

T. & R. BULLETIN

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of
THE RADIO SOCIETY OF GREAT BRITAIN.
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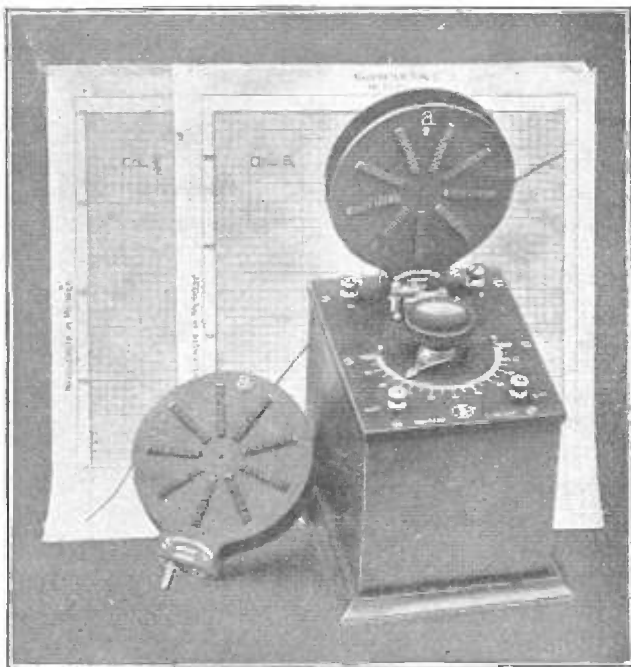
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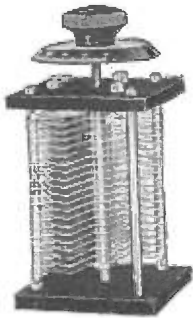
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T. & R. BULLETIN

Devoted to the Interests of the Transmitting Amateur

JULY, 1925.

No. 1.

The Bulletin.

THE T. AND R. BULLETIN is a new departure of the section mainly with the object of keeping those members of the section who are unable to attend the meetings in touch with the work carried on. It also has the object of informing members of programmes of transmission, tests and results. It makes no attempt to pose as a commercial radio journal, but to meet a want which is not met by any of the present publications, very few of which are able to do much with the transmitter on account of the far greater receiving interests.

The success or otherwise of THE BULLETIN is entirely dependent upon the support it will receive from members of the section. Obviously, owing to the small circulation, no large financial return can be expected, and as printing and postage will only be covered by the small charge made, there is nothing whatever left to pay for contributions. For this reason the committee must depend entirely upon articles and matter contributed gratuitously by members, and they invite members willing to help to forward immediately articles, etc., for this purpose. It is hoped that it will be possible to increase the size of THE BULLETIN when financial considerations permit of it.

As one of the main aims of the section is the advancement of radio science by the interchange of knowledge between members, it is hoped that members will thus agree to work together for the common good through this medium. Mutual exchange of ideas has always proved the greatest incentive into research among men working along similar lines. In this BULLETIN, many members will no doubt come forward to give helpful information who find difficulty in expressing themselves in speech at the meetings. Further, as THE BULLETIN is for private circulation only, writers can adopt their own style of writing and expression without regard to elaborate literal forms. We already have quite a number of members in the section who are writers of known merit in the radio world and who are willing to assist in the preparation of contributed articles, also artists who will make illustrations of circuits and apparatus where necessary.

Articles can only be inserted according to the space available and as arranged by the Editorial Committee. Hints and tips are specially invited, especially those of a practical nature as the results of

direct observation. The practice and methods of short wave work are keenly sought for by many members, and information under this heading will be appreciated. Extreme technicalities should be avoided, and writers should always endeavour to be as explicit as possible. Readers will be much more satisfied with THE BULLETIN if they really understand what they read. Elaborate formula and intricate deductions may sound very learned but are not very convincing. Where mathematics are used, care should always be taken to explain thoroughly each factor and its functions.

Attention is directed to the calls heard and general notes section on the back page. It is hoped that members will use this portion to arrange tests with each other and give results of work done. Many other uses for this section will no doubt be found in the course of time.

In a later number it is also hoped to start a query

Continued on page 5.

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The Tetrodyne.

By H. ANDREWS.

MOST people are probably familiar with the well-known Superheterodyne principles, and the circuit which I now propose to describe is a development of this principle. As is well known, one difficulty in adjusting satisfactorily a superheterodyne receiver is to get the coupling between the incoming signal and the local heterodyne so adjusted that the two signals have their correct relative proportions. In the circuit to be described this difficulty is to a certain extent got over. This is done by using a four electrode valve as the first detector, using the inner grid for detector with the usual grid leak and condenser and connecting the outer grid to the local heterodyne source. Another important feature of this circuit is the use of a second four electrode valve as the local oscillator. Most experimenters are by this time I think familiar with that very useful circuit the Numan's Oscillator. This circuit employs a four electrode valve with only a single inductance. By combining this arrangement of two four-electrode valves, a very simple circuit results. As only two simple inductance coils are necessary this circuit may be simply adapted to the one-knob control system. This may be done by using either a double condenser or two condensers mechanically coupled, and correctly proportioning the two inductances. Of course it is not possible to use similar inductances with the condensers set at an angle, electrically so to speak, unless one used a true frequency squarelaw condenser. This frequency changing unit is then, of course, coupled to the usual high frequency amplifier working at about 100 kilocycles. A complete circuit is shown in Fig. 1, a resistance-capacity coupled amplifier being shown. In the receiver made up by the writer a Dubilier double condenser having 250 m.m.f. on each side was used. The aerial circuit may then be coupled to the detector coil and tuned or not according to local conditions. One rather important point should be noted in this circuit. It will be seen that the opposite end of the detector inductance from the grid condenser is not connected, as is usual, to the negative L.T., but to plus H.T. the grid leak being connected across the grid condenser in the usual manner, thus maintaining the grid slightly positive and giving a marked increase in signal strength. Also it will be observed that the outer grid is maintained at + H.T. potential to the filament with the usual reduction of space charge and its attendant good effects. The author has found that this circuit gives good results and amplification; it may be no better than the conventional superheterodyne, but it is thought that it is simpler and easier to construct and operate.

Manufacturers and dealers know that the Transmitting Amateur is able to discriminate between good and bad articles. Unless their goods fulfil their claims, they dare not offer them to you. The T. & R. BULLETIN advertisers have confidence in their goods, or they would not advertise them here.

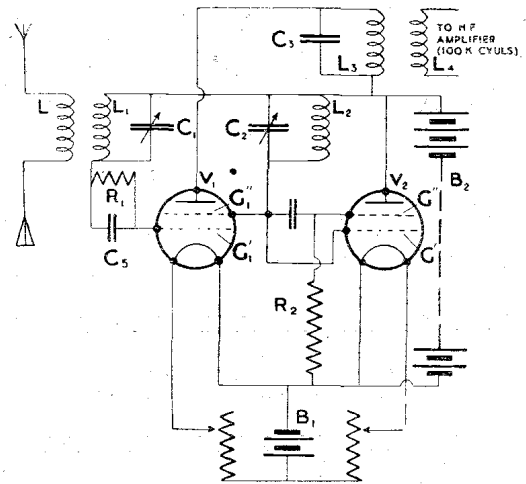


Fig. 1.

The Receiver.

HERE are a few improvements which could be included in most receivers.

Don't hesitate about tearing plates out of the secondary condenser. For 20 and 40 metres I use one of 0.00003 mfd. with an 8-inch extension handle, and even with that the tuning is very critical. My 20 metres secondary consists of 7 turns spaced 3-16 inch on a 3-inch diameter. This seems to be larger than the usual 20 metre coil of 3 or 4 turns indicating too much capacity in the secondary. Cut it out, and up goes the signal strength, and don't forget that by double-spacing a condenser the capacity is divided by four, since the number of plates is halved.

The usual method of aerial coupling is generally quite O.K., but I find that the coupling must be rather tight.

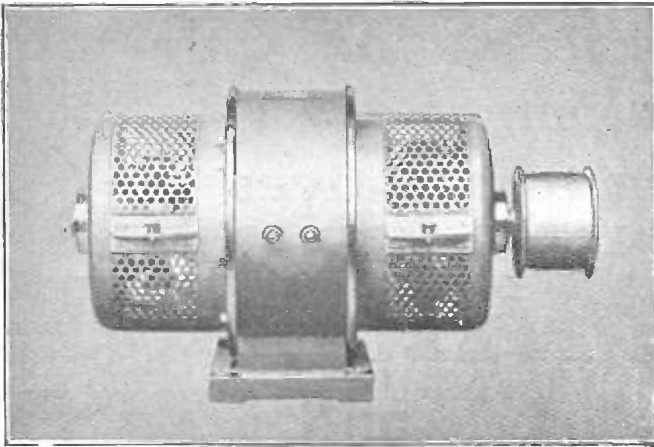
Reaction control is sometimes a difficulty. I use the ordinary straight circuit, dump the reaction coil down 3 or 4 inches from the secondary filament end, and control with a 0.0005 mfd. variable condenser across the phones and H.T., which doesn't change the wave so much as moving the coil. About 8 turns will do for the reaction on 20 metres. Don't forget to try various grid filament connections, put the rheostat in the other lead, or reverse the L.T. and so on, but don't test on strong signals; you can't tell any difference in them. Test on the weaker stuff only.

If you get a squeal just on oscillation try altering the value of the grid leak, generally an increase is needed.

The days of D.X. are not yet passed, and we must still strive for the highest efficiency, so try these things to-night O.M.

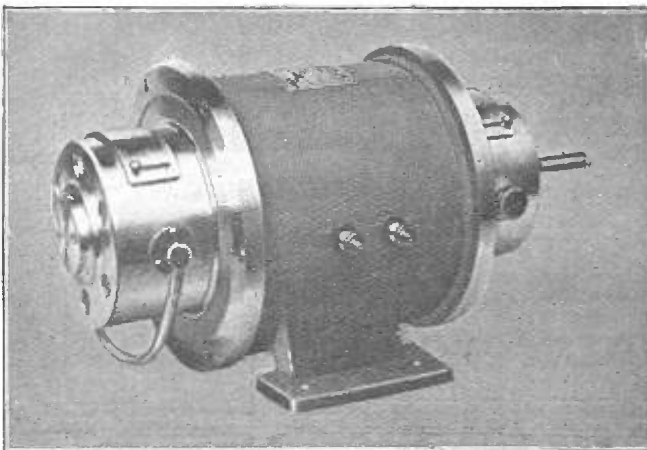
C. W. L.

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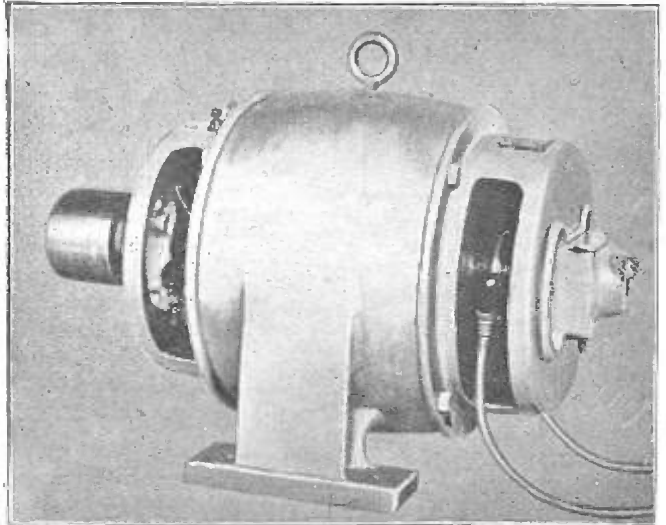
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Mr. J. A. Partridge writes:—"I am enclosing remittance in respect of H.T. machine recently supplied, and you will no doubt be interested to hear that with this machine I have exchanged signals with 4AA (New Zealand). The N.Z. Station had no difficulty in reading my messages without any repetition."

Later:—"You will no doubt be pleased to hear that 5LF and myself have effected communication with U.S.A. in full daylight on 23 metres."



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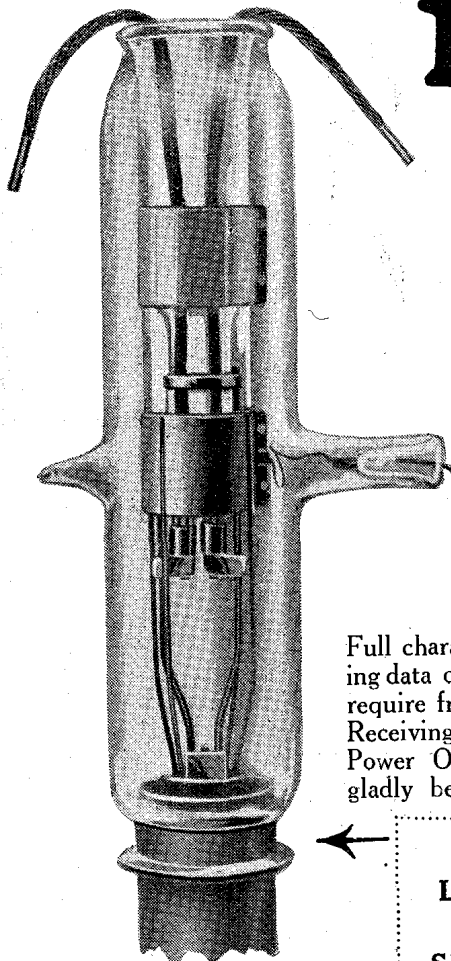
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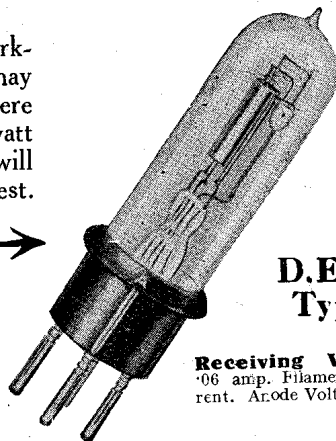
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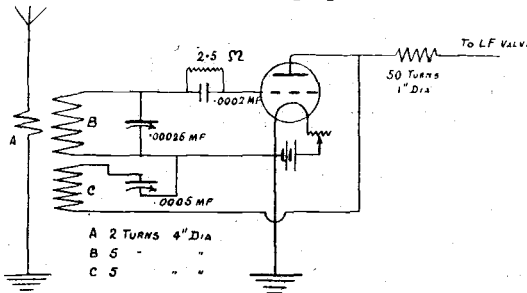
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Circuit for Reception on 20 Metres Band.

By E. J. SIMMONDS, F.R.S.A., G. 2 O.D.

ASI daily receive letters asking for particulars of a simple circuit capable of efficient reception on 20 metres it is thought that the following description may be of use, although there will doubtless be nothing novel to many of my readers.

The coils may be wound with 16 or 18 S.W.G. enamelled copper wire, the turns being spaced $\frac{1}{4}$ " and the amount of supporting insulating material reduced to a minimum. The condensers should be of the "Lowloss" type, preferably with rotor grounded to metal end plates and the insulated fixed plates being connected to the high potential side of the circuit, thus obviating hand capacity effects. The new Igranic square law condenser can be recommended for this purpose.



The valve may be a D.E.V. or D.E.Q., in both cases being used with a grid condenser and leak as indicated. The value of the H.F. choke in plate lead is not critical. The L.F. transformer, which is not shown on the drawing, and, of course, follows the H.F. choke, should preferably have a high ratio, and if an old type transformer with the resonant peak round 800 to 1,000 cycles can be obtained, this will be found an advantage for the reception of C.W.

By this means and by the skilful use of note tuning, interference from Xs, etc., can be much reduced. It may be necessary to use a load coil in the aerial lead to eliminate "dead spots," or, alternatively, the earth connection may be removed. This factor will, of course, depend upon the characteristics of the aerial used for reception.

THE BULLETIN—Continued from page 1.

section where members may insert questions on technical matters for general answering and thus receive practical help from other members. This service should supply a boon upon those who find difficulty in getting information from other directions. It may also be possible to devote a space to deal with the exchange or sale of apparatus owned by members.

It is intended to publish THE BULLETIN monthly, and this will be done provided sufficient support is forthcoming in the manner indicated.

Finally, THE BULLETIN has no axe to grind in anybody's interest, and exists solely for the benefit of the Transmitter and Relay Section.

Key Crashes.

Hams in the North are all very delighted at the prospect of having a Bulletin from which they can learn all the latest news of the doings of the Hams throughout the other part of the British Isles, and they trust that it will be an effective means of drawing all the British Hams into a closer fellowship and make for better co-operation all round.

It is rumoured that 5MO is secretly, slowly, but surely building up a new transmitter with which he intends to work stations all over this world at least, and possibly he may have an idea of working Mars. At all events, good luck to him g a o.m.

5KO is still pushing out juice from the B.B.C. station in Newcastle, and has now quite settled down as a respectable married man, but thank goodness is y.l. or o.w., as she should now be termed, is a true Ham's wife, so there is every prospect of his reappearance on the air when he is more favourably situated as regards juice; at present he only has gas and sometimes too much of that HI!

6FG has been very busy lately with exams., but radio has had its place in a small way, and secretly and silently at nite he would steal into his shack and turn out many volts. Bi the way, he has now got a real transformer, which he has made himself, so next winter we may expect to see the air turn blue in this quarter.

2 Clickety-Click has now been working on 20 metres for some time and seems to be getting out O.K. with Pa's juice, which is home made, only 50 volts, so naturally the amps float about a bit when he starts his m.g. up, as also do the lights dip when he keys. It is to be regretted that tennis is taking up too much of his time of late. However, we trust that by the winter he will have his alarm clock once again put into thorough working order.

The notorious Mr. Neil, of Belfast, whose name has predominated in the London ether for many months, will no longer be called. He is now 5NJ, and is sucking the juice from 300 volts of the dry battery variety.

5QV is having a happy time at Clacton-on-Sea. The gales which we experienced early this year have given him a new stock of ether which he hopes will carry him through the summer. His aerial is intact and his bearings have not changed.

6TD finds that the constant wearing of the 'phones is not a cure for neuralgia. He says that the talk about the curative properties of etheric waves is all rot, but he does not mind being a martyr to the cause so long as he continues to receive QSA reports from USBX, Texas.

5XN has worn out all his gramophone records (so it is rumoured), and the mysterious V or B, whoever he or she may be, has taken to listening to the Eiffel Tower time signals.

2FK has plunged into the lowest of wave-lengths, and never came to the surface again after the third time. He is still listening-in on a wave-length of —1 metres, and will disclose some strange secrets of the spiritual world if ever he returns.

6PD has used up all the d.c. volts in his district and has taken to A.C. He says that the change is very bracing, but that he prefers a shock from 200 volts P.C. to 2,000 volts A.C.

Readers will be pleased to learn that 2SH is quite certain that his rectifying valve is still in circuit.

G2W.J.

THE following description of the 23 and 45-metre transmitter in use at G2WJ has been written with the hope that it may prove of help to any who have encountered difficulties on these wave-lengths.

Details are given as to the sizes of coils, etc., but it is of course obvious that these may differ with individual stations.

On both 23 and 45 metres the so-called "Reversed Fed Back" circuit is used; many circuits have been tried, but no doubt owing to the writer being more familiar with the aforementioned circuit better results have been obtained.

In the photograph, which shows the transmitter ready for use on 23 metres, practically the whole circuit can be traced out, and it will be noticed that the lay-out allows of the substitution of larger coils for the higher wave-lengths. Starting with the aerial circuit, the aerial itself consists of two wires, each 90 feet long, including down leads, with an average height of 50 feet. It should be mentioned here that little success was obtained with small aeriels worked near their fundamentals; working the large aerial at a harmonic was found far superior in results.

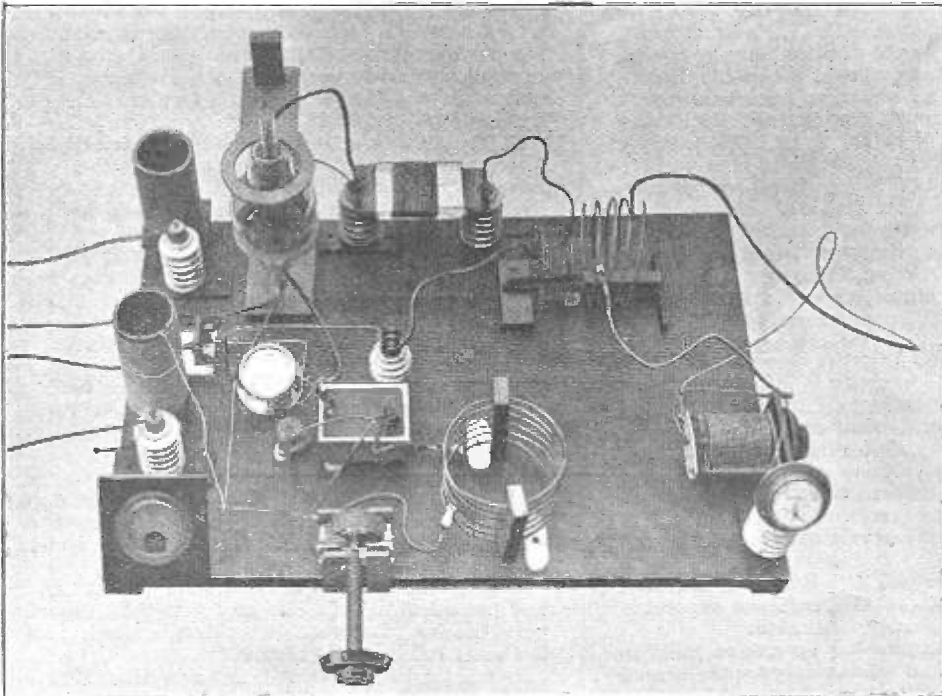
The aerial lead-in goes via the key to the aerial ammeter seen in the right-hand corner of the photo. Behind this is the A.T.C. which is in parallel with A.T.I. seen immediately above. The other lead from A.T.I. goes to a 4-wire fan counterpoise, each wire being 50 feet long. The aerial circuit is tuned

to 138 metres when working on 23 metres, that is to say the aerial is worked at the 6th harmonic and similarly, when working on 45 metres, it is tuned to 135 metres, it then obviously being worked at the 3rd harmonic. Next to the A.T.I. is the plate coil, the low loss construction of which can be seen in the photo. One lead from this coil goes to the plate-stopping condenser seen to the left, at the rear. This condenser consists of zinc plates insulated by means of ($\frac{1}{4}$ plate) photographic plates. In the foreground is the grid coil which is tuned by the small variable condenser (to its left), whilst just behind the grid coil condenser are the grid leak and condenser. The two long cylindrical coils on the extreme left will be recognised as the high tension H.F. choke coils; these both consist of 200 turns of No. 28 D.C.C. wire wound on formers 7in. long by $2\frac{1}{2}$ in. in diameter.

The valve we use is a Mullard 0/150, immediately in front of which is the filament voltmeter; the remaining meter is a Weston H.T. milliammeter. The high-tension plate supply is obtained from the A.C. house mains, transformed up, and then rectified by means of a chemical rectifier, whilst the low-tension filament supply is derived from two six-volt car accumulators; it should be mentioned here that if A.C. is used to light the filament, it is essential to include small H.F. chokes in the leads to the step down transformer.

Having described the apparatus in use, the method of adjusting it will now be described. Firstly, the aerial circuit is broken and the grid circuit then tuned to the desired wave-length. Watching the plate milliammeter, the plate tapping is now altered until a point is reached where the plate milliamps are at a minimum—that is to say,

(Continued at foot of next column.)



CIRCUIT DETAILS.

On 23 metres the A.T.I. consists of 3 turns of 14 S.W.G. $5\frac{1}{2}$ " dia. spaced $\frac{1}{2}$ ". The plate coil, 8 turns of 16 S.W.G. $3\frac{1}{2}$ " dia. 3-16" spacing. Grid coil 2 turns of a coil consisting of 6 turns of 14 S.W.G. $5\frac{1}{2}$ " dia. spaced 3-5". For 45 metres, 4 turns of the same A.T.I., 5 turns of the same grid coil, but the plate coil consists of 13 turns of 14 S.W.G. $5\frac{1}{2}$ " dia. spaced $\frac{1}{2}$ ".

Experimental Work With Mosul.

MY first two-way communication with the short wave experimental station at Mosul was early in February this year. We had often heard each other previously, but had not established communication. On February 9, about midnight, I had a long chat with Capt. Durrant who was operating at Mosul. I was on active service for over three years in Mesopotamia during the war, so knew a little about the conditions out there.

Ever since our first communication we have been in touch with each other nearly every day, with the exception of about 10 days, when I was away at the Paris Radio Conference. On the few occasions we have missed each other this has been due to the bad atmospheric conditions out there, when the operator said the next day that he had been hiding behind a sand storm or a cloud of QRN.

We have had to overcome great difficulties in maintaining our daily communications, and a great deal of valuable experimental data has been compiled during our tests. During February March and April I was working on about 100 metres and Mosul was experimenting with various waves down to 50 metres. Our time for communication was mostly between 7.15 and 8 p.m. when the B.B.C. closed down for a short time. The time at Mosul is three hours ahead of Greenwich. We were unable to do much after midnight (his time) as he had difficulty in obtaining a power supply due to his local power station reducing the supply at midnight.

As soon as the evenings began to get lighter and the clock was put on an hour, we found difficulty in maintaining communication on 100 metres between 7.15 and 8 p.m., and I was unable to work later owing to possible QRM with the local B.C.Ls. Mosul in the meantime was experimenting on the lower waves, and I found this came through well in daylight. I obtained a permit to use the lower waves and commenced experimenting there. We soon found that reliable communication could be obtained on the lower waves, even though it was daylight most of the way across.

Early in April Capt. Durrant left Mosul for England, and the experimental work was left in

G2W.J.—Continued from previous page.

rising when the plate tap is either increased or decreased. It will be found on these short waves that altering one complete turn gives too great a variation, but an easy way of overcoming this is to slightly adjust the grid coil condenser until the desired minimum plate reading is found; this, of course, alters the wave-length slightly. Finally the aerial circuit is closed and then adjusted until it falls into resonance. The plate current will now be found to have very considerably increased but will again fall to its original low value the moment the circuit is broken. It may be here mentioned that the writer keys in the aerial lead and, contrary to what might be expected, obtains a very steady note and at the same time eliminates key click.

As to results obtained, it has been found on 23 metres that the station is able to work the United States with daylight all the way.

charge of Flight-Sergeant Hall and Flight-Lieut. Duncan, who took over from Capt. Durrant.

We have had many very interesting tests. On May 26 we tried a low power test on 45 metres. The lowest power he could receive me on was 10 watts and I received him quite well on 6 watts. Our ultimate object in these tests is to maintain a reliable twenty-four hour two-way communication, and we have very nearly reached our goal. On June 3 I had several tests on the lower wave lengths between the hours of 0700 and 1600 G.M.T., and each time Mosul received me. We hope now within the next few days to establish a two-way communication any time during the day or night. The following message was sent me on June 3 regarding the daylight test:—"Congratulations on very fine show. First all day working with Mesopotamia. Very nearly a record for this time of the year."—(Signed), Flight-Lieut. Duncan.

These experiments have been most valuable and interesting, and my thanks are due to the whole-hearted co-operation of Capt. Durrant, Flight-Sergeant Hall and Flight-Lieut. Duncan, of the R.A.F. One of the greatest difficulties in carrying out experimental work is to get a station at a suitable distance to co-operate reliable with one. But here is a station which has been most reliable all through. From my experience it is useless to experiment with the ultra short waves unless one has another station to test with.

A great deal of hard work has been put into the job and a great number of disappointments have been experienced, but all can be overcome by applying the old saying, "If at first you don't succeed, etc." G 2 L. Z.

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Important Correspondence.

DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH.

SIR,—The Radio Research Board are formulating an extensive research into the propagation of short waves used in radio communications, especially in the part played by the upper atmosphere, and they consider that any reliable data that can be obtained on this subject may well be worth careful expert analysis, particularly in the matter of diurnal and seasonal variation over long distances.

I therefore venture to ask you if you would be good enough to bring this matter before the transmitting and relay sections of the Radio Society of Great Britain with a view of their co-operating in this important branch of research. Twelve copies of a note are enclosed showing the nature of the information required, and if any of the members of the transmitting section would be good enough to give us the results they have obtained on these lines during, say, the last 12 months, they would be much appreciated by my Board. A more complete questionnaire in tabular form will be provided for this purpose. The results of the analysis will be published.

Should, also, any of the members who are continuing their short wave work be willing to give us their future results, I should be obliged if they will inform me.

Believe me,
Yours faithfully,
H. B. JACKSON,
Chairman,
Radio Research Board.

June 17, 1925.

Scope of Questionnaire to Private Experimenters as to Results Obtained on Short Wave Communications.

1. Information is required with regard to reception of radio signals of waves of 100 metres and less (a) over long distances (more than 200 miles) and (b) any abnormal results on shorter distances.

The following are some of the details which would be required:—

2. The call signs, position of, and general details of the transmitting stations, including aerial and power input.

3. Details of receiver and precautions taken to maintain receiving circuit and voltages used in it constant.

4. Type of transmission, wave-length, times G.M.T., and whether signals could be relied on to be received at prearranged intervals, fading effects and signal strength, interference from other stations.

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The International Amateur Radio Union, (I.A.R.U.)

By the Vice-President, GERALD MARCUSE.

IN April, 1924, a small party, consisting of those interested in international amateur radio from various European countries and the American States headed by Percy Hiram Maxim, who for some years has been regarded as the father of amateur radio in the American Continent, met in Paris to discuss the formation of an international league or union, which would serve to bind all those interested into a fraternity. After several days of discussion, it was unanimously agreed to call an International Congress in Paris at Easter, 1925, and it was decided to invite delegates from every country in the world, and a committee of organisation was formed to deal with the preliminary details.

A word of praise is befitting here to the French committee, who were practically responsible for the organisation of this Congress.

Easter, 1925, duly arrived, and naturally great excitement prevailed amongst the Congressists at the prospect of meeting those in the flesh with whom one had communicated by radio over many thousands of miles, and it was noted with great regret that no delegates arrived from the Antipodes or South Africa, otherwise practically every country in the world was represented, and the Congress opened with 25 nations represented, which should indeed go down in the annals of amateur radio history.

When that never-to-be-forgotten Tuesday, April 14, arrived, it proved something of a thrill for all, and No. 12, Rue Cuvier was seething with radio enthusiasts of all nationalities, and there was the worst qrm's one could possibly imagine.

Great praise is due to Monsieur Belin, Commander Menys, and Mr. Percy Hiram Maxim, through whose united energy and tact we were able, in under a week, to secure the unanimity of the Congress, in spite of several difficulties.

One difficulty which at first seemed insurmountable was the question of languages, but thanks to our good friends Monsieur Leon Deloy, Mezger, and Mr. Jacquet, of New York, and various other kind gentlemen, this was easily overcome.

Monsieur Belin, as chairman of the Congress, certainly handled the situation with diplomatic precision.

The following five main points were placed before the Congress and voted upon:—

1. Do you believe in the need for an International Amateur Radio Union? Answer: Yes (unanimous).

2. Should the Union be established along the lines made by Mr. Maxim. Briefly as follows: "That the objects of this Union should be the promotion and co-ordination of two-way radio communication between amateurs of the various countries of the world; the advancement of the radio art; the representation of two-way amateur communication interests in international communication conferences; the encouragement of international fraternalism and the promotion of such additional activities as may be allied thereto?" Answer: Yes (unanimous).

3. Should the membership be by individuals or by societies. Answer: Two votes for individual and three for societies.

4. Do you agree to the definition of an amateur as proposed by the American Radio Relay League? Answer: Yes (unanimous).

5. Where should the headquarters of the Union be? Hartford (unanimous).

I might mention here that the period for officers and headquarters is only for two years.

Sub-committees were formed to discuss and prepare reports on the following five subjects:—

1. Organisation of Union—constitution.

2. Organisation of tests.

3. Allocation of wave-lengths, taking into consideration the various wave-lengths allotted by the various countries.

4. International auxiliary language.

5. Dissemination of call lists.

Esperanto was finally accepted as the auxiliary language.

I must add here a word of praise to all those who worked untiringly throughout the night especially to get out the Constitution, which had to be typed in French and English ready for the next morning, and it is gratifying to know that amongst this band of workers several well-known British amateurs were conspicuous, and those who imagined that they were going to Paris for a holiday soon found out to the contrary; and although several very interesting excursions were arranged, I am afraid very few of us had the time to take advantage of these.

K. B. Warner was conspicuous for his hard work, as usual, and even went without food, so much so, that he was always seen munching sandwiches! This was too much for some of the Congressists, and they bought the largest loaf of bread they could, and wrapped it with national colours and presented it to him, photographs of which have appeared in the Press.

The officers of the executive committee were elected as follows:—President, Mr. Percy Hiram Maxim; vice-president, Mr. Gerald Marcuse; treasurer-secretary, Mr. K. B. Warner; councillors at large, Monsieur Mezger (France, 8GO), Mr. Fredk. Dillon Bell (N.Z., 4AA).

A portion of QST will be devoted every month for I.A.R.U. notices. The International Amateur Radio Union has nothing whatsoever to do with national societies, and will only deal with international work.

One very interesting point at the Congress was the ease with which all amateurs conversed with one another, by using QST language. The Congress wound up on the Saturday with a most enjoyable banquet, which was so well attended that you could not have wedged another in.

The British Section was formed at the T. & R. dinner on April 24, 1925, and duly approved by the executive who were present, with Mr. E. J. Simmonds (2OD) as national president.

All those who wish to join the British Section of the I.A.R.U. should send their names and 5s. to Mr. E. J. Simmonds, Meadowlea, Queensway, Gerrards Cross, Bucks.

EDDYSTATICS.

HERE we are! For a long time past many members of the T. & R. Section have clamoured for a magazine of their own, and so an effort has been made to satisfy this demand.

Having come into existence we must keep here. In order to do so we want every possible assistance from you. We want assistance in the shape of increased membership and also articles of 500 to 1,000 words, and we want *reputable* firms to give us their advertisements.

Other things which we require are cartoons, simple sketches, and articles of a humorous character, for the BULLETIN is to have its social side.

Editors are always wanting something. I want quite a lot, for the BULLETIN has no big bank balance to fall back on in cases of emergency and neither can it offer large fees to authors. Therefore the work which is published is all the more valuable, for it has been done for the good of the cause. It is a lot and very much appreciated, and I want more of it.

This issue deals largely with short wave work, which is making such vigorous strides just now. Suggestions for articles for future issues are cordially invited. For the present we have in mind articles on aerial and earth systems, A.C. rectifiers, efficient transmitting circuits, efficiency in transmission, reliable D.X. receivers, power problems generally, and the like. Articles on these subjects are needed.

Have you any ideas for the betterment of the BULLETIN? If so send them along. No doubt there are many who would produce a better publication if they were given the opportunity, and it is on these people we rely. I do not ask for criticism. I shall get it in any case, and it is to be hoped that it will be open and candid. The next issue will contain one or two features which circumstances do not permit of embodiment in this number.

We have had to gather the material for this issue from one or two enthusiasts, so that it is perhaps rather scanty. We think that we shall be able to extend our space in our next issue, so come along all you who have never tried "ink slinging"; let us see what you can do. Don't be put off for fear of grammatical errors, etc.; the worst ones will be rectified for you, and in any case the BULLETIN is not intended to be a treatise on English; in fact we rather welcome articles in "Radio language"—it gives it a homely flavour, which is, I think, appreciated.

So see to it that *your* publication is a success.
THE EDITOR.

The Office Boy's Corner.

2NM has discovered an ultra-violet ray in his thingummy jig on short waves. It makes him cry, and he has to wear lead spectacles. Perhaps he has discovered the "Hoo-ray."

Enough, thank you.—*Ed.*

A sad tragedy is reported from Snaresbrook. 2KT has broken "Softly Wakes My Heart."—And a good thing, too. The last time it happened it rained. Quite enough, thank you.—*Ed.*

D.X

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Various.—RCB8. CIDD. CIAR. C9AL.

20 metres.—American: 1ASF. 1CCX. 1HN. 8NB. 4TA. 1AAC. 1UW. 3ZW. 4TV. 1CMX. 2WC. 1BCC. 1CKP. 4DU. 4DM. 8GZ. 1XZ. 2BGI. 1KA. 2CMX. 4SA.

Various.—Mexican: 1AA. Italian: 1RG. Canadian: 1AR.

I have received a card from UICMP, the station of W. Jackson, 32, Clarence Avenue, Bridgewater, Mass., stating that he has heard the following hams, and would be glad if they would QSL: 5PZ, 2PC, 2YQ, 6TD, 6FG, 2VS, 6RY and 2LI. He has worked the following and wants cards from them: 5BV, 6GH, 2FM and 5BH. The card was dated February 17.—J. F. M.

Notices.

We are in need of short articles of from 500 to 1,000 words.

Please send these along in time for our next number.

We go to press about the middle of the month until further notice, so that all material for the coming issue should be in by that date.

Do not be disappointed if your article is not in this number—it is being kept for a future occasion.

Our publishing date is the 24th of the month and if you do not receive your copy, let us know.

All articles and correspondence concerning the "Bulletin" should be addressed to The Editor, T. & R. BULLETIN, 1, Montreal Road, Ilford, Essex.

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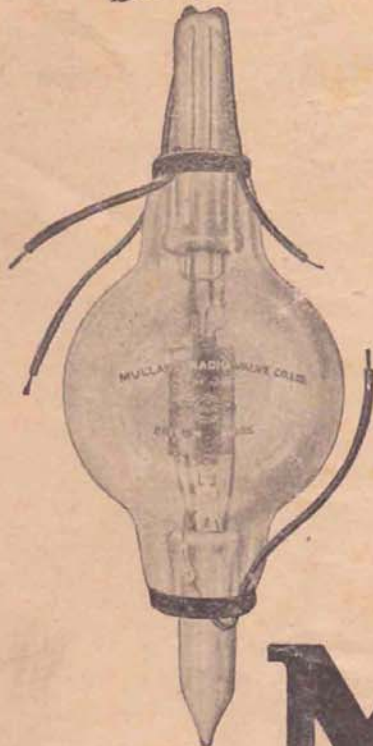
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