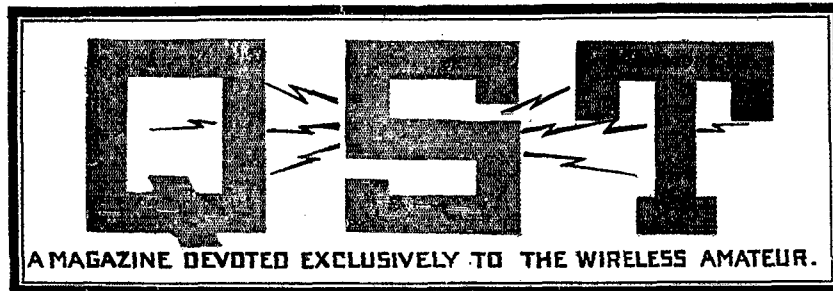


THE AMERICAN RADIO RELAY LEAGUE SPECIAL BULLETIN



GETTING TOGETHER AGAIN

This midget issue of QST is sent out by certain good old scouts of the A.R.R.L. who, at a meeting held in New York on the evening of March 29th, chipped in the necessary coin to pay for the printing and postage.

Its object is to broadcast the latest amateur radio news, and to start the work of getting our membership together again. It was thought that the best way to do this would be to get out the simplest bulletin we could think of, which would be up to our A.R.R.L. standards, and to trust to the loyalty and spirit of our members to come back with financial help so that we might gradually get "QST" back to its original form. Therefore, fellows, accept this little bulletin in the spirit in which it is offered and remember that we want your help. Just how you can give this help, you will see by the time you have read the bulletin through.

At this writing no one knows when the Government will let us open up again, although the best information we are able to get from Washington is to the effect that the Navy Department will unlock the door just as soon as the peace treaty is finally signed in Paris. Just when this will be is another question which no man seems to want to answer. All we have is what we read in the newspapers, and the signs seem to be that the documents ought to be signed up sometime early in the month of May. Provided the anarchists and Bolsheviks have not got the upper hand of us to the ex-

tent that they constitute a "public peril", we are led to infer that we would not have to wait until the United States Senate had ratified the peace treaty.

For the benefit of those who were not able to be present at the meeting, it should be said that this bulletin has been made possible by the following gentlemen: H. P. Maxim, A. A. Hebert, Lt. C. D. Tuska, Radio Gunner R. H. G. Matthews, J. O. Smith, Lt. V. F. Camp, H. L. Stanley, W. S. Browne, Lt. K. B. Warner, A. F. Clough, and H. E. Nichols. When it was decided that we ought to have a bulletin, these gentlemen went down into their pockets and brought up the cash and placed it on the table in the form of a pure donation for the good of amateur radio in general. By practicing the strictest economy and doing as much of the work as possible by volunteer effort, we hope that with the money donated we can awaken enough interest among the amateurs to induce them to come back with the necessary financial help to resume "QST" in its full size.

Now, therefore, we want as many fellows as possible to buy A.R.R.L. bonds. These are described later on in the bulletin. They constitute a formal and regular loan to the A.R.R.L. and will bear interest at the rate of 5% per annum, payable semi-annually, and to be retired within two years' time from income derived from membership dues. Read the special article, by Mr. Maxim on these Bonds.

There you have the explanation of this

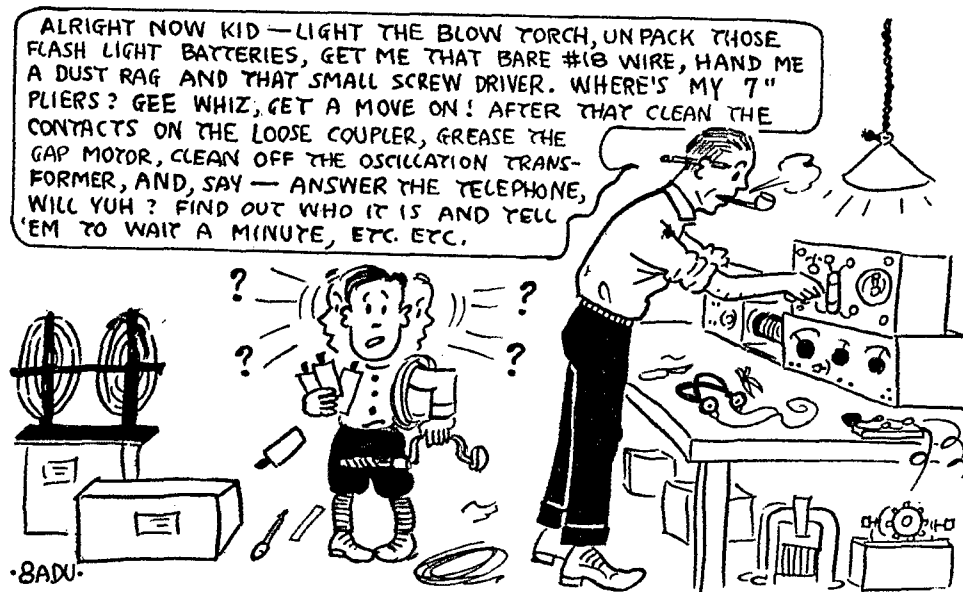
A. R. R. L. BONDS

NEW DEVELOPMENTS

If one were to select a title for a good size radio book, based on the last two years, he might do well to select "New Developments". We intend to cramp type and space in an attempt to tell something of the development of radio apparatus during the war as it will apply to the amateur.

The foremost development which concerns everyone of us is the remarkable work which has been done with vacuum tubes. They are vacuum tubes or V.T.'s in

American radio engineers got busy, and something completely new in the way of a bulb resulted. These bulbs were designed for receiving and operated at definite potentials. For example, the plate potential is twenty-two and one-half volts and the filament potential is four volts. No attempt is made to adjust either the filament current nor the plate voltage. This is unnecessary as the working range is quite broad and plate voltages, varying from eighteen



IT'S COMING, FELLOWS !

the Service, but to most amateurs they may be audions, bulbs, lamps or anything. The war brought up the radio problem of a sensitive, reliable, permanent detector. The so-called V.T. was finally selected, since the old type, known as the audion, was found wanting. This was due to the great lack of similarity in the audions and the necessity for careful adjustment of filaments and plate voltage. The delicacy of the old style bulb was out of the question "In the Service".

to twenty-five and filament potentials between 3.6 and 4.2 are sufficiently close.

These tubes are constructed with bases having four points which plug into sockets and automatically connect filament, grid, and plate leads. The filaments are coated with an oxide which freely liberates electrons. These filaments burn at a low cherry red and are of long life. They are steady, efficient and are fine oscillators. The remarkable development of the V. T.'s puts us far ahead of the old audion

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days. It is probable that some of the manufacturers will arrange to put these tubes on the market within reach of the amateurs' pocketbooks. We trust it will not be long before some of the manufacturers will come out with the full story and description of the new tubes in "QST".

Along with the development of the receiving tubes came tremendous strides in bulb transmitters. Single bulbs have been constructed which have an output of over one-quarter kilowatt and even the smaller tubes have output enough to transmit up to one hundred miles. These tubes require a high plate potential which is usually obtained from a dynamotor. One type, known as the V. T. 2, has a plate potential of three hundred volts and will put over half an ampere into an antenna at a wave length of one thousand meters. The bulb transmitters have been used to send out modulated waves, undamped waves and also for radio telephones. The apparatus required is not extremely complex and if we may predict, it is our opinion that vacuum tube transmitters will be the coming thing among the amateurs. They are many more times efficient than spark transmitters and will rid us of some QRM.

The developments suggested above are among the most important which have taken place as the result of the war. In addition to these developments in apparatus has come another change, which is the loop antenna. Loop antennas are used for receiving. They are primarily what the

term implies; one large loop or several loops of wire. These loops do away with much of the static and at the same time, are somewhat directional so that they might be used among amateurs to minimize QRM. Loop antennas are used without ground connections and usually the signals are amplified through one or more tubes. The possibilities in this line would be to have loops with amplifiers for receiving and the usual old style antenna for transmitting.

Another line of thought has been suggested which would mean the development of impulse excitation transmitters. We amateurs realize that two hundred meters definitely limits the inductance and capacity of our transmitting primary circuits with the usual rotary or fixed gap outfit. If we were to excite the antenna with one single impulse from the primary, this primary impulse might be accomplished with a circuit having capacity and inductance equivalent to three hundred meters, but due to its being the impulse type, the antenna would oscillate at its natural period which could be set within the amateur limit. Impulse excitation requires a special form of quenched gap. Many amateurs have already begun a study of this case and it is quite probable that a variety of improved spark gaps will be suggested.

"QST" will be a busy place in the months to come, acting as a clearing house of new ideas, and plenty of opportunity will be offered everybody to discuss the latest developments.

A. R. R. L. BONDS

"QST" AGAIN

We have heard that some cats have seven and others nine lives, but darned if we don't believe radio bugs have cats outclassed. As we think over the dreary two years of amateur deadness, it's a real hard job to believe that any of us are still in existence, but after using many three-cent postage stamps, to say nothing of paper and envelopes, telling these same amateurs that "QST" was coming again, we stand convinced that amateurs are here forever, and can't be killed off. Yes fellow bugs, if you

don't quit writing the Eddie asking as to the actual year, month, week, day, hour (shall we say minute) that "QST" is to resume, we'll have to give you a QRT in order to catch our breath. We're at it and it's coming!

But listen here, "ex-gobs", "birds" and fellows in general, we shall need your immediate help; and if you really want your familiar "QST", take an extra careful slant at the A.R.R.L. LOAN and come across.

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Rotten Rusty

By "The Old Man"

Well, well, you Editor chap over East there, you sure did knock the ashes out of the old pipe when you sent that telegram. I darned near stepped on one of the kids and sat down on the stove when I received it. I am not sure I get your drift, but if there is any good to be done by this rusty old sash weight who has not heard a sig in nigh on two long lonesome years, you sure can count upon him to do his damdestangels candonomore.

Say Son, you don't mean to insinuate, hint obliquely, nor suggest indirectly that we are actually to be opened up again soon, do you? Is QST really to drop in again upon us and brighten these wirelessless days? Can it be that the old junk is at last to come down from the attic, and that the old bits of wire are to be straightened out and pieced together and a whole litter of new holes hammered in the plastering again, and the lightning switches, kick back preventers, hot wire ammeters and mechanical miscellany generally to be worried back into place under the old table once more? It makes the cold shivers of delight oscillate up and down my spinal ground lead to think of it.

Is this old rusty has-been to go all over the long weary road again, of trying to get 2KW into a 200 meter antenna? And "Final Authority" and "Radical" and the "President with the hefty mallet and the strong right arm" and the "guy with the wart on his nose" all away at the war, and unable to be got at for legal advice? And for the love of Mike! Don't tell this old knocker he is to go up against a radio inspector and have an omnigraph pulled on him and be expected to lap up twenty a minute and on top of that draw a neat diagram of the apparatus and connections of a modern chicken roost from the source of power to the antenna circuit and give a brief explanation of its operation!

I wonder if I could take ten a minute— Lord, how I do despise that omnigraph business! Say Son, do I have to actually show in black and white, by simple diagram, a direct or conductively coupled transmitter set and tell wherein it is different from a rotary quenched stationary regenerative spark gap?

Furthermore and moreover, do you mean to convey by your telegram that the accumulated scale of two unhappy years has got to be rasped off my brain cells to an extent that will enable me in decent and polite language to state what I would put in the place of my hot wire ammeter if it broke down, in order to accomplish the same results as far as resonance is concerned?

And has that evil day at last arrived when this clinging old vine must roll up his sleeves, spit a preliminary spat on the cat, and proceed to bone up on how you would adjust your garters in case of distress aboard ship in order to secure a maximum radiation and a broad interfering wave? It certainly is fierce, and leads me to quote our poetic but slow moving hired girl, 'Vaseline' who, when plumb up against something serious, usually remarks, "Oh My Gawd"!

Honest, Son, I have my doubts. I seriously question whether this old rusty and creaky machine will be able to get away with it. And the "junk", itself. Will it be up to date now? In the winter of 1916-1917, it used to get me over to 8NH and 8AEZ and 9VY and even 2AGJ and sometimes 9ZN would take a few from me. But I don't know about it now. In fact on the QT, I am wondering if I would remember all the dope about handling msgs. and getting repeats on small parts. Maybe I can get some of the brats with the spark coils to give me a little practice.

Just the same, for the sake of our A.R. R.L. and our first and only love, "QST", I reckon this rusty old gink will have to do his part and proceed to hunt up his old pants, take a slant at the business end of the soldering iron, and get busy.

It sure will be sweet music to get the phones on again and hear the boys over in Illinois threatening each other with Wouff Hongs, Ugerumfs, Rettysnitches and what not and chewing the fat about QRM. Here's hoping the old gang may get together again soon in the air, and then tell how Rotten it all is in "QST". "Ain't it a Grand and Glorious Feeling."

A. R. R. L. BONDS

A. R. R. L. Bonds

By Hiram Percy Maxim

Amateur wireless was ordered discontinued the first week in April, 1917. All A. R. R. L. relay work came to an abrupt end at that time. The Government asked for assistance in interesting amateurs to enroll, and "QST" was continued for that purpose. Its efforts were more than successful as the Government officers have since stated and as the boys themselves have also said in a great many cases.

This was all very patriotic, but it built up an indebtedness because the membership thought only of getting into their country's service. Membership dues and "QST" subscriptions were entirely lost sight of. What is more important, from the financial standpoint, the advertisers cancelled their contracts one after another. In short, income suffered a very high "decrement" and very quickly reached the vanishing point. Publication was continued until September 1917, and then, since the supply of experienced amateurs was about exhausted, and funds had reached a similar stage, it was decided to "cease firing."

We are now faced with the resuming of the publication of "QST" and providing enough money to carry it over the first five or six months which are necessary to make it self-supporting. Our Board of Direction have met several times with many of the members and have studied this matter from every angle. The result of this study has led ~~all~~ concerned to the conclusion that since we are a really successful organization, there should be no difficulty in handling our affairs after the manner of other successful organizations. Furthermore, that in order to handle the matter on strictly sound business lines, we should in addition to providing for "QST", also provide for the other things which a successful going and growing concern should have. These are, providing enough money to es-

tablish a headquarters' office, to hire and place in this headquarters a paid Secretary, and lastly, to provide the funds to reorganize our old membership and bring in new members. The material available for the latter is many times what it ever was before in the history of amateur wireless, because of the great number of young men who have recently been trained in radio work in the different branches of military service.

The amount of money that is necessary in order to carry this work through has been computed to be \$7500. Other organizations who have met this situation in the past, such as our near friends, the Institute of Radio Engineers, have raised their funds from the sale of regular bonds, among the membership. Unquestionably, this is the best way for us to handle our finances. These bonds could be retired inside of two years' time, pay 5% per annum interest, and be taken up by the membership in installments. The method of retiring the bonds would be by establishing a sinking fund to be built up from a certain fixed percentage of moneys received from membership dues and "QST" subscriptions.

At a meeting of the Board of Direction held in New York on the evening of March 29th, it was voted to adopt this method and to place the matter before the membership. The writer takes great pleasure in carrying out these instructions. He has every confidence that the membership will rise to the occasion in true A. R. R. L. style, and that we may have "QST" coming to us again regularly, as in the old days. Every member is urged to get his name in at once and become established on the record as a recognized A. R. R. L. helper. Only the amount needed will be accepted, and over \$2500 of the loan has already been raised at this writing.

APPLICATION BLANK

**THE AMERICAN RADIO RELAY LEAGUE, Inc.
Hartford, Conn.**

I desire to become a member of The American Radio Relay League and I am remitting herewith my yearly dues of \$2.00.

Name.....

Address.....
Street, Town, State

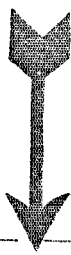
Age.....

Did you have an Operators License?.....

If so what grade?.....

Did you have a Radio Station?.....

Give short description.....



Date..... Signed.....

CUT OFF HERE

Date.....

The Treasurer
American Radio Relay League
Hartford, Conn. :

I am enclosing \$....., which is a loan for two years at 5% interest to the American Radio Relay League, Inc. Please remit my A.R.R.L. Bond to the following address:

Name.....

Address.....
Street

.....
Town

AMATEURS :

Now is the most critical time in the history of Amateur Wireless. We must pull together. To pull together we must have organization. The American Radio Relay League is the organization OF AMATEURS, FOR AMATEURS, BY AMATEURS. No commercialism—no connections. Just all amateur.

Do your part by joining and buying an A.R.R.L. BOND. It will establish your name in the Amateur world.

ACT TODAY

The American Radio Relay League
Hartford, Connecticut



LIBERT PARDEE

R. NO. 4

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A. R. R. L. BONDS

See Other Side