

AMATEUR RADIO

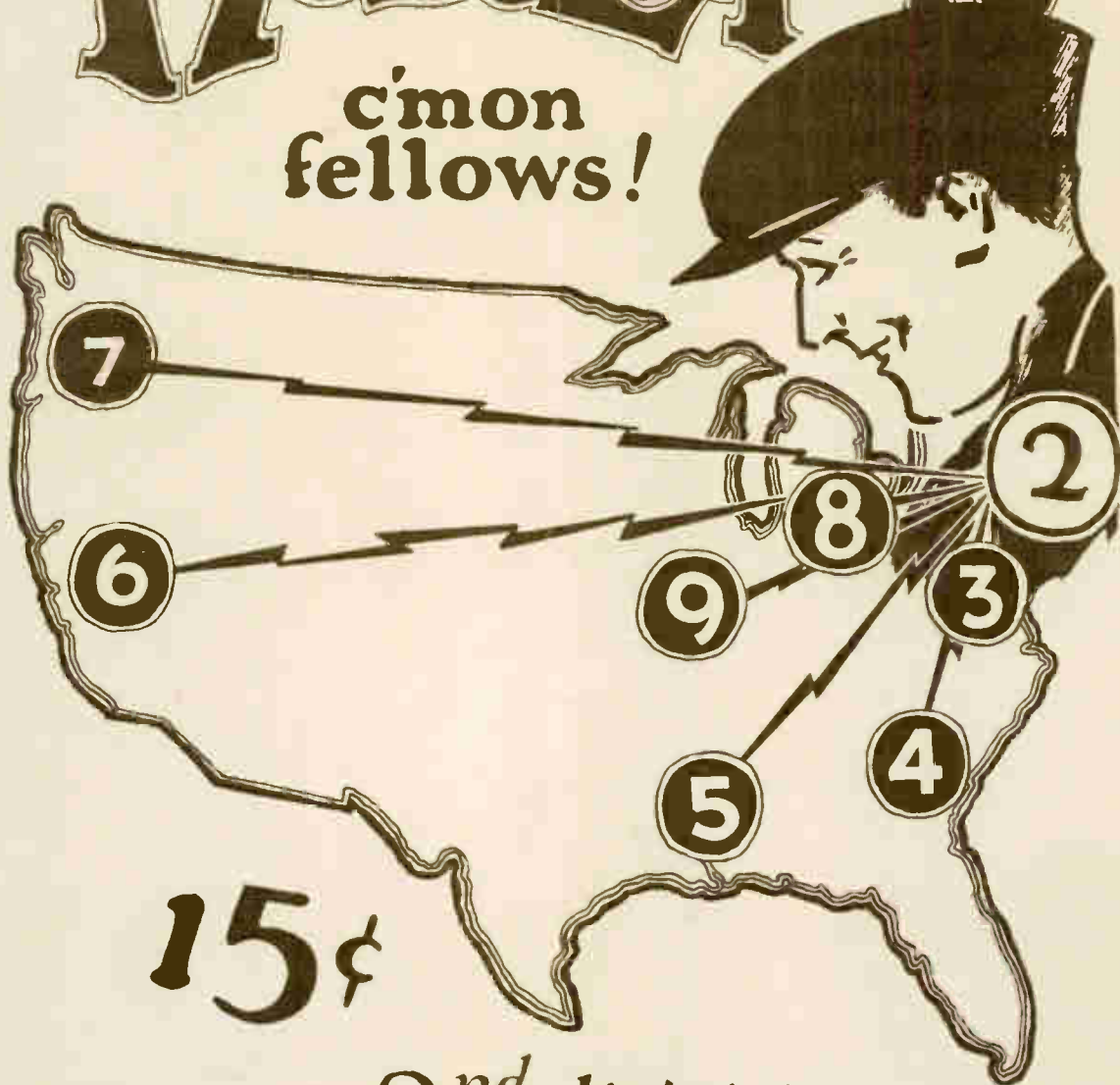
The

MARCH

1923

MODULATOR

c'mon fellows!



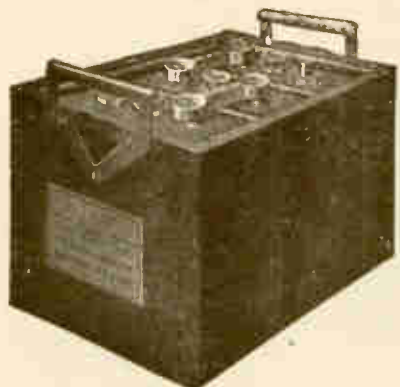
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2nd district

CONVENTION NUMBER

Executive Radio Council of the Second District

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161

THE MODULATOR

THE REAL AMATEUR RADIO MAGAZINE

Official Organ of the Executive Radio Council, 2nd District, Incorporated

Volume 2

for MARCH, 1923

Number 6

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THE MODULATOR

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EDITORIAL

OWING to the chaotic state in which amateur radio transmission is, at the present time, it has been suggested that a few real relay stations get together and transmit on a short wave length. By a short wave length is meant, 170 meters or thereabout, and we would like to know what the rest of you think of the matter.

Naturally 180 meters cannot be used for this work because of the interference from broadcasting stations, whose harmonics usually fall on this wave. However 170 meters would be above the naval fleet intercommunication range and below these broadcasting harmonics and would be very fine for relay work.

Now for some real dope on the matter, and who are going to be the first stations to take the matter up? Naturally there will be difficulties arising in the receiver, and there will also be some job in getting the wave of the transmitter down to the proper length. As a suggestion a flat top aerial possibly fifty feet long with a fan lead in forming a T aerial would do considerable in the way of wave reduction, but there should also have to be a T counterpoise to bring the wave down still further. Some experiments have been carried on, along these lines already and it has been found that while the radiation drops off considerably, surprising results will be apparent from the fact that the wave is so short that it is well below the QRM point of most amateur transmission.

Now here is the real point of the matter. Amateur transmission comes to a complete standstill from seven in the evening until ten thirty. Why? Simply because most of the fellows are a little above the legal wave length, or so close to the broadcast receiver that he naturally kicks when the dots and dashes start to float in. Now, if we can get a few good relay stations handling traffic on a wave that goes below the range of the average receiver, there will be practically very little interference and the traffic work may go on all of the evening. It will also relieve the congestion on 200 meters considerably and make it possible for more stations to operate on that wave or below it.

Now how about a little experimenting, fellows? Have you tried anything in the way of receiving very short waves and how did you do it? What method did you find to be the best? Have you done any transmitting on short waves? How do you do it? What circuits did you find the most efficient? If you have any data on these things write them in to us. Here is a chance for the Second District to start something really worth while, and incidentally move more traffic. A dozen CW stations on 170 meters will be able to work right through almost anything, without QRMeing or without being QRMed by anything.

Some of you fellows who are handling traffic regularly, might get up some sort of a schedule with some other station and try out some experiments. Let us know the results, we will give it all the space available, for here lies the solution of the interference problem, and incidentally there will be a certain amount of secrecy. Of course 170 meters will never do for a CQ hound because there is a possibility that no one will ever hear him.

Arrangements are already under way with 2NP, 2UA and 2KK for a series of experiments on this wave and we hope, before long to present to you the results. Don't wait for the other fellow to do it all, though, get busy and try it out among yourselves. Another advantage that this wave has is the fact that your station will be within its legal limits and any complaints, if there are any, will be scrapped. If a broadcast receiver cannot separate 360 from 170 meters, the receiver had better be thrown out, because there is certainly something wrong with it.

Here is a chance once more to put the second district in the lead, by having the first working relay route on a wave that permits transmission all during the broadcasting periods. Incidentally think of the increase in traffic that may be handled.

The Counsel will be glad to work with you in any way possible in the matter. Wherever possible a list of these short wave stations will be published so that you may have the data as to just who is doing the work; and also with whom you may arrange schedules.

Suggestions for short wave receivers, with all of the necessary constants will be welcome, together with data on just how the transmitter was brought down, the aerial and so on. If your hands itch for the key during the hours of the early evening, get busy on the suggestion so that you may transmit at any time, as in the good old days.

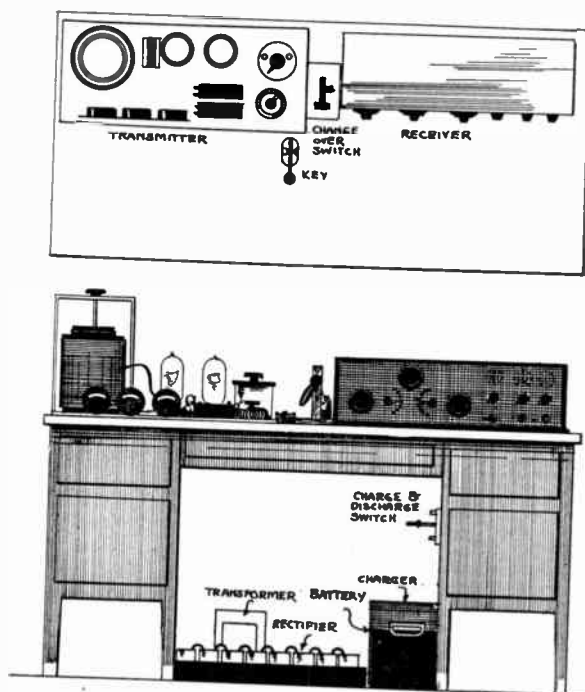
Step up now, who are going to be the first to work it out successfully!

Construction of a Good Relay Station

Part 2

IN THE last issue of The Modulator, in the first of this series of articles, there appeared a description of a suggested receiving set for a good relay station. In this article, the transmitting set will be taken up in great detail, and it has been decided that the 1DH or sure fire circuit is best adopted for a good transmitter.

stations are using edgewise wound ribbon for this purpose, but some operators claim that this type ribbon will give a very high capacity and it is advised therefore, to use heavy wire for the purpose. L-2, the grid coil, is made up of fifteen turns of wire on a tube, a little smaller than L-1. It is placed in the bottom of the main inductance,



Plan and Elevation of the Completed Set

This transmitter is comparatively easy to make and will work after a fashion with the least adjustment. However, if it is carefully adjusted, and a suitable aerial and counterpoise is used, good results will be obtained. The circuit may be used with either 5 watt and 50 watt tubes, but it is suggested that if 50 watt tubes are used, then a 500 cycle generator would be the ideal combination, and would undoubtedly carry further and be easier to read on account of the fact that the note would be distinctive.

By referring to figure 1, it will be seen that L1 is the main inductance and consists of 25 turns of large wire or copper ribbon. This inductance should be well insulated and five or six inches in diameter. A great many C. W.

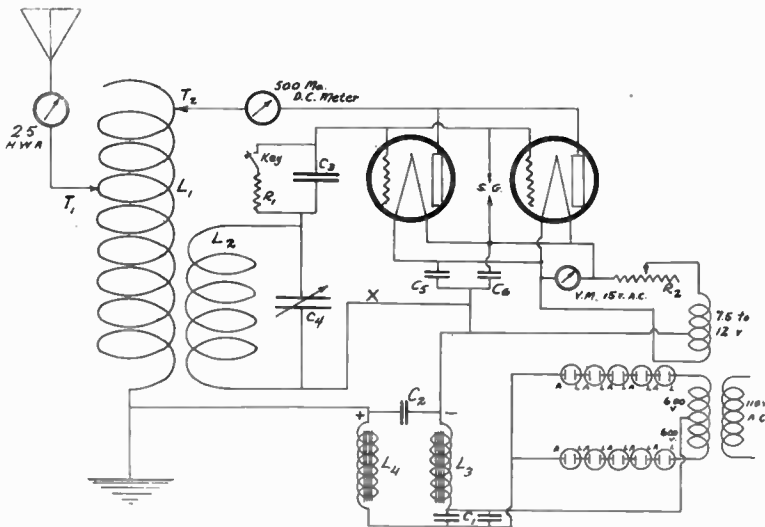
and the wire is wound in the opposite direction from that of the other coil.

L-3 and L-4 are iron core chokes, $1\frac{1}{2}$ henry, and 500 M. A.; C-1 and C-2 are 1mfd condensers and 21-A. A. Western Electric condensers will do very well; C-3 is a mica or air condenser of .0005 or .005 mfd. capacity; C-4 is an ordinary variable condenser of approximately .0005 to .001 mfd.; C-5 and C-6 are .001 fixed paper condensers; R-1, the grid leak of 10,000 to 15,000 ohms resistance; R-2 is a heavy rheostat capable of carrying 4.7 amperes. If the voltage of the transformer can be regulated to exactly that required by the filament, the rheostat may be eliminated.

T-1 is the wave length tap; T-2 controls the

coupling; the hot wire ammeter in the aerial should read up to $2\frac{1}{2}$ amperes and the meter, near T-2, is a 500 Ma. D. C. Meter. A 10 or 15 volt meter may be inserted in the filament lead as shown in the drawing.

and there is no excuse for an amateur not to be able to get down to 190 meters. Generally speaking, the circuit when properly adjusted, will give a higher radiation reading than any other. It is simple to make and adjust, and has also



The Complete Circuit

At the point marked X in the diagram, the lead may be broken and the secondary of the modulation transformer inserted. This transformer secondary should be shunted by an .001 mfd. condenser or short circuited when C. W. is used. This will make it necessary to change the value of the condenser, C-4, every time the set is changed from voice to C. W. The rectifier is of the well known electrolytic type and it may be advisable to use more jars than those shown. The size of the plates seem to be a subject of much discussion, but generally speaking, they usually run about three inches long, and from $\frac{1}{4}$ to $\frac{1}{2}$ inch in width. The thickness should be about 1-32 of an inch and they will pass 200 M. A. easily. It is suggested that these plates be made of pure aluminum and lead, and distilled water be used in the jars. The solution is made up of borax and water and it will be advisable to get good borax for the best results. If poor aluminum is used, there will be considerable sparking in the rectifier, which will cause overheating, and consequent loss of efficiency. The choke coils, L-4 and L-3 together with the condensers C-1 and C-2, if properly adjusted, will make a very fine filter system that will effectively iron out any ripple left in the high voltage. Rectifying tubes may also be used but there will be a large drop in the voltage.

If U-V 203 tubes are used, the grid leak may be left out at 750 volts, while with 1,000 volts, plate current, the grid leak should be of about 250 ohms, and for one tube, about 500 ohms. The condensers in the filter circuit will have to be able to stand at least 2,000 volts.

This circuit will work very well on short waves

the added advantage in that, it is comparatively cheap.

Although the panel set puts up the neatest appearance, it will be better to spread the whole outfit out on a piece of wood, so that adjustments may be easily made. A set in the open, in this way, will make a very fine appearance if it is wired up neatly. It may be placed alongside the receiving set on the table with the rectifier on the floor, as well as the high voltage transformer.

Figure 2 is a general layout of the completed station and in the plan view, the transmitter is on the left, and the receiving set on the right, with the change over switch in the center. This change over switch may be either made at home, or better yet, bought from one of the well known radio manufacturers.

In the April issue of The Modulator, the 3rd of this series, will be continued, giving explicit data on the aerial, and the counterpoise best suited for the outfit. The May number will have complete data on securing a license and also some interesting material on the transmission and reception of relay messages.

**SUBSCRIBE
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See Page 198

Some Night

By Lloyd Jacquet, 2OZ



Everything But England and France

ACCORDING to the prearranged schedule of the American Radio Relay League in cooperation with European amateurs the last week in December was set apart as a transmission period for the radio amateurs in France and England. It was hoped that the amateurs on this side of the water would be as successful in reception as the British and French had been during the American transmitting period.

Three members of the Evening Mail's radio staff, Olle Engstrom, 2BKE, Lloyd Jacquet 2OZ, and Brainard Foote, 2NP were requested to pack up their grips and choose some quiet corner and attempt to log as many European amateurs as possible. To get away from city interference of all kinds and also by mutual consent an out of town location was selected. In due course the apparatus was installed in a bungalow 50 miles west of New York at Netcong, N. J., through the cooperation and hospitality of Mr. R. S. Baxter.

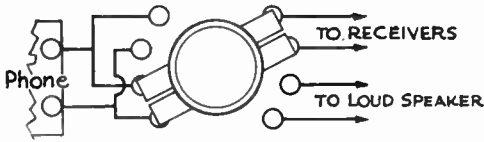
After much preliminary testing and experimenting the tuned impedance receiver was placed in operation and on the evening of December 29th everything was "set" for receiving. A Beverage antenna had been decided upon and 600 feet of stranded wire had been run via flagpole and tree in a northeasterly direction from the house.

A flock of tubes, condensers, insulators, and a wavemeter together with a few other knick-knacks in case of emergency, completed the stage setting.

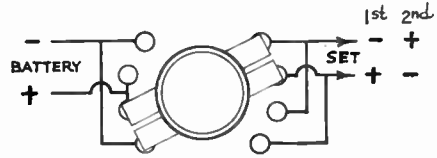
Stringing the antenna was perhaps the most perilous event of the whole adventure. The mercury registered 8 degrees, but luckily there was a moon shining brightly. This provided enough heat to warm up the atmosphere and also enough light to assist in untangling the wire. By virtue of much arm swinging to warm up and many cuss words to produce the same effect, the terminal insulator was reached and adjournment for supper decided upon. The supper and some of Mrs. Baxter's peppy cider raised the party's spirits sky high again. Another expedition, this time to the end of the aerial, was necessary. A sledge hammer was called into service and a sharp crowbar was slung over 2BKE's shoulder at the risk of breaking his collarbone, and the 600 feet separating the party from its objective were paced in a silent but careful procession. When the end of the antenna was reached a spot was located for the driving of the crowbar into the ground. This was to be for the con-

Continued on page 202

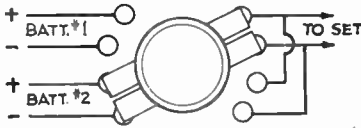
THE SERIES PARALLEL SWITCH



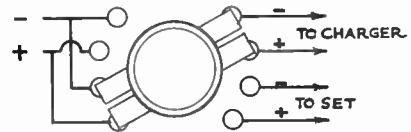
TO CHANGE CONNECTION FROM PHONE TO LOUD SPEAKER



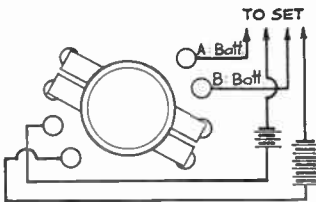
TO REVERSE POLARITY OF CURRENT TO SET



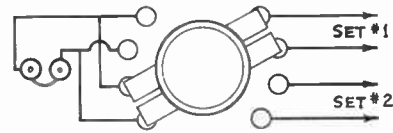
TO CONNECT TWO BATTERIES SO AS TO SWITCH SET INSTANTLY FROM ONE TO OTHER.



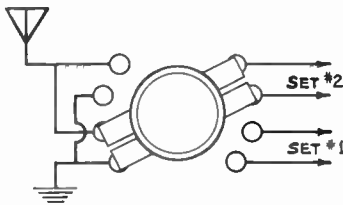
TO CONNECT BATTERY TO CHARGER OR SET



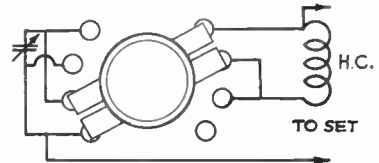
USED TO CUT OFF A & B BATTERIES WHEN SET IS NOT IN OPERATION



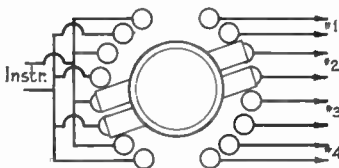
TO SWITCH PHONES FROM ONE SET TO ANOTHER.



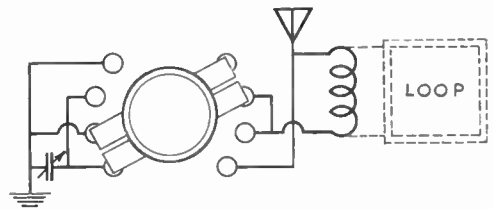
TO INSTANTLY CHANGE AERIAL & GROUND CONNECTIONS FROM ONE SET TO ANOTHER.



USED WITH H.C. COILS SO CONDENSER CAN BE USED SERIES OR PARALLEL



TO CONNECT AN INSTRUMENT TO EITHER OF FOUR CIRCUITS A METER CAN BY THIS MEANS BE USED TO TEST 4-CIRCUITS



USED TO THROW CONDENSER IN SERIES OR PARALLEL WITH INDUCTANCE ALSO USED WITH LOOP AERIAL

Cuts loaned by Courtesy Willis Switch and Instrument Co.

A Bout with C.W.

By John Escobar, 2CRO

IT IS with some misgivings that I submit this article for the attention of experienced and critical amateurs. However bear in mind the fact that there are many fellows just starting to monkey with transmitters of the continuous wave type—ahem—who would be interested in reading about the kinks in C. W. Furthermore, if you read this it means that Ye Ed found something good in it. MIM.



A couple of months ago Cecil Guyatt (cg) and myself got together and put up station 2CRO and tried out more ideas than any self respecting C. W. set will stand for. The circuit used was the reversed feed-back, sure-fire, etc. Two U. V. 202's did the oscillating for us.

After a single wire aerial 100 feet long and 35 feet high had been strung up and insulated—you know what I mean—we hooked ac on the plate of one tube and used a water pipe ground. Radiation .8 amp on 200 meters. The secondary of a flivver coil was used as a grid leak and an ordinary grid condenser was tolerated for a while. Now you men with iron of wire fences around the premises, here's some dope. We have an iron fence around the yard. Each side is about 25 feet long and has eight wires in it running lengthwise. The top wire was connected to our ground (water pipe) and radiation went up a whole tenth. Each time that we added another wire the radiation went up a bit. Then a pipe of galvanized iron driven six feet into the ground was hooked in. Up she went again. Well there's a limit to what should be put in the ground system we found. Several wire rings around flower beds were hooked in and—down went the radiation. Needless to say we discarded the latest addition to the system. A wire hedge—guess that's what you call 'em—was hooked in and radiation was helped a bit. This wire ran along the house parallel to the fence. All the leads were brought together and one wire brought to

the ground post of the set. Now bear in mind that no connection had been soldered—bet the radiation would have been 10 amps if we had soldered everything. Radiation was 1.2 amps. with one five watt bottle.

We put in the other tube and thereby dispelled a very popular illusion—don't expect double radiation each time you double the number of tubes. Try and get it out of the poor tubes. Our rectifier was made up of eight jars in parallel, using the bridge circuit. Across the output of the rectifier we put two 1Mfd. condensers, and found that the note was smoothed out and the wave sharpened. Hi! Placing a ford coil's secondary in series with the negative power lead gave us a note like a mg set—one of those nice peep-peep whistles—gwan now laugh. But our radiation went down to half, the sigs may have been going out—they blocked tubes in town—but for psychological reasons we took the choke out. When we used phone we inserted the choke. The absorption loop was used for modulation and worked perfectly. But it is interesting to note that if one wishes to pound brass and leaves the one or two turns of wire around the main inductance, there will be a decrease in radiation of about one-tenth ampere. Try it and see for yourself. That's another reason why phone was rarely used here. Too much work taking the loop off.

The grid coil was made up of twenty-five turns of No. 18 DCC with a .001 variable condenser across it. It would have been better to have used a smaller condenser as the .001 is harder to tune with. A .002 Murdock condenser section was next used as a grid condenser and for a leak we put in a carbon potentiometer. We found that the adjustment of the leak was very critical and that on a certain point the radiation would go up a full tenth of an ampere. The reversed feed-back circuit will work on almost any adjustment but for maximum results one should adjust the circuit very carefully. Trouble may be found in the burning up of the grid leak and the only remedy that we tried was readjustment of the pointer on the carbon. It always worked again.

Well, I guess that most of you know more about this than I do but I haven't seen it in print so I hope that these little experiences will help some other fellow who may be in the same fix that I was in when I looked a C. W. set in the face for the first time. It was some bout while it lasted. I won 'cause one of the tubes quit. Hi!

We have with us in this district Dr. Ende formerly of 9ZE. He was recently issued one of those good (f) three letter calls.

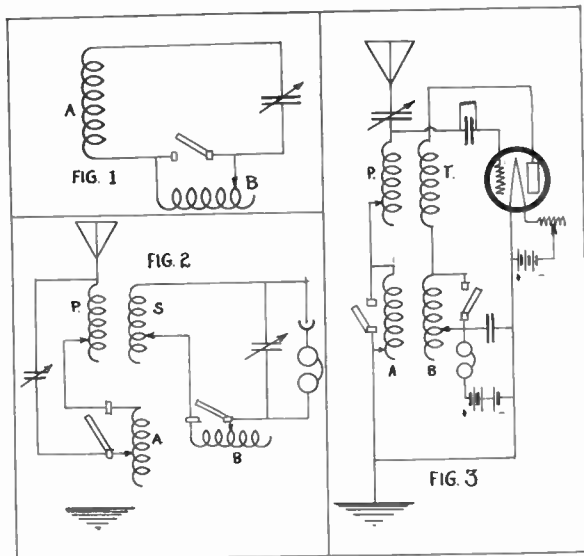
2MP has sailed for Cuba and leaves us for five months. We wish you a successful trip Mr. Hebert.

Loading Coils and How to Use Them

By W. J. Howell, 2II

THE loading coil was devised as an inductance or coil of wire which is inserted in a circuit to increase the wave length range of that circuit, and usually consists of wire wound on a tube with taps brought off for various connections. Figure one shows a tuning coil A shunted by a variable condenser which at its maximum capacity may only raise the wave

length of the circuit up to four hundred meters. Now by opening the switch a loading coil B is inserted in the circuit and with the condenser at maximum capacity the wave length may be three thousand meters, so it will be seen how easy it is to load a circuit up to any wave length simply by inserting a loading coil.



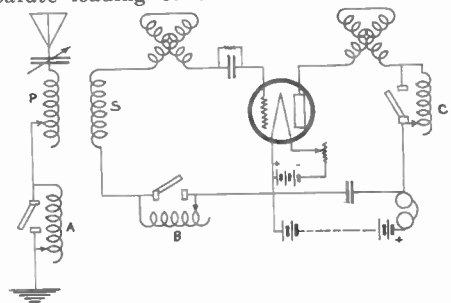
length of the circuit up to four hundred meters. Now by opening the switch a loading coil B is inserted in the circuit and with the condenser at maximum capacity the wave length may be three thousand meters, so it will be seen how easy it is to load a circuit up to any wave length simply by inserting a loading coil.

One thing that must be remembered tho, is the fact that if one circuit is loaded, any other circuit or circuits that are to work together must also be loaded as is shown in figure two where the primary circuit of a crystal receiving set has a loading coil inserted in the circuit and in order to tune the secondary circuit to the same wave length another loading coil must be connected in series with the secondary of the loose coupler.

The single circuit regenerative circuit shown in figure three illustrates the method of loading the grid circuit and also the plate circuit for it is a well known fact that in order to make a vacuum tube circuit regenerate it is necessary to tune both grid and plate circuit to the same wave length. It will probably be found that the set will oscillate better if the two loading coils are placed close to each other because sometimes there is not enough coupling between the grid coil and the tickler. Care should be taken that the two

can be mounted in the set so that rapid change can be made from the low waves to the higher ones without wrecking the set each time a change over is desired.

Regarding figure four it will be seen that the aerial circuit, grid circuit and plate circuit have separate loading coils but in this case it may



not be found necessary to couple the grid and plate loading coils together because the plate circuit can be adjusted very sharply by means of the plate variometer and usually the total circuit regenerates easily when grid and plate are tuned

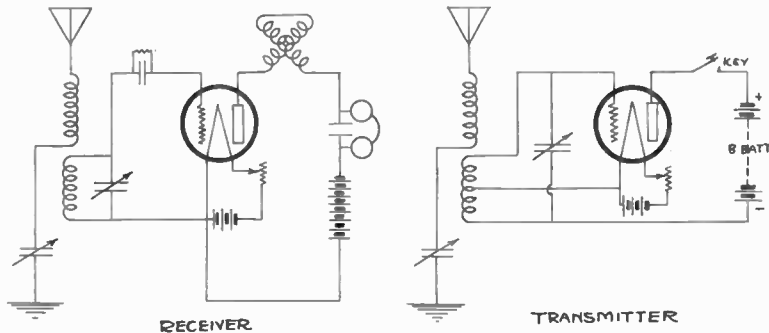
Concluded on page 208

How About 150 Meters?

By Brainard Foote, 2NP.

ANY amateur in this district will admit without a second's argument that 200 meters is hopelessly congested. And with the advent of 50 watt bottles and 5 amp. radiation it's next to impossible to shoot a few short range messages from Brooklyn to The Bronx. Then the R. I. is clamping down the lid, as in truth he ought, so there's small chance of accomplishing much on 250! Is there an answer to the problem? Hams have found an answer to every one so far, and this one has reached the stage where an answer must be found.

Some experimenting is needed to determine just what is the best transmitting circuit to use. The Hartley is at once brought to mind on account of its ease of adjustment and stability. Perhaps a separate antenna inductance is best, since then the coupling may be placed at that happy medium where the set will radiate and still not so close that the tube won't oscillate at all. The suggested receiving circuit is somewhat similar, though the regeneration may be obtained by a baby plate variometer of diminutive proportions. The Armstrong super may be the thing



Short Wave Circuits

Marcconi's recent experiments demonstrated the possibilities of shorter waves than 200. He had 'em down to a matter of two or three meters. By comparison, it should be a snap for a number of progressive amateurs of this district to get together on 150 meters. Perhaps that wave isn't the best, but it is considerably below 200, and enough below 180 so that there won't be any interference by harmonics from the local broadcasting stations. Quiet reigns down there—listen as far down as you can get and be convinced!

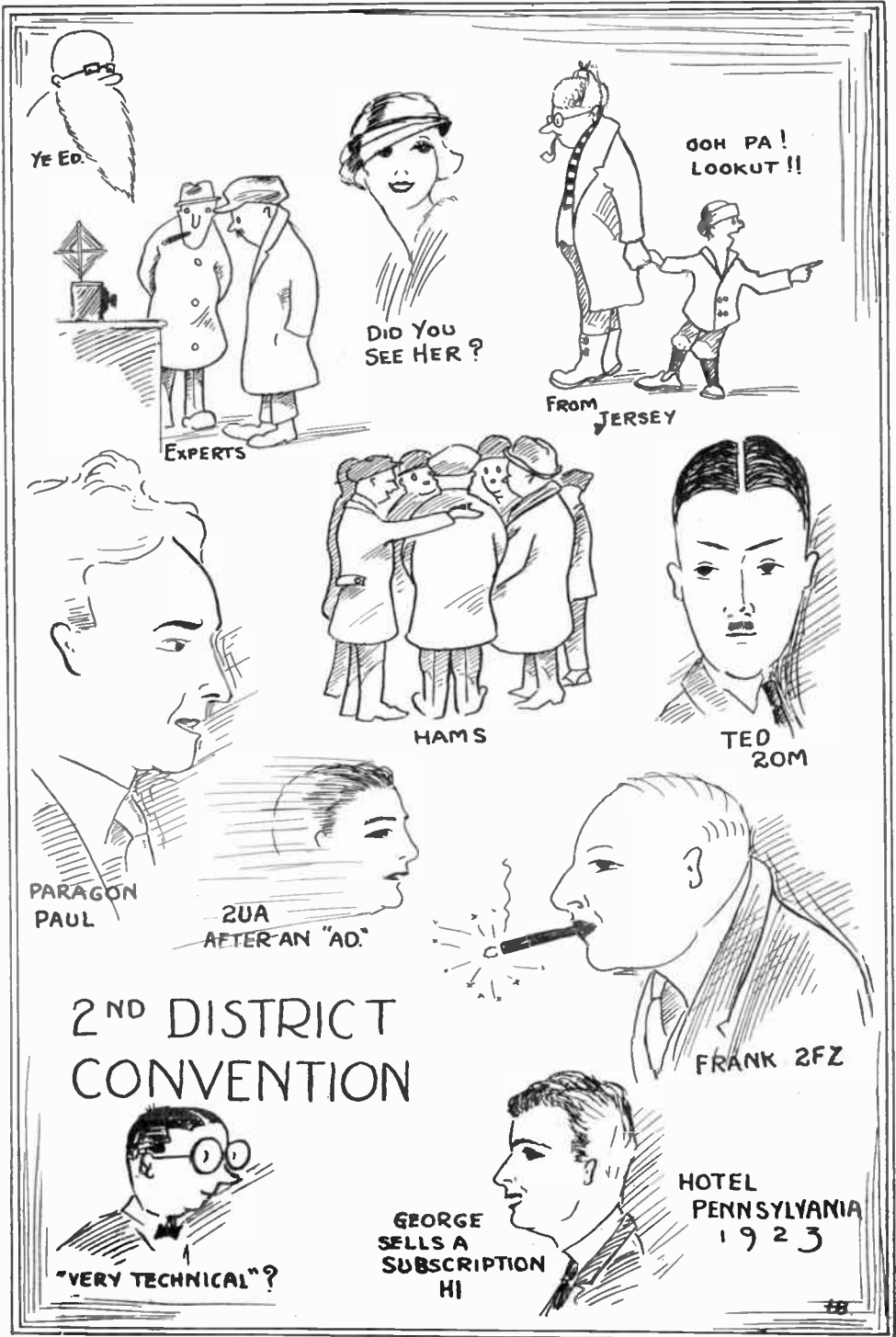
On 150 meters the tuning is unbelievably sharp. 150 meters is 2,000,000 cycles. Let's assume the high point of audibility as 15,000 cycles. Hence a station operating on a frequency of 2,015,000 cycles wouldn't bother a 150 meter fellow in the least. 2,015,000 represents a wave of 148.8 meters, or only 1.2 meters away! That means precision! It means accuracy! It means the possibility of about 16 different stations operating at once between 140 and 170 meters without the slightest QRM; in other words, 32 stations working each other on different wave lengths. But you will say, "Nobody has a wavemeter to do that and even two wavemeters wouldn't check so closely." Granted, but the Executive Council could have such an instrument and loan it to the various clubs for calibration of their members transmitters. Suppose the wavemeter were a couple of meters out—no one would care so long as the system functioned properly.

for 150 meter stuff, since its amplification goes up with the frequency. The exact number of turns needed on the various coils hasn't yet been determined, but the writer hopes to have a sample set working by next issue and be able to present some dope on the subject. Probably the secondary condensers ought to be 3 plate variables and those in series of the 7 plate type. A special aerial will be needed, too; low capacity tubes will no doubt be superior to the VT 2. Cooperation is needed in this field, anyway, and it can be done.

Here's the vision: a metropolitan "net" of about fifteen or twenty leading stations operating on, let's say, 160 meters, 3 stations per borough. These would all be able to shift to 155 meters and each be the main station in a local net, through which the message received via the metropolitan net would be distributed. We might carry the picture further and have district nets of five or six stations located half a mile or so apart. DX messages could be distributed through the metropolitan net and thus little time lost in QSR-ing them back and forth as is done nowadays. But now, 150 meters is as quiet as a graveyard.

2CJX, for the luv of mud pull that OT apart. Try a counterpoise or something.

2PI in the Globe has a good slap at the CQ hounds FB om. Keep the good work up and give 'em H— when they CQ all night.



Third Annual Convention and Exhibition Executive Radio Council

HOTEL PENNSYLVANIA, NEW YORK

March, 1, 2, 3, 1923

EXECUTIVE RADIO COUNCIL, SECOND DISTRICT

OFFICERS

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W. A. REMY, Recording Sec'y

J. STANTLEY, Treasurer

G. T. DROSTE, Vice-President

W. F. CROSBY, Corresponding Sec'y

F. B. OSTMAN, Traffic Supervisor

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J. STANTLEY

M. THURY

EXECUTIVE RADIO COUNCIL, SECOND DISTRICT

The Executive Radio Council of the Second District is composed of two representatives of each of the following clubs:

Bronxville Radio Club

Yonkers Radio Club

White Plains High School
Radio Club

North Jersey Radio Associ-
ation

Hill City Radio Club

Bloomfield Radio Club

Radio Club of Irvington,
N. J.

Rutherford Radio Club

Bidgewood Radio Club

Westfield Radio Club

Hackensack Radio Club

Nutley Radio Club

Roselle Park Radio Club

Passaic High School Radio
Club

Radio Club of Hudson
County

Hudson City Radio Club

Ridgefield Park Radio Club

Radio Club of Jamaica

Radio Division Hudson River
Yacht Club

Radio Association of Greater
New York

Hudson Radio Club

Chelsea Radio Association

Down Town Radio Club

City College Radio Club

Radio Club of Harlem

Bronx Radio Club

Talo Club

Bushwick Evening Trade
School Radio Club

Vocational School for Boys
Radio Club

Nassau Radio League

Radio Club of Long Island

Staten Island Radio Club

Baldwin Radio Club

Radio Club of Brooklyn

Stuyvesant Radio Club

Highway Radio Club

Universal Radio Club

Camp Wallkill Radio Club

Roof Garden Manufacturers' Exhibit

BOOTH No.

3. Westinghouse Union Battery Company
 4. Electric Storage Battery Company
 5. Radio Corporation of America
 6. Mortimer Radio Co. and Advance Metal Stamping Co.
 7. General Radio Company
 8. Acme Apparatus Company
 9. W. J. Murdock Company
 11. Jefferson Electric Mfg. Company
 12. American Radio Relay League
 13. F. A. D. Andrea
 14. Experimenters Information Service
 15. Federal Tel. and Tel. Company
 16. Diamond State Fibre Company
 17. A. H. Grebe & Co., Inc.
 18. Executive Radio Council, Second District
 19. De Forest Radio Tel. and Tel. Co.
 20. Marko Storage Battery Co.
 21. The Bristol Company
 22. Jewell Electrical Instrument Co.
 23. Adams-Morgan Company
 24. Novo Manufacturing Company
 25. The Allen D. Cardwell Mfg. Corp.
-

Club Exhibits

As this goes to press have to date received applications from the following
Radio Clubs who will have exhibit booths in the Butterfly Room:

BOOTH No.

26. Radio Club of Brooklyn
27. Hackensack and Ridgely Park, N. J., Radio Club
28. Chelsea Radio Association
29. Radio Association of Greater New York
30. Ridgewood Radio Club
31. Hudson Radio Club
32. Department of Commerce
35. Bronxville Radio Club.
36. Bronx Radio Club, New York
37. Hill City Radio Club
38. Staten Island Radio Club
39. Radio Club of Jamaica, L. I.
40. Radio Division Hudson River Yacht Club
41. Bushwick Eve., Trade School Radio Club.
42. Roselle Park Radio Club
43. Camp Wallkill Radio Club.

First, Second and Third prizes will be awarded by a committee of judges
for the best all around booth.

Programme

THURSDAY, MARCH, 1923

2:00 P. M.—OPENING

2:00 to 5:30 P. M.—See Bulletin at Convention for Meetings, Speakers, Motion Pictures and Demonstrations of Latest Radio Equipment—Butterfly Room.

8:00 P. M.—Formal Opening of Convention and Exhibition.

7:30 to 9:00 P. M.—See Bulletin at Convention for Meetings, Speakers, Motion Pictures and Demonstrations—Butterfly Room.

8:30 P. M.—Code Speed Elimination Trials—Open to Amateurs, Men and Women.

MEN—Minimum Speed 25 words per minute; necessary to qualify for finals, 35 words per minute, perfect copy

WOMEN—Minimum Speed 15 words per minute; necessary to qualify for finals, 25 words per minute, perfect copy.

No commercial operators will be permitted to compete in either contest.

11:00 P. M.—Closing Time.

Wave meters will be checked free of charge by the United States Radio Inspectors at the Department of Commerce Exhibit.

Applicants for United States Amateur radio operator's licenses will be examined by the United States Radio Inspectors in the room adjoining the Butterfly Room. Licenses will be issued to successful applicants immediately following the examination. The department of Commerce will also supervise the code Speed Contests.

Programme

FRIDAY, MARCH 3, 1923

2:00 P. M.—OPENING OF CONVENTION AND EXHIBITION

2:30 to 5:30 P. M.—See Bulletin at Convention for Meetings, Speakers, Motion Pictures and Demonstrations of Radio Apparatus—Butterfly Room.

7:30 to 9:00 P. M.—See Bulletin at Convention for Meetings, Speakers, Motion Pictures and Demonstrations—Butterfly Room.

8:30 P. M.—Code Speed Elimination Trials—Continued. Open to Amateurs, Men and Women—Same conditions as on Thursday. Under Supervision of the Department of Commerce.

11:00 P. M.—Closing Time.

Programme

SATURDAY, MARCH 3, 1923

-
- 1:00 P. M.—OPENING OF CONVENTION AND EXHIBITION.
 - 2:30 to 5:00 P. M.—Speakers, Motion Pictures and Demonstrations in Butterfly Room—
See Bulletin.
 - 3:30 P. M.—Exhibition of Radio Apparatus entered by Amateurs.
Judging of Best Homemade Transmitter, First, Second and Third Prizes.
Judging for Best Homemade Receiver, First, Second and Third Prizes.
Butterfly Room.
 - 4:00 P. M.—Finals of Code Speed Contests, the contestant copying the greatest number
of words per minute with least number of errors will be declared the winner.
There will be First, Second and Third Prizes for men. First and Second
Prizes for women. For amateurs only—men and women.
 - 5:00 P. M.—Judging of Club Booths—for the best all around booth. Butterfly Room.
There will be First, Second and Third Prizes.
 - 7:00 P. M.—Third Annual Banquet, Large Ball Room, Hotel Pennsylvania. The award-
ing of all prizes will take place at the Banquet. (See Banquet Programme
for details).
 - 11:00 P. M.—Closing Time.

Banquet Programme

SATURDAY, MARCH 3, 1923

7:00 P. M.

-
- Address by the Chairman, Mr. G. T. Droste.
 - Introduction of Convention Committee.
 - Introduction of Amateurs by Districts.
 - Mr. H. P. Maxim, President A. R. R. L.
 - Mr. Arthur Batcheller, Chief Radio Insp., Second District.
 - Mr. E. H. Armstrong, Radio Engineer
 - Introduction of Radio Clubs.
 - Introduction of Amateurs Successful in Transatlantic Tests.
 - Mr. K. B. Warner, Secretary A. R. R. L., Editor QST.
 - Mr. P. F. Godley, Radio Engineer.
 - Mr. W. F. Crosby, Editor Modulator.
 - Testimonial to Mr. J. O. Smith.
 - Award of Prizes.

Musical Selections During Banquet by Ted Schuster's Society Orchestra.

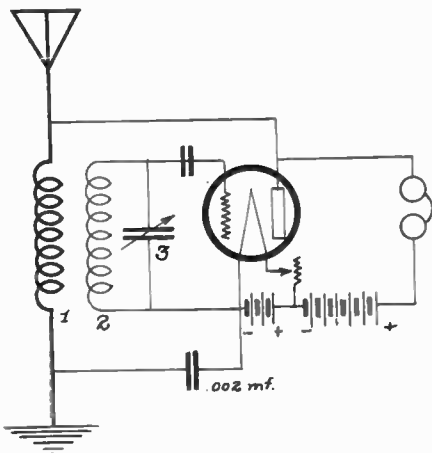
NOTE—Other Prominent Speakers will be announced during the Convention.

The Log Book

KEPT BY R.W.E. DECKER. Z UA

HEREWITH is presented for probably the first time, a real single control circuit that is fairly selective and will tune sharply. Starting at the left of the drawing, the numeral 1 represents the primary coil. This consists of ten turns of wire, wound on a cardboard tube, $3\frac{1}{2}$ inches in diameter, while $\frac{1}{4}$ of an inch away on the same tube, is a secondary (2), which is made up of twenty-six turns of wire, wound in the same direction. The size of the wire is not critical, but No. 22 DCC will do very well.

The 43 plate condenser (3), is used to tune the whole set, and makes the one knob control.



The rest of the circuit is practically self-explanatory but it must be noted that there is a wire running direct from the aerial end of the primary to the plate, and another wire running from the ground end of the secondary to the negative side of the A battery. In this latter lead, an .002 mfd. fixed condenser is inserted. It will also be well to notice that the A and B batteries are directly in series and if the novice builds this set, he must be careful to see that the leads from the filament are corrected into the proper place.

Such a set as this may be made in a very small cabinet at a very small cost. If it doesn't work at first, try changing the wires running to the secondary (2). There's nothing much more to say about it, it is simple and efficient. Amplifiers may be added at will, and generally speaking, this receiver will make a fine transmitter.—III

First District

1CN1 on spark still knocks the old bulbs. His station is very consistent handling traffic also.

1AJP on with CW is doing very good work. He handles a great share of the lower Connecticut traffic.

1BKQ on cw is also doing his share in the First District.

1AW has cw now and seems to have deserted the ole spark entirely. One of the reasons was that the gap went to pieces.

1XM comes thru very steady at all times.

John L. Hubbard, 1RZ, has been assigned the call 1FD, address, Norwich, Conn. 1RZ was formerly 2ZP and 2IR in the second district and sure had a healthy spark in the good old days. 1ZE is increasing his power, He is QSA now but should tear in with the new outfit.

1CJ is reaching out with his set. His tone is FB.

What's happened to 1DY? He seems to have dropped out for a while.

1BDI is working on his CW set now and is doing good DX.

1CKP and French 8AB are attempting a two way exchange of messages without a Quiet Air. This would be FB if it works.

Second District

2CQM is on now with CW using two 5 Watt tubes.

2ARB has left the noble Second District for Boston and probably is eating beans by now. HI.

2ZK sure does pound in with his CW. He got across with voice too. FB George.

2BJC who voices on CW and Spark recently lost his 70 foot mast in a wind storm. He promises to have the ole pole up again by next month.

Third District

3ZO certainly does handle traffic. Where do you get it all OM?

The Third District will hold their Fourth Annual Radio Convention at The Hotel Emerson, April 13th-14th.

This will include a trip to NSS by water and a regular Ham Fest with the well known amateurs. And of course the eats will not be forgotten.

3BNU handles his share of the messages in this district and is very consistent.

3HN is another one of the consistent heard nightly.

3CN has been getting out good with his CW, and handles quite some traffic.

3ZW is another 3 station who is on the air each night.

Fourth District

4BY on spark is doing good work but of course B. C. L. likes spark very much.

4BQ is still very active on the air.

4BK is getting to be a well known 4 station by his consistent work. He is working fine DX.

The boy who comes thru in the second district is 4EA. FB om, keep it up.

4BI is QSA on spark. He fades very little and has a very pretty note.

4DY gets thru the QRM good also.

Fifth District

5 BQ is keeping Alabama on the map.

5XA is being heard all over the U. S. and is handling great traffic.

5DO is there each evening on cw handling traffic.

5DA also with cw is going strong.

It is reported that 5MO has put in cw to replace the old boiler. One less spark in the Fifth District. 5 NV is one of the most consistent Five's, being heard most any night.

Sixth District

6ZZ has sure been working dx being heard frequently on the Atlantic coast. FB OM

6KA sure has a dx credit to be proud of. He was heard in China.

6ZAC has left Hawaiian district for the Main Land, this will leave 6ZY to handle that traffic.

6DA on spark is very QSA.

6KC also on spark is making the ole cans jam. 6AQA has a neat looking CW set and it also works.

Gang—We have started a relay and amateur department which is to take in every district so please send us some dope from your district.

There has been a great call for these articles so please support it by sending us the latest news of the amateurs and what they are doing DX or changing of apparatus.

If possible try to get it right from your log book which is the best dope to have.

WESTCHESTER BUZZES

By the Retysnitch

2ZS can be heard denting the air any night and sometimes more frequently. Of course he got across. Remembrances of that sink spark that used to paralyze our detector come back to us.

2ZK is another consistent ether buster. He was the most consistent station heard in England and his 200 Watter has been heard in France, Switzerland and Hawaii. Recently his voice has been heard in London which certainly is FB. "HY" says that no matter where you touch the key you always smell burning skin before you feel as though you pressed a bunch of pins. Hi.

2HJ is heard now and then. He also got across. Wassamatter?

2BYS still thinks a lot of the old spark. Personally we like his CW a whole lot better. He and 2CBG are planning to erect another one of those "super-stations" at Yonkers. We hope the rock crusher is being left behind.

2KV is still using the old ten watter but is shoving out 1.8 amperes instead of the .8 that travelled out last year. A new reflex receiver is being used and the sixes and sevens come in pretty regularly now. That new 100 Watt set ought to be heard soon.

2KV has competition now in two new stations just on the air. 2UP moved up from the city

and is using 100 Watts. 2CUR is getting out nicely with a 20 watt self rectifying set.

We award 2CBI the original stuffed owl boiled in transformer oil. He is on any time of day or night. How do you do it om?

Our radiophone listeners think that the announcers are getting rather familiar. We thought so too until we heard 2BAI's phone set one evening above the realm of 200. How about the ohm saw om?

2BIS called 2KV one night and sed QSQ CQ. Well, he called him long enough.

WITH THE BROOKLYN BUNCH

By 2PF.

2FP work 6XAD for over half an hour steady on the morning of January 11th. Traffic was exchanged both ways without any repeats. This sets a new DX record.

2BRB has been heard in Hawaii on his CW. He uses one 250 Watt bottle.

Several 6 stations are being copied regularly by Brooklyn, 6XAD, 6KA, 6ZZ are most consistent.

The Radio Club of Brooklyn is now meeting in its new quarters at the Masonic Temple, 2211 Bedford Avenue, Brooklyn, N. Y.

Traffic conditions are improving and credit is due to 2BRB, 2KE, 2FP, 2CCD, 2HV and others for the handling most of the Brooklyn traffic.

2CCD has an I. C. W. set that is a duplicate of 2FP.

Talk about DX—2FP was heard by Cawman, "nv," on a ship 3200 miles the other side of Gibraltar. I. C. W. was used at the time and the total distance was about 7000 miles.

Where are 2RM, 2WB, 2CCX and a lot of the other old timers?

2BO is going again, having moved to a new location at 956 East 22nd Street. He is using 10 Watt CW and expects to increase to a 50 Watt set very soon.

2KD was heard on his new I. C. W. and fone set the other night. First time he has been on the air for over a year.

2BEG's call is in the January Modulator as a CQ hound. This is a mistake as he is a spark station and doesn't call CQ much. This correction is made in fairness to 2BEG.

BRONX BUSTS

By the Bimbo

A very unfortunate circumstance, and one that is directly effective on every operating amateur, is the case of 2CT. By now the story is an old one and we will not repeat it again. Simply through a little neglect Matty did not attend to proper licensing of his station, with the result that he has been shut down for three months. It is a very unfortunate affair all the way through, and Matty is certainly to be condoled. However, much as we feel for this fellow, who is a real amateur and a regular fellow, we cannot but hold him up as an example to the other fellows who are doing the same thing that he did. If your license calls for spark and your set is a C. W. outfit, get the license changed at once so that it covers the proper equipment of the station. If the Department should ever start to

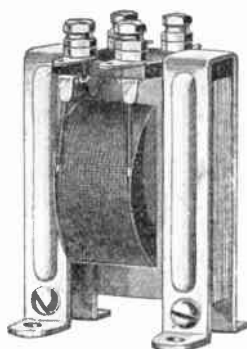
Continued on page 181

MAKE YOUR SET SUPER-SENSITIVE WITH Jefferson Audio Frequency Transformers

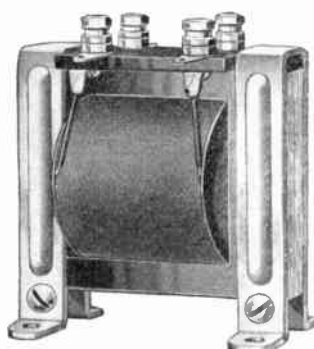
TODAY THE FACT THAT JEFFERSON AMPLIFYING TRANSFORMERS mean increased range and super-sensitivity is a well known conviction.

IN TENS OF THOUSANDS OF RECEIVING SETS JEFFERSON Transformers are insuring 100% Amplification and the elimination of howling and distortion.

THIS POSITIVE PREFERENCE RESTS ON THE UNMISTAKABLE superiorities of design and operation which makes Jefferson Amplifiers the choice of discriminating amateurs.



No. 45



No. 41

ELECTRICAL CHARACTERISTICS NO. 45

1. Ratio of secondary to primary turns, 3.1 to 1.
2. Useful tone frequency range, 60 /5000 cycles.
3. Allowable current on each winding, 7 milli-amperes.
4. Test voltage between primary and secondary, between primary, secondary and ground, 300 volts.
5. Terminal voltage tests on open circuit, 500 volts.
6. D. C. resistance of windings:
Primary, 2000 ohms (approx.)
Secondary, 9000 ohms (approx.)
7. Primary and secondary wound with No. 44 enamel-covered copper wire.

No. 45—\$7.00

ELECTRICAL CHARACTERISTICS NO. 41

1. Ratio of secondary to primary turns, 3.75 to 1.
2. Useful tone frequency range, 60 /5000 cycles.
3. Allowable current on each winding, 10 milli-amperes.
4. Test voltage between primary and secondary, between primary, secondary and ground, 300 volts.
5. Terminal voltage tests on open circuit, 500 volts.
6. D. C. resistance of windings:
Primary, 1000 ohms (approx.)
Secondary, 5000 ohms (approx.)
7. Primary and secondary wound with No. 40 enamel-covered copper wire.

No. 41—\$4.25

Send for Descriptive Bulletin

Jefferson Electric Mfg. Co.

428 So. Green Street

CHICAGO, U. S. A.

Continued from page 179

get really active and check up on the amateurs and their equipment, we venture to predict that there would be really very few left to operate. Why not correct this condition, fellows, don't wait until you are closed up, do it now.

The Radio Association of Greater New York, at its new location has had several very successful meetings. The average attendance has been over the forty mark, and several interesting talks on radio frequency amplification, the W. D. 11 tube and other subjects have been given. The club is functioning in better shape than ever before and has probably the largest membership of any club in the city.

Evidently the operators of the C. W. station at Fordham University, 2XZ, do not know the rulings appertaining to the use of the hated signal CQ. They were heard to CQ something like thirty odd times and sign off twenty times, not so long ago, and this right during the time of the evening when the concerts are on, and the amateur stations are supposed to QRX. This station has two or three fifty watt tubes and yet 2XZ delights in working such stations as 2AEQ, 2TB and others located within a radius of three or four blocks. SOME DX. This station also had to be requested to QRX during the Transatlantic Preliminary Trials as they insisted on sending tests during the periods when the other districts were transmitting. Will some kindly soul give them a subscription to either the Modulator or QST so that they may know what is going on?

The case of 2WA has caused quite a furor of excitement about the West Bronx section.

Some night before long you will probably hear 2XK breaking out with his two fifty watters. It sure is some set, Larry.

From the standpoint of aerials, there is probably no section of the city that can begin to compare with the block from Fordham Road north to Kingsbridge Road, on the west side of the Concourse. There are more aerials on this block to the roof, than anywhere else, and some of them are certainly wonders of design. HI.

The long silent 2VF is threatening to break out on CW some of these nights.

Speaking of 2VF reminds us of what happens after the meetings of the Radio Association of Greater New York. The "gang" usually adjourn to some convenient "coffee house" and then the fun begins. Did you ever have a piece of pumpkin pie draped around a nice new white collar? Ask 2VF he knows just how it feels. You might also ask him if he has a lolly pop about him.

AT THE OFFICE

Probably the best known visitor during the month of January was Lloyd Berkner, 9AWM, the man who used the "P" tube for the record breaking relay from 1AW to 6XAC. His home is in Sleepy Eye, Minn., but there is nothing sleepy about 9AWM. The much questioned height of the pole as used in his station is between 75 and 80 feet. So that settles that. 9AWM is taking a short course in Theory in one of the

well known radio schools in New York. Welcome, OM, and may we see more of you.

Another name in the registration book is that of J. K. Hewett, 2FP and ex 2RK. There is probably no better known or more discussed amateur in the country than 2RK, and we were sincerely glad to meet him. Hewett has just broken all DX records for amateur transmission, according to an item elsewhere in this number. In our estimation 2RK is a might good scout, and we would like to see more of him.



2AFP was also in several times during the month and, of course, many of the other fellows of the district.

We have a registration book now, in the office, where the fellows are welcome at any time to come in and sign up. This is especially good for any out of town amateurs who may be stopping here and would like to meet some of the gang. By signing up and leaving their address, some of the bunch will be sure to look them up and give 'em a good time. Before long this book is going to be the real thing. As there are already stations from almost every district registered it will not be long before the council registry book will take on the appearance of a call book. Step in some time when you're down town and put your name among the rest of the active radio men.

40 Hedges Place, Jamaica, N. Y.
January 10th, 1923.

Executive Radio Council,
120 Liberty Street,
New York N. Y.
Mr. Lloyd Jacquet,
Dear, Sir:

I am in receipt of your letter of the 2nd Inst. and wish to state that I am indeed very much surprised to hear of my call letters having been received by any one.

Since I have received your letter, numerous other stations of all districts have been forwarding me cards advising me of reception of my signals. To make the situation even more puzzling, I have received a card today from the temporary station of the A. R. L. criticising me quite severely for interference.

This matter has been accepted by myself as a good joke until the reception of the above mentioned card. It is now assuming a very serious

aspect, as I wish to advise the MODULATOR that Radio 2QV, due to change of address, has NOT been working in any way whatever. May I add that whoever is using the Radio call letters 2QV is so doing unlawfully and I personally shall take the matter up with the Radio Inspector, immediately.

To advise you more accurately, I would say that the station has been completely dismantled for over a period of four (4), to five (5) months.

As a frequent reader of your fine magazine, THE MODULATOR, I would appreciate very much if you would devote a line or two in your next issue to warn the Radio Public of the mistake and also advise the operator who is practically outlawing my call to QRT and quickly, as I will resort to all means and methods as a law abiding Radio Citizen to locate that particular person.

Thanking you for your kind letter and hoping to hear from you regarding the matter, I remain,
Very respectfully yours,

H. A. DE PALMA.

NEWARK NOTES

By 2ALY

Every day in every way Jersey is becoming noisier and noisier. This month we have 2BK's famous 1KW sink spark set to add to the list of noise makers. 2BK moved to Maplewood, N. J. the first of the year, put up two 88 foot masts, and has installed his old 1KW spark set. This will not last long, however, as he has two 250 watt tubes and two fifty watt tubes which will soon be part of his 500 watt I. C. W. set.

We thought that 2JZ and 2ZC had called time out in order to change from spark to C. W. We were mistaken, however, as they have both returned on the air with their old 1KW sets and manifest no signs of being C. W. crazy.

If the number of stations in Central Jersey continue to increase in the future as fast as they have in the past, Jersey will not be a home sweet home for the broadcast listener. Every night you can hear a new station this evening for example, I heard the following very qsa cw stations for the first time: 2API, 2AIQ, 2CFB, 2CUI and 2CUV.

3XM is not located in Central Jersey, hut just the same, we have some stations that handle traffic, first look at the traffic reports of 2CQZ, 2CDB, 2ALY and 2CTC next month, if you don't believe me. The total will probably be over 800. Not so bad for four ops. Eh wot?

The cost of electricity has been reduced one cent per K. W. H. here and we wonder whether this was made possible because the broadcast fans use so much juice charging their batteries.

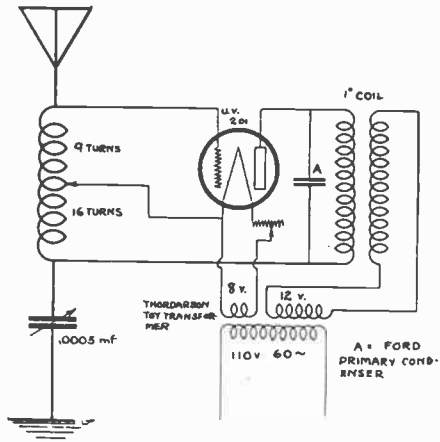
Fellows we all want to join a good club whose members are all 100 per cent A. R. R. L. men, so let's get together and form one. All who are interested please drop me a card.

SPARK COIL CW

By Thomas Bell

THE spark coil C. W. circuit to be described, is, with one or two variations, the same as that used so successfully by 9DDY, and described by him in QST, March, 1922. On a single wire aerial a UV201 amplifier, and a water-pipe ground, this set radiates .3 of an ampere.

The inductance, as shown in the diagram, is



the same as that used by 9DDY, 25 turns No. 18 on a 3 1/2 inch tube, tapped at the 9th turn for a filament connection. The condenser used across the spark coil secondary is one taken from a ford coil, and works OK, cutting down the voltage from a one-inch coil, and passes the high frequency easily.

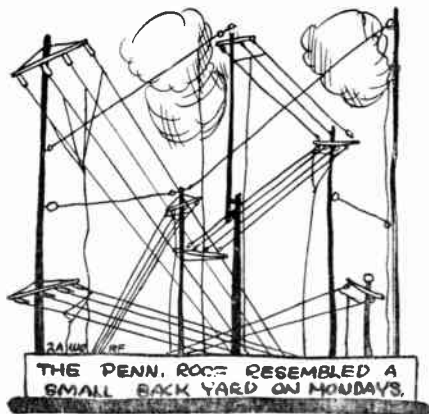
The main difference from 9DDY's circuit, is in the use of 110 V. 60 cycle current stepped down, as the current supply, resulting in a saving of battery juice. The transformer is a toy Thorndarson, 75 watts capacity, which furnishes eight volts for the filament and 12 or more for the spark coil. The ford coil used by 9DDY as a separate interruptor is unnecessary, as the note is a regular 60 cycle one.

This circuit has no critical adjustment, in fact the series condenser is the only adjustment. It gets down to 200 easily, which cannot be done with the circuit described by 2II, and is much easier to tune than the improved circuit of 2BYO. No doubt if a five watt is used, on a decent aerial, .6 of an ampere or more should be easy.

AMATEURS AND AMATEURS AGAIN

By J. De Giovanni—2CRZ.

MANY years ago before communication without wires was known to the world, there dawned upon a certain individual the possibility of communicating with distant points by wireless telegraphy. Years rolled by and radio became more and more developed until today we have radio to a point where we can talk by wireless telephony. During these years of development there arose a class of individuals who were constantly working toward the betterment of a radio, some were earning their living by it, and others simply as a hobby. This individual was classed as an amateur operator, and night after night he experimented, constantly making improvements and developing new apparatus. As a result of many sleepless nights and personal sacrifices, the amateur was rewarded by finally having his signals heard in England. This was far from the end however; an amateur in Honolulu was heard in Connecticut, a distance on about five thousand miles and more than one hundred other amateurs were heard in different parts of Europe. When radio telephony came into commercial use, for broadcasting, immediately another class of individuals came into ex-



istence. This man is called the broadcast listener, and he has been recruited from all walks of life. Consequently it is seldom that he has the ability to successfully operate the radio receiver and thereby hangs the trouble.

An article appeared in a certain radio magazine stating that the amateur was jealous of the Broadcast listener because he has accomplished in one week, what the amateur has taken years to do. This statement seemed rather queer to the amateurs who read that particular article, but upon reflection it can be easily seen that it is more or less of a joke. Such material should not be published as it is very far correct. The radio man or an amateur cannot be made overnight, the art requiring years of study and careful thought as well as any small amount of money. The broadcast listener has blamed the amateur for interference which came from the single circuit receivers of the Broadcast listeners or from commercial radio stations. In many cases the Broadcast listener has an aerial that is so long that other waves will cause a lot of the interference that could be eliminated by careful design. If he would learn the code, the listener, would not curse the buzzes of radio telegraph, and he would get real fun out of radio. If interference is caused by some station the Broadcast listener should be sure that he has the right station before accusing some innocent amateur. Single circuit receivers may be operated in such a way that they do not transmit, and also when properly operated they will tune fairly sharp, thereby eliminating interference. A law against an amateur is a waste of time and money. The air is free and everyone can use it. If an amateur is on his legal wavelength he may operate whenever he sees fit, and no one can stop him unless diplomacy is used. The amateur is willing to cooperate with the Broadcast listener in every way, as proof of which the amateurs all over the country have recently voluntarily stopped all transmission between the hours of 7 and 10:30 P. M. Of course there may be a few amateurs who have no sense of respect, but why damn them all for the sake of a few? Practically every leading engineer was an amateur and most of their experience was obtained through amateur experimenting.

Now then to sum it all up—BROADCAST LISTENERS—Get a good set of the two circuit type and learn the code, get a ham license and

join the crowd. Don't use too long an aerial make 200 feet your limit. Study radio wherever possible. Join a radio club and get the utmost from radio.

To the Amateur: See that your wavelength is correct and that your decrement is low. Transmit at the allotted time and cooperate with the Broadcast listeners wherever possible.

EXECUTIVE RADIO COUNCIL

AT THE January meeting of the Executive Radio Council of the Second District, the annual election of officers took place. The following were elected for the coming year: President, A. A. Hebert, Nutley Radio Club. Vice-President, G. T. Droste, Down Town Radio Club. Assistant Vice President, W. J. Howell, TALO Club. Recording Secretary, W. A. Remy, Bronxville Radio Club. Corresponding Secretary, W. F. Crosby, TALO Club. Assistant Secretary, C. E. Huffman, North Jersey Radio Association.



The Council intends to take a very active part in all of the doings of the second district during the coming year, such as straightening out any difficulties that may arise between the amateur and the broadcast listener, the betterment of the different radio clubs and the drawing up of a new set of traffic regulations. It is hoped that these new regulations will be respected by the amateurs of the 2nd district more than those that have been advocated in the past.

A great deal of careful thought is necessary in the compilation of traffic regulations to really make them of any use, and any suggestions coming from many of the affiliated clubs will be greatly appreciated. A square deal is going to be given to everyone interested in radio, whether he be simply a broadcast listener or an brass pounding amateur of the worst (or best) type. It will be a real man's sized job to get up these regulations and we would like to hear from anybody who has anything to say about the amateur.

The Abele Receptor

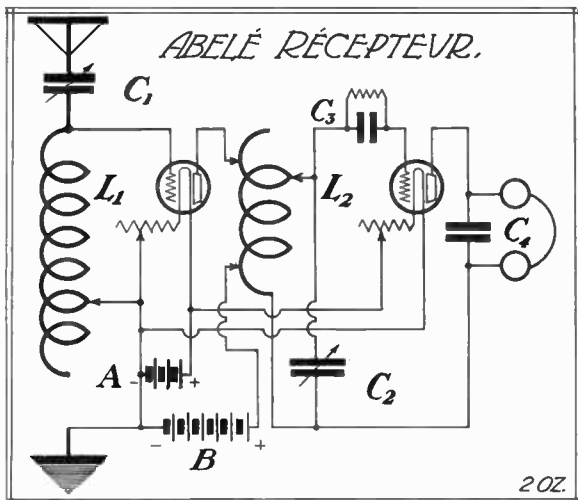
By Lloyd Jacquet, 2OZ, Technical Radio Editor,
N. Y. Evening Mail

The first article ever written in this country on the new type of receiver used by French and Belgian radio amateurs. Although constructional details are not available, the theory of this interesting receiver is discussed below.

THERE are hundreds of hams who swear by the "Reinartz" tuner in this country. In France, they swear by their "Recepteur Abele." This receiver is of a type very similar to the Reinartz circuit, but it possesses several distinct advantages over the latter which make it study interesting.

ling, shunt condenser, etc., but the Abele Receptor combines these ideas in a new, original way with which very good and unusual results are obtained.

Essentially, the receptor employs the following principles: capacitive coupling between plate and grid, and feed back effect obtained by both



The Abele Receptor was conceived by a French Signal Corps Officer, M. J. Abele, just before the war ended. Hence, it is older than the Reinartz circuit. It received its first trial on the battlefield, and has since spread throughout France and Belgium, and has been adapted as "the receiver" by those amateurs. In fact, the Abele Receptor is to the French amateur what the Reinartz tuner is to the American.

First, it should be said that the two receivers are not exactly the same. While the Reinartz tuner was essentially designed for short wave reception, the Abele receptor was studied for a wave length range of 1,500 to 25,000 meters. Remember that up until a short while ago, the European amateur was restricted to receiving only and had no idea that he would be granted short wavelengths for transmitting and receiving amateur traffic. Hence most of the receiving apparatus available today in Europe is of this excessive long range wavelengths.

The Abele receptor, as in fact does the Reinartz, employs features, and ideas which are well known, and have been patented a long time ago; capacitive feed-back, tuned impedance coup-

electro static and electro magnetic means.

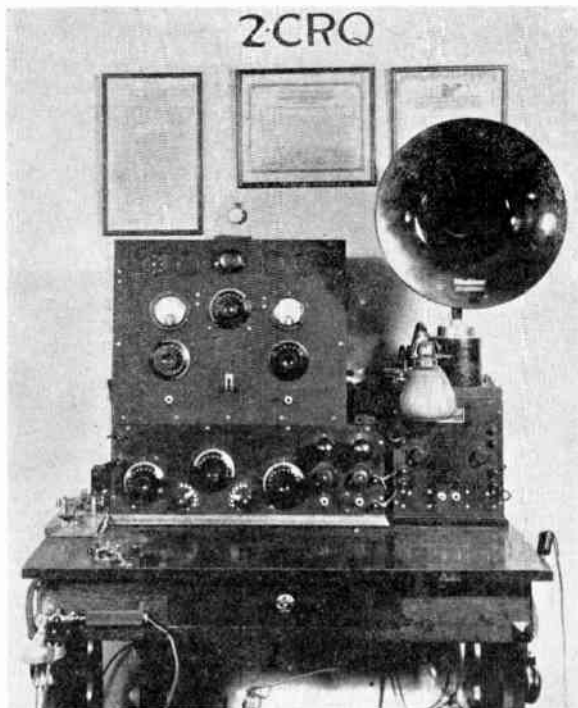
This type of receiver has some distinct advantages which are not possessed by other types of short wave receivers with which we are acquainted. In the first place, the coupling tube is used as the first stage of a radio frequency amplifier. All feed back effect between the primary and secondary is eliminated, thus doing away with critical adjustment, and making the feed back adjustment independent of any changes in those circuits. Hence the feed back is regulated automatically.

Because of the use of the first vacuum tube, as the first step of radio frequency amplification all re-radiation is stopped. This feature alone makes this type of receiver very desirable. The primary circuit is aperiodic, but the secondary is tuned. If desired, this circuit may be calibrated directly in wave lengths. This would be a very desirable feature for quick tuning on C. W. and spark relay work, and would facilitate reception immensely.

Very little information is available about the constructional data for use of the Abele receptor on short waves. However, it is believed that

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Station Photos



The station 2CRQ is owned and operated by R. L. Koerner. It is located at 60 West 190th Street, the centre of the QRM.

At the first glance will be noticed the set is very compact and neat. The transmitter consists of four five watt bottles in a 1 DH circuit. On the panel a hot wire ampere and milliam-

per ampere meters are located. The throw over switch is near the bottom of the set and is a very clever stunt.

The receiver is the ole reliable short wave set with two steps of amplification. A Vitalifone is for the moosik when the family demands entertainment. 2 CRQ is an ARRL member and will QSR at any time.



Code Class of the Radio Division, Hudson River Yacht Club

CLUB NEWS

Radio Club of Long Island

AT THE last meeting of the Radio Club of Long Island the following officers for the year 1923 were elected:

- President, Edward Finck.
- Vice President, E. Huerhausen.
- Treasurer, E. Ruth, Jr.
- Secretary, W. L. Eckert.
- Publicity Manager, F. Siemers.

Mr. Fowler was re-elected representative to the 2nd district council. The club is still meeting in the Room of the Plaza Business School but is trying to get a permanent club house where both a transmitting and receiving set can be installed. The former treasurer of the Club, Edward Penn, was burned to death in a large apartment house fire in which ten people lost their lives. Mr. Penn was a faithful and energetic worker for the Club and his loss has been keenly felt.

dent, is working on a couple of 50 watters and expects good results. 2BZV was seen coming out of a home-brew supply store with a large roll of copper tubing for a new lead-in. He believes in reducing antenna resistance to a minimum. "Doc" Miller 2GA is being heard all over town with a 5 watt fone set. Several members of the Club are going into the theory of radio. Fred Siemers is studying electrical engineering at Brooklyn Poly and Joe Bonanno and Jim Miller are taking it up at Stevens Institute. The Club would like to hear from other clubs in the vicinity and from amateurs desiring to join the Club. The meetings are held every second and fourth Friday in the month.

Address all communications to:

Fred Siemers, Radio Club of Long Island, 257 Bridge Plaza, Long Island City, N. Y.

Yuba Radio Club

From the west coast comes news that the Yuba Radio Club has been recently formed with quite a large membership. Frank Spies is the president of this club, which is located in Yuba City, California. Not understanding the situation, this club wished to become affiliated with the Executive Radio Council, 2nd District, but owing to the fact that it is in the sixth district, and also that the delegates would have quite a lengthy trip to the Council meetings each month, the idea was given up.

Keep up the good work, Spies, and may the Yuba Radio Club live long and prosper. The Modulator, despite the fact that it is primarily a second district publication is always glad to receive any news from any of the other districts

2211 Bedford Ave.

Second District Executive Council,
120 Liberty Street,
New York City.

Dear OMS:

This club is again located at the above address. The meeting nights have been changed to the second and fourth Fridays of the month. At our last meeting, yesterday, the 12th, the following were elected and appointed to office:

- President, L. Jaquet.
- Vice President, M. Carter.
- Secretary, D. Kirchick.
- Treasurer, K. Knudson.
- Trustees, C. Caggiano and M. Greene.
- Chairman Traffic Committee, M. Greene.
- Chairman Membership Committee, D. Talley.
- Editor "Radio Log," Club Paper, C. Caggiano.

We extend a most cordial invitation to you and anybody interested in radio to drop us a line or pay us a visit. Be glad to see or hear from you.

73, OM, Cul.

D. KIRCHICK, Secretary.

Secretary's address, 409 Osborn Street.



The Club is in favor of the plan of having a central meeting of all the radio clubs in the city. This plan was introduced at a meeting of the council. The members of the club believe that by this plan they can hear good speeches and lectures on radio. A meeting of this sort will also bring about an exchange of ideas which will benefit all concerned.

Affiliation with the A. R. R. L. was also discussed and voted upon favorably. Now that all obstacles are removed affiliation and incorporation will be accomplished in a short time.

Mr. Danils an ex-navy man and radio engineer has presented several interesting papers before the club. Mr. Danils knows radio from A to Z and his talks are very interesting. He explained several new transmitting circuits and gave the Club some ideas of airplane radio equipment. Mr. Ferguson of the Ship Owners Radio Service has also give some interesting talks.

Quite a few members of the club have transmitting sets and all have receiving sets. 2BUM, a member of the Club, has a record that is far from bum. He is getting ready to paper his room with acknowledgment cards. Ed. Finck, Presi-

Ridgefield Park Radio Club Notes

By John Escobar, 2CRO.

The club held its second annual dinner at the home of the president, on December 27th. Music by the club's orchestra—MIM—was enjoyed by all present. After the hungry mob had been fed various forms of amusement were indulged in—so, om, did you ever try to beat the other fellow push a peanut across the floor with your nose? After equally trying feats had been attempted and more music played, the crowd dispersed.

The club sports a wavemeter now and is ready to help out any nearby amateur with it whenever requested.

A committee to procure speakers—by hook or crook—was appointed. We hope the "Flying Squadron" pays us a visit. Any amateur is welcome at our meetings, which are held as mentioned some months ago, every Wednesday evening at the High School at 8 P. M.

There is no doubt that Ridgefield Park has a real traffic station—noisy, we'll admit—in 2CJX, who works dx on spark in a way to make most cw bugs green with envy. We'll admit—in 2CJX, gang understand that he isn't using 10 kw as most people are wont to think. Only draws 8 amps when using the quarter tap. MIM. Another station came and—went. 2CRO with ten watts cw handled a flock of messages and then blew a tube just when the old thing was percolating right. 2AWT has been threatening to use a half kw spark so watch out as it is being installed now. More QRM.

Well, fellows, guess I have taken up enough valuable space. So cuagn 73.

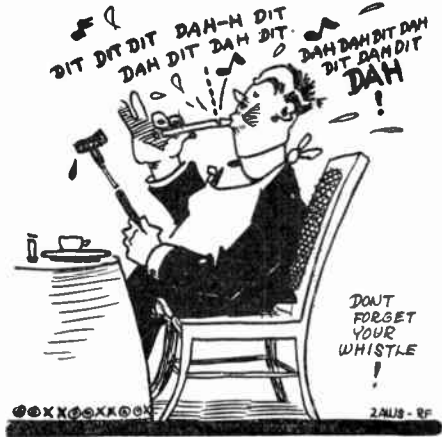
Talo Club

The Talo Club was formed on October 21, 1913, by five amateurs of the Second District, at the suggestion of W. J. Howell, who with the aid and co-operation of E. T. Dickey, W. Woodrow, W. H. Sands and F. L. McLaughlin, drew up a constitution under the name of "Technical Association of Licensed Operators." This organization was the final result of a Radio Club which was formed a few months before the above date but which did not function in the proper manner so drastic changes were made. The first letters of the Club name have been taken and put together so that at the present date we have what is known as the Talo Club, among the Amateurs of the Second District.

There are three outstanding features of the Constitution, namely, first, the Club is limited to thirteen members; second, there are no dues, and third, the Club cannot dissolve as long as there are four dissenting members. The rest of this interesting document is drawn to conform to the Club's particular requirements, simply because it has been changed to apply to the various radio conditions that have taken place in the past. This policy has resulted in having a very successful Club and gives a tremendous incentive toward a progressive program of Club action.

There are several features of the Talo Club that may be of interest and we doubt whether other Radio Clubs have the same un-written laws among their membership. In fact there are many reasons why we have such laws but they have operated to the fullest satisfaction in every case. The majority of the Talo members have grown up together in the Radio field and therefore know

to a great extent just what each member knows or does not know. This means that a member is respected only for what he really knows about Radio and not for what the outside Radio field thinks he knows. The result of this feeling produces the interesting situation of hearing members who hold good positions in Radio today, admit that they know practically nothing about certain subjects, in fact subjects which they are paid to know. There is no razzing from the other members when an admission is made, rather it is accepted as a matter of course and wherever



possible the members supply the missing information. The story is told of the knight who started the habit of removing ones hat when he enters a house, by removing his helmet upon entering a castle filled with other members of his organization. When asked why he had taken his helmet off, he replied, that he no longer needed it, as he was among friends. In the same manner the members of the Talo Club remove their mental helmets and know that the other members will not take advantage of their position, but rather will do all they can to help construct and repair a member's technical armor. This is as it should be and the members are living up to the passage in the Constitution where it says that we are combined together for the purpose of increasing our knowledge of wireless telegraphy by means of intercourse and organized experimentation.

The next unwritten law is a very peculiar one and apparently is the opposite of the one just explained but in reality it is a tube with a different characteristic curve, and that is the right of any member to sit down beside another member and tell him just exactly what he thinks about him in regards to any matter of any kind. Now the member who is doing the receiving simply must listen because it is for his own good in future activities and upon no subject can he get sore because this type of transmission is never indulged in unless there is due cause for same and it is usually a Club matter.

From the two above laws it will be seen that any member of the Talo Club who survives this kind of mental hazing either deserves all he gets or is a regular fellow, and let me state right here, that we have had some royal battles and still continue to carry on.

The membership has been kept low because it has been difficult to get new members who would fill all the requirements such as personality, technical ability and the will to bring something to the Club in return for value received. Members have been dropped and new members added from time to time but the old spirit of good Radio fellowship remains and each member as

an esteemed member of the Talo Club. This Club data and publicity we trust will be taken in the right light by Amateurs because every one of us are dyed in the wool hams and believe in Citizen Radio and all that it stands for.

In proof of the above let it be known that the Talo Club bought an A. R. K. L. bond in April 1919, for \$35.00 and we had only seven members at that time, altho we were not affiliated with the A. R. K. L., we saw our duty to Amateur Radio and dug out the iron men. At the present time we own a Liberty Bond, the interest of which more than covers Club expenses. Another item that should be noted is the Club's activities in connection with the Executive Radio Council, Second District, and contributions to the Modulator. We believe in Radio, by, for and with the Amateur.

In connection with this paper there are a few data sheets which will give the members full information regarding practically every one of the one hundred and twenty-one meetings that have been held in nine years; as the minutes of each meeting has been gone over carefully and data obtained from same. Many interesting features have come to light thru this compilation and the members will find much to guide them in the future policies of the Club. One item that will be derived is that the Talo Club meetings are growing more important as the years go by and while we only hold ten or twelve per year the subjects that are discussed usually are some what ahead of what is known in general, due, no doubt, to the many sources of information at our command, and for an Amateur organization the Talo Club is among those present, even if it is the oldest Club affiliated with the Executive Radio Council. After all is said and done, the words of Steven A. Murray, who died in the service of his country, come to mind, "Look at all the fun you had." Murray was one of the Talo Club's members and we wish we had more like him.

The outlook for the Club's future is very bright and new members will be voted in so that the entire Radio field will be covered in practically every branch, for it is the ambition of the present members to have a real Radio Council where they can bring their problems for discussion and build up their technical knowledge thru a man to man debate without having that aloofness of feeling which is so common in many Radio circles. In closing I wish to thank E. T. Dickey for his aid in preparing this paper and the Talo Club sincerely thanks him for his faithful services as Secretary and Treasurer as he has been the best one we ever had since the Club's inception.—W. J. H.

The Blumfield Radio Club

The Bloomfield (N. J.) Radio Club is one of the oldest clubs affiliated with the Executive Radio Council of the Second District, Incorporated, the club was organized November 28, 1914, with a membership of seventeen bonafide old-timers, many of whom have become commercial or Government operators.

The club disbanded at the beginning of the war and was re-organized February 3, 1920, by Mr. Fred J. McKinney, "2EY," who was elected president, which office he still holds. Mr. McKinney's radio experience began in 1908, and

Continued on page 190



MISTAKES WE'VE ALL MADE

Put a k.w. coffin on a ¼ k.w. dubilier condenser.

a Club unit takes it upon himself to aid the welfare of his associates in a personal manner. In fact every member is a personal friend of the other members and this is the reason why the Talo Club exists today and will continue for many years to come. We sincerely wish that every Radio Club could be organized on the same basis for then, and only then, can full co-operation be obtained. We have had many applications for membership in the Club but it will be seen how difficult it is to comply with the requirements that have been built up during nine years and that the general welfare of the Club is at stake whenever new members are voted in. The reason for this is that the Talo Club has developed into a Radio Council in the sense that each member represents some important branch in the field today and therefore is able to bring reports regarding salient features of activities in his line of work. This means that many new developments are discussed and results obtained by putting two and two together from various sources which gives data far ahead of general radio publications, and while it gives each member a broad view of any particular situation there are times when this information must not be broadcasted. This brings up the point of absolute trust between members and this feeling is one that only time can produce, so it will again be seen why it is difficult at times to increase the membership of the Talo Club.

We wish that fellow Amateurs could have been with us on our trips to high power stations and have access to the papers that have been written in the past for some of them were very good and usually many months ahead of Radio magazine articles but we hope to make up in future by publishing data thru the kind assistance of W. F. Crosby, Editor of the Modulator, and who is

Traffic Notes

BY F. B. OSTMAN, 2OM

AY by day in every way we are handling more messages. Let's try this fellows, we didn't go ahead much this month, but probably because the translaties took up half of our time—and even after that was over, all some fellows had was the Test habit. That and the eq affliction are our worst enemies. This is the month we go out to double all previous

This is absolutely necessary. Thanks, om, we want your report no matter how small.

Notice A. R. R. L. men, we want official relay stations in every town. If you have a station and can be on duty a reasonable length of time, are willing to QSR relay traffic, write to your District Superintendent or City Manager if you qualify a certificate will be issued.

JANUARY MESSAGE REPORT

	CW			SPARK			TOTAL		
	Stns.	Msgs.	M.P.S.	Stns.	Msgs.	M.P.S.	Stns.	Msgs.	M.P.S.
Northern N. J.	40	2384	60	21	1287	62	61	3617	60
Southern N. J.	2	70	35	1	42	42	3	112	97
Eastern N. Y.	37	2426	66	4	266	66	41	2692	66
Western N. Y.	0	0	0	0	0	0	0	0	0
TOTAL	79	4880	62	26	1595	62	105	6475	62

Total messages 6475.

Each month we will publish the six leading stations, three of each cw and spark:
 CW—3XM, 411; 2AWS, 308; 2AJF, 253. Spark—20M, 292; 2CJX, 136; 2DI, 126.

records. We want at least 12,000 messages from the Northern Section Atlantic Division—and we won't feel real big unless we can go over the top to the tune of 15,000 messages. What say om? Let's go. Here's our slogan.

EVERYBODY SEND A MESSAGE BY RADIO.

Perhaps the most noteworthy thing we can mention this month for this section is the return on the air of Carl Trube 2BK—honest, om, those of us who know you sure welcome you back and this time a Jerseyite, you're in one of the livest nests of relaying hams in the world—do you know that too?

For the fourth consecutive month No. N. J. takes the cake leading the other sections of the Atlantic Division No. section with messages handled, FB R.S.J.—Hi. 2AFA not satisfied with reporting total messages handled gives us the total number of words also; maybe next month if he has the time he will tell us the number of letters. Great, eh? 2CJX still having trouble with his spark set—it is rumored he is considering a change to cw—2CJX has the last remains of that old rock crusher of old 2ZM. 2CJX doing good work on his spark set, but running into hot water with the local BCL's. 2EX at last on cw and is as pleased with results as any old spark man can be with first results. CW stations fell off with their reports this month for some reason.

The Assistant Division Managers say: Traffic Stations, kindly get your traffic reports to your District Superintendents and City Managers on or before the 16th of each month, so he can get them to his Assistant Division Manager on time.

Newark stations went all to pieces this month the only report "Walker" got was from his own station, 'smatter?

3XM promises us a new record next month, one that will make 1226 look sick—can you beat that? Princeton always shows speed since the early days of 3DH. The following stations have been appointed as official relay stations: 2BMR, 2AWH, 2CJT and 3BEI.

Herewith is a list of stations who have within the past four months been appointed as official A. R. R. L. relay stations throughout New Jersey and New York.

These men for the most part have been deserving of such distinction for the active relay work, their conscientious reporting of messages handled, and their interest in A. R. R. L. activities.

NEW JERSEY

2AWL, 2AJF, 2ALY, 3CG, 2OF, 2FC, 3FP, 2AFC, 2ARB, 2AQI, 2BNZ, 2JZ, 2WR, 2CBK, 2RU, 2AZY, 2COR, 2AFP, 2AMB, 2QB, 3CS, 2UE, 2CHG, 2MP, 2EX, 2SQ, 2OM, 2BMS, 3JL, 2CJX, 2BQZ, 2EY, 2BG, 2BOI, 2MN, 2BIR, 2AAF, 2AER, 2ACD, 2AKO, 2ANZ, 2AOS, 2BBB, 2BEM, 2ZM, 2ZE, 2QZ, 2RZ, 2CJA, 2CKA, 2AJA, 3XM, 2CQZ, 2BMR, 2AWH, 2CJT, 3BEI, 2BK.

NEW YORK

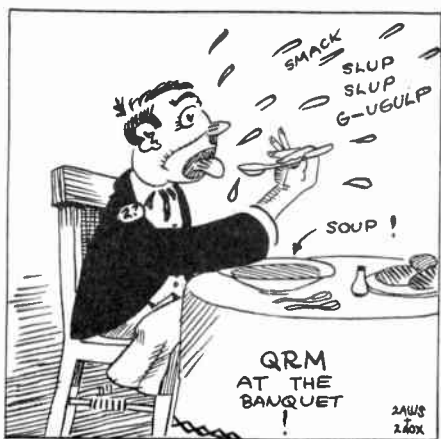
2DI, 2AJW, 2UA, 2HW, 8CKN, 2GK, 8AOT, 2AEO, 2TT, 2FZ, 2RM, 2AVE, 2TS, 2AWF, 2CNI, 2ABM, 2AAX, 2CNP, 2DA, 2BQD, 2ANM, 2DN, 2KV, 8FE, 8BIP, 8HJ, 8AMM, 8AGK, 8ASL, 8QB, 8VW, 8AYM, 8DAJ, 8NB, 8BRI, 8ADG, 8BOE, 2AUY, 2AJE, 2ZL, 2AEQ, 2Wb, 2BRB, 2PF, 2NZ, 2IG, 2MJ, 2AGC, 2CEV, 2IN, 8PJ, 8QX, 8AXN, 2BNL, 2KP, 2BJO, 2BRC, 2AWS, 2AZC, 2BSC, 8BMM, 8BUX, 8BQA, 8AHK, 8CSE, 8ADN, 8AIW, 8OTU, 8AMQ.

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since that time he has had much practical experience, as one of the original licensed radio operators having served both as a commercial operator in charge of a ship sailing out of San Francisco, and as a Government operator and also an instructor in radio.

The Bloomfield Radio Club is a charter member of the Executive Radio Council, Second District, Inc., being officially accepted December 21, 1920, and has been represented at all regular meetings of the council since that date. A charter of affiliation was awarded by the American Radio Relay League, Inc., December 2nd 1921.



Arrangements were made in January, 1921, to hold the club meetings at the Community House, 82 Broad Street, Bloomfield, N. J., where the club has two well-equipped connecting rooms, for the meetings and a fine club radio station, which is fully equipped and in charge of competent operators on their various evenings.

The receiving antenna, which was erected in Many, 1921, is two hundred feet long, sixty-three feet high, consisting of one phosphor bronze wire supported by galvanized iron masts properly guyed with stranded phosphor bronze cables, well insulated and grounded for lightning protection. The transmitting antenna is an eight wire cage of woven copper wire, built on thirty-inch light metal hoops. On inside direction finder loop is also used for special test work.

The receiving equipment consists of a Paragon R-A ten regenerative receiver, with a signal variable antenna condenser, two step audio frequency amplifier, phones, radio Magnavox, Burgess "B" batteries, five cell Edison storage battery and a six ampere Rectigon battery charger. Very selective work can be accomplished on distance and the received signals have been heard three blocks from the station.

A large code practice table is equipped for connection either with the receiving set or a key and motor chopper, the signal strength being variable for any number of head phones. Instructions in theory and examinations are given for those preparing for license examinations.

The regular meetings are held every Wednesday evening, but the club rooms are available at

any time, when in charge of one the duly appointed operators in charge. The Technical Committee arrange for talks on timely and interesting subjects and conduct demonstrations and tests for the benefit of the members. Social evenings and refreshments are arranged and agreeably carried out by the program committee.

Mr. Paul F. Godley accepted an honorary membership in the Bloomfield Radio Club before his trip to Scotland for the A. R. R. L. Trans-Atlantic tests. Mr. Alfred P. Morgan, is also one of the club's honorary members. At the January meeting of the Board of Directors, a resolution was passed to subscribe to the "Modulator" for one year for each new associate member accepted up to the close of the Convention in March. The associate membership is for those interested in the club's work, but are unable to attend the meetings regularly.

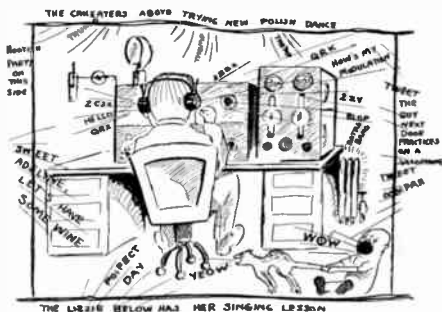
The entrance fee for associate membership is three dollars, including the first year's dues, which are two fifty annually thereafter. The entrance fee for active membership is two fifty and the dues are three fifty per annum or ten cents per week. The active members are entitled to all the privileges of the club and to membership in the community house. Only active members are eligible to hold office or vote. Membership cards are issued annually and the club also has a neat club pin of original design.

Applications for membership may be secured by addressing the Chairman of the Membership Committee, Mr. S. Gilbert Evans, 164 Washington Street, Bloomfield, N. J.

The following officers were elected for 1923 at the annual election of officers of the Bloomfield Radio Club, Bloomfield, N. J.:

- Fred J. McKinney, President.
- Arthur J. Ball, Jr., Vice-President.
- Robert R. Blunt, Secretary.
- Archie J. Wykes, Jr., Treasurer.
- Frederick B. Woodworth, Recording Secretary.

Fred J. McKinney and Robert R. Blunt were re-elected Representatives to the Executive Radio Council of the Second District, Incorporated, with Wilber C. Roake, as Alternate Repre-



Radio Station Zone of Quiet, III, III.

sentative. Mr. McKinney, "2EY," was re-elected Chief Operator and Local Traffic Manager. The regular meetings of the club are held at 8 P. M. every Wednesday evening at the club

Concluded on page 192

A Manufacturer Who Is Really for the Amateur

"PARAGON" success is based on the good will of the amateur—on the amateur's appreciation that PARAGON RADIO PRODUCTS have made it possible for him to get the very best out of radio.

From the first, PARAGON has applied advanced engineering methods to amateur radio problems.

Among the manufacturers of radio equipment, the makers of Paragon products have gone furthest in studying the difficulties and needs of the amateur—and in devising radio apparatus which would enable him to receive radio messages and programmes from far and near with professional facility, and without the common annoyances from mixed messages and general jamming between the various broadcasting stations.

We place great confidence in the willingness of the experienced radio amateur to recommend PARAGON Products and Service to the radio beginner.

And when any problem comes up, which the amateur—expert or beginner—cannot solve for himself, we are only too glad to have him take it up directly with us either in writing or by personal visit to our plant.

Let Us Hear From You!

ADAMS-MORGAN CO.

28 Alvin Avenue,

Upper Montclair, N. J.

Continued from page 190

rooms, Community House, 82 Broad Street, Bloomfield, N. J.

The Bloomfield Radio Club which was organized in 1915 is a charter member of the Executive Radio Council, and is affiliated with the American Radio Relay League, Inc. Any further

Continued from page 189

8CUU, 8KS, 8QE, 8TC, 2CT, 2CIM, 2IF, 2VH, 2CEI, 2CEC, 2BUE, 2PV, 2ABQ, 2MX, 2AQL, 2CNK, 2CHK, 2BLP, 2AIF, 2BK.

NOTICE

The A. R. R. L. and members of the Executive



Sermon for the CQ Hounds in Four Pictures

information may be secured from the Secretary, Robert R. Blunt, 75 Monroe Place, Bloomfield, N. J.

Hudson Radio Club gives Banquet

The banquet given by the Hudson Radio Club on the evening of January 26th, was a decided success. There were forty-two of the Club's members present, which is slightly more than eighty per cent of the total membership.

The dinner actually got under way at 7:15, and after a few minutes occupied in taking a photograph of the assembled crowd, a merry hour was spent in consuming enormous quantities of food.

The vice-president of the Club, Mr. Kilbourne, 2BRO, acted as toastmaster, and introduced the speakers. The first on the program was Mr. Droste, the vice-president of the Second District Executive Radio Council, who gave a very interesting address on the services of the radio amateur to the Army during the World War. Mr. Droste gave a very comprehensive description of the work performed by the amateur operators, and of the difficulties encountered during their service.

The second speaker of the evening, was Mr. F. B. Ostman, 2OM, Executive Assistant Division Manager of the Northern Section of the Atlantic Division of the American Radio Relay League. Mr. Ostman spoke on the traffic system now in force in the Atlantic Division, and also urged everyone to be more conscientious in their delivery of messages.

The last speaker was Mr. W. F. Crosby, Editor of "The Modulator." He spoke first of the importance of efficient organization among the amateurs, and secondly of the support which they should give the Council's organ, "The Modulator."

At the conclusion, the president, Mr. Danziger, announced the new committees which have been appointed for the coming year, and expressed his thanks to those retiring from office. He also stated, that in view of the very enjoyable evening had by all, he sincerely hoped that it would be possible to have another such dinner in the not far distant future.

Radio Council, Second District, invites the public to transmit messages to all parts of the United States, Canada, Porto Rica and Hawaii, by Radio. No charge is made. Official A. R. R. L. relay stations are located in nearly every city of the United States. For further information inquire of A. R. R. L. Executive Radio Council, Second District, booth or club booths located in the "Butterfly Room."

Attention! The following information is for those amateurs of this district and particularly the traffic officers and club representatives to the Executive Radio Council, Second District, who for the good and welfare of amateur radio want amateur radio to continue to exist.

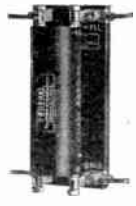
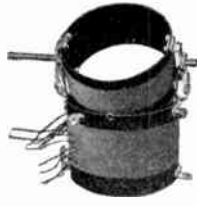
Wholesale violation of U. S. Government, and Executive Radio Council, Second District, traffic rules and regulations continue at breakneck speed. It must be curbed—at once! For those good amateurs who want amateur radio to continue, we print herewith instructions and methods to be taken to rid ourselves from the damaging influence of the many irrational hams among us who continue to show utter disrespect for the regulation we pledged ourselves to uphold.

Every club represented to the Executive Radio Council, Second District, is an official Assistant Traffic Supervisor.

It is the duty of every honest amateur, A. R. R. L. traffic officers and Assistant Traffic Supervisors to report by mail, on hearing violations of U. S. Government and Executive Radio Council, Second District, traffic rules and regulations, in or out of his district, to the Traffic Supervisor in whose district such violations occur with all details, as to time, what the violations were, etc.

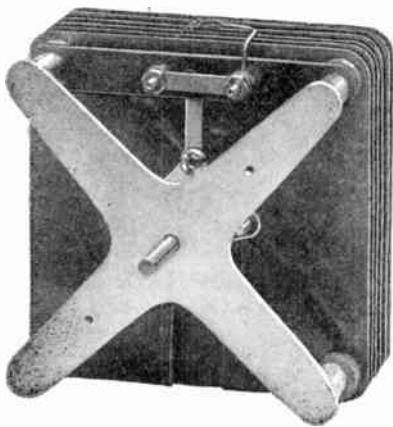
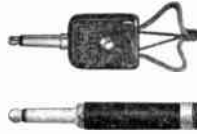
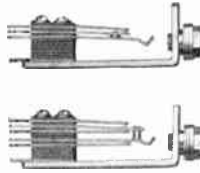
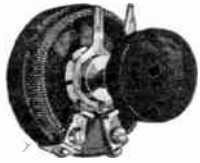
Assistant Supervisors have absolute authority to enforce the regulations of the Council in territory under their control, and are also responsible for the strict adherence to the regulations of all amateur stations in their respective locality.

In the case of violations, Assistant Supervisors will handle these matters direct with violators with a view of clearing up the difficulty. If unsuccessful, the Traffic Supervisor will then refer-



Federal Parts
Will give you DX
Stuff every night

Federal Telephone and
Telegraph Company
BUFFALO, N. Y.



Patents Pending
The TELOS Variometer

A variometer that is really efficient. Wave length range 180-730 M. in series connection, 50-530 M. in parallel connection. In latter connection has only one-tenth the distributed capacity of the ball and stator type.

Write for details
Danziger-Jones, Inc.

Manufacturers of TELOS Apparatus
143 Prince Street New York

such matters to the Chairman for final action.

Many of you might like to know just what final action means—suffice to say the Customs House is at all times ready to back the Executive Radio Council of this District in such cases, closing of the station or confiscation of the apparatus, such as the case may warrant will soon rid us of nuisances!!!

Station operators finding it necessary to make a complaint against another station because of violation of the regulations will file complaint with his Assistant Supervisor.

Assistant Supervisors will prepare and forward to the Traffic Supervisor monthly reports, which is to be in the Traffic Supervisor's hands not later than the first of every month. This report will cover all activities in each district and everything of interest to the Council.

Assistant Supervisors should have accurately calibrated receivers at their stations which may check wave lengths in excess of 200 meters or when the degrement of a transmitter is high, whether or not the offending station requests such information.

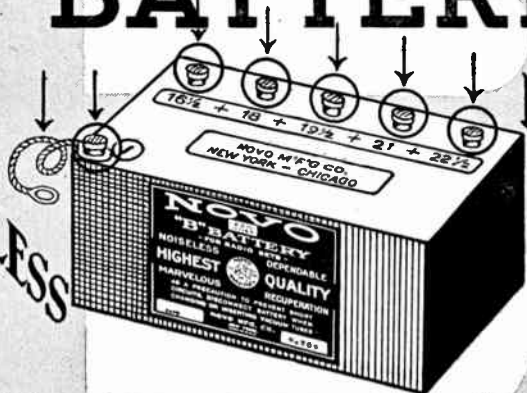
When an offending station has been warned three times within a period of one week of any violation of the Council's regulations, and still persists after the third warning, the matter should be reported to the Traffic Supervisor. In all such cases, the Assistant Supervisors will merely call the offending station operator's attention to the fact that he is violating a regulation and in all cases the notification will be confirmed to the above formal notice.

Concluded on page 196

NOVO "B" BATTERIES

NOISELESS

DEPENDABLE



NOTE THE INSULATED BINDING POSTS AND 7IN. WIRE CONNECTOR

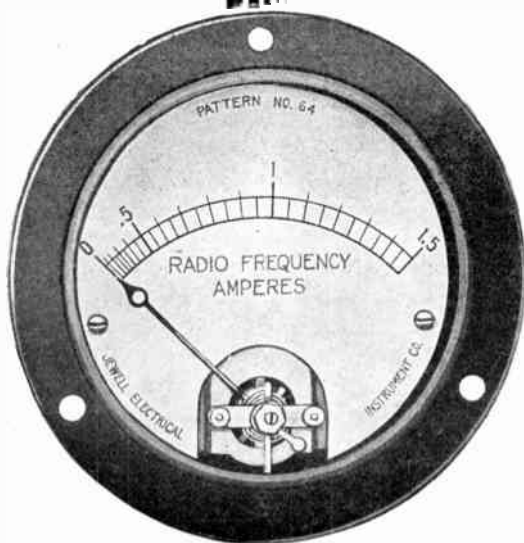
NOVO M'F'G CO.

424 W. 33rd ST.
NEW YORK

531 SO. DEARBORN ST.
CHICAGO



LOOK FOR THE JEWELL
"WINGED MAGNET"



*"Over twenty-two years
experience manufacturing
electrical measuring
instruments."*

*Our Sales Engineer, Mr. John H.
Miller, will be in attendance at this
show, our Booth Number 22. Let
him help solve your instrument
problems.*

JEWELL ELECTRICAL INSTRUMENT CO.

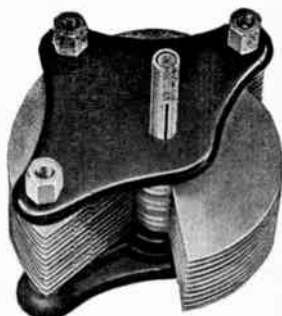
**1640-50 Walnut Street
CHICAGO**

"ORDER FROM YOUR DEALER"

ALWAYS MENTION THE MODULATOR WHEN ANSWERING ADVERTISERS



No More Marred PANELS



THE AMSCO INDUCTANCE SWITCH saves the trouble of drilling your panel for each and every contact point. It facilitates soldering to coupler. It has a fan switch (dead end).

Beautifully finished with metal graduated dial and knob.

Price \$1.50 Postpaid

THE AMSCO VARIABLE CONDENSERS are extremely efficient, compact and ruggedly constructed.

3 Plate	\$1.25
13 "	2.00
23 "	2.50
43 "	3.25

All AMSCO Products are Guaranteed

ADVANCE METAL STAMPING CO.

19 THOMPSON STREET

NEW YORK

Continued from page 193

A written record should be made in all cases where the attention of operators is called to violations, such as call letters, name and address, date, time and what was transmitted by the offending stations. In any case on first or second warning, where an offending operator states that he will not cooperate with the Council, the matter should be at once reported to the Traffic Supervisor in writing with full details.

F. B. OSTMAN,

Traffic Supervisor.

Continued from page 184

by following the suggestions given below, some interesting results may be obtained by the amateurs who want to try this idea out.

Referring to the diagram, L-1 is the primary tuning inductance. It is similar in construction to a Reinartz antenna coil. C-1 is the usual antenna condenser. L-2, which is connected in the plate circuit of one tube, and in the grid of the detector tube, may consist of about 40 turns of No. 24 wire wound in a single layer on a bakelite tube about 3½ to 4 inches in diameter. This winding should be tapped about every two turns. It is shunted with a variable condenser C-2 of .001 mfd capacity. C-3 and C-4 are grid and phone condenser of the usual size.

The primary coil L-1 may be placed as far as three feet away from the L-2. The tuning is extremely sharp, and is comparatively simple, as it only comprises three controls. It is as simple in construction as the Reinartz tuner, and

may give us quite a surprise. Let's try it out, let's hear something about these essays.

CALLS HEARD AT STATION 2AFC

January 29, 1923.

Spk. 3CS, 3QW..

CW, 1GV, 1UJ, 1XM, 1AGH, 1AJP, 1AYZ, 1BKQ, 1BQD, 1BWJ, 1GNF, 3HD, 3HK, 3LC, 3MB, 3MD, 3OT, 3PZ, 3XM, 3YO, 3AFBB, 3AJJ, 3ARK, 3ALN, 3AQR, 3ARM, 3BFU, 3BIF, 3BMO, 3BOB, 3BOF, 3BPV, 3BQX, 3BUC, 3CEL, 4BI, 4DX, 4EA, 4EH, 4FT, 4KC, 4LJ, 4XD, 3XM, 5EK, 5MB, 5UJ, 5XK, 8EI, 8ER, 8FU, 8KS, 8MZ, 8NN, 8UE, 8UF, 8XE, 8YN, 8ZD, 8ZO, 8ZZ, 8AGX, 8ANB, 8APV, 8AQL, 8ARD, 8AVD, 8BOG, 8FQ, 8BYN, 8CEI, 8CPZ, 8CVE, 8CWB, 8XAN, 8ZAE, 9AL, 9DI, 9DW, 9EP, 9LZ, 9OX, 9QR, 9UR, 9YB, 9ZY, 9AAP, 9ADU, 9AFK, 9AMA, 9AMT, 9AMU, 9APS, 9CBB, 9BCH, 9DBD, 9BED, 9BIJ, 9BIL, 9BJC, 9BRK, 9BRS, 9BSD, 9BZI, 9CCM, 9CKA, 9CVI, 9DDY, 9DIO, 9DRI, 9DWK, 9DYN, 9DXE, Canadia 2 AM, 3BP, 9AJ, 9AL.

Radio Fair

THE Permanent Radio Fair at the Hotel Imperial, is still attracting a great many people who are interested in radio. Most of the leading manufacturers have spaces at the Fair and many interesting sets are on exhibition.

This exhibition started last Fall, and has continued successfully ever since. The exhibits be-

Continued on page 198

Exide

BATTERIES

There's 34 Years Experience Behind Exide Radio Batteries

And after all, it's experience, properly applied, that enables one to build a better article—whether that article be a battery or a battleship.

Exide Batteries are made by the oldest and largest manufacturers of storage batteries for every purpose, in the world.

That is one reason why the radio fan may confidently depend upon an Exide Radio Battery—either A or B—for all those qualities that contribute so much to the satisfactory operation of his receiving set.

Our representatives will be in attendance at the Exide Booth throughout the show and will be glad to answer any questions that may arise in your mind regarding storage batteries

THE ELECTRIC STORAGE BATTERY CO.
EXIDE SERVICE STATION

Direct Factory Branch

23-31 West 43rd Street

Telephone Murray Hill 7400

THERE'S AN EXIDE SERVICE STATION NEAR YOU

ALWAYS MENTION THE MODULATOR WHEN ANSWERING ADVERTISERS

197



The "Melco Supreme" Radio Frequency Amplifying Receiver can be used with indoor or outdoor aerial, loop or lighting plug. It is a new departure in radio, non-reflex, non-regenerative, tuned radio-frequency. Amplification of this instrument is extremely high per stage, without loss of tone quality. IT DOES NOT DISTORT THE WAVE NOR INTERFERE WITH OTHER MEMBERS OF THE RADIO AUDIENCE.

This new system permits of single tuning adjustments that result in a high degree of selectivity and long distance reception.

Price \$125.00

A complete line of high grade parts are also available
For quality merchandise, price cannot be equalled

MORTIMER RADIO CORPORATION

114-116 FULTON STREET

NEW YORK CITY

Continued from page 196

ing changed from time to time, so that a new array is on view continually. The management have installed a super-hetrodyne on one end of the floor and some remarkable reception has been accomplished with it.

Right here!

Radio Bizness

Fellows, you little know the calibre of the average man who is in the "Badio Bizness" today. Here is one of the best ones yet, that really happened to one of the staff of The Modulator. This fellow went into one of the largest concerns in the "Bizness" to see about an advertisement and here is what happened. The proprietor thought he knew all about "the radio" and was not going to be fooled by anybody. Our representative asked to see him and said something about the Executive Radio Council. The "boss" immediately looked wise and said, "Oh, yes, I know all about dot, dots dat magazine, QRM!" Then he went on to tell about the "amachooors," and how he knew all about the radio game.

Remember, this was an actual happening. This man had been in the radio business for some time and should have had a good knowledge of it, he is very glad to get your money, or my money, and yet . . . oh, wats the use.

Executive Radio Council,

120 Liberty Street, N. Y. C.

Enclosed herewith find one dollar and a half (\$1.50) for which please send me The Modulator for one year (12 numbers), commencing with the _____

Name _____

Street _____

City _____ State _____

WESTINGHOUSE



RADIO BATTERIES

*Built by Westinghouse—You know
they're RIGHT!*

Radio "A" Batteries

6-HR-9—6 volts, 108 amp. hrs.	\$27.75
6-HR-13—6 volts, 162 amp. hrs.	37.20

Radio "B" Batteries

22-MG-2—22 volts, 1.2 amp. hrs.	\$8.00
22-L-2—22 volts, 4.5 amp. hrs.	16.50

Radio "C" Batteries

2-M-2—Single cells	85c.
--------------------	------

Battery Chargers

Westinghouse Rectigon 2 amperes, 7.5 volts	\$18.00
---	---------

Westinghouse Rectigon $\frac{1}{4}$ amps., 27.5 volts; 2 amps., 7.5 volts	19.50
--	-------

For charging "A" and "B" Batteries

Westinghouse Rectigon 6 amperes, 7.5 volts	28.00
---	-------

Sold by good Radio supply stores and Westinghouse Battery
Service Stations everywhere.

Metropolitan Battery Service Co.

Distributors

321 West 54th Street, New York

Announcing

A New

**M u r d o c k
L o u d S p e a k e r**

For \$ **5**.00

*Backed by the oldest manufacturers
of Head phones*

Wm. J. Murdock Co.

CHELSEA :: :: BOSTON MASS.

Sales Offices

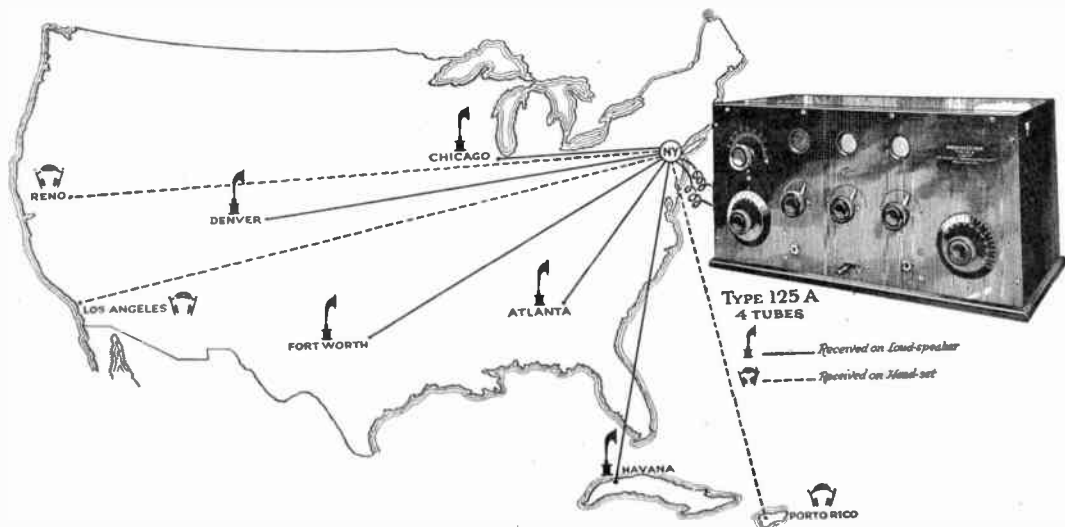
New York

Chicago

San Francisco



Quality Radio Apparatus



Distance—Selectivity—Ease of Adjustment

CARDWELL RADIO APPARATUS is being used by the United States Navy, United States Signal Corps, and Bureau of Standards. The same rigid rules of manufacture and inspection are enforced in the production of amateur apparatus as in our Government and commercial work.

Cardwell Products include

RECEIVING SETS	TRANSFORMERS—AUDIO
AMPLIFIERS	TRANSFORMERS—RADIO
CONDENSERS	COUPLERS

Descriptive Catalogue Mailed on Request

—THE IDEAL RADIO FREQUENCY HOOK-UP—

This will be sent free of charge to those who wish to build an exceptionally fine set. An exceptionally good hook-up embodying long range and selectivity.

OUR INSTRUMENTS STAY SOLD

The Allen D. Cardwell Manufacturing Corp.

75-81 Prospect Street

Brooklyn, N. Y.

LEDOX RADIO BATTERY

The only Battery made with a
TWO YEAR GUARANTEE

Designed especially for
RADIO WORK

6 Volts, 100 Amp. hours \$14.50

6 Volts, 120 Amp. hours \$16.50

Dealers write for proposition

LEDOX RADIO BATTERY CO.

76 Fourth Ave. Brooklyn, N.Y.

Phone, Sterling 1274

Continued on page 168

nection of the resistance used with the Beverage antenna.

After driving the crowbar through eight inches of snow and apparently through a two feet of solid rock, the sledge hammer was given a rest. Contact was made to the crowbar, the snow was dusted off the resistance box, and the whole business hooked up to the antenna. By dint of much flashlight code signalling and hallooing back and forth, the decade resistance was finally adjusted and the set ready to work. Upon examining the scene of these momentous events the following morning it was found that what had been deemed hard rock was nothing more than frozen sandy ground. It is unlikely that a very good ground was obtained. However, the party tendered its heartiest thanks to the sledge hammer, which it had acted in lieu of a furnace.

An idea of the comforts of home may be gleaned from the interior photo where the action took place in the bungalow attic. The set appeared to be functioning particularly well, for signals galore came rolling in immediately. Jacquet kept a log of everything heard during the test period, and many were the sweet remarks passed about the hundreds of American amateurs whose fingers itched so to transmit that they couldn't keep off the air for this special occasion. From 150 meters to 300 almost, the

dials were moved in progression. Every infinitesimal shift brought in another American station, every one pounding in with detector and two stages of radio alone. Signals from all districts were picked up, predominating in this order: 8th, 1st, 2nd and 9th, those of the 8th being particularly obnoxious. Every one of these stations, who by their transmission prevented the reception of weaker signals in this test from across the water are being notified by printed card.

Some strange happenings should be recorded. Spark signals from NBD, a government station at Bar Harbor were very strong on 215 meters. A harmonic from WBZ, Springfield, Mass., was much louder on about 200 meters than on the real wave length—400 meters. While this wasn't true with any other broadcasting station, strong harmonics from WIP, and all of the New York stations were picked up near 180 meters. Best results were had with AP tubes in the R. F. circuits and Radiotrons in the others. The second stage wasn't used, as the racket was terrific. Three pairs of Baldies were connected in series so that the calls were all verified. Somewhat after 1 A. M. the batteries were covered up to prevent freezing. Walter Camp's dozen were indulged in to unbend a few cramps, and the party secluded itself beneath a pile of blankets whence three streamers of condensed breath wafted their way up into the rafters.

Next day was Saturday, with a bright sun and all day ahead to juggle condensers and "monkey" with the decade resistance. Finally it was decided that the Beverage just wouldn't Beverage with so poor a ground connection, and about 300 feet of it was rolled up. This left a straight antenna from the house to a nearby flag-pole, a fine clear space.

During the daytime the set was tried out on broadcast wave lengths; KDKA was very strong at all times, as was WOO of Philadelphia. WOO and WIP had the edge on the Newark stations for volume, somehow. At 7 o'clock, midnight in London, the log was resumed—fruitlessly though, as far as transoceanic work goes. Once there was a thrill as "test, test, test" was picked up, but the signature was from the 5th district. After 1 A. M. some trials were made on higher waves. WDAP was there, louder than Newark had been, with a "boiled owl" all night party in progress. WBAP and WFAA were heard also, together with a great many small fry east of the Mississippi. Enough broadcasting was picked up to tickle the most hardened broadcast fan.

More than 200 amateur stations from every district in the U. S. were logged. It is regrettable that space is not available for a complete list of these inconsiderate few who just couldn't keep off the ether, even though they had been requested to do so. It would contain the call letters of well known stations—of fellows who surely should know much better. Perhaps it is possible that many of the fives, eights, nines and ones thought that their sigs were not carrying so far, and were not, therefore, interfering. But that week was to be a week of absolute quietness, and the lack of cooperation and sportsmanship on the part of many is certainly to be regretted.

It is said that only three stations were logged

Concluded on page 208

WHERE DO YOU STAND NATIONALLY O. M. ?

You fellows of the Second District are the exponents of the best in Amateur Radio in your locality. You wield a potent influence for the good of the game.

Nation-wide Amateur Radio also needs you and all that you stand for. How can you best link yourselves with the national aspects of the game you love so well?

THE ANSWER TO THESE QUESTIONS WILL TELL YOU!

Who is standing up for the amateurs' rights, and supporting them with legal defense and nation-wide publicity?

Who is watching their best interests in Washington?

Who is responsible for the fun you have and the constructive good you do—relay traffic, Transcons and Transatlantics—

THE AMERICAN RADIO RELAY LEAGUE!

An organization of the best amateurs from everywhere—bound together for mutual pleasure, protection and progress into one big family.

The A. R. R. L. needs men, good men, representative Second District Amateurs—it needs you!

Boost the Second District Executive Council, your local organization!

Visit the A. R. R. L. booth at the Convention! Join up with your national organization!

WE'LL BE LOOKING FOR YOU, O.M.!



THE AMERICAN RADIO RELAY LEAGUE, Inc.
EXECUTIVE HEADQUARTERS HARTFORD, CONN.

“—and for Amateur Wave Lengths!”

A few suggestions on how to secure maximum results with radio frequency

ACMER-1 Radio Frequency Amplifying Transformers are as effective for amateur wave lengths of 150 to 300 meters as are their older brothers the Acme R-2's, R-3's and R-4's for greater wave lengths.

In fact the maximum results of radio frequency amplification for the amateur lies in the use of not only the R-1, but of R-1, R-2 and R-4 combined.

An Interesting Test

The Laboratory force of a large concern recently made this interesting test for performance. They took six Acme R. F. Transformers from stock and tested them for uniformity (the absence of peaks and depressions in the wave length range) along with six of various other makes. The results were astonishing. The Acme Trans-

formers showed a uniform curve range while the others showed a large number of peaks and depressions—these depressions representing points in the wave length range where no amplification was possible.

How to Get Maximum Results

The surest way to be certain of securing proper radio frequency amplification is to use only Acme Transformers. See them at the show and buy them from your dealer. Write for booklet M giving proper hook-ups and useful information.



TYPE R-2 ACME TRANSFORMER
R-1 and R-3 are of similar construction
Each retails at \$5 (East of Rockies)

THE ACME APPARATUS CO.

*Pioneer Transformer and Radio
Engineers and Manufacturers*
CAMBRIDGE, MASS., U. S. A.

CHICAGO, 184 W. Washington St.
NEW YORK, 1270 Broadway

Cleveland Kansas City San Francisco

ACME—for amplification

A Quality Battery



MARKO

"The Mark of Quality" for **RADIO**

ALWAYS DEPENDABLE

At the Radio Show

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There is nothing like handling a quality product that can be sold at a price to meet any man's pocketbook.

DEALERS - JOBBERS: HERE IS YOUR OPPORTUNITY!

Marko Storage Battery Co.

1402 Atlantic Avenue, Brooklyn, N. Y.

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205

PERMANITE

The Synthetic Crystal

The Real Goods for a

REAL CRYSTAL

Sensitive, Permanent

No tiresome adjusting. Wherever the catwhisker touches, there is your spot.

PERMANITE with special catwhisker wire —.75.

Money Refunded if Not Satisfied

Dealers communicate with us on special proposition on sale of **PERMANITE**.

Our stores are famous for their courtesy and service

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179 Greenwich Street
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Two Seconds to Connect!



Model UD-825
Price each \$2.60

These plugs will prove a big convenience to every broadcast enthusiast and radio amateur.

You have only to pull back the pin, insert tip in the end and let go.

A positive, clean connection that **CANNOT** pull loose.



Model UD-824
Price each \$1.75

Examine these plugs at your dealers—see for yourself how easy it is to connect and disconnect the tips, and you will not want to do with anything less.

Radio  **Corporation**
of America
WORLDWORTH BUILDING ~ NEW YORK CITY

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BUILDERS OF STANDARD SWITCHES OF QUALITY

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FREE
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VISIBLE TYPE
PRICE 65c

Willis Switch & Instrument Co.
8 Kingsbury St., Jamestown, N. Y.



NO. 764 SERIES PARALLEL
CONCEALED TYPE
PRICE \$1.50

Continued from page 202

Continued from page 171

in this country. This is either an indictment against the European transmitter, or the American receiver. Contrast this to the results obtained by the Europeans in receiving 315 American stations!

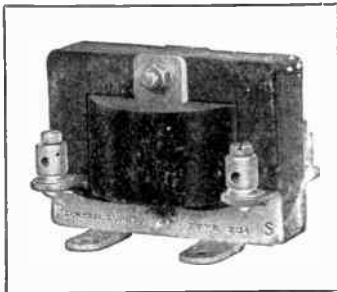
The party certainly enjoyed a well-earned "vacation," and as it rode fully an hour overtime on the D. L. & W., the only regret was that along with all of the paraphernalia brought for the experiment, that a good C. W., or "sink gap" outfit hadn't been with them, so that they could have told some of the interference to lay low.

to a point of resonance, in other words the same wave length.

Loading coils can be very easily made by winding wire on a cardboard tube or form three to five inches in diameter using any kind of silk or cotton covered wire, ranging from number twenty to twenty-eight, B. & S. gauge. Wind a single layer of wire three to ten inches long on the winding form and bring off a tap every inch or so. The exact amount will depend upon the range of wave length desired and is simply a matter of trial. An Eureka clip may be used to tap onto the coil at various points.

**STANDARD
PARTS ONLY**

*A Real Amplifying
Transformer*



**A REAL AMATEUR STORE
RUN BY REAL AMATEURS**

Radio Accessory Products Co.

Dept. A

**219 Greenwich St., near Vesey St.
New York City**

Authentic

BLUE PRINTS

SERIES B	Two Variometers and Variocoupler50
SERIES C	Honey Comb Coil Set with Two Stage Amplifier50
SERIES D	Radio Frequency Hookups50
SERIES E	Crystal Detector and Two Slide Tuner25
SERIES F	Crystal Detector and Loose Coupler25
SERIES K	Two Variometer & Variocoupler small size print25
SERIES L	Variometer Crystal Set.....	.25
SERIES J	Single Circuit Receiver.....	.25

All of these are genuine blue prints, the first three being 17 inch by 22 inch, and the others being just half the size.

All of the circuits are proven and are correct in every way and if the sets are built according to the plans will work excellently.

THE MODULATOR

120 LIBERTY STREET NEW YORK CITY

FADA WANTS TO SEE YOU

AT BOOTH THIRTEEN

FADA manufactures ultra-efficient receiving sets as well as a complete line of parts that may be used in the construction of DX and broadcast receivers. :: ::



VERNIER ATTACHMENT
No. 151-A \$0.50



VERNIER RHEOSTAT
No. 150-A \$1.25



POTENTIOMETERS
No. 152-A (200 ohms) \$1.00
No. 154-A (400 ohms) 1.00



ELL O. M., night hawks, radio owls, and all other "bugs" of the radio world—the 1923 Second District Convention and Exhibition is sure going to be a radio holiday three days long.

☞ To shake hands with all the gang and to get a glimpse of the K. B. W. in that "two gallon hat" is going to be the big modulated event of the year.

☞ Another big event awaits you at **BOOTH THIRTEEN**. All the regular standard FADA instruments and parts will be on display. These will include complete receiving sets, amplifier panels, single, double and triple sockets, vario-couplers, inductance switches, rheostats, potentiometers, etc.

☞ Something doing every minute at **BOOTH THIRTEEN**.

BOOTH  THIRTEEN



F. A. D. ANDREA
1581 Jerome Ave., New York City

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\$1 per bottle sufficient for
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**WRITE FOR OUR COMPLETE
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Something NEW; Great; ALL
Ready for Use, no SPROUT-
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3 Trial Cans for \$4.50
12 (6 Gallons) \$16.00

*Complete Instructions sent with
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The BEST and EASIEST to
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Many are wealthy or will inherit. FEE 75c
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leading publication for the period you have
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bers who are lonesome and wish to correspond
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Liberty Street, N. Y. C.

FOR SALE, one 500 volt, 200 watt, motor gener-
ator, 100 volt, 60 cycle, \$80.00. First class condi-
tion. Installed larger set. Radio 2AWL.

2UA's DX SPARK SET, for sale. 1KW. Acme,
.01 Dublier, enclosed Benwood with motor. Price
\$60.00. Also 2 pair Federal phones, \$4.50 each.
2UA care The Modulator.

DX CARDS printed to order. Prices upon appli-
cation. J. I. Cornell, 120 Liberty, New York City.

CALL BOOK, corrected to December 15th, '22.
All broadcasting stations, also amateurs in U. S.
and Canada. The Modulator, 120 Liberty St.,
N. Y. C.

4 SALE, 20 watt tube set, complete with tubes.
Rectified by "S" tubes. C. W. or phone used at
will. Has worked 2000 miles. Bargain, \$90. Box
3A, care The Modulator.

New Classified Advertising Page

For the fellow
who wants to
sell his apparatus

GET IN ON THIS!

BOOST YOUR OUTPUT 400%

By Running Your Transmitter At 80% Efficiency

COMPARE THE RESULTS

TUBES	Output at 50% Efficiency (Maximum with present sets)	Output at 80% Efficiency
ONE 5 WATT	7.8 WATTS	31.2 WATTS
TWO 5 WATT	31.2 WATTS	62.4 WATTS
ONE 50 WATT	75 WATTS	300 WATTS
TWO 50 WATT	150 WATTS	600 WATTS
ONE 250 WATT	250 WATTS	1000 WATTS

Full details for all sizes and combinations of tubes shown in blue print 50 inches x 17 inches, No. 30140, \$1.00

Ask for 1923 Catalog No. A

Experimenters Information Service

Designers of the Highest Class Radio Apparatus in the World

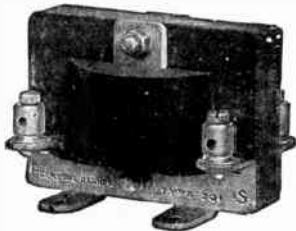
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23rd Floor

New York City

IMPORTANCE of AMPLIFICATION

The simplicity of audio frequency amplification still makes it the most practical and popular type. It is adapted to all types of receiving sets and is free from tuning adjustments. With the proper choice of amplifying instruments, audio frequency amplification is accomplished with a minimum of distortion.



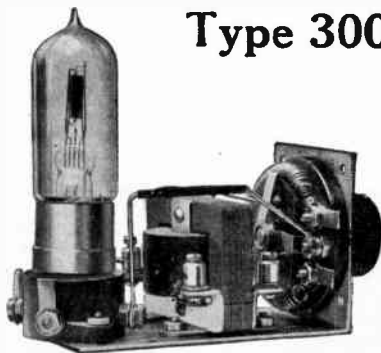
**TYPE 231-A
AMPLIFYING TRANSFORMER**

The amplifying transformer is the most important of these instruments. The General Radio Co. was the first company to have available a closed core audio frequency amplifying transformer. This was before the United States entered the war. Many of these transformers were supplied to the army and navy during the war, and with the return of amateur radio after the war, thousands have been supplied for use in this country and abroad.

Our latest type is the 231-A. This transformer is designed to give the maximum of amplification possible without distortion. It is the result of careful engineering design. It is particularly adapted to the WD-11 and UV-201 tubes. The electrical constants of the windings are as follows:

	Primary	Secondary
Direct current resistance, ohms	1,100	5,500
A. C. Resistance at 1000 cycles, ohms	11,000	130,000
Reactance at 1000 cycles, ohms	66,000	700,000

PRICE, COMPLETELY MOUNTED - - - - - \$5.00



Type 300-A Amplifier Unit

For those who desire a compact amplifier unit, we recommend the type 300. This unit consisting of our Type 231-A Amplifying Transformer, Type 255 Filament Rheostat, and Type 282 Tube Socket mounted on a nickel finished brass plate, is all ready for the external connections. It may be used as a table unit or mounted behind a panel, in which case only the rheostat knob projects. Connections are properly made so as to keep the unit from howling.

PRICE - - - - - \$7.50

For those who desire to use the UV-201 tubes, this unit may be supplied with a standard base socket—our Type 156.

TYPE 300-B AMPLIFIER UNIT, PRICE - - - - - \$8.00

Send for NEW FREE RADIO BULLETIN 913-M and learn about these instruments.

GENERAL RADIO COMPANY

MASSACHUSETTS AVENUE AND WINDSOR STREET

CAMBRIDGE 39

MASSACHUSETTS

Inspect these instruments, as well as our complete line at your local dealer or at Booth SEVEN of the Radio Convention



—And When It Comes to Regeneration—

For those who prefer the Regenerative principle utilized in sets which are made up of the finest possible parts, the RadioCraft Co. offers D-4, a single circuit tuner with a wave length range of 150 to 800 meters, which is made up of the famous De Forest parts. A 300-mile reception range is a conservative estimate for this compact single-tube regenerative set, walnut finish cabinet, \$35.00; solid mahogany, \$40.00.

Where a loud speaker is desired or greater range, D-5 is used in connection with D-4, this being the same size and so designed as to line up evenly in position with the receiver when connected by short wires. Walnut finish, \$33.00; solid mahogany, \$38.00.

Below is shown RadioCraft's famous Regenerative Radiophone* Type D-6, which is without doubt the best selective receiver on the market. It has a wave length from 150 to 25,000 meters, depending on the Honeycomb* Coils used, and will receive not only broadcasting stations but also transatlantic stations operating on long wave lengths, and even European stations. This set may be used with outside aerial only, and either with head phones or loud speaker. Price \$130.00.

Second Model of De Forest's Reflex

For extreme sensitivity, simplicity of control (single knob), and all round satisfactory operation under difficulties such as are usual in city receiving, De Forest's D-7A Reflex Radiophone* Receiver is carrying off the banner all over the country. This new model includes many advances on D-7, such as complete shielding against body influence, a vernier air condenser, and new contact points for the transformers.

The absence of distortion and the elimination of extraneous noises is also a very noticeable feature in the operation of this set, due to rectification of the amplified radio frequency signal in a crystal detector. D-7A gives your five stages of amplification with three tubes only, and has a wave length ranging from 200 to 550 meters and an average reception range of over 1,000 miles with head phones. It may be used with either head phones or loud speaker. With solid mahogany cabinet and collapsible loop aerial the price is \$125.00.



De Forest Radio Tel. & Tel. Co.
Jersey City New Jersey

The RadioCraft Co., Inc.
139 Franklin Street
Jersey City New Jersey



* Reg. U. S. Pat. Office



By permission of De Forest Radio Tel. & Tel. Co.

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The Ultimate Amateur Receiver

The Federal DX type 58 receiver is built to suit the amateurs need for maximum possible selectivity and sensitivity. It incorporates one stage of R.F. amplification and two stages of A.F. amplification in connection with two coupled circuits of startling sharpness of tuning. It will operate on wave lengths between 200 and 500 meters and will give signal intensity and freedom from interference that is quite unrivalled by any other type of receiving equipment.



Try a Federal DX Receiver against your own receiver

The Telephone Supreme



The Federal Head Telephone still holds its position of supremacy over all other head telephones. During the last year it has met the challenge of more than one hundred new types of headsets that have been offered as substitutes. Now only a few of the best types remain but the Federal Head Telephone still stands, head and shoulders, above all others.

Federal Telephone and Telegraph Company

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