

Value of a Good Earth

GREAT IMPROVEMENT EFFECTED IN RECEPTION

USEFUL HINTS RECORDED BY LISTENERS

IN our issue of March 30 last we described the phenomenal results secured by an American youth through establishing a "super" earth in the form of twelve pipes sunk in the ground and the ground kept moist by means of a leaky radiator placed adjacent. Later, in May 18 issue, we offered a half-guinea for the best record of good results secured through adaptation of Mr. Pierce's earth, or any other specially good earthing device that had effected particularly marked improvement in reception.

This competition has brought in a number of interesting letters giving the experiences of those who have improved their earths on the lead given by Mr. Pierce. The competition has served to demonstrate the very important part that a really good earth plays in securing good reception, particularly good long-distance reception.

THE prize is awarded to Mr. Spencer R. Ellis, Okato, Taranaki, for his record of improved results on Mr. Pierce's system, but a further award is made to Mr. W. W. Markland, Normandale, Lower Hutt, for his account of the earth found most satisfactory in a particularly dry spot.

The Prize-winner.

I AM writing this letter in reference to Mr. Pierce's earth. Well, the earth system is just great. I have installed it for the last two months, and the improvement is beyond anybody to believe: with selectivity it improves it wonderfully.

Before I adopted this earth and had just one pipe into the ground, reception was as usual. Then I saw Mr. Pierce's story on March 30, so I thought I would try this earth, so I put one pipe a week into the ground and found it increased selectivity wonderfully. Before I adopted this earth I could only get 2FC's carrier wave at midday, and now I can bring them in on 'phones quite clearly. I could not get an American station till I adopted this earth, and now they come marching in one after the other when conditions are good.

The list of stations before I adopted Mr. Pierce's earth is as follows:—1Y, 2Y, 3YA, 4YA, 2ZF, 2BL, 2FC, 2GB, 2UE, 2UW, 3LO, 3AR, 5CL, 7ZL, 4QG.

With Mr. Pierce's earth the list is as follows:—2AQ, 3ZC, 1ZU, 1ZQ, 2KY, 3UZ, 3DB, 5DN, 2BE, 4ZB, 4ZM, American: KFON, KDKA, KCO, WCX, KSL, KOMO, 9XE, Japan: JOAK, JOBK, C. R. Larson; 21 pieces earth.

I can log 2FC any afternoon, 4.30 our time, offering up their afternoon session (3 p.m.), on speaker. Also bring in 3YA on speaker any afternoon and 4YA on 'phones.

I added a benzine tin to the earth the other day, and found a big improvement in it. The down-pipe off the roof runs into the trench. I believe in plenty of water. The aerial I have got is 140 to set, and 160ft. high, and thinned copper aerial wire with two porcelain insulators each end. The set I use is a 5-valve.—Spencer R. Ellis, Okato, Taranaki.

An Alternative Earth.

HERE is the description of a simple earthing device that is superior to anything I have yet tried, and you will notice that my experience has been different to that of Mr. Pierce.

My previous earth was four two-inch steel tubes, six feet long, buried in a trench, which gave plenty of volume from 2YA when kept wet.

I live on the top of a hill, and around the house is only a few inches of clay soil, and then rock, which dries out in summer, and makes any earthing system inefficient.

My set is a universal home-made set of three valves and crystal, which can be used as a crystal set; a crystal set and one valve for local reception; also a two or three-valve set for long and short waves.

To find the best earth for universal reception was the object of experiment, and the result is as follows:—A length of half-inch (½ in.) galvanised water pipe, three feet long, was welded to a point at one end, then five quarter-inch (¼ in.) holes were drilled about two inches (2 in.) apart and spaced around the pipe at right angles. The pipe was then driven into the rock with a maul until the top was nearly level with the ground, and the earth wire was fastened on with a brass clip. The pipe was then filled with bluestone (sulphate of copper), which was also sprinkled on the ground around the pipe, and boiling water was poured down and around the pipe. The boiling water will dissolve the sulphate of copper, and the action of electrolysis will deposit the copper on the ground around the pipe.

This earth has only been in use a short time and improves with age. Up to now it has given greater clarity and volume in distance work, and the only disadvantage so far noticed was a slight decrease in volume from the local station, but even this improves as time goes on. Short wave signals are sharper and clearer, also minor broadcast stations in Australia can now be heard on two valves, while under favourable conditions 1YA and 3YA are received on two valves on loudspeaker.

In my experience bigger earths give larger volume and wider tuning from local station, owing to increased capacity, but for clarity, distance, and short wave the earth should be kept small enough to provide only sufficient contact with earth; this contact is provided for with sulphate of copper dissolved in boiling water, percolating through the holes in the bottom end of the pipe, and being deposited on the surrounding ground by the action of electrolysis produced by the electrical oscillations from the aerial. The pipe could be made longer for soft ground, and should

water and soaked the ground round them. The result was to more than double the volume, and with one pair of 'phones only connected, hanging on the wall, music can be distinctly heard on the other side of the room, a distance of about six yards. On the Monday (1YA silent night) I got the local station, 1ZB, at comfortable 'phone strength. I had previously been unable to get this. During the course of one item, a cornet solo, "The Better Land," I moved my tuner, which is a variometer, and picked up the faint strains of an orchestra which was playing something entirely different. Imagine my surprise at the conclusion of the item when I heard the announcer say "Station 2YA, Wellington," in fact, I tuned back to 1ZB to make sure I wasn't being deceived. This happened about 9 p.m., so I returned to Wellington and had the pleasure of hearing direct the new orchestra at 2YA until close down.—E. Wratten, Auckland.

Unsuccessful Experience.

I WAS very interested in your article in the "Record" of May 18, "What Difference Does a Good Earth Make?" Well, I made an earth as per diagram, and my results will not win the prize. My original earth is a piece of 2-inch galvanised pipe driven 5 feet in the ground, with a 2ft. 6in. drain pipe round it, on top, filled with rocksalt, and always kept wet.

The new earth I drove nine one-inch pipes 8ft. 6in. in the ground, 5ft. 6in. away from the terminal point. I soldered nine wires (copper) together and fastened to an insulator right at my earth lead-in, then all the wires were soldered on to the respective pipes.

The ground lead-in was soldered on to the terminal point of the nine wires, and the original earth wire left off. The set was tuned-in with the new gadgets only, and given a good go, but results were very disappointing. The reception was not as good as with the old earth. I then soldered the old earth back, and also on to the terminal point of the new one, giving in all ten pipes. I got the same result with all connected together as I used to get with the original. It made no difference to tuning-in any way.

My set is a six-valve and reception with same is O.K., getting 1YA, 2YA, and 3YA in the daytime any old time. 1YA not very strong some days.—K.E.L. Murchison.

A Fan of Wires.

IN reply to your inquiry concerning the type of earth, similar to Mr. Pierce's, used by listeners and the results obtained therefrom, I should like to describe the system I have adopted. Five wires each 40 feet long, buried at a distance of 1ft. in the ground, stretch in the form of a fan from one point, where all are soldered and a lead taken into the set. After having tried at least fifteen different types, I have finally decided on this one, due to its selectivity: I the increased volume obtained from it. I have found that as leads are disconnected from the common joint reception falls off considerably, and, although not so noticeable on 2YA, there is a very marked difference on the distant stations.

My log to date on my one-valve set may help prove what I have said:—1YA, 2YA, 3YA, 4YA, 1ZB, 1ZQ, 2ZF, 3ZC, 3LO, 3AR, 3UZ, 2FC, 2BL, 2GB, 2UE, 2KY, 2UW, 4QG, 7ZL, 5CL, 5KA, JOAK, JOBK, JOHK (N.B.—The call signs of the above stations have been identified by their wave-lengths and dial readings relative to the logged stations), KFON, KEX, WBBM, 3BY, 3DB, 5DN, JOIK, JOGK, JOFK, 2ZM (Gisborne?); while several Morse, including the Government Morse station and 2BL. My aerial is 40ft. high and 110ft. long. In conclusion I would, as one who has read a good many handbooks, etc., like to congratulate yourself and technical associates upon compiling such an instructive, comprehensive, and compact guide ("N.Z. Listeners' Guide").—C. W. Morrison, Seatoun.

39 Stations On One Valve.

WITH reference to your competition for the best earth, I received the following stations on a one valve home-made receiver, and the exceptional results which I have obtained I attribute to the Pierce system which I am using.

New Zealand: 1YA, 1ZQ, 2AQ, 2ZF, 2ZK (Wanganui heard last night for first time), 2YA, 3YA, 3ZC, 4YA, 4ZB, 4ZF.

Australia: 2FC, 2BL, 2GB, 2UE, 2KY, 2UW, 2BE, 3LO, 3AR, 3UZ, 3DB, 4QG, 5CL, 5DN, 5KA, 7ZL.

Japan: JOAK, JOBK, JOCK, JOGK, JOHK, JOIK.

Philippine Islands: KZRM.

America: 9XE, KFON, KPI, KPO, KNX.—Total, 39.

All the above stations have been distinctly heard on a one valve receiver.—H. A. Sissons (Miramar).

An Auckland Experience.

THE following is my brief experience in regard to Mr. Pierce's earthing system. I am only the owner of a simple crystal set, with an aerial about 75ft. long and 25ft. high, and had the ordinary water-pipe earth. With three sets of 'phones working from one receiver, the reception was at moderate strength. After reading the article in "Radio Record," and not being in a position to obtain the twelve pipes and radiator, I decided to try the next best available. I sunk only three pipes in the ground, clamped a lead to each, and joined them to the remaining wire going to the set, the total length of wire being about 8ft. I filled the pipes with

Our Short Wave Corner

PRESSURE of work combined with an attack of influenza has prevented Mr. F. W. Sellens devoting time to listening this week, and consequently no detailed report is available.

On one afternoon, however, he did hear the concluding portion of 2XAF broadcasting the Democratic Convention from Houston, Texas. It was announced that this was being broadcast through so comprehensive a chain of stations that the whole of the people of the United States were able to hear the proceedings. The Convention continued till 3.3 a.m. Eastern State and daylight saving time, so that they made a proper "all night session" of the occasion.

Defence of Mr Sellens.

IT is, indeed, regrettable that your correspondent, Mr. Olaf E. Stout, wrote what he did about the "Short-wave Corner" in "Radio Record"; and it is still more regrettable you, Sir, allowed the matter to be published. [As already explained, we exercise our prerogatives of supervision as little as possible.—Ed.] As is well known to most of those acquainted with Mr Sellens, that gentleman has been, and is still doing, good work in the interest of listeners. It is a pity a few more ambitious listeners don't see fit to rise early enough to compile records of shortwave reception. Someone has to do the pioneer work, and Mr Sellens and the others supplying the information contained in the "Short Wave Corner" in "Radio Record" deserve every particle of thanks possible for their splendid efforts, efforts which have been acknowledged by the actual broadcasting stations, as evidenced by the letters being continually received from such stations as PCJJ, etc.

If a person happens to be fortunate enough to be able to stay home, alongside his receiver, of course, that listener is indeed fortunate, and considering the hours of shortwave transmission, and seeing, also, that most listeners supplying copy for the "Short-wave" column, are business men, and not retired or wealthy people, they are doing more than the lion's share of the pioneer work.

Had several of us been able to afford the time from 2.30 p.m. onwards we could have obtained the "dope" relative to Mr Hoover's nomination; but, you see, radio must take second place with working men, unless it be before or after working hours.

Mr Sellens has been true to the cause of radio, and has the respect of hundreds of listeners throughout New Zealand, and further, has spent many years in listening-in and experimenting with radio receivers, etc.

Plenty of people look on and growl at the other fellow; but are too indifferent to lend assistance to any cause; we can all pick holes in the other fellow's methods, but when a man works definitely with a purpose and will, it behoves us all to help him with our assistance. The reports being supplied to "Radio Record," although reading somewhat abbreviated, do, I suggest, materially assist listeners, and the reports being sent direct to the broadcast stations by the correspondents, plus the newspaper reports, also prove invaluable to the broadcasting companies. If some of us had more time to spare, I am sure we could also help Mr Sellens and the other correspondents by forwarding reports both to the "Radio Record" and also to the broadcast companies.

There are many people who do not like seeing their name in print, and who are very timid when it comes to a matter of signing their name to a letter for publication; and there are hundreds of people who sit in judgment upon those who work in the public interest; and who never raise a finger to assist in public work; but for a correspondent to come out in the open and say the shortwave reports appearing in the "Radio Record" are "bunk," well, that beats anything I have ever read or heard.

Did Mr Stout know that Hoover's nomination was "coming over" from 2XAF at a particular moment? No! He tuned in hoping to hear something from somewhere, and his report might easily have been: "Got 2XAF at 2.30 p.m. faintly, just heard some Yank saying 'Hoover's in! Hoover's in!' and faded out, got them again at 2.30 5-8 p.m." and so on. It so happened Mr Stout was unfortunately confined to his house through sickness, and he happened on 2XAF by a merest fluke! I happened to be up at midnight yesterday, Sunday, and, knowing the

"Japs" would be transmitting, I tuned-in my super-set and had quite an interesting time at loud-speaker strength; would Mr Stout suggest I am not assisting anyone by stating this fact? There are many who welcome information about hours and strength of reception. I admit I have sat up late, or have arisen early, for some specific purpose, and as clear reception over a lengthy period cannot always be depended upon, nevertheless, I consider any information I have had to offer has been of some use to someone.

It was not so long ago I spent several hours taking down the full reports of the N.S.W. elections, and passed this information on to the proper quarters; even that was helpful to someone; and the same may be said about all listeners; every listener, if he so chose, could pass round valuable information; and it is up to every listener to see that information is made available through the medium of the "Radio Record" and Press, where possible R. Leslie Jones.

Further Comment.

IN your editorial comment last week you seem to have correctly interpreted the intention behind my criticism of the matter appearing in your "Short Wave Corner," an intention that appears to have escaped Mr Sellens and Mr Young. Let me make it plain that I cordially agree with Mr Sellens, "that there is nothing very smart in picking up station 2XAF." Any person of average intelligence can, in the course of an hour or so, build a receiver that is capable under proper conditions of picking up station 2XAF, 5SW, PCJJ, and other stations mentioned from time to time in your "Short Wave Corner," and I have never at any time claimed that reception by me or any shortwave station was "a remarkable performance." My contention was, and still is, that the short wave corner consists in the main of uninteresting and bald statements of fact that might be taken from the logs of hundreds of shortwave listeners throughout the Dominion. I quoted a typical example, but here is one from your current issue: "Tuesday, June 19, 'Big Ben' was heard through 5SW at 6.30 a.m., followed by a violin solo. Reception was better than usual at this hour. A lady was talking from RFM during the evening."

NOW, if the editor would give us from time to time descriptions of the more recent shortwave stations, their location and layout, the technique adopted, the result of experiments in using the new screened grid valves for shortwave reception, experiences with "frequencies changers" used in front of sets having radio frequency amplification, descriptions of the results obtained from a shortwave super-het. (such as that used by Mr. Ray Alsopp, of 2BL), or full descriptions of the matter broadcast on special occasions (such as the one reported on by Mr. Sellens for June 16, when we are told merely that a speech by — from — University dinner was given), then I would say that the shortwave corner would be of more interest to listeners.

Owners of receiving sets can, to my mind, be divided into two main classes. First those whose pleasure is derived from the quality of the entertainment obtained. These people are content to tune in to one of the principal New Zealand or Australian stations, and to hold that station so long as reception is strong, clear, undistorted, and free from static or other electrical interference. The other class, whom I might term "dial twiddlers," are more interested in the number of stations that they can log, and so long as they can hear something, and get the station call sign, they don't care whether the entertainment is in Chinese, Dutch, or Yiddish. This class very seldom stay long with one station, and, as quality is not a consideration with them, they are quite content to listen even although oscillation, distortion, fading, or interference they would be unable to distinguish between "God Save the King" and "The Wearing of the Green." Let us hope for the future of radio in New Zealand that the majority of our listeners belong to the first class.

I am sorry to read that Mr Sellens is discouraged by a little criticism. I feel sure that no one who has been a regular reader of the radio press in New Zealand, or of our local dailies, can fail to be aware of Mr Sellens' enthusiastic devotion to shortwave work, and the time and trouble expended by him in connection with it. I feel sure that his reports on reception to stations PCJJ and other stations are much appreciated by those in charge of those stations, and that he has always been willing to place his wide experience at the disposal of beginners.—Olaf E. Stout.

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