

The HOT WIRE



Volume 1

Number 1

NOVEMBER, 1921

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CONSTITUTION OF ST. LOUIS RADIO ASSOCIATION

ARTICLE 1

SECTION 1.—The name of this organization shall be the **Saint Louis Radio Association**.

SECTION 2.—The object of this Association shall be to bring together those interested in the advancement of Radio and desire to become more familiar with the Radio Art. Progressiveness and co-operation shall be the key-note of this organization and a general diffusion of knowledge pertaining to radio its endeavor.

ARTICLE 2

SECTION 1.—Membership of this Association shall be divided into four classes: Honorary, Senior, Junior and Student.

SECTION 2.—Honorary membership shall be conferred on those who have been associated actively with the St. Louis Radio Association for twenty-five (25) years, or upon any person who has signally contributed to the Radio Art, and by a majority vote of Juniors and Seniors present.

SECTION 3.—Senior members shall be those who are well versed in the Radio Art, of twenty-one (21) years of age, and elected by the Board of Directors.

SECTION 4.—Junior members shall be those conversant with the operation of a radio station, and upon recommendation of three Senior members, and acceptable to the Board of Directors.

SECTION 5.—Student members shall be those who are beginners in the art of Radio, and who sign regular form of application for membership.

ARTICLE 3

SECTION 1.—The Officers of this Association shall be a President, Vice-President, Secretary and Treasurer and a Board of Directors.

SECTION 2.—The President, Vice-President, Secretary and Treasurer shall be elected by a majority vote of the Senior and junior members of this Association, for a term of one year.

SECTION 3.—The Board of Directors shall consist of six (6) Senior members appointed by the President for a period of one year.

SECTION 4.—All officers shall be elected by ballot at the first meeting of the fall season, and shall be installed at the second meeting.

ARTICLE 4

SECTION 1.—All members shall pay dues monthly to the Treasurer, Seniors and Juniors shall pay the sum of fifty cents (50c) per month; Students shall pay the sum of twenty-five cents (25c) per month. All dues are payable in advance.

SECTION 2.—Seniors and Juniors may pay the sum of four dollars (\$4.00) in advance for their yearly dues. Students may pay two dollars (\$2.00) in advance for their yearly dues.

ARTICLE 5

It is the expressed intention of this organization to affiliate with the American Radio Relay League.

BY-LAWS

All regular and special meetings shall be held at such place as may be specified by the Board of Directors.

This Association shall hold weekly meetings throughout the Radio year, the time to be left to the discretion of the President.

Committees shall be appointed by the President to serve during his term of office for such purposes as he may deem necessary.

Any member falling three (3) months in arrears on his dues may be suspended at the discretion of the Board of Directors.

Any wireless operator who wilfully infringes upon any of the rules of the Radio Association shall be placed on the Club Blacklist.

Any operator on the Blacklist shall be ignored by all members in this Association insofar as his wireless signals are concerned. If he shall persist in interfering he shall be reported to the District Radio Inspector, who will be asked to revoke his license.

The officers of this Association shall be empowered to formulate such rules and regulations as may be necessary to govern traffic.

These By-Laws may be amended at any time by a two-thirds (2/3) majority of all junior and senior members, provided at least one week's notice is given prior to this action.

This organization shall be governed by Roberts Rules of Order.

Traffic Regulations

St. Louis Radio Association

There shall be four divisions of operating hours, as follows: 6 a. m. to 4 p. m., 4 p. m. to 9:30 p. m., 9:30 p. m. to 11 p. m., 11 p. m. to 6 a. m.

Between the hours of 6 a. m. and 4 p. m. any station may test, tune, or transmit, either locally or long distance without interruption.

Between the hours of 4 p. m. and 9:30 p. m. stations may transmit locally only, except on Tuesday and Thursday evenings which are given over to radio concerts exclusively.

Between the hours of 9:30 p. m. and 11 p. m. transmission can be made to long distance stations only, stations not having traffic to handle should use this period, this is the time to call CQ, etc.

Between the hours of 11 p. m. and 6 a. m., transmission can be made only to long distance stations and real bonafide traffic should be handled during this period. No CQ calls are permissible.

THOSE WHO HAVE WORKED DURING PREVIOUS PERIOD CANNOT TRANSMIT DURING THIS TIME.

All radiofones and CW sets are considered as radio transmitters and come under the above regulations at all times.

Any irregularities of the above shall be promptly reported to the ST. LOUIS EXECUTIVE COUNCIL, who will deal with the violators accordingly.

PAST

Ah, me, how the older men recall those days in the dim and distant past when a fellow would go half nuts if he heard NAA sending the time signals, or when he heard a rotary gap sending out a mess of nothing, nobody could be bothered with learning the code, all you had to do to be a real celebrity was to HEAR the signals, it was merely taken for granted that ANY signal was over a thousand miles away, nobody argued that point, well we recall how several of the older fellows met to look over the FIRST audion bulb in town and it was unanimously decided that the thing was a rank fake, and holy cats, the price of the whole shabang, including "B" batteries and a mahogany cabinet cost the unheard-of sum of \$14.00 plus express a guy had to earn \$12.00 or \$15.00 a week to keep up that pace, and support his family besides. It has been said that Don Oneil had the FIRST audion in this town (there, now we're in for an argument). Don is at present hiding out under the Nom De Plume of 9GO and it is rumored that he has a radiofone, at least Don was an authority on this audion proposition and the old gang used to stand agast when Oneil would buy at one time SIX flashlight batteries to make this audion proposition "work." After things got down in good shape and were running smoothly along came this Rotary gap busness and it seemed it was necessary to have a motor to turn a real thin copper disc, said disc to have a lot of projections on the outer diameter, it was decided that the thicker the disc, the faster it would turn so there was a noticeable decrease in the number of available PIE PANS at the home of James C. Crowds.

This Crowds Guy was a wealthy cuss so he blossomed out with the FIRST ROTARY GAP (continue with the argument) and by the great horned spoon, if he didn't roar in, you could hear him 2 feet from the fones on a good night if you had a decent crystal and the following winter somebody else got a rotary and it was told around town that this birds' signals were heard in Murphysboro, Ill. About this time more attention was being given to LOOSE COUPLERS and the works of Art that were turned out were a revolution, we recall that Lester Sears made an affair that would tune up to 2500 meters without a loading coil, of course if anyone slammed the back door the slider would cease to function properly but Sears was of an inventive turn and he rigged up a contraption that could be worked with the right foot, enabling the operator to throw the lightning switch, start the rotary, disconnect the silicon detector, and shunt the phones, all at one whack, this device brought in much better signals so Sears' reputation was established. Somewhere in this period there appeared a bird, named Blatterman who rigged up an affair at Washington University that sure had a kick, he "worked" Chicago and points in between on a FIVE KW, some

fellow started the talk that Blatterman only left the windows open and these distant stations were hearing the racket his spark made but this has never been verified, there was talk going the rounds concerning a radio club and finally there was established The St. Louis Radio Club in 1912 with seven members, look at us now, 300 strong and just starting, Ah, me how times do change.

PRESENT

Whoop!-Wow!- Could it come to pass? The world needs telling it could. The fact of the matter is, it couldn't help happening. We've graduated—We sold our mimeograph junk, and now By Heck we're a magazine. We're small of course. But Dr. Kleink will tell you where we're going.

The advisability of the change of name can hardly be disputed. Whether or not we have the right name,—That's our readers job to decide, but whatever our name we are the official organ of The St. Louis Radio Assn., whose watchwords are, "Progressiveness and Co-operation."

These two words go hand in hand so beautifully that they cannot be separated. It is a recognized fact that an organization of some two-hundred Radio Amateurs, cannot progress without a hearty brand of co-operation. We have progressed. Our first issue (October, 1920) was a three page mimeograph sheet, look at us now. The fact that we have progressed in this manner proves without a doubt that we have co-operated. The fact that we can have attendances of any where from one-hundred to two-hundred, members at our regular meetings proves that we have co-operation of a high order.

What we will do in the future cannot help from being up to the standards which we are now setting.

Experience is the best teacher. Past conditions have shown us the need of co-operation. The mistakes of the previous organization of the same name have taught us a wonderful lesson. Today we stand in the Present, newly organized, determined to profit by those mistakes. We stand today shoulder to shoulder as a firmly united body of real radio men with eyes aglow and peering into the future. We can only picture the future as the child pictures the coming of that time so dear to its heart, the wonderful Christmas time.

FUTURE

Just so, we look forward to the day when the name of the St. Louis Radio Association is a by-word of every radio man of this great and glorious Country.

When we are so well organized and working in perfect harmony, every cog perfectly adjusted, so well fitted in, that not even the slightest disturbance can throw us out of

(Continued on page 6.)

WHO'S WHO

FIRST



CHARLES A. KELSO

Here we have the smiling countenance of one of the "Old Guard." Charlie is known and beloved by us all for his Scotch brogue and the assistance he is always ready to lend to the younger men. Mr Kelso has been interested in radio for over 12 years and has been an active member of the St. Louis Radio Assn. since its debut many years ago. The call letters 9EK are heard far and wide, while the concerts given by Kelso are eagerly looked forward to as his radiofone is one of the best in town.

(Continued from page 5.)

equilibrium, when every man, woman or child who is interested in this wonderful science puts his shoulder to the wheel then



LORRAINE JONES 3rd.

Mr. Jones shown sitting at his apparatus, is one of the younger generation, but is strictly a "comer" or better still we will say, "has arrived." Jones handles a "bug" with the ease born of an expert, his call 9ACB is known thruout the country and he has never been known to break a traffic regulation. His apparatus is 90% home-made. Jones uses both Spark and CW and has hung up several transmitting records. We need more men like Jones.

this organization will stand forth as a spectacle worthy of the attention of all other similar bodies in this country. We look forward to the day when the St. Louis Radio Association stands second to none in membership, fraternalism and accomplishments. We believe in a short time all the boys, especially those under 14 years of age in whom we have the greatest interest, will become real radio men. We want to teach these youngsters how to become the future officers of our association. It is our endeavor to teach every one of them the real meaning of co-operation and brotherly love. There must be no factions or cliques or trouble makers of any kind. Nothing is more dangerous and detrimental to the success of an undertaking if such monstrosities exist.

The officers of the future must be chosen for their ability to lead, they must be big men, diplomatic and tactful. They must be

(Continued on page 13.)

LOOP ANTENNAE

A. W. PETERSON

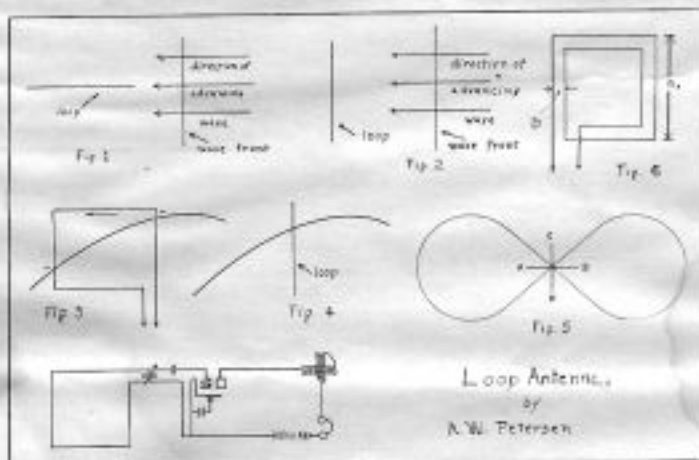
It is a well known fact that a closed circuit antennae, namely a loop, possesses directional tendencies in reception and also transmission. It is useful in direction finding, but its greatest feature is the possibility of reception through a barrage of local QRM by its use.

To the author's mind it is very doubtful whether the loop will ever be used for amateur transmission. It might, however, be interesting to know that the author has actually radiated .1 ampere of CW on a four foot two-hundred meter loop with an input of less than 5 watts.

The operating characteristics of a loop may better be explained by referring to figures 1, and 2. When the plane of the loop is parallel to the direction of the advancing wave the greatest flow of energy takes place in said circuit, (fig. 1). If the loop is in a position at right angles to the advancing wave no emf. is induced therein, (fig. 2).

the loop is in position A-B, and minimum signal-strength is obtained when the loop occupies the position C-D. Between these two points the signal-strength varies as the cosine of the angle which the loop forms with the advancing wave. Since the minimum signal-strength is more sharply defined than the maximum it is generally used in direction finding.

Since a loop does not lend itself readily to great flexibility in wave-length range, it behooves the amateur who intends to use a loop for reception to build one of the proper dimensions. Therefore a little discussion of the technical side of the loop will not be amiss. Of course, we want the greatest signal-strength possible on two-hundred meters, and as the signal-strength varies in accordance with the following data, same must be considered in the design of a loop.



The theory is substantially this, A wave advancing, and striking a loop in the manner shown in figure 3 sets up a difference in potential as indicated, which causes a flow of current in the grid circuit and causes the detector to function in the usual manner. On the other hand when the plane of the loop is at right angles to the advancing wave front, it cuts the wave with the complete circuit at the same instant. Therefore no difference in potential results. (fig. 4)

The reception curve is indicated in figure 5. Maximum signal-strength is obtained when

Signal-strength varies as—

$$\frac{n a l}{\Lambda^2 r}$$

Where n = number of turns.
 a = area of loop.
 l = inductance.
 Λ = wave length.
 r = high frequency resistance.

The inductance may be computed from:

$$l = 1.26 \times 10^{-7} n^2 a (A + B)$$

$$l = 0.008 n^2 a$$

(Continued on page 12.)

A FEW F

FACTS are what count nowadays. Facts have a definite meaning.
FACTS always tell a real true story. We are so proud of the facts

IT IS A F

THAT--

We are the only exclusive radio concern in this locality.

We have manufactured and SOLD 2150 spark gaps to date.

We have manufactured and SOLD 3659 rotam gaps to date.

We have been in business less than two years.

Our first years business was only \$1,896.67 gross.

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(Amounts certified by EMMET & WATSON & CO., public accountants)

Our daily CASH SALES over the counter average \$1,000.00.

We are AGAIN moving to larger quarters.

(Watch for our announcement)

It is YOU who have again proven that

TREATMENT, HIGH GRADE G

business.

OUR BUSINESS HAS GRE

We manufacture "spark" equipment and yet we have installed

ST. LOUIS POST DISPATCH

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Thus showing our efforts are not wholly confined to "spark" equipment
all its branches and we are at all times ready to render any and all

We are a live and progressive bunch, fellows, and WE WANT

Yours till the ground

For the latest information
Get your name on our mailing list
It contains over 9100 names

THE BENWOOD

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OPEN A CHARGE ACCOUNT

NEW FACTS

finite meaning.

of the facts in our case that we present them herewith for your perusal.

THIS IS A FACT

in this locality.

spark gaps to date.

9 rotar gap discs.

two years.

\$1,896.07 gross.

\$78,650.10 gross.

(K & CO., public accountants)

at the counter average \$110.00.

larger quarters in the down town district.

It has been proven that a **SQUARE DEAL, REAL SERVICE, COURTEOUS**
GRADE GOODS and a **FAIR PRICE** will **GREATLY** increase any

YOUR BUSINESS HAS GREATLY INCREASED!!

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F. V. DESLOGE, St. Louis, Mo.

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VERNER HICKS, Marion, Ills.

G. E. DIECKMAN, St. Louis, Mo.

“spark” equipment. We can give expert advice concerning radio in
any and all assistance within our power to help you.

WE WANT and APPRECIATE YOUR BUSINESS.

Do not let the grids leak,

BENWOOD CO., Inc.

Five St., St. Louis, Mo.

MAKE ACCOUNT AT “BENWOOD”

All standard apparatus carried in
stock

Mail Orders a Specialty

Editorial



ANNOUNCEMENT

The taking of a great step; We of the St. Louis Radio Assn., have long talked and dreamed of the time when we would actually have a real Radio publication that would be our own exclusively and would be entirely supported by the St. Louis Radio amateur, well, tis' here as we can easily see and tis' here to stay. At a meeting of the publication staff it was mutually decided that the name of our old magazine was too commonplace and after a great deal of swear—sweating and many hot arguments, the name "HOT WIRE" was chosen as best fitting our requirements. This name signifies something different and something alive and full of pep, it has a decided meaning to the Radio Man and at the same time it carries a meaning to the layman who has perhaps never heard of radio. Other names were discussed at great length and one that nearly carried the "house" was that of "8 AMPS," another was "THERMAL COUPLE," still another was 220 "VOLTS", etc. The committee racked their brains trying to choose a name that was befitting our magazine and they hope that the name meets with the approval of the club at large. It must be remembered that a great deal of time and attention is required by those who are on the various committees trying to do their best and these men are at all times eager for information and suggestions from the many members who have excellent ideas but are too busy to take active interest in the executive work of the Association at large. The editor invites suggestions and criticisms on the name "HOT WIRE" and these suggestions and criticisms will be handed to the publication committee who will act upon them. Remember that if you are a member of the Association you automatically have a voice in all that is done and what we want is original ideas, stories, jokes, pictures of your stations, etc., in short, roll up your sleeves and HELP the "HOT WIRE" and its staff to make it a real success.

Welcome to the St. Claire Radio Assn. of East St. Louis. The first meeting was held on Friday evening, the 14th, in the Sexton Building, Main and Division Sts. The following were elected to office:

Jerome Hartman, 9AMV, President.
Russell Dye, 9AMS Sec. Treas.

The best wishes of the St. Louis Radio Assn. are yours.

Success to the Scout Relay League, we are with you.

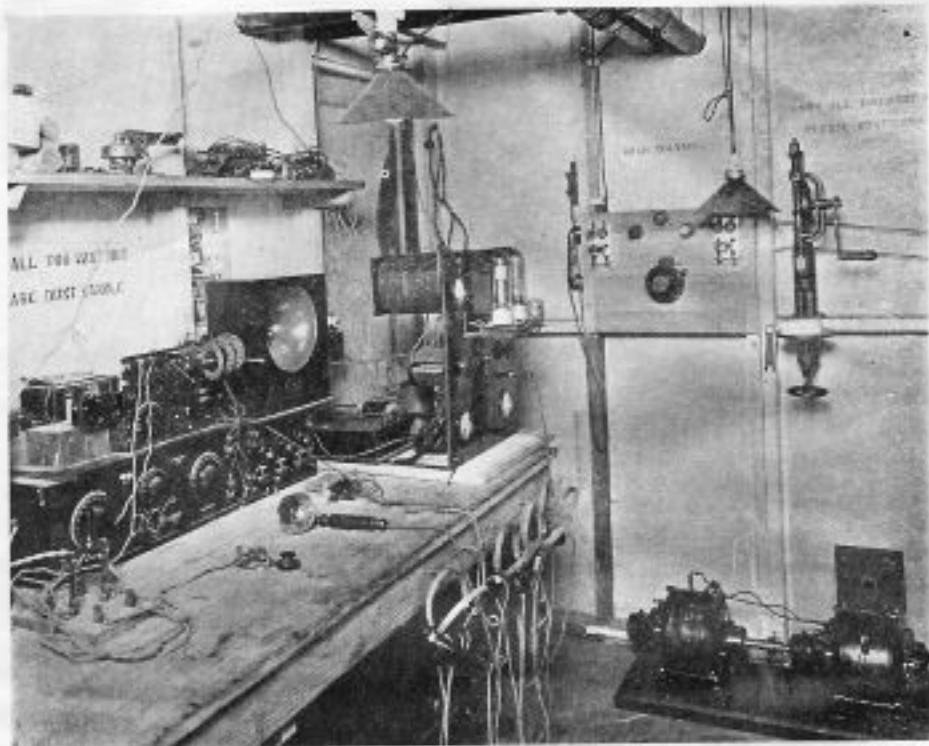
Where's all those "Old Times" who used to try to outsjt each other. 2 a. m. used to be a common occurrence; now we say "How's my modulation" a few times and then go to bed.

Get your set all tuned up for the TRANS-ATLANTIC finals that are to soon be held. It is imperative that your transmitter has covered a thousand miles or more to be eligible.

We haven't noticed that CW has as yet broken any of the old records that were attained by "spark" but still CW is in its infancy, on the other hand so is the whole radio game. Come you spark and CW sharks let's have more friendly competition and hang up a few records.

At the meeting of the Association, held at the Marquette Hotel, the evening of October 21st, there were well over 100 present showing that great and widespread interest is being taken in radio. It is worth mentioning that there were about forty-five men present who were well over thirty years of age. This radio "game" apparently is not a "kids" game after all, eh?

Subscribe NOW to the "HOT WIRE," the rate is only one dollar per year, for 12 copies and you are bound to get value received on the investment many times over. We need the money and you need the book, so let's get together with no delay.



Picture shows the elaborate outfit of Mr. C. S. Williams, of Webster Groves, Mo. Three 50 watt tubes are used for transmitting while the receiving end needs no explanation.

Remember that it is our advertisers that make it possible that we have a magazine, patronize them so they in turn will patronize these pages.

Boost St. Louis for the next radio convention, let's show 'em how it ought to be done.

PICKED AT RANDOM

Have you heard 9ARI hating them out, fine work OM, the tower did it.

9DCP is erecting a new aerial. 40 feet long 55 feet high T type. 9 wires for transmitting, watch him break the phones now.

Remember the 11 "DOES" and DO NOT PRACTICE the "DON'TS" of 9ZB's.

9EK worked Canadian 8BP, Ontario, Canada, using 4 tubes, C. W. on October 19th, just another score for the tube set.

We note George Weber has at last got a good note, soon as George gets down on the amateur wave we'll all be sitting pretty.

There are about 25 radiofones here in town, whats the matter with handling a little traffic with voice now that we have proven we can "reach out." This will deserve a big write up so go to it, gang.

"Kid" Fritz on 9KO fame has the keenest antennae in town, and he cops this month's record for handling traffic. Fritz has pushed thru over 150 bonafide messages. This is real ARRL spirit and is what we need.

Mr. C. S. Williams has offered a cash prize of \$10.00 for the picture of the best all round station that is printed in "THE HOT WIRE" during the coming winter.

Get your apparatus in first class shape fellows and have a picture taken at once and hand same to any member of the Editorial committee who will see that same is promptly printed.

Remember that it takes hard WORK to get out this little paper and the men who do this WORK have to give their spare time, namely evenings and Holidays, so the least you can do is to HELP by handing in timely articles, stories, photographs and the like to adorn the pages of the "HOT WIRE".

L. A. Benson wins the steam heated grid leak, for the work he has been doing with his radiofone of late. Benson uses only two 5 watt tubes and his VOICE has been reported QSA in Bristol, Conn., and Dallas, Texas, besides many other towns in Kansas, Nebraska, Iowa and Wisconsin. Good work Benny Ole Kid.



Did you ever look back to the good old days before the Edison bulb was born and the E. I. Co. was in its prime? Yes, ole timer, come with me back to those wonderful days of yore when they sent a real radio message from Forest Park Highlands to New York for only a quarter. The days when we would go up in the attic or out in the coal shed, far from the maddening crowd, sit down before those great long coils of wire, put your foot on the buzzer and jiggle that little hunk of galena around on an old worn quarter until that one little sensitive spot was found, and then behold to our pride and joy we were actually hearing Arlington (NAA) sending the time and weather reports. Ah! some of you will say that it is not long ago, but come with me, you old timer, with your long grey beard and your wiggly cane, back to the days before the coherer and before the electrolytic, when with a coil of wire, two razor blades and a piece of carbon laid across the edges and shunted with a 75 ohm receiver, we could actually hear a spark which was produced in the next room. Think of it. This was coming direct thru the wall between these adjoining rooms. Yes—then were the days when Marconi sent his first wireless message across the Atlantic and it was proclaimed the sixth wonder of the world.

Then let's wade back into that pond of hobby where time is no object and where the waves are represented by dots and dashes and before the glamour of a thousand HELLO'S were heard pounding into your ears and the voice of a worn out victrola was heard rumbling through the din, and when riding along in one of the old Hadisomont cable cars we would point out a tall smoke stack or a three-story building as the ideal spot for our aerial. Then we come to the days of that wonderful mineral which would actually collect these waves, transpose them into alternating current and produce a sound in the telephone receivers—and a certain Bill Jones, it was proclaimed, absolutely had a hunk of the best galena in town and was selling pieces one quarter inch square for one dollar, and how we would scamper over to Bill Jones' house to obtain this wonderful magnetic ore before his supply became exhausted, return home and sit up far into the wee hours of the morrow, just waiting to hear at least one station and go to bed happy and contented with our marvelous success. Yes, not only

the neighbors, but Uncle John and Aunt Mary knew that their nephew was a master electrician, and what a wonderfully smart boy he must be to be hearing signals that were coming thru nothing but space, and lord only knows from what distances. Occasionally we would wander over to Bill Jones' shed and put on a regular hamfest which would consist of wirelessly until about one A. M., beating it over to the nearest hash foundry (which was a good two miles) before it closed, and bring back a flock of hot sandwiches and several bottles of milk or maybe a big cream pie, and sit up 'till early morning chewing the fat—only to miss the last owl car and hoof it home in the snow. WHY? Wireless is the answer, those good ole wireless days, GONE BUT NEVER FORGOTTEN.

Oh, memoirs of old,
 Long will our hearts dwell
 For those good old days
 When wireless they do spell.
 And the happy hours we spent
 May they always unfold
 This old timer's dedication
 To memoirs of old.

(Continued from page 7.)

$$(2.303 \log, \frac{a}{c} = + 0.2235 - + 0.726).$$

Where 1 = high frequency inductance.

l_a = low frequency inductance.

n = number of turns.

a = may be determined by the formulae:

$$a = a_2 - (N-1) D$$

$$C = ND$$

See Fig. 6

For round wire the constants A and B may be found in Tables 11 and 12, on page 284 of Radio Instruments and Measurements.

At first thought it would appear that one could increase the signal-strength by increasing the number or size of turns, but as N A increases so does L, and so does \wedge as the square. A graph of the reception factor indicates a definite size of loop for reception of a given wave length.

After a great deal of experimenting the author found that the best all around loop for two-hundred meter reception was four feet square, with three turns spaced $\frac{3}{4}$ inch.

—A. W. Petersen.



Wonder why 9AAC went to Dodges.

There a new call in town 9BED, wonder if he uses a bed spring aerial, wonder if he ever goes there.

Wonder where 9KO got that banjo note.

Maybe Bill had more than grape juice at Petes, how about it Bill.

Wonder when 9EK will give us some real Scotch, you know the kind.

Dont listen in before calling 9EK or 9AAU, Goodbrelet doesn't.

CAN YOU IMAGINE—

9JQ on 200 meters.

Reading 9AAU's fist.

Some of our local QRM artists sleeping once in a while.

A 6 step amplifier like Bill spoke of.

A loop you can wrap on your arm and tune out squeak boxes.

9EK holding back his Scotch when talking to Canadian 3BP.

W. E. G. getting a license.

9JQ using low power for local.

Whats the trouble Don' run out of meters?

Where did 9SN get that pipe?

Will we be governed by 9AAU's Book of Knowledge?

(Continued from page 6.)

able to think, to do the right thing at the right time. They must be able to provide for every type of member, must make sacrifices for the welfare of the organization, they are chosen to serve.

All of these things are absolutely necessary and they will act as a beacon light, illuminating the way for a wonderful, unheard of future for the Radio Association of St. Louis.

SUBSCRIPTION BLANK.

Enclosed find \$ for years' Subscription to "THE HOT WIRE."

Make Checks Payable to A. W. PETERSEN.

NAME ADDRESS Business Manager

9DCP has a method for not burning our 50 Watt tubes, he keeps them on the shelf.

When will that CW set 9AZW won get working?

HI!

Whats wrong with 9AAU's fist.

How come H. C. Thompson don't know the code better than 3 per.

Howard May of 9FU renown, has a note that misses being synchronous by only 1 rpm. Kid Ravenscroft and said May cop the bakelite ground wire for their breakin system and dual control playlet, entitled, A dot for you, and a dash for me.

We are going to institute a "knock and Boost column" so hand in your ideas with no delay. (Not responsible for consequences. Ed.)

Who has a turn of their O.T. to spare? We need it for a head band for Charlie since he heard from Haytl. Was it Haytl, Mo., Charlie?

CONCERTS HEARD

University of Wisconsin Symphony Concert by Cincinnati Symphony Orchestra.

Western Radio Company, Kansas City, Mo. Victrola Concerts.

KDKA

Westinghouse Electric Co., East Pittsburgh, Pa.

A regular program every evening. Church service, time signals and news bulletins.

KYW

Westinghouse Electric Co., Chicago, Ill. Broadcasting Chicago Grand Opera, every night for ten weeks.

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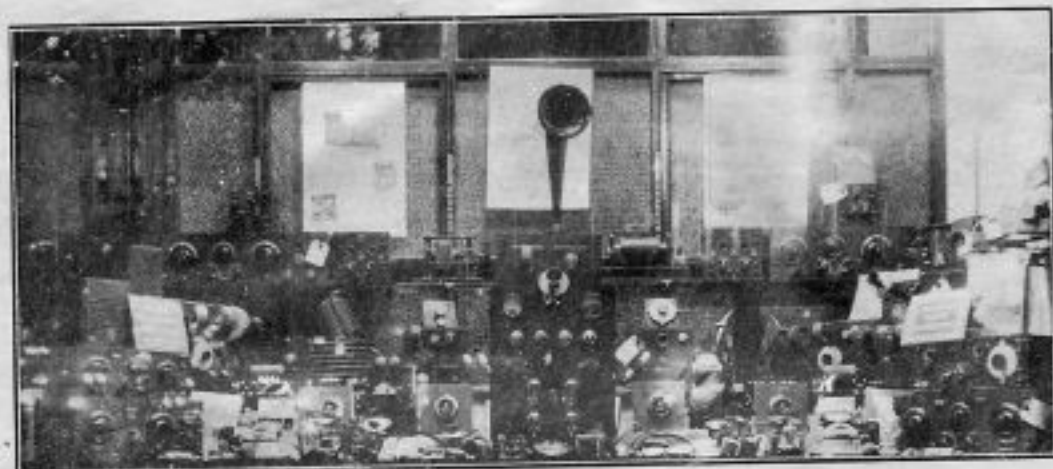
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Moulded Bakelite Variometers.....	\$6.00
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339 Detector Panel Moulded Bakelite.....	8.00
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UV712 Radiotron.....	7.00

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O- 100 Milliamps Flush Mtg.....	\$ 8.00
O- 250 Milliamps Flush Mtg.....	8.00
O- 500 Milliamps Flush Mtg.....	8.00
O- 15 Volts Panel Mtg. back-con.....	10.00
O- 500 Volt Meter.....	16.00
O-1000 Volt Meter.....	23.00
O-1500 Volt Meter.....	29.00
O-1, O-2, O-2 1/2, O-5, Thermo coupled Radiation Meter Flush Mtd.....	12.00

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No. 92 Remler Socket.....	\$ 1.50
No. 156 General Radio.....	1.50
No. 550 Murdock.....	1.00
No. R300 DeForest.....	1.60
De Forest Moulded Bakelite.....	1.40

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181 Coil (2 lbs.).....	\$ 7.50
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179 Filtr. (8 lbs.).....	16.00

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No. UV-291 Radiotron, amplifier.....	6.50
No. UV-292 Radiotron, 5W. power.....	8.00
No. UV-293 Radiotron, 50W. power.....	36.00
No. UV-294 Radiotron, 250W. power.....	110.00
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Moorhead VT Amplifier.....	6.50
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\$1.00 PER COIL 200 FEET AEROPLANE ANTENNA WIRE \$1.00 PER COIL 200 FEET
BRAIDED WIRE COMPOSED 16 STRANDS No. 30 BARE COPPER (1 LB.)

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