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Amateur Radio Forum

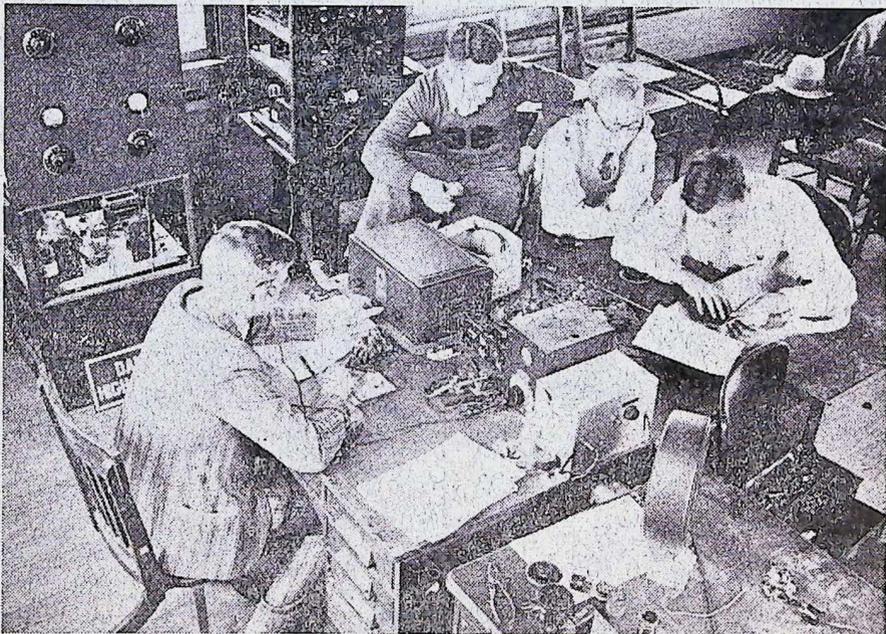
W4DMY

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OCTOBER—NOVEMBER, 1934

Number 9



AN ENGINEERING PROBLEM
Ham Radio in College, U. of I. — See page 3.

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AMATEUR RADIO FORUM

Published Monthly in the Interest of
Amateur Radio.

Owner and Editor—Clyde F. Wright.
ARRL-AROC
W9JIQ

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ADVERTISING RATES ON APPLICATION.

WITHOUT A DOUBT?

I've been trekking along with you folks now, nine long months. During that interval it has been my pleasure to "strutt my stuff"—meaning editorials. My efforts, in this connection, have been toward neutrality—in the factional League fuss.

The name I have established, however, has differed somewhat from its intent. I am charged with being "on the fence." Neutrality means—hands off.

"On the fence" means—double threat. Hi. When you have finished reading this editorial and other material elsewhere in this issue I hope that you feel that my position is entirely clear, and it has been decided, beyond a doubt, by the readers' reaction to current events and reflected in their correspondence. It is not by my choice.

From letter tabulation—received at ARF—what is desired? Well just this—a strict open Forum—within reason. Quite natural this request. Quite natural that it should be granted . . . if we hold to clean true fax.

Amateur Radio Forum lets down the bars! !

It has been charged—most grossly so—that the editor of ARF holds aloft the banner and fights the battle of the League.

This is rank injustice. I offer a defense, as any gentleman should, for that organization to which I belong. I do not, however, in past writings, or in future policy, hold true to the policies in total . . . come what may. I wish to appeal to the fair minded Amateur Radio citizenry for whatever justice those policies demand.

I do feel that our organization is somewhat short high power inspirational leadership; it's defined progressive plan is vague and a new stimulant is in need . . . it should be concocted and meted out immediately.

Dissension is prevalent and should be eliminated. There should be no dissenters. There should be no reason for dissention. We should immediately shoulder the full responsibility ourselves and provide the ultra-modern leadership—that inspiration and build up that co-operative spirit.

Something should be done to pull us out of the Radio doldrum in which we are mired.

We all desire a just peace.

We all desire a peace with honor.

None desire a peace at any price.

Amateur Radio Forum devotes its pages toward this end. —C. F. W.

W9OHR—E. E. Glenn, of Alda, Nebr., claiming Grand Island as a suburb of his home town. Will wonders never cease?

HAM RADIO IN COLLEGE

By Louis R. Huber
203 Journalism Bldg.
Iowa City, Iowa

AN ENGINEERING PROBLEM (Description of cover photo)

Rebuilding days at the University of Iowa amateur radio station makes study play for students in the department of electrical engineering.

This photograph was taken when the present radiophone transmitter was in the making, and shows Paul E. Griffith, left, working the c. w. transmitter while Robert Mitchell, Owen Williams and Marcus Sutton work on a circuit diagram. The present arrangement at W9YA-W910 is much the same as that shown in this picture, but with the premises tidied up after the muss of construction was ended.

W9YA-W910

Among the better amateur radiophones on the air will be found, on 3956 kc., one signing with the long and resounding identification of "This is W9YA, the short-wave experimental radio station of the electrical engineering department of the State University of Iowa in Iowa City, Iowa."

Quite a mouthful of a signature, but 18 university students—or at least those out of the 18 who have 75-meter, 'phone endorsements—learn to trip it lightly off their tongues ere the school year is long in progress.

Times were at the University of Iowa when amateur radio was not even noticed by the faculty, was given no encouragement whatever, and, as far as the future was concerned—well, there just seemed to be no future for it. But with the coming of Dean C. C. Williams of the College of Engineering, and Prof. E. B. Kurtz, head of the department of electrical engineering, amateur radio took a new lease on life at the University of Iowa, and continues in full swing with an active club, a shack, towers and everything supplied by the University, and a respectable complement of operators—many of whom have been attracted to this institution by the existence of the amateur station.

W9YA (an historical call, by the way, for 9YA were the call letters used back in the olden days when radiophone was an oddity and the University of Iowa was one of the first institutions in the country to install such equipment) is the call used for all 'phone work and, with a carrier of around 100 watts, perfect contact has been made with Hawaii, Mexico, and other distant spots.

W910 is the call used for all c. w. work, notably on 7,000 kc.

The nice thing about operation at W9YA-W910 is that it is strictly an amateur station, built, maintained and operated by amateurs enrolled in the University. Aside from a few rules pertaining to keys, behavior, etc., there are no restrictions on the use or purposes of the station. Nothing is exacted by the University because nothing need be—in other words, the University is "sold" on the idea that amateur radio in itself is so worthy an activity that it needs no surveillance and for this reason Mr. L. R. Potter, instructor in radio in the department of electrical engineering (and himself an amateur), finds his duties as overseer of "the west-side radio laboratory" extending chiefly to the issuance of pass keys to the shack door.

And this, my lads, is something more significant than you perhaps believe. For here is the fact of a great state university, seat of higher learning, not only giving sanction to, but supplying apparatus and housing for, and withal giving free rein to the development of, amateur radio, by the amateurs within its halls.

(See page 10)

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Rochelle Salt for the Ham — hi!

73 — W9HMD



COL. SPENCER RETURNS TO W9BNT AFTER EUROPEAN TRIP

Col. T. C. Spencer, 7th corps area, returns to his office after five thousand miles of travel in Europe—nearly a dozen countries. In an interview for one Omaha newspaper he stated: "One of the greatest joys of the trip was the radio. I couldn't understand the advertising, if any, and could concentrate on the music."

W9NTY is in the Methodist hospital with a wrenched back. He is doing nicely and many Radio Amateur visitors done much toward making time less irksome. When Dwight gets home he will have remote control and be on the air during the balance of his confinement.

W9PDP, A. F. Pickett, after quite some time on 40 mtrs. contemplates returning to the 89 mtr. band.

W9KVZ being the first ORS in Omaha has been questioned! ! !

W9KVZ is now OBS in Omaha.

W9PDG is in the movies now working for the Benson theatre.

W9HGV, Roy J. Shively, 5823 N. 42nd St., Omaha, Nebr., holds an operator's license dated July 19, 1913, and subsequent licenses down to date. His first license was number 69 in the 9th district. Can any of ARF readers go back further?

PIONEER DAZE

By P. H. Quinby, W9DXY
NCR—New Federal Bldg.
OMAHA, NEBR.

(Pioneer days in Omaha concluded from Sept. issue)

In this way signals were made on the sounder which would duplicate the keying at the transmitter. These signals were damped and untuned so a lot of energy was necessary to make the thing work even at slow speed.

Later on the auto-coherer came along. In this device the metal filings were replaced

with carbon granules. These automatically decohered themselves when the signal stopped and eliminated the necessity for the "doorbell." Then this device was again replaced with a real "detector" which consisted of two sharp-edged pieces of carbon or graphite mounted parallel and horizontal with a small sewing machine needle laid across them. The sounder was replaced with a telephone receiver, usually of the 75 ohm variety. These changes gave marked improvement in results and the range of the receiver increased to several hundred yards on a powerful signal.

Tuning coils were then brought into use on both transmitter and receiver. Someone heard of crystal detectors and sent away for some assorted samples. Among those most prized were silicon and perikon (the latter being a piece of copper pyrites imposed on a piece of either bornite or zinoite). Carbonyl and molybdenum were also used to a lesser extent because they were less sensitive and required a local battery circuit with a potentiometer. Silicon was the old reliable standby and gave way only after some good galena was imported and distributed among us.

Transmitters came in for large improvement. The induction coil was replaced with a transformer—or revamped to use an electrolytic interrupter. The spark gap enlarged and given cooling flanges. Glass plate condensers or leyden jars were cut in across the gap to "fatten" the spark and give it ample snap. Tuning inductances and later, oscillation transformers, were inserted in the circuit for tuning the local and aerial circuits. The rotary and quenched gap were introduced and higher efficiency was immediately apparent.

We have thus far concerned ourselves with equipment and materials. However, the personnel element entered into Pioneer Radio to a great extent. The ingenuity of the experimenter (or was it downright luck?) had much to do with the success of his radio operations. With a scarcity of texts and written material available, it was necessary for the experimenter to use his imagination and resourcefulness to make up for the lack of efficiency of his equipment. It was real pioneering. He was on his own! ! !

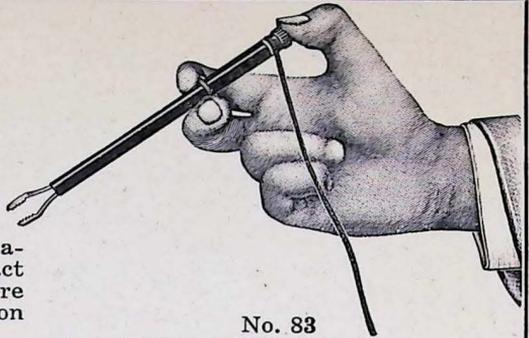
(Concluded in a near issue)

Honest! ! Claire Eckley, W9IFE, Tekamah, Nebr., was heard in the midst of a lengthy ragchew. This trafficker in the act of ragchewing! ! !

Thirty-four stations appearing on the same dial setting in one and one-half hours. In the center of the band! !

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.....Snappers at 50c each, postpaid.
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Address.....A.R.F.

NEW CLUB ORGANIZED— THE QSL CLUB NO DUES

F. J. Sherman, W9FOD, 1744 Newport Ave., Chicago, Ill., has, so reports W9DBO, organized a new club known as the QSL club.

One of the features of the club is, according to the report, the requirements of a QSL card. These must be sent, within 30 days after a QSO.

No membership dues. Send a few stamps to the above address and get information.

HAM-O-GRAPHS By W9DBO

W9MKS, Leslie E. Anderson, Granville, Ill., went to Chicago for class "A" exam.

W9IEP, C. B. Skeels, Lostant, Ill., has just completed new shack. C. B. is President of the Starved Rock Radio Club, sooo no doubt most of the members and others will have a hamfest therein.

W9OXA, Jack M. Jacobowitz, Streator, Ill., recently appointed NCS AARS. By the way Jack, not only punches brass, but is a football star this fall.

W9HB, H. M. McCormick, Streator, Ill., has gone down on 20. Harry used to work at WENR—taking care of the rigs a few years ago and also used to pound brass on a tub in the Great Lakes. Ask Harry for an ole timer's story.

The 6th Corps Area AARS is having a recruit contest. High score man will receive a \$66.



PREVARICATORS CLUB

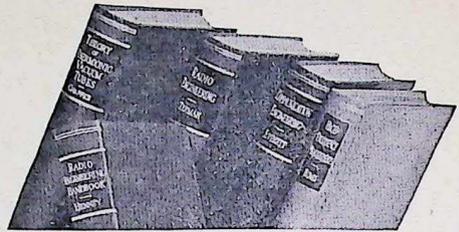
President—John Douglas, Tulsa, Okla.
First Vice-President—Frank Finger, Farnington, Ark.
Second Vice-President—Elmer Kleppin, Wenona, Ill.

Mr. Kleppin's Vivid Untruth

The other day, just shortly after dinner, I thought I would try out my 160 mtr. fone rig. Soooo I yelped out a few (honest) CQ's and then lissens. A funny voiced fella answered me. I cud not understand him. Thinking perhaps, it might be a fella who had lost his false teeth (maybe swallowed 'em) I being a gentleman gave him another opportunity. So I told him about what a bumper crop of sig he had but his mush talk was n'ix. He came back next time wid a buzzer set. Now who do you suppose it was? None other than ACS. Yes an AC 8. He gave me BC quality wid a QSA 5R7. We chewed the fat for an hour or so. I had to QRT

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on acct. of storm which was brewin' bad. So I quit this gazob and left the desk to ground my antenna. To my great surprise as I glanced out the winder the old sky wire already had a ground on it! ! ! I had talked to AC8 with a grounded ant. Yes siree! ! What sort of a rig you ask? Oh yes. 12A modulator, 12A ocs. and a 71A amp. with 180 volts on de plate.

I, W9DBO, do swear this is a vivid untruth. (The third vice-president of this organization will appear with his vivid untruth in the near future.—Edr.)

Anoka, Nebr., now has a new town slogan! ! ! Someone overheard this one "The Home of Hardwater and Beautiful School Marms."

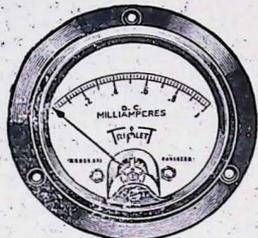
How about it, W9KQC?

W9SEE—Not a bad call at that! !

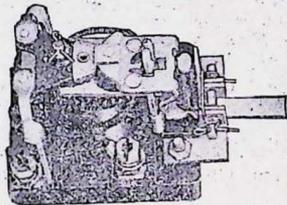
W9MHV back on the air at home.

MID-WEST CONFAB PRIZE LIST

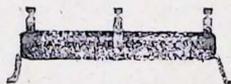
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A TRIPLETT (W9DI)
TRIPLETT INSTRUMENT CO.
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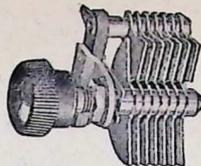
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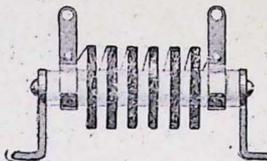
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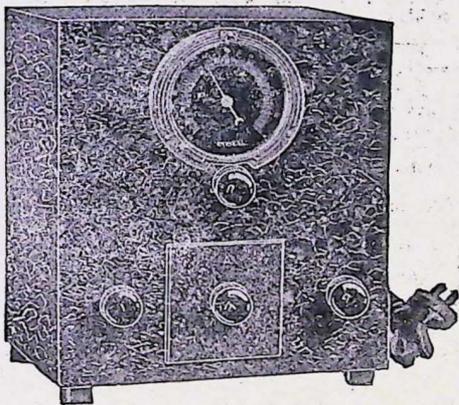
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THE PRIZE WINNER FOR THE LAST NUMBER OF AMATEUR RADIO FORUM! ! ! !

Here is the prize which Mr. Garfield L. Nien, New Virginia, Ia., won. Winning number, 4996. See the list of prizes for the next issue of ARF. Be sure and send in your number early. Watch next issue for list of winners.

Depression economy—4 and 2—four CQ's followed by two station "announcements" . . . looks like Fred Schnell's recommends in that Navy Bulletin have taken effect! ! Not to be confused, however, wid 3.2.

W9OER—Just o'er the riyer.

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Please send me your Free 1935 Catalog with the Radio Amateur Listing. Your Catalog

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WHEN THEY SAY QSP? DO YOU HAFTA QRT?

By Evelyn Fish, W9RIV,
Marathon, Iowa.

Some do and some won't—QSP. And it's after I do that I get ahold of some who won't.

But the argument goes on as to whether message handling or rag chewing do the most toward the preservation of the hobby. I assure you I'm strictly neutral but like all neutrals I have ideas on the subject.

One time a certain feller told me ftc handling would be no trick at all if there weren't so many lids on the air. That was when I had just been on a few weeks and I wasn't any too handy on the qsa's and r's, not to mention T's, and I quavered at the thought of a message. Although not told that because I had refused a message I took it as a suggestion, and decided I'd be a good ham even tho I was a yf.

When I rag chew I take things easy, crochet on a rag rug, read a book, or eat a Hershey bar, BUT when I say ok qsp I drop everything, grab a pencil, lean over the table and stare intently at the receiver, bite my lower lip, and curl my toes up tight. When I get the thing complete I pin it up on the wall so I have to see it every time I step in the shack. Every time I want to grab off a good CQ I see that message on the wall and sigh, look up in the call book and find out he's way off the wrong direction or if he happens to be the one I'm looking for. I can't hook him. But I can't have any fun until I get that message off the wall, so I do it as soon as possible some way or another. Then I draw a long breath and boost the light bill with a two-hour rag chew and I do love a good qso!

Even so, I'm glad to qsp. And I think everyone should be, to a certain extent, because to handle a message is to be of service, and even a hobby service is strength.

Then, too, I sieze upon this when, after I have tried to explain short wave to someone, she says, "But what is it for? Do you just send code to someone I don't see any point to it." "Oh! No!" I exclaim. "We send Radio Telegrams for anyone who wants to

Now, say, if you have a sister living in California, I can Then she breaks in, "No, but my Aunt Sarah lives in Dan Diego. How would you send a message to her? I know she doesn't have one of these things?"

But it gives me a talking point. They can finally get the radio telegram through their heads where they never would under-



Please RUSH the New Yaxley Replacement Volume Control Manual to me—Free of Charge.

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oscillator within a rigid metal shield, build its coil and tuning condenser from ruggedness itself, and couple it through a very small capacity to a fixed detector tube providing constant load. The headset is then coupled to the plate of this detector through a series capacity and changes in load due to plugging in the phones is remote from the oscillator and will not affect its calibration. Thus the only variable left on the oscillator circuit is the tuning capacity and changes in line voltage. By properly balancing the cathode tap on the tuning coil between grid and ground, and choosing the proper L/C ratio in the tuned circuit, we can obtain an adjustment which will permit a wide variation in line voltage without any appreciable change in frequency or calibration. Thus we have eliminated every variable which will affect the frequency, except the condenser we use to tune it with.

The tuning condenser should be of the SLF type, and should be shunted by a fixed capacity of proper size to give the band spread we desire. This shunt capacity can be built right into the variable condenser by reversing some of the plates, providing the motor will move through 360 degrees. A condenser having a minimum of 100 uufd and a maximum of 170 uufd will have a tuning range of 1000 kilocycles in the 3500 band, double that in the 7000 band, etc. This makes a very convenient range and one that will plot up very accurately on the calibration chart. The beauty of having straight line frequency condenser is in getting a straight line for the calibration curve, which makes for convenience and greater accuracy, and is easy to check.

The circuit is simplicity itself and is shown in the diagram together with all the necessary circuit constants. A 58 tube may be used in place of the 24A, a 27 in place of the 56, and an 80 in place of the 82 if desired. The pilot light is not necessary, but is convenient if you are forgetful and go off to bed leaving the monitor turned on. The wiring in the 24A grid and cathode circuit must be heavy and rigid. Grounds should all come to a common point and be as short as possible. Ground the case but do not depend on it as a ground connection. Give the coil and tuning condenser plenty of room, and you may crowd the balance of the parts as much as desired for compactness. Build a STRONG CASE that will stand a lot of knocking about. One made of 16 gauge sheet steel will repay you for the trouble of cutting and drilling and costs little. Don't use a tomato can.

Once built, it is easily calibrated with broadcast station harmonics, standard frequency transmissions, etc. Warm it up well before calibrating or using for accurate measurements. Ten minutes will put it on frequency, and after thirty minutes it won't vary a red hair for days of continuous operation.

When used in conjunction with a receiver, the headset and detector are not required. Use the beat on the receiver. But when used with a transmitter, plug in the headset and listen to your note as your friend in the next state is getting it. When used in the station, a SPDT switch is convenient to throw the headset to the receiver when listening and to the monitor when transmitting. It is much easier on the nerves than listening to your sending in the receiver.

Then when your schedule says to meet him at 8PX on 3792.5 KC next Tuesday, your Monitor will set your receiver on frequency, and at 8PX here he comes without moving a dial. After you have used it awhile, it ceases to be a mere convenience and becomes an absolute necessity in your station. Don't pass another winter without one.

(Continued from page 3)

Here is another! ! !

BUILT FOR SERVICE

(See Photo on Page 15)

(W9GND)

A station that is not "prettied up" but which delivers the highest sort of quality in output. The transmitter, at left, has its own self-controlled power supply, as has the speech amplifier (upper center) which is used also for public address work.

The receiver (lower center) produced signals of such terrific volume that the Farrand inductor-dynamic speaker (upper right) shows the strain in the form of a patch diaphragm.

Something different, something better, and usually something new, characterizes the output of W9GND of Iowa City. And one may search high and low for the answer—look into the station if you will, follow the circuit from the 110-volt mains through the set, up the lead-in and out to the ends of the aerial—noting particularly startling in appearances will reveal the secret.

But consider that the operator, Elwin J. O'Brien—"Oby"—to his friends—is a graduate student in electrical engineering at the University of Iowa, that he has several years' experience with Western Electric in Chicago, and the reason for the extra-high quality of W9GND's modulation is apparent.

Because O'Brien is an engineer from the bottom up. Ohms and microfarads are his bedfellows. He is "chummy" with decibels, hob-nobs with logarithms and stays up nights when any sort of impedance bothers him. If there is anything to be "got" out of a pair of '45's, O'Brien will get it.

A glance at his layout—'47 oscillator, '46 buffer, and a pair of parallel '45's in the final amplifier, 70 watts input with 650 volts on the plates; modulator consisting of a pair of '46's Class B driven by a pair of '45's push-pull, a '56 and a '57 taking the speech from a 387-W W. E. double-button microphone—all this is customary practice and the slight edge of W9GND over the rest of them is simply explained by the owner's excellent training.

An unique feature of W9GND is the speech amplifier (to left of loudspeaker in picture), which is used on occasion for public address work, being compact and plentifully powerful for such purposes.

The only possible flaw one might find in W9GND is this—the fact that O'Brien has proceeded exactly backwards compared to the customary evolution of the genus ham. He knew his reactances and micromhos long before he had pumped the handle of a key, and he is thus just a wee bit rusty on Continental Morse—being thoroughly able, of course, to pass all amateur code exam requirements.

No lofty theorist, however, is Mr. O'Brien. Your pedantic dissertations and professional postulates have little place in his scheme of things. His touchstone is "Will it work—and if it will, why don't we use it?"

It was this attitude that prompted him to move daily from his usual place in the 75-meter band to the 160-meter territory, and there to hold a schedule at the bright hour of 6 a. m. with a station in a neighboring state. And it was this spirit which caused him to connect the desk telephone set (see right side of picture) through proper impedance-matching transformers to the speech amplifier, and to connect likewise the output of his receiver to the telephone line so that two-way remote control operation is provided—a handy thing to have on many occasions.

(Another story by Mr. Huber in a near issue)

OPEN FORUM THE SOAP BOX

Leonard Collett
304 Nebraska Street, Sioux City, Iowa
W9DEA

The Forum's Editor has been kind enough to give this commentator advance information on the new policy of his splendid paper and it is with a great deal of gratification that I witness this change. His decision comes in recognition of comment received and of how important a thorough discussion of our perplexities are. Amateur Radio needs a Forum.

Let us use it intelligently to acquaint ourselves with other individual opinions and in this manner become more conversant of our own difficulties. Let us employ this Forum as a means of better qualifying our ARRL vote for our Directors. In short, we should wait no longer in becoming familiar with the politics of our own enterprise.

That there is a growing need, I personally believe, for a distinct betterment in the understanding between the two factions that have long ranged over—"what is best for the Amateur and his ART"—has long been apparent to the intelligentsia of Hamdom. The bewildered amateur, with challenges, charges, denials and contradictions ringing in his ears, knows only that it is all confusing to him and settles upon the opinion that it don't matter to him which way the wind blows. In the contemporary radio papers he reads many accounts which purport to enlighten him, which it is quite apparent, fall short of their objective. The amateur is still in the dark. With the advent of the Forum's new policy, I hope this will be changed. Whether this will be the case depends upon you readers.

Everyone errs, for it is human to do so. The executives of the League, in their defense of the methods they employ, have made statements to the effect that the critics of their actions were motivated by a sense of jealous greed. (QST Editorial May '34) Moreover, they have dubbed these critics "enemies of amateur radio." (Maxim's speech to the Iowa 1934 convention) All this and much more does not correct the condition that must have brought about this veritable deluge of oburgation.

The application of some fair and open minded thinking may convince one that League officials cannot always be right and the alleged "radicals" always wrong. There is probably a great deal of right on both sides. But the amateur has a time trying to figure which side is right, with both his loyalty and his common sense telling him conflicting stories. But for amateurs to ignore these controversies with an attitude of nonchalant indifference could only be described as mere suicide.

Perhaps it will occur to the reader that even though he manifests an interest in these argumentative conflicts; just what can he do about it? Briefly this. Weigh with common sense and fair minded judgment the comments on both sides, keeping in mind that a charge ignored by either side is generally a charge that hit the bulls-eye. Come to a determined conviction and use your vote where you think the most can be accomplished. If you haven't a vote because you are not a League member, then join at once so that you may have a voice in what affects your hobby.

ARRL has long taken the position, apparently, of representing the amateurs domestically as well as abroad. While it has carried, of its own accord, the burden of representation, its membership list carries a low percentage of licensed amateurs. This means that a large percentage of the present members do not possess a license. And no

amount of eye-brow lifting will alter this fact.

It is imperative that the amateur act in his own behalf by seeing that the one organization which claims the title of "the amateur's voice" becomes 100 per cent amateur in purpose, accomplishment and membership. We repeat that as long as the League is composed of a small percentage of license holders, the future and welfare of the amateur will remain in jeopardy, his conditions become more intolerable and his meagre rights dwindle to a pitiful few kilocycles on 56 MC.

This is no idle prophecy but the only ultimate outcome unless we equip ourselves with a fighting organization as good or better than those who have always sought the elimination of the amateur.

The Soap Box, long a feature of The Amateur Radio Review, has transferred its activities to the Forum because its author felt that the Box's purposes could be better accomplished on account of the wider Mid-West circulation of the latter. The Soap Box intends to create more interest in League policies and try to bring about the ultimate election of a progressive and independent Director for this Division. Moreover the Soap Box will strive to advance the interests of the League for it feels that the ideals upon which this fraternity was founded are fundamentally right.

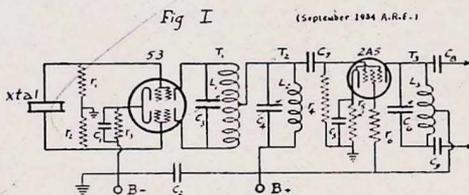
The Soap Box feels that no one man is bigger than amateur radio, and prefers to worship the high ideals of thorough amateurism, unstinted, rather than the erection of tin gods who have adroitly placed themselves above the noble traditions of the Art.

The general conduct of our National government is influenced by the power and editorial righteousness of the press, and the freedom of the press is our traditional birthright. Employing this in our hobby will in time eliminate the unsavory conditions that have long existed. Until recently no magazine took the field in defense of the critics who have tried to lead the League back on the amateurs' side.

—W9DEA.

A PRACTICAL TWENTY-METER RIG

By J. H. Deming, W9JI
Washington University, St. Louis, Mo.
(Continued from Sept. issue)



wise. Of course there are certain things in any junk box that deserve to stay there, particularly when twenty meters is the goal, but a little rummaging around will generally bring forth a twenty-three (more or less) plate midget for C(3) and one, half its size for C(4).

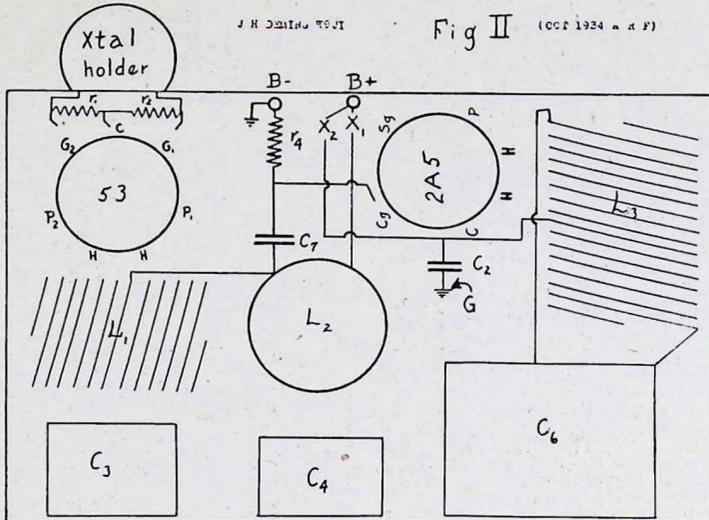
C(6) can be one of the double spaced midgets, or a revamped receiving condenser. The only condition being that C(6) be about the same capacitance as C(4), but able to withstand higher R.F. voltages.

Since definite makes and values of condensers are not specified, it is impossible to give exact coil data, but a little scouting around the present rig, counting turns, plus some good guessing, plus some cut an try

the plate voltage does not exceed 400 volts, R(3) and C(1) may be omitted, the cathode of the 53 tube being bonded directly to ground. The meters or plug in jacks should be placed at the positions X(1) and X(2) shown in figure II. The current in either of the tubes should be between 50 and 75 mills., depending, of course on how hot you have nerve enough to operate the plates of the tubes.

To line up the exciter, proceed as follows:

Tune C(3) in th normal manner for a crystal stage, that is, for minimum plate current. Next, observing the plate current to the 2A5, tune C(4) for maximum plate current in that amplifier stage. Now, we are ready to tune C(6) for minimum plate



will yield the correct results on the new Rig. Now, for a few hints about the actual construction of these coils. In the first place, do not buy forms to wind them on. Air is the best and cheapest coil form, so wind the coils on one of these removable cylinders, using celluloid splints and Duco Household Cement to support the turns. Don't use too many splints, however; just enough to make the coil self supporting, will do. If you don't know this method of coil construction, go through some back issues of Ham magazines, or ask a fellow Ham. (Author's Note: The editor says that coil winding is not a lost art and, besides this all costs him money, so shut up and on with the story.)

In spite of this rude interruption I shall say one more thing about coils. Make L(1) all one coil tapped at the center. Do not make it two coils with the junction going to the center tap. You will lose harmonic output seriously if there is separation between the two halves of the coil. Try it and see for yourself.

Now for a few other things. In the first place it is well to remember what things can be grounded and what cannot. The variable condensers should be insulated from the chassis, of course. Since we have a push-pull crystal oscillator, both sides of the holder will be hot with R. F., so do not ground one side. It is a good thing to have all ground returns coming to a common point, such as the point marked G in Figure II. This is not essential, but it sometimes adds stability to a circuit.

Now, we might consider a few miscellaneous things. If good tubes are used, and

current in the final stage. A wave meter should be used to make sure that the right harmonic is tuned in on L(2) C(4), since there will always be a strong second harmonic which may be tuned in, and even a possible weak third harmonic, if there is some unbalance in the crystal stage. For twenty meter operation, we want the fourth harmonic, of course, when the usual eighty meter crystal is used.

Below are the values of resistance, capacities, etc.

- r(1), r(2), r(4) 50,000 ohms
- r(5) 2,000 ohms
- r(6) 20,000 ohms
- C(2), C(5), C(7), C(8), C(9)001 mfd.

For all other values, see the article. —J.H.D.

MID-WEST TRAFFIKER'S REPORT OF STAX 1934

Nebraska leads the Mid-West Division in traffic handled per station with an average of 157; Kansas in the total number of messages handled. Missouri in the number of stations participating and Iowa is a fair third in the average per station.

With a total compilation of 99,135 messages handled during the first ten months of this year—an average per state of 29,567 for the period, Kansas stands way out in front. This remarkable showing is no doubt due in most part to W9KG and W9NI—very active stations for a great part of the period.

The showing of Missouri is quite re-

markable (ranking fourth in average number per station) when one considers the large number of stations involved—some handling only one or two per month.

Missouri had over 40 per cent of participating stations on their list still they handled nearly 28 per cent of the traffic . . . three per cent more than their quarter.

Kansas had 25.7 per cent of stations on their list but yet handled better than 36 per cent of total traffic.

How will these comparisons "stack up" for the year?

Key to table below:

- 1—Consolidated total this year to date
- 2—Number of stations participating.
- 3—Average number handled per station
- 4—Average number handled per month.

	1	2	3	4
Iowa	12,669	155	81	1,266
Kansas	35,795	230	155	3,579
Missouri	27,521	361	76	2,752
Nebraska	23,159	147	157	2,315

Topnotchers:

Iowa—ICX, ABE, LEZ, FYC, DRK, ACL.
 Kansas—KG, NMR, IOL, FLG, IQI, IEL,
 BYM, MUY, NI.

Missouri—BMA, MZD, NP, IXO, CJR,
 JWJ.

Nebraska—IFE, DMY, DFF, FGS, FYP,
 F'WW, RUJ.

THIS QSO BUSINESS

By W. H. "Bill" Graham

(Editor's Note: Bill Graham, W9BNC, is one of the feature writers of the Omaha World-Herald. He continues herewith his comments on "This QSO business." The first of this series began in September Amateur Radio Forum.)

My log book looks like something the cat dragged in. It has frazzled pages, splashes of ink here and there and great thumb prints on the cover that Sherlock Holmes could see with the naked eye. Some day when I'm flat on my back, ill in bed, I'm going to read that old book through and live again the hundreds of pleasant chats and contacts on the air it will recall.

For the purposes of this article, I'm just glancing down a page here and one there. Page one tells me I snagged my first 6. Hot diggedy dang! He signs W6EKS in Long Beach, Calif. Right underneath is W4JO's log, from Miami, Fla. He was working all states in 30 minutes. Would I QSO, cul vy 73s diddle de dah de dah! ! ! There ought to be a law against those guys.

Down in the middle of the page W (? ? ?) deleted for self protection . . . looms up like a sore thumb as "a lid . . . whooie." and then W9CAT, Detroit, Mich., unloads a message. Got even with him, however, by giving him two right back, even if I did have to do some fast thinking! !

W2CPG makes the last entry on the page with a wobbly signal from New York City but it was snowing here and the wind was blowing cats and dogs, so what the hell.

VE2AW, good old Hugh Glassford of Wier, Quebec, who always reminds me of that "orsses oofs" poem they recite about the bloomers' Britishers then sticks out his ethereal fist and says "Howdy!" It is a lasting friendship, good to this day, and if it's the final thing I ever do, I intend to accept Hugh's invitation, go up and hunt ducks with him. Hello, Hugh, you old son-of-a-gun, if you see this. I'm still working on that 20 meter rig. Don't laff! ! !

Now comes "Pop"—W9ZD, of Kansas City, who boasts of 57 years. Remember that QSO, Pop? Pop swings a mean fist and I look to renewing this friendship with him

again some day before "Pop's" whiskers get too long and tangle up in the bug.

(Continued in a later issue)

ARF PRIZE — FOR THIS ISSUE HOW! ?

At the end of this column, (also in other numbers of Amateur Radio Forum) you will find a number. Paste that number on a postcard, giving your name and address and call (if any) and mail to:

PRIZE
AMATEUR RADIO FORUM
FLORENCE STATION
OMAHA, NEBR.

Then: Watch for the announcement of the winner in the following issue.

QUESTION:

If I don't win what becomes of my number?

ANSWER:

Your number, if you are not a winner, is left in the raffle box—you may win later.

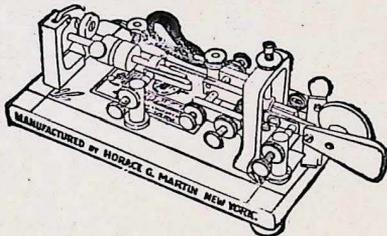
QUESTION:

Are sample copy numbers acceptable?

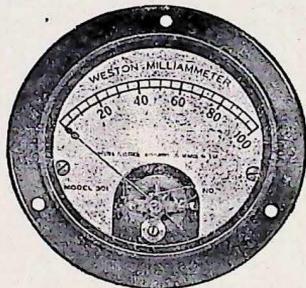
ANSWER:

Yes—if you win though we expect you to get on the subscription list so be prepared to dig down in your jeans and \$1.00 will put you on the subscription list.

THIS MONTH'S PRIZE LIST.



One Martin Jr. \$10.00 as pictured.



One Weston 301 MA-DC Scale 0-300 Ma.



REPAIR SERVICE

W9HUZ, Henry VanVoorst, 2228 Olive St., St. Louis, Mo., we regret to report, has lost the use of his right arm, temporarily, through a bad infection.

W9ASV's new shack, it is reported by W9CMV, will house a neatly arranged halloween and house warming party. And instructions read "no admittance without costume and mask." Where? C. E. Perry, Route 3, Joplin, Mo.

W9HYS on at 8 AM!!

W9SKT—Another active station.

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MR. "BUG" ARTIST! ! DO YOU NEED

Repairs for your bug? Do you need any new parts? How about those points—dash contact; dot contact or thumb screw contacts? Can renew your points or furnish new ones—quite reasonable. Have a few second hand bugs in good order will trade or sell. Have you one to sell? Also trade? Let me quote you price on new or second hand bugs before you purchase. Let me quote you price on your standard machine before you sell it. Lets hear from you. Will swap radio parts too! !

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the chassis, of course. Since we have push-pull crystal oscillator, both sides of the holder will be hot with R. F., so do not ground one side. It is a good thing to have all ground returns coming to a common point, such as the point marked G in Figure II. This is not essential, but it sometimes adds stability to a circuit.

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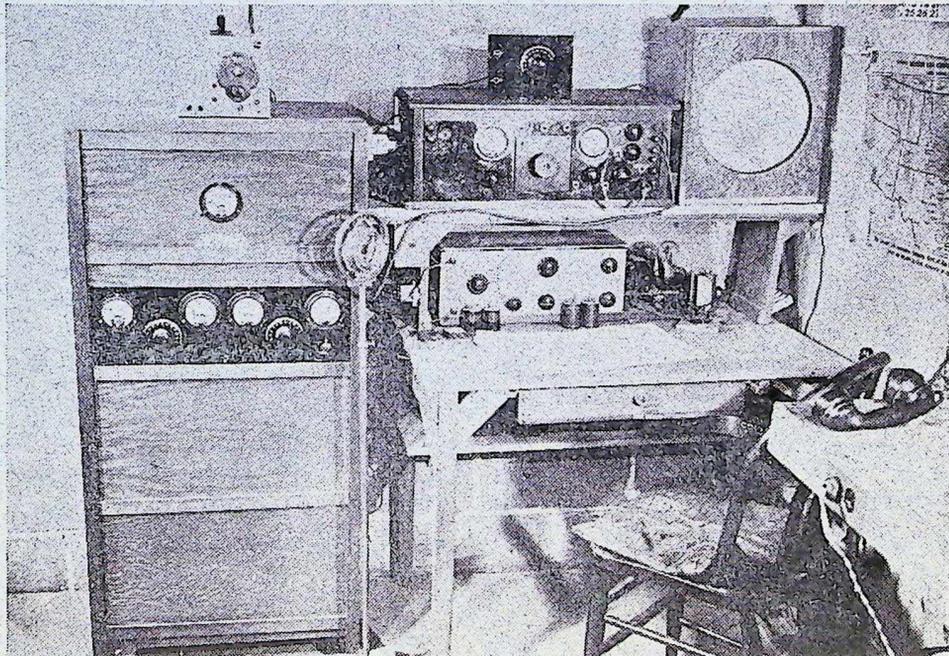


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As Low As Quality Will Permit

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at 5c each—25 for \$1.00

By-Pass Condensers
.01, .02, .004, .006, .002, 400-
600 V., 7c each
.1 —200 V., 10c ea.
.1 —400 V., 13c ea.
.1 —600 V., 15c ea.
.25—400 V., 17c ea.
.5 —400 V., 19c ea.

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Sizes 1,000 to 1 meg, 50c ea.
Exceptional quality

Power Transformers
For 4-5 tube Midget Receivers
or low power transmitters, \$1.20!

Hookup Wire
Solid or Stranded, 25 feet, 15c

Electrolytic Condensers
1 mf. 500 V., 30c
2 mf. 500 V., 35c
4 mf. 500 V., 40c
8 mf. 500 V., 44c
4-4 500 V., 65c
8-8 500 V., 75c
8-3 or 7-4 round
500 V., 95c

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Large Assortment and Makes
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luth, Minn.
Bealey, Donald A., W9IEH, Walnut St. Mor-
rill, Kas.
Barber, John, W1AVE, 241 Lake Ave. Green-
wich, Tenn.
Bolen, Lee, W6UP, Olive View, San Fernando,
Calif.
Eradley, Robert, W8HB, 18 Franklin Ave.,
Saranac Lake, N. Y.
Bock, Francis, W9AMI, 857 S Marietta, South
Bend, Ind.
Bretlinger, Wm. E., W9NTP, 1625 So Elev-
enth St., Terre Haute, Ind.
Brooks, Harold, RFD 2, Pleasant Lake, Ind.
Burt, Fred, Truro, Iowa.
Colpus, Walter, W8BRS, 23 Henderson St.,
Pontiac, Mich.
Corkwell, Orley J., W8IAL, Bx 112, Conti-
nental, Ohio.
Dobbs, M. R., Sterling, Colo.
Drews, Rudy, W8DSQ, 1413 Sheridan St.,
Lansing, Mich.
Deming, J. H., W9JI, Physics Dept., Wash-
ington Univ., St. Louis, Mo.
Erickson, Herb, Sioux Falls, So. Dak.
Estes, Charles, W9FYM, 111 S Jackson St.,
Brunswick, Mo.

(Continued next issue)

E. R. C.—NEWS

Having just returned from Memphis,
Tenn., not a great bit of news for this issue.
Gathering what I can and getting into the
harness again. We are holding a hamfest
here and expect to have a good gathering--
the last of this month. Please be referred
to Podunk News next issue with Mr. Lane
Eldred's (W9SG) picture and story. He is
our candidate for Central Division Director
—is president of BRC. 73—Pluff W9FYZ.
East St. Louis, Ill.

SIBLEY, IOWA

Link, Rober, W9SKM, new station in this
man's town.

BURLINGTON, WIS.

Peck, Harold J. W9HTZ, Burlington,
Wis., editor of QRZ will be heard through
these columns now. He has joined ARF
through the exchange of monthlies.

GRAND ISLAND, NEBR.

Considerable activity being shown at
Grand Island. W9RKF by the time this issue
is out will be on the air. Sanders, with
several other live wires, is organization
minded and before long another good radio
club will be in full swing.

RAVENNA, NEBR.

Fred Thomas, W9GKZ, Ravenna, Nebr.,
received a New Zealand QSL! Misdirected,
it came to Omaha and reached its destination
through the courtesy of W9KVZ who had a
good look at it. Tell us about those many
foreign contacts, Fred—please.

JOSH GOSH SAYINGS!

DON'T WORRI!

AXIMS

A group on the street corner, and where,
and time—can usually solve problems of
great import that have had statesmen and
greatest lawyers in the world buffaloed! !

In this age, in which the home is rudely
invaded by the world . . . I want to make
mine a place of repose, a quiet sanctuary—
a meeting place of friends—a place in which
the family can come back and renew their
youth. Whoever wrote that knew little about
radio amateur problems of the home. Should
he not have said: In this age, in which the
home is rudely noised up by disinterested
parties . . . I want mine to be a place
of quiet, an inhaler of QSO's—a place in
which the hams can come back for more
swaps and replenish their stocks?!?!?! Oh
Yeah.