THE SUNDAY OREGONIAN, PORTLAND, DECEMBER 31, 1922

RICH REWARD AWAITS RADIO FANS WHO MASTER MORSE CODE

Many Interesting Things, Tossed To and Fro in Ether on Land and Sea, Are Made Available to Owner of Set Willing to Attend School or Take Lessons at Home-Chart of Letters and Buzzer Are Essential

BY SAUL EMANUEL. Source of the second state o certs and lectures and the like

are most entertaining to the lis-tener, he feels that there is a wealth of information massing "over the beginner should practice sending with a book or newspaper in front are most entertaining to the llsof information passing "over his of him, translating the words into

There are many things of great Importance being tossed to and fro In the "ether" by the radio stations of land and see land and sea. will develop.

on land and sea. With a little patience any radio fan can master the international Morse code, which is used in trans-mission of radio messages. It may be months before he will be able to copy the signals sent by fast com-mercial operators, but a few weeks of practice will give him the ability to read those sent at a medium speed. One method of learning the code is by attending a radio school. This, of course, L, the quickest way. How-ever, one sea teach himself if he will apply himself to the task. The fan who wants to learn the code should get a chart of the let-ters and a "buzzer" set. Both can buzzer set is nothing more than an electric buzzer operated by a dry cell and an ordinary telegrand. Market and an ordinary telegrand. Date and an ordinary telegrand. Also get some friend to take up the code some friend to take up the code some friend to take up the code is by attending a radio school. This, and more letters out of the air, then whole words, and finally en-tion to learn the eode. At least one hour a day should be given to the practice of sending. A good deal of practice can be had by listening to the amateur

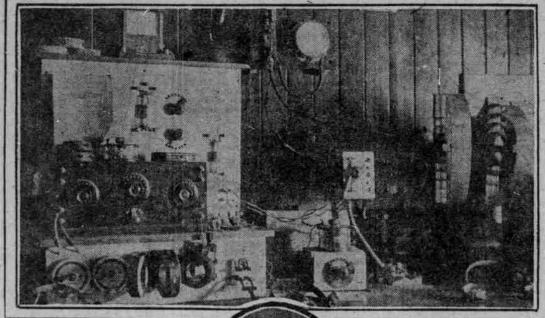
be procured in any radio shop. The burker set is nothing more than an electric buzzer operated by a dry cell and an ordinary telegraph key. The first step is to memorize the code, letter by letter. Each letter should be fixed in the mind, not so husch by remembering the dot and should be fixed in the mind, not so should be fixed in the mind, not so much by remembering the dot-and-

much by remembering the dot-and-dash combination as by learning the sounds they represent. For instance, take the letter "C." On the chart it is found to consist of "dash-dot-dash-dot." But don't memorize it that way. Make it a combination of sounds, like this, "dah-de-dah-de," just as they taught you to learn words by sounds instead of spelling them when you were a child. When every letter in the code is

them when you were a child. When every letter in the code is fixed in your mind begin to send them on the busser set, remember-ting that a dash is equivalent to the time taken in making three dots. Send each letter slowly and listen to the sound produced by the busser, to the sound produced by the buzzer. sent whole sentences. A chart of The letters of the code should be these can be procured in any radio

Complete Receiving and Transmitting Apparatus Provided So as to Meet Wide Demand for Instruction. All Pacific Coast Stations Within Easy Range.

MODERN RADIO SET OF HIGH EFFICIENCY



Surger.

8 OUNT ANGEL COLLEGE, St. M Benedict, Or., Dec. 30.-(Spa-cial.)-In order to complete its equipment of scientific apparatus, Mount Angel college recently installed a radio station of modern design and high efficiency. Due to a demand for instruction in the new

sctually amplify telephone currents. In that room, then, there was born the tiny little glass baby which was destined to rule the world of elec-ALABAMA RADIO FAN HAS IS INSTALLED AT MOUNT ANGEL COLLEGE Unfortunately, in January, 1968. treat fire completely gutted the Parker building, wiping out of ex-stence note books and many pre-clous samples of the earliest audion Reports From The Oregonian Station Heard Clearly-Potentiometer bulbs-which would have toda shown the history of its evolution today in a most interesting way.

(Copyright, 1923, by C. S. Thompson. All rights reserved.) (To be continued next week. Preceding chapters of this absorbing story of the development of radio broadcasting can be obtained from the circulating department The Oreconfan.) Potentiometer Big Aid in

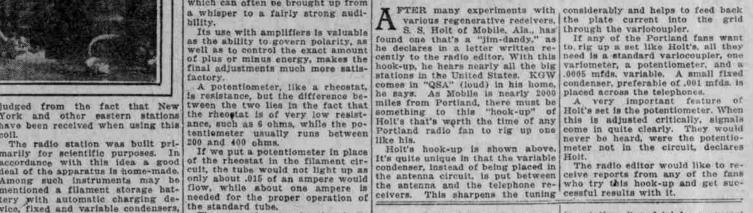
Unit' Enables Operator to Bring Up Weak Signals, MANY radio fans do not know that the addition of a potentimeter will make an considerable improvement in their reception of the broadcasts. This unit comes in

Broadcast Reception.

York and other eastern stations have been received when using this

The radio station was built pri-marily for scientific purposes. In accordance with this idea a good deal of the apparatus is home-made. Among such instruments may be mentioned a filament storage hat-tery with automatic charging de-tery with automatic charging de-

Hook-up used by an Alabama amateur, who reports that The Oregonian especially handy on weak signals, X FTER many experiments with considerably and helps to feed back



UNUSUALLY GOOD HOOK-UP

Important Feature of Set.

mm

station is heard clearly with this receiver.

V.C.

- B-BATTER

<text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text>

which can often be brought up from whisper to a fairly strong audi-

Editor Radio Department-(1) Could an asciotrop W. D. 11 dry-cell detector tube be used with a tube adapter in a Clapp Eastham H. B. set Instead of the C-300 tube without decreasing the effi-cleancy of the sot? (2) Does the W. D.-11 tube take the same grid leak and grid condenear as the C-300? (3) How does the Clapp-Eastham set compare with the other single circuit sets on the market? A. R. F. Portland, Or. (1) There awill be no difference in

There will be no difference in the efficiency of the set.
 The peanut tube usually re-

quires a little larger grid condenser than the standard tubes. One about .0005 mfds. is recommended, and a leak of about one' megohm seems

best in most cases. However, a lit-tic experimenting will be necessary in the case of the grid leak. (3) Comparisons of various receivers cannot be given in this col-

. . . Editor Radio Department-(1) Can I produce regeneration in my receiver with only one variometer? (3) Using a one-stage amplifier, would I have to have a large B battery or would two batteries each 22% voite do? .(3) Will size 22 double cotton covered wire work for winding a variometer? wire work for winding a variometer? K. T., Athena, Or.

(1) Yes. Place the variometer in

(2) Either the two batteries or one of 45 volts which is tapped for various voltages can be used. If the two batteries are used they are connected in series, with the positive of one connected to the negative of the other. The plate circuit of the detector tube is connected to 22% volts, while that of the amplifier is nected to the entire battery of ment.

(*) Yes, this size will give you

excellent results. Editor Radio Department-Am using three-honeycomb regenerative receiver and it doesn't work very good. I only hear you once in a while. Can you give me a hook-up of a circuit which you think will work better? E. S., Vernunia, Or. aerial.

Your fault is probably due to not understanding the correct tuning of such a set. There is no reason why you shouldn't be able to hear the Portland stations with your re-ceiver if you adjust the various units correctly. Of course the trou-ble might like in your these or the ble might ile in your tube, or the batteries, both "A" and "B," might not be correctly connected. Try re-versing the polafity of the A bat-tery. This will often make a great difference in the degree of recep-

Editor Radio Department-I have a snaycomb receiver used in connection with a detector and two-step amplifier pd would like to know if you could indiy send me a hock-up using the one-yround tells as a short-distance tel-one transmitter. Also would like the ne transmitter. Also would like the vs for both telephone and C. W. A. M., Astoria, Or.

Every regenerative receiver will act as a transmitter for short dis- gize properly.

A coupler is given when the sec-ondary turns in use are just outside, and not directly under, the turns of the primary. For this reason, pri-mary and secondary windings on the same tube, but spaced one-quarter of an inch apart, give very satisfactory results. Keep your eye of your storags batteries. Don't let them stand too long without recharging. If you charge them at home, take them to the service station at least thesized into a single highly com- scores, nay hundreds, who had plex musical current, were trans- neither time nor patience to learn

The operating a crystal detector, it often occurs that a sensitive spot to the mediate use to those who were conscious only of the dot and dash proper balance, adjust your crystal detector to the sensitive spot of re- mediate use to which I was put to the roof of the Parker building. Fourth a venue and Nineteenth stretched between two flag point of the original must be covered. The mediate use to which I was put ting this antenna was not a further development of the wrieles rate and the substribution was provided in their cables or conduits.
If signals are much weaker during reception than usual, it may be from any of the following causes: Poor ground connection.

Poor ground connection. Detector may be out of adjust-Coupling between colls is too

Loose contacts in the receiving orial. The switches may be making poor ontact. on Admiral Evans' battleships and pointed out that the question of

The primary and secondary cir-cuits may not be in resonance. Never allow unused batteries to remain idle too long. Batteries should be recharged whether they have been used or not, if a test shows that they need it. When the too go it is a lot of the state is an it of the state of the stat

When the tops of the plates are dry the bottoms only are working. That means that only half of each dent of the Wireless Specialty complate is carrying on the action that pany, then chief electrician of the is required of the whole plate, with Brooklyn navy yard, was among

is required of the whole plate, with the result that they are overheated and often buckle. The battery should be filled with d'attilled water so that the plates are always covered about one-quarter of an inch. Only distilled water should be used. This seems to be a minor point, but it is very impor-tant, as impure water reduces the life of the plates and does not ener-life of the plates and does not ener-gize groperiz.

which are almost in constant serv-ice giving bearings to ships at sea. which threatens the usefulness of For this purpose, the radio compass more than 1,500,000 receiving stastations work in pairs, and the pro- tions in the United States, may codure is as follows: If a ship has been unable to ob-devised and patented by Alfred

If a ship has been unable to ob-tain bearings for some time due to inclement weather or if it wishes to have a check on the bearings which it has obtained itself, the nearest radio compass station is called by the compass station after which the dividual stations desire to more If you charge them at home, takes them to the service station at least once every year. A few dollars spent in having an expert look them over may save the price of a new battery. Keep the tops of the elements covaroates, but the sold does not Use only distilled water. In operating a crystal detector, it often coverrs that a sensitive spent to be many ama-to coverrs that a sensitive spent in the sold does not Use only distilled water. In operating a crystal detector, it often coverrs that a sensitive spent to cover sensitive spent to be many ama-to coverrs that a sensitive spent to be many ama-to coverrs that a sensitive spent to be many ama-to coverrs that a sensitive spent to be many ama-to coverrs that a sensitive spent to be many ama-to coverrs that a sensitive spent to be many ama-to coverrs that a sensitive spent to be many ama-to coverrs that a sensitive spent to be many ama-to coverrs that a sensitive spent to be many ama-to coverrs that a sensitive spent to cover a many months earlier. In operating a crystal detector, it of the occurs that a sensitive spent to those who were

bulb; then with two plates, one on nected usually by a land wire, and length." Crossley explained. each side of the filament, one the station number one transmits the "Under present conditions, receiv



complete Crystal Receiver which can be adapted to Vacuum tube operation. An ideal set for broadcasting reception. MODEL AR 1300

\$50 As illustrated..... A detector and two- \$75 MODEL AA 1400

step amplifier for the above.

For the necessary accessories to make this a complete \$56 tube station, add.....

We have other Sets from \$18 up and would be glad to show you. An ideal gift.

 Kilbourne & Clark Receiver Detector and 2-stage amplifier in nice oak cabinet "B" and "C" bat-teries included
 Sale.

 PROFCO receiver, detector and 2-stage in nice ma-hogany finished cabinet
 S10.00

 WESTINGHOUSE receiver, detector and 2-stage
 110.00

 WESTINGHOUSE receiver, detector and 2-stage
 110.00

 This is one of the best long distance sets on the market]
 132.50

 Large size Magnavox
 52.00

Reg.

Sale.

90.00 59.50 1.00 20.00

Radio Sale to be Continued

Until Our Stock Is Sold

Stock is not complete now, but if you need anything in the radio line it will pay you to find out if we have it before buying else-where. A few bargains left are listed below:

(This is one of the best long distance sets on the market) Large size Magnavox Arkay loud speaker horns Rheostats, Framingham Detector and 1 step in nice oak cabinet, FADA. Profeo Receiver and Detector in mahogany fin-ished cabinet Western Electric Head Phones, best grade. Federal Head Phones, 2000 ohms Holtzer-Cabbott Head Phones, best grade. Murdock Head Phones, No. 56, 2000 ohms. Murdock Head Phones 85.00 5.00 .75 40.00

40.00 15.00 8.00 7.50 6.00 5.00 1.00 .75 7.00 .15



J. B. WEED, Managet The Oldest Exclusive Radio Store in Portland 310 OAK STREET PORTLAND, OREGON



RADIO completely equipped sending and eiving station and experimental receiving Anton Inhoratories. Graduates are qualified to pass any government reamination. Dust of the second second second OKEGON INSTITUTE OF TECHNOLOGY. 4th Floor Y. M. C. A. Sirth and Taylor.

OUT-OF-TOWN

FRIENDS

HAVE YOU RECEIVED OUR

PRICE BULLETIN NO. 1?

A REQUEST Brings It to You.

We pay postage on orders over \$2.50.

HALLOCK &

WATSON

RADIO SERVICE

192 Park Street, Portland, Or.

Broadcasting Station KGG Experimental Station 7XI

E. L. KNIGHT & CO.

0 Washington St., Near 12: Brondway 0145 START THE NEW YEAR WITH A RADIOPHONE IN YOUR HOME. Radio Sets and Parts.

"KNIGHT MAKES DAY THE ELECTRIC WAY"

This necessity for wire distribu-tion and the insuperable obstacles

It was in the course of these ex-periments of 1907 that the phono-graph was first used to actuate the microphones of the radio telephone transmitter. The phonograph was regularly used at this time in our development of some 20 small tele-

The gwitches may be making poor contact. The variable point on detectors may be corroded. The condensers may be short in certain positions. The primary and secondary cir-tuits may not be in resonance. The installation of installation on Admiral Evans' battleships and destroyers, prior to their round-the-world cruise. During those busy nights and days the ether around New York was kept thoroughly agitated with harmonic" music from "Il Trovatore"; and more

receivers, which latter could be ob-tained by lease only from the musitained by lease only from the music distributing company. Had this yiew of the problem and its solution been then accepted by the Telhar-monic company I have no doubt that

mitted over telephone wires to marby theaters, hotols, restaurants, where one or several "loud-speaker" horns poured into the air this new electrical music. Much of it was sweet, most of it was musical; in imitation of the organ, the clari-net, certain brasses and wood-winds, comminged with these familiar