

WITH THE RADIO BOYS

When one thinks of radio he visualizes a complicated assortment of delicate and wonderfully contrived electrical apparatus; and in many cases he is not far from being right in his conception.

If one should glance through the pages of a book of radio history he would notice many such stations and wonder at the many different forms and queer names of the odd looking pieces of apparatus. In almost any new science, or in fact, any new endeavor of any sort, we find the first attempts of the experimenters crude and his apparatus ungainly. So it is in radio. Today any up-to-date amateur would laugh in scorn at Marconi's crude apparatus, for the modern radio amateur possesses apparatus that is second to none in excellence.

Yankee Boys at Work

Almost as soon as Marconi had proven his system of telegraphy practical and had placed it on a commercial basis the American boy was discovering in his small shop in the corner of the basement or up in the attic that he could do the same thing with some scraps of wire and a few discarded telegraph instruments.

One will be surprised to note how soon the few boys in New York City, the first radio amateurs, "hams" as we often call them, became legion and their weak sparks had increased in power and number until in 1912 congressional action was taken to

Spring Weakness
Is Overcome and the blood purified and vitalized by

Hood's Sarsaparilla

assign the different classes of radio traffic to its own distinct "layer" of wave lengths in order to minimize interference.

Concerning Wave Lengths

"Now, what is a wave length?" How many times that question has been asked and how many times it has been the first cause of misconception and hindrance to those who try to understand why and how the air can be full of traffic, hundreds of stations operating at once and yet be possible for an operator to select the station he wishes to hear.

When the aerial and the transmitting coils are designed for a station the size is governed by the purpose of the station. The amateur is allowed to use only a very small aerial, not over 125 feet in length, including the wires forming the aerial proper, the wires leading to the apparatus and those leading to the ground connection. The commercial outfits, such as those used on ships and the coastal stations who work with them are from 250 to 600 feet in length. The navy uses the next group and finally the large naval and commercial high power long distance stations use huge antenna up to 800 feet in height and often over a mile long.

Physics Studied

To understand how these different sizes of antenna affect the wave length one must delve into the realm of physics. The world of science tells us that all matter is fundamentally electrical and for convenience the electrical "fluid" that fills all space and is the basis of all matter, is called "ether."

Now radio works on the principle of wave motion in this ether. The transmitting station uses transformers which produce high voltages and which are used to energize certain arrangements of apparatus that is able to give the

maximum jar to the ether for a given amount of power applied. The result in the ether is similar to that which takes place when one throws a stone into a pond of water. Waves spread in all directions from the point of disturbance. So in radio, the waves travel from the transmitter in ever widening circles with the speed of light, 186,000 miles a second, behaving in a manner very similar to the waves in the pond of water.

Waves Non-Interfering

Now the length of the aerial wires determine the wave length transmitted by any given station for in the aerial the current rises and falls periodically and the longer the wires the slower is this rise and fall or oscillation.

The slower rate of oscillation makes wave length in practice of from 15,000 to 25,000 meters or roughly 50,000 to 86,000 feet from the top of one wave crest to the top of the next, the waves, as above, being similar to those in a pond of water.

So we can see that by using the different aerial lengths how we can radiate from them waves of any different length. These waves do not interfere with one another unless they are of the same length or of very great intensity.

Receiver Captures Them

The receiving apparatus is arranged to catch the ether waves by means of the aerial wires, which convert the ether waves into feeble electrical oscillating currents. These weak currents are amplified and adjusted by the operator and are made audible by causing them to operate sensitive telephone receivers. The receiving operator has coils and controls with which to select any desired station and to enable him to do so with a minimum of interference from undesired stations.

The ether is a wonderful fascination in being able to take a little wire, a few coils, and other easily constructed pieces of apparatus, and talk to other amateurs a few miles away with no connection whatever.

Many of the older folks will remember the telegraph line connected with a chum across the block. But with that sort of telegraph a wire was necessary between both stations. This introduced complications with power companies or an irate neighbor who objected to those "fool things" cluttering up his premises.

Amateurs Are Legion

The radio set is small, requires a few short wires overhead and causes little or no nuisance to the locality it is in when properly adjusted. So we find in America today hundreds of thousands of radio amateurs, boys from 14 to 80 and not a few girls, both old and young.

During the war the ranks of our army and naval operators were filled from this vast army of amateurs. They have furnished many new ideas, have developed apparatus second to none in the world for sensitiveness, selectivity and durability, and have formed the backbone of radio development of the United States and lead the world in all radio endeavor.

Radio Association Notes

Radio in Salem seems to be preparing for a busy summer.

KARNOPP WILL BE BANK HEAD

New Depository at Prineville Takes Place of Defunct Institution

CAPITALIZATION \$50,000

Reorganization of Crook County Bank Found Not To Be Feasible

Because reorganization of the Crook County bank, which failed at Prineville several months ago, offered extreme difficulty and did not appear to be feasible, Frank C. Bramwell, state superintendent of banks, yesterday issued a charter for the new Bank of Prineville, which will open for business about June 1. The old bank suspended business December 27 last.

The capital stock will be \$50,000. J. L. Karnopp of Portland will be president; W. O. Hall, cashier, and George F. Euston, assistant cashier. A. J. Noble, J. M. Elliott and Lake M. Bechtell will be directors.

Two Proposals Made

In a statement issued yesterday Mr. Bramwell reviews efforts that were made for reorganization.

"This would not have been difficult," says Mr. Bramwell, "had it involved a guarantee of the deposits and the removal of the doubtful assets, but in addition to assuming the liability to the depositors, the bank had a large volume of rediscouunts, bills payable and repurchase agreements which the new organization would

have been required to assume. These aggregated approximately \$150,000."

Many complications arose which made it difficult to reach a satisfactory solution. As soon as the bank suspended business a petition was filed by Mr. Karnopp and about 40 other persons of Crook county requesting that a charter be issued for the Bank of Prineville. Mr. Bramwell was satisfied that the petitioners represented the integrity and financial ability necessary, but about the same time a new proposal was submitted by men not connected with the Crook County bank and this received first consideration.

Reorganization Abandoned.

This proposal ultimately was abandoned although certain stockholders of the defunct bank offered to make sacrifices aggregating \$115,000 for the protection of depositors. Arrangements were then made to sell the Crook County bank building to Mr. Karnopp and his associates.

The supreme council would have made a hit if it had done something to give a married man a mandate over his wife. The shoe is on the other foot these days.—Exchange.

There are a number of new aeriols around town either up or being erected.

We will all be glad to welcome 7 IN. Mr. Adams of Silverton, who is erecting a 100 foot pole out on 21st street, and we may look for a record breaking station there in the near future.

At present Salem is off the relay map, 7BH, Clive Scott on 14th street, is rebuilding his station and so is not on the air except for a receiving set. Mr. Scott is our oldest relay man and has handled many messages.

THA, Churchill, out on Belmont, is not using his station and so is not on the air except for a receiving set. Mr. Scott is our oldest relay man and has handled many messages.

7IO, Herb Welch, out on route 8, is on the job with his Ford coil, but lately has been unable to QSR with 7CW either out of order or not on the job. 7ID at Mt. Angel is a coming relay man and handles a limited amount of traffic.

7MU, Peyton, out on south Commercial has a good station and is constantly improving. Paul is a bit new in the relay game, but with the start he has made will make a good relay man.

We hear 7OW some, but not nearly enough. 7JA will startle us one of these days we hope, for he has lots of pep and should make a fine relay man.

7GO, Goodwin, on North Commercial has finally found that "dinged" generator and will soon be on the air with a CW and tone set.

The Radio association of Salem meets every Thursday night at 7:30 p.m. in the association rooms on the third floor of the city hall. Visitors or other interested in radio are welcome to the meetings. General radio topics, construction, code practice, are taken up and theoretical subjects are discussed.

For further information call or write the secretary, H. E. Welch, Route 8, or phone 95F2.

School Children's Matinee Saturday 10:30 a. m.



A picture greater than the book
It's Here for Four Days Starting SUNDAY
Special Matinee Saturday A. M.
LIBERTY

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GALE'S SALE

a most pronounced success. Friday and Saturday bid fair to be the banner days of our sale, coming just before Decoration day, it is an opportune time to buy your summer's outfit

SALE PRICES MEANS MONEY SAVED

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| 17x35 HUCK TOWELS Striped Border 19c Each | HOPE MUSLIN Bleached 14c Yard | MEN'S B. V. D. UNION SUITS \$1.05 Suit |
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| 36 inch QHALLIES 18 Yard 75c BRASSIERES Special 39c | LADIES' POLO COATS Just Received, Special \$9.75 | BED SPREADS Full Size \$1.98 Each |
| Ladies' Heather SPORT HOSE 69c Pair | SUMMER VOILES New Patterns, Just Received, Specially Priced 49c and 69c Yard | 36 inch CHIFFON TAFFETAS All the Wanted Shades \$1.79 Yard |
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LEROY and COOPER
Two Boys and a Piano
HONEYSUCKLE and VIOLET
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Refined Gymnasts
FRANCIS FAY
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EARL WILLIAMS
In
"IT CAN BE DONE"

ALL NEW VAUDEVILLE SUNDAY

BLIGH THEATRE

8%

First Mortgage
Five-Year Gold Notes

WASHINGTON-IDAHO WATER, LIGHT & POWER COMPANY

Trustee
Guaranty Bank & Trust Company, Seattle, Washington

| | |
|------------------------|-----------------|
| Character..... | First Mortgage |
| Authorized..... | \$300,000 |
| Amount To Be Sold..... | \$200,000 |
| Date of Notes..... | April 1st, 1921 |
| Date of Maturity..... | April 1, 1926 |
| Denominations..... | \$100 and \$500 |

Subject to Registration

Interest 8%—payable semi-annually—April 1 and October 1—callable, 105 any interest date—price, par plus accrued interest.

LEGALITY OF ISSUE
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SECURITY
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These notes represent a general obligation of the company and is the only funded debt against the above property and constitutes a first mortgage thereon

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Please send me further information about your First Mortgage 8% Gold Notes.
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City or Town..... Phone.....

MEAT INJURIOUS TO THE KIDNEYS

Take a Tablespoonful of Salts If Back Hurts or Bladder Bothers

We are a nation of meat eaters and our blood is filled with uric acid, says a well-known authority, who warns us to be constantly on guard against kidney trouble. The kidneys do their utmost to free the blood of this irritating acid, but become weak from the overwork; they get sluggish; the eliminative tissues clog and thus the waste is retained in the blood to poison the entire system.

When your kidneys ache and feel like lumps of lead, and you have stinging pains in the back or the urine is cloudy, full of sediment, or the bladder is irritable, obliging you to seek relief during the night; when you have severe headaches, nervous and dizzy spells, sleeplessness, acid stomach, or rheumatism in bad weather, get from your pharmacist about four ounces of **Dr. Sear's** take a tablespoonful in a glass of water before breakfast each morning and in a few days your kidneys will act fine. This famous salts is made from the acid of grapes and lemon juice, combined with lithia, and has been used for generations to flush and stimulate clogged kidneys, to neutralize the acids in urine so it is no longer a source of irritation, thus ending urinary and bladder disorders.

Jad salts is inexpensive and cannot injure; makes a delightful effervescent lithia-water drink, and nobody can make a mistake by taking a little occasionally to keep the kidneys clean and active.

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