

# American Amateur's Radiophone Bridges the Atlantic

## By Means of Vacuum Tube, a War Invention, a Phonograph Record of a Harry Lauder Song Put on the Transmitter in Keyport, N. J., Is Picked Up in Scotland

WHAT the possibilities of edifying amusement are that may be enjoyed by amateur owners of radio outfits is being demonstrated in more than one quiet home on the Atlantic seaboard and perhaps deeper into this vast America. This is the story of a 16-year-old boy whose father constructed an outfit for his use. It is no plaything, this radio outfit, as will be comprehended when one reads how sitting in his quiet home in Keyport, N. J., the boy can listen to conversations going on all over the world. When such wonders of science are daily being revealed it is not strange that some persons still seek the superhuman where they are or have been stopped up to the present by an impasse?

If the reader is a radiophone student and in his "listening in" to the world conversations hears the number 2QR he may know that he is in communication with either Harold Robinson, the boy in question, or his father, Hugh Robinson, sitting at their transmitter in the laboratory at 13 Walnut street, in Keyport. It is a tiny place, and the outfit is far from being mechanically perfect, in one sense, while in another it has various devices that are the inventions of the elder Robinson.

Through the use of this small powered outfit—it is but fifty pounds—by the application of the vacuum tube amplifier and under certain atmospheric conditions marvellous and almost incredible results have been attained. Distance, even by a light instrument, has been annihilated, and what may still be attained no one can estimate. As a proof of what has been done by amateurs it is only necessary to read the adjoined correspondence, which opens an interesting field to everybody desirous of realizing in what a wonderful world they live now.

By RUSSELL B. MOON, U. S. N.

ON the evening of October 6 Mr. George W. G. Benzie sat at his amateur radiophone in his home at Peterculter, Aberdeenshire, Scotland, tuning his apparatus to the various messages which were being transmitted through the air, when suddenly he caught a faint tone, evidently coming from far away. Gradually the tone became clearer and Harry Lauder's song "Roamin' in the Gloamin'" came to his ears. When the record was finished Mr. Benzie picked up the conversation, which told him that he had been listening to a record on a phonograph in Keyport, N. J., and that the sending station was 2QR. Practically he picked up his transmitter and called "2QR—2QR!" But his power was not strong enough to penetrate the three thousand miles of space which lay between him and the sender.

Amateur radio men are always on the lookout for the phenomenal, and six days later Mr. Benzie, having heard nothing further from 2QR, decided to write and tell them that he had picked up their message of October 6. Looking in the *Wireless Age*, he found that 2QR was conducted by Mr. Hugh Robinson of 13 Walnut street, Keyport, N. J. Several days later Mr. Robinson received the following letter:

Letter From Scotland Comes To Tell of the Success of 2QR

DENMILL COTTAGE, PETERCULTER, ABERDEENSHIRE, Scotland, Oct. 12, 1920.

DEAR MR. ROBINSON: I write to say that my friend and I received your transmission on October 6, to your friend Mr. Wilson. I could not be sure of this gentleman's name, but we heard the record "Roamin' in the Gloamin'" by Harry Lauder, and the other tune very clearly, also that your power at the time was 400 watts. I write you this as no doubt you will be interested to learn that you can be heard over here with so small a power. I was using three values. I would be greatly obliged if you could transmit again (radiophone), say three weeks after you mail your letter to me, as the letters take some time to reach here. As regards time, two hours after the transmission referred to above would suit. Hoping you will manage to cooperate in our tests, I am yours faithfully,

GEO. W. G. BENZIE.

Mr. Robinson complied with the above request and wrote to Scotland for a verification, which was received a few days ago.

The set used by Mr. Robinson is heard in Scotland with little over fifty pounds and sits upon a desk in his laboratory. He receives his power by plugging into an ordinary lamp socket on the lighting circuit, which usually carries about 110 volts. This he steps up by the use of transformers to about 500 volts. While Mr. Robinson uses a standard set, he says that it contains many little improvements added by himself, which he does not care to divulge at present.

The sending distance of the ordinary amateur radiophone sets is placed at sixty miles, but upon many occasions they have been heard much further. Mr. Robinson has talked with Napoleon, Ontario; Ashland, Ohio; Mokane, Mo., and many other points, the distance depending upon the atmospheric conditions, and he lays the success of his transmission to Scotland to ideal conditions existing at that time. But the fact that a radiophone of so small a power has throttled three thousand miles of space, delivering a message clearly and distinctly, reveals the great possibilities and future of vocal transmission.

In a Simple Room This Amateur Outfit Performs Wonders

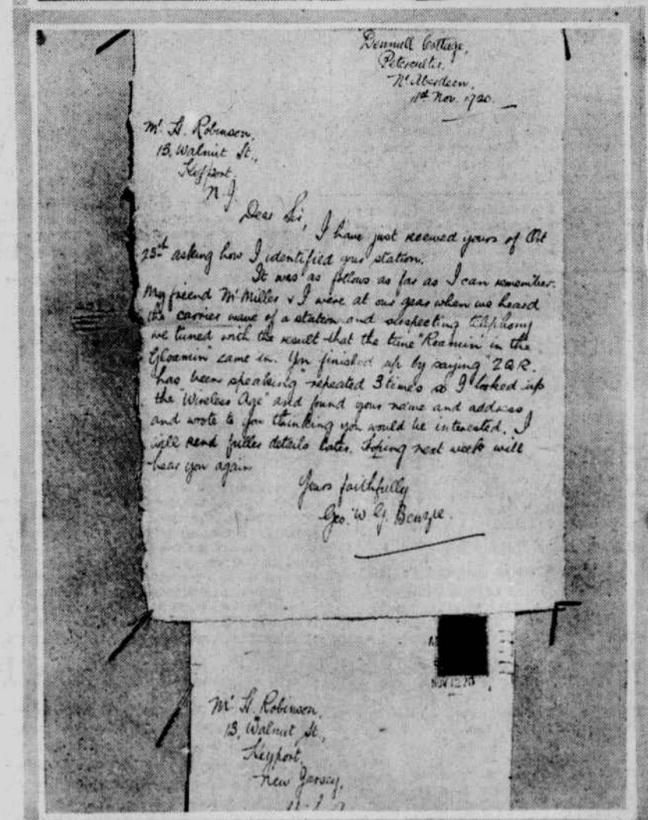
Mr. Robinson's laboratory occupies a little room about five by eight feet in size. A desk located in one end of this laboratory contains all the equipment used for the transmission of these messages, including a phonograph with a special reproducer having a microphone attachment. It is distinctly an amateur outfit and shows in many ways the handwork of the operator. Mr. Robinson, who was born in Neosho, Mo., in the year 1881, is a student of electricity. He early became an electrical

engineer and when flying was in its infancy took up aviation as a profession. He has made over 900 exhibition flights in this country and abroad. When Glenn H. Curtiss decided that he would build a hydro-aeroplane it was Mr. Robinson who shaped and constructed the pontoon, a type which is still in use, with very few improvements made upon it in the past ten years. He assisted Mr. Curtiss in instructing Lieut.

son took up automobile racing and later motor boat racing, and is at present employed at the Aero-Marine Corporation's plant at Keyport, where, as he says, he is "everything from superintendent to sweeper."

Mr. Robinson installed the radio plant at his home in order to interest his son, Harold, who is 16, in electricity, and he says that he feels well paid for the time and patience

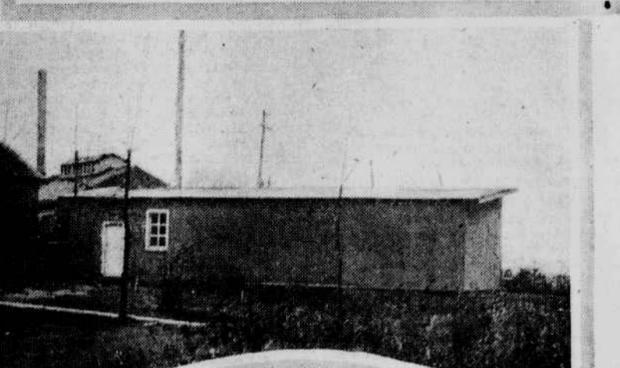
Below is the Robinson home in Keyport, N. J., showing the radiophone plant whence a message was received in Scotland. At the right is Hugh Robinson at his instruments.



Ellison and Towers, the first naval air pilots at North Island, Cal., in 1911, and when the pontoon machine was perfected he took it to Europe, where he demonstrated its efficiency in Germany, France and Italy. He was the first American pilot to carry United States mail in an airplane.

As flying grew less hazardous Mr. Robinson

expanded in developing his outfit. Seated in his laboratory, he reaches out and with the mere turn of a switch listens to the conversations of the world, for the radiophone can also receive the ordinary radio message in Morse or Continental code, and he has access to the high power conversations of even the great Lafayette station in France.



At left is a facsimile of the letter telling of phonograph record played in New Jersey being heard in Scotland. Above, Hugh Robinson of Keyport, N. J., and his son Harold.

Directly over his head hangs the horn of a phonograph, or such it appears, but this horn is attached to a radiophone receiver and when receiving a message throws the voice of the sender out in the room, where all listeners can hear clearly and distinctly what is being said. Sitting at the set one recent Sunday, Mr. Robinson tuned up and picked up a song from the air which the big horn threw out in great volume. Later he picked up Mr. Bondeaux of 924 East 169th street, New York city, and caught a faint signal from Somerville, Mass. A conversation was heard between KQG and 2XP, which is the steamship Gloucester and the Western Electric station at Cliffwood, N. J., in which they were planning to connect up the radiophone from the ship and talk overland on the ordinary telephone to a point on shore. This has been done before with much success. A steamship in the Atlantic talked to the mainland by radiophone, where it was connected up with land phone and transmitted to San Francisco.

where it was again turned into the air and transmitted to Catalina Island. Radio stations, to obtain long-distance results, step up their power and practically drive it through the resisting atmospheric conditions of the air. The stronger the power the greater distance obtained. But Mr. Robinson believes that small power can be made to transmit messages for long distances. The invention of the vacuum tube amplifier, a war product, has made this possible. By picking up the feeble transmission at a distance and magnifying its power many times, it can be transmitted on to another station, where it goes through the same process, and so on. In this way the great cost of high-power outfits are obliterated and the results are more satisfactory. Instead of the heavy pounding necessary to force the transmission through the air, it is carried lightly onward, receiving its increased energy by the use of the vacuum tube amplifiers located at distances with a radius of sixty miles separating them.

## Demand for White Food Puts Up Cost of Living

CITY folks are largely to blame themselves for the high prices they pay for food. I don't know whether you'd call it a degenerate taste, but city consumers generally want their foods white, and they want them flawless—so they pay high prices for fine appearance and inferior quality.

The speaker was a country buyer for a big produce syndicate, and was skimming the cream of farm production from the exceedingly fertile county of Monmouth, New Jersey. Incidentally he was quoting prices to the producer that would have made the cityite want to go out and lynch his corner grocer as the greediest of piratical profiteers. For that reason and the fact that he was playing fast and loose with trade secrets he made it imperative that his name was not to be mixed up in any newspaper narrative.

"I said city folks want their food white," he resumed. "Well, take, for example, the Shrewsbury oyster. Twenty years or more ago the Shrewsbury, that filled your river here in Monmouth county, was famous. If you're an old timer you will recall that it ranked 'em all on the bills of fare at the leading restaurants and hotels. Ever hear

of it now? Yes, if you go down along the Shrewsbury River, where the natives still enjoy it. But it has had its day, and the once great beds have been all but abandoned. Instead of the fleets of oyster boats that used to carry the bivalve to the markets you will see only an occasional old oysterman in a rowboat, raking a small bed for local consumption. "Why? I'll tell you. The Shrewsbury oyster is brown. It is a big, fine flavored, succulent oyster, but it made the mistake of being born brown, while the modern city fellow demands that his oyster be white. Serve it to him small and hard and lacking in flavor; but so long as it is white you can charge him any price you care to ask—and get it. "Which reminds me of a young housewife who went to an honest dealer and told him she wanted a dozen of his best eggs. Being an honest dealer, he got down a dozen of the finest, biggest brown eggs that ever was hatched. 'Oh, I don't want those,' she said. 'I want the eggs you get from the white chickens.' He obliged her, and for twenty cents more a dozen sold her smaller, inferior eggs—but they were beautifully white. "Now, it is a fact that the brown egg contains a higher percentage of food value than the white. But that doesn't matter to the consumer in the city. Although he doesn't

eat the shell, he insists that it be white. Consequently the white egg is in so much greater demand that it commands a considerably higher price—and again the dear public fools itself, while it complains of the ever increasing cost of living.

"There's another example—celery. Give 'em any tough old stalk so long as it is white and they'll pay you a quarter for it without the russet. But I'll tell you, some of the finest, tenderest, crispest celery I've ever eaten was grown right here in upper New Jersey—and it was green. Yes, sir, green; but you couldn't sell such stuff in a city shop, where they're out for white goods. "Take corn, too. That's got to be white if it's to go on the table of a city epicure. Of course, the man born of the country knows that the very sweetest, tenderest, juiciest table corn is the golden bantam. But sell that to the cityite? Not on your life. It's yellow, and he'd think you were trying to feed him horse corn. He knows what he wants in the way of corn, and no matter how dry it may be from long residence on the stand of the green grocer it's all right if it's white. "For the same reason, I suppose, the cityite demands white bread. His aesthetic vision cannot tolerate the sight of whole wheat bread, which is vastly more nutritious. It looks dirty, I suppose, so to please his eye

the city bread eater makes his stomach suffer. And he will take his cornmeal white, also, thank you, despite the superiority of the yellow.

"Then the city fellow has his notions about the size and color of other things he eats. Take apples. There never was, nor never will be, a finer, sweeter, juicier apple than the russet. It is undersized and a rusty brown, but it is there with the flavor. Sell it on the city stands? Never. Your apple eater there is willing to pay 10 cents apiece for a fine, large, polished red skin that contains a mess of dry, mealy substance that he considers an apple. "He will do the same for a pear. That must be large and yellow, with a bluish on one side. It doesn't matter so much what's inside. But try to offer him as a substitute the little seckel pear. Would he buy it? Not much. "And there are many of these finer things going to waste by the wholesale, right at the gates of the cities. Some one will say, 'Why not give the public an opportunity to buy?' What's the use? It has been tried. The dealers naturally are in business to make money, and they are trying to give the buying public what it wants. And so long as that public insists on eating white goods and is willing to pay the price for selected stock, that's what it is going to get."

It is such efficiency that will place the radio-telephone in general use, and will render each home a telephone exchange. With such a system the telephone exchange is unnecessary, and the operator can reach any station that listens in.

It will be remembered that the vacuum tube amplifier is used on the radio plotting cable, recently placed in Ambrose Channel and demonstrated by the navy in a very successful manner. In this instance the magnetic waves as picked up from the cable, are increased 400 times by the use of two stage vacuum tube amplifiers. Mr. Robinson believes that much depends upon the experiments carried on by amateurs, in that they are compelled to operate at small cost and with small power. Thus anything that they discover will of necessity be of great help in keeping the cost of the system at a reasonable figure.

Harold Robinson, who is sixteen, is the real owner of the outfit which recently communicated with Scotland. In that his father constructed it for his use. But his father is like a boy when he gets his fingers on the keys and his eyes glow with enthusiasm. He talks long and willingly on the subject and one cannot fail to appreciate the importance of the radiophone when listening to his interesting conversation.

Harold, being of a mechanical turn of mind, like his father, has constructed his own car, using the chassis of a cheap car, to which he has added a racing body and equipped it with self-starter and an airplane carburetor. When one hears this car roar along the streets of Keyport one would believe that it is of at least ninety horsepower, but upon raising the hood, one finds a motor inside which seems lost in the enormous space, being so small that it resembles a sewing machine. However, it is probably the first flivver that has ever been successfully disfigured.

When the fleet was in the North River Mr. Robinson entertained the radio men of the fleet with graphophone concerts, and now it is a common occurrence for radio men, when arriving in the river, to call up 2QR and request the latest song hits. Keyport is quite a radio center, having some twenty-two amateur stations, and Mr. Robinson says there is no chance to get lonely with so many friends standing by for a conversation.

Amateur Enthusiasts of Radiophone Have an Honor Code of Their Own

Amateur enthusiasts have a code which is strictly observed by all, and while many of them have never met personally, they are aerially acquainted and know the personal characteristics of each other's speech and their peculiarities in operating. Mr. Robinson can tell by the manner in which the call is made whether it is any of his acquaintances or one with whom he has never talked over the phone before. While listening in he will often receive a strange note and immediately tune up, calling in the end to ascertain the sender's number and call, and often a new radio acquaintance is formed and something new is learned from another experimenter. They are very liberal with their ideas and exchange them freely. Like aviation, it is the comradeship of the air and one which portrays a beautiful spirit, the spirit of co-operation.

The use of the radiophone in connection with aviation is of the utmost importance and its future in commerce is assured. When the radiophone has been developed to such an extent that every home contains a set, plugged-in on the lighting circuit, it will be the amateurs to whom the public will be indebted, for it is the experimenters who are developing this wonderful means of communication.

## New York Beavers Damage Forests

NEW YORK STATE beaver fur, which has been out of the market for more than a quarter of a century, will figure in the fur buyers' reports this winter, as the result of trapping which will be done by the employees of the Conservation Commission to save some of the most important Adirondack regions from further devastation by these busy little animals.

This reappearance of the New York beaver in the market recalls the early Colonial days, when beaver skins were one of the staple products of the infant colony of New York, and even passed for currency. Indeed, so important was it that the beaver was incorporated in the seal of the city of New York, and Albany, then a far flung outpost of civilization, was christened "Beaverwyck"—beaver village.

The beaver, however, failed utterly to meet the demands of commerce and became extinct in the State, to be returned in 1905, when a few were liberated by the Forest, Fish and Game Commission in the neighborhood of Fulton Chain and Big Moose Lake. Since that time, under rigorous protection, they have increased so rapidly that some are found in all parts of the Adirondacks, while all through the heart of the lake region they have become an absolute pest. Lakes with small, narrow outlets have been dammed, the water raised a few feet above the wooded shore lines, and every tree around the margins killed, until the shores of the lakes look as if they had been swept by forest fires.

For several years the Conservation Commission has issued permits for tearing out dams and houses. The almost invariable experience, however, has been that when a dam is torn out one day the break will be stopped the following night, and in a very few nights thereafter the dam will be as sound as ever. Moreover, the destruction of a beaver dam with axes, shovels, picks and grub hoes has been found to be no light matter. Branches, sticks, mud and debris are so tightly and intricately assembled that the description of the structure as the "first reinforced concrete" is more apt than figurative.

On many streams the beaver have built a succession of dams, the backwater of one reaching to the base of the dam above, and so checking the flow of the stream that the danger of the dam pulling out in a flood has been eliminated without the necessity of such extensive foundation work as that practiced by human engineers. Navigation of such streams by canoes or guide boats is thus sometimes improved because of deeper water, but often impeded by the dams.

Fishing, which at first seemed better in these beaver ponds, because the trout had more opportunity to grow to large size, is now said by many of the more observant Adirondack guides to be actually falling off, because the fish cannot reach the headwaters of the streams for spawning.