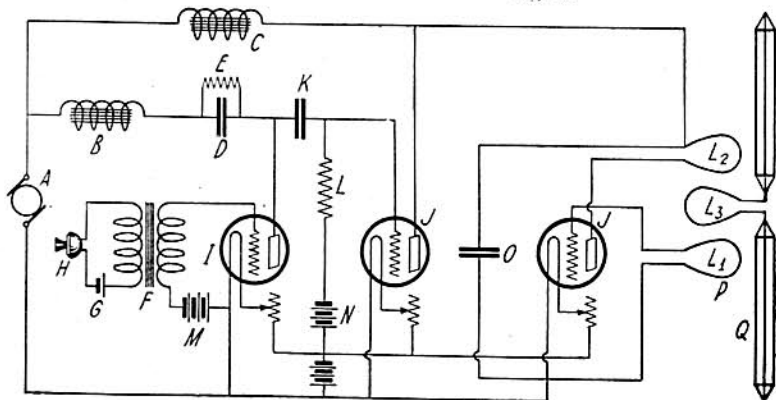


Fig. 13