# T. & R. Bulletin

THE JOURNAL OF

The Inc. Radio Society of Great Britain

AND THE

British Empire Radio Union.

Vol. 6. No. 1. JULY, 1930 (Copyright) Price 1/6

THE INCORPORATED

# Radio Society of Great Britain

AND THE

# British Empire Radio Union

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*Committee Representatives:*

J. D. Chisholm (G2CX).
J. W. Mathews (G6LL).
H. B. Old (G2VQ).

## R. S. G. B. CALENDAR.

### *ANNUAL CONVENTION.*

*September* 26.—At the Institute of Electrical Engineers, W.C.2. 5.30 p.m., Tea. 6 p.m., Presidential Greetings. 6.15 p.m., Lecture.

*September* 27.—At the I.E.E. Morning: Delegates' Meeting. Afternoon: Photograph, followed by Business Meeting. Evening: Convention Dinner at Pinoli's.

*October* 24.—Meeting at the I.E.E.

*November* 21.—Meeting at the I.E.E.

*December* 19.—Annual General Meeting at the I.E.E.

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*New Zealand:* J. Johnson (ZL2GA).
*Egypt:* C. E. Runeckles (SU8RS).
*South Africa:* W. H. Heathcote (ZT6X.)

T&R

# Bulletin

*The only British Wireless Journal Published by Amateur Radio Experimenters*

JULY, 1930. Vol. 6. No. 1.

# EDITORIAL.

## Telling the World.

OUR Society has recently found its way into the columns of the Daily Press and thereby into the limelight of publicity. We refer primarily to incidents in connection with the Trans-Atlantic flight of the *Southern Cross*, when many of our members, at the request of the General Electric Company, stood-by for many hours listening to the transmissions from the plane, on the chance of being able to render service should any accident have happened. Fortunately the flight was not marred by any mishap, though we are proud of the fact that we, as a Society, were asked to give any assistance that may have come within our scope. At this stage we should like to assure any organisations who, in the future, may be planning hazardous flights or expeditions, that we, speaking for the Amateurs of the British Empire, will always be ready to render such service as may be required of us to an extent limited only by the terms of licences and the capabilities of our apparatus.

In another sphere our Society has received recognition, coming this time from the pen of our Patron, His Royal Highness, the Prince of Wales. Through the efforts of Mr. Arthur Watts, our Publicity Manager, the various B.E.R.U. Sections scattered throughout the Empire were asked to transmit messages of greeting to His Royal Highness on the occasion of his birthday, June 23. As a result the Society was able to deliver at St. James's Palace, on the morning of the 23rd, a number of messages of congratulation addressed to the Prince of Wales and received *via* Amateur Radio from the Empire. Further details and results, as well as a reply from His Royal Highness, are to be found elsewhere in this issue.

In the above paragraphs we have referred to " our Society " and to a little publicity we have obtained. It is hardly necessary to point out that, in this respect at any rate, the words " our Society " could be well substituted by " Amateur Radio." The two are, in a sense, synonymous, and the limelight is good for both. A little more publicity would greatly help Amateur Radio, for though we exist as a growing body of very enthusiastic workers, we are little known outside our own ranks. In this country opportunities whereby we can be of service to the community at large are few and far between ; luckily we do not experience floods, tornadoes or similar devastations, that have, in other countries, proved the worth of Amateur Radio. We should miss no opportunities whereby we are able to push Amateur Radio, as a cause to be reckoned with, before the eyes of the public. Publicity will do no harm and, in particular cases, may do much good. We believe that in cases of National or Imperial emergency we should prove of inestimable value. Let us therefore tell the world that we exist, who we are and what we can do, so that when the need for our services arises we shall not be left in total darkness through having lived too long in the shadows.

# The Transformer in Action.—Part 2.

By "INCONNU."

THE transformer has two very important characteristics, efficiency and regulation. Probably most amateurs consider the former to be of greater importance, but they are not unrelated, and for amateur work the regulation is a very important item. One does not want a chirpy note because the voltage output from the transformer falls away when the load is keyed on and off.

As the two are related, let us consider the efficiency first. When one speaks of the efficiency of transformation, one means the percentage of the input which comes out again ; if a transformer is rated as 87 per cent. efficiency under a given set of conditions, it means that somehow 13 per cent. of the input power is being wasted, usually as heat.

The power losses may be grouped under the following headings :—

**Resistance Losses.**—The heating produced in any conductor is proportional to the square of the current, and to the resistance of the conductor. The value of the current is fixed by the load, so variations only of the resistance are possible in order to reduce this loss to a minimum.

If the cross-section of the wire is made greater to reduce the resistance, it will occupy more space and require a larger "window" in the transformer. This means a larger iron core and larger magnetic losses.

The resistance of the windings can be kept small by making them of small length, and this is possible by a proper design of the core. An ideal core would be of circular cross-section, and this is impracticable, due to the large number of stampings required. The best compromise for amateurs is a square-sectioned core.

**Hysteresis Loss.**—This is a heating of the core plates due to the reversals of magnetism. Such heating represents lost energy, and must be reduced to a minimum.

Hysteresis loss depends upon the quality of the iron, the degree to which the windings magnetise it, and the frequency. A certain amount of loss will occur with each reversal of magnetism, and the greater the number of reversals in a second (frequency), the greater will be the heating.

Makers of core plates will supply figures or curves showing the hysteresis loss in watts per pound of core for given frequencies, and induction densities. The higher the degree of magnetism, or induction density, the greater the loss.

To keep the induction density low means using more iron, so we get back where we started. We could keep the core small and use a low density by putting a larger number of turns on the core ; but this shifts the loss to the copper—and it is still a loss.

It is usual to settle on a definite density well below the saturation of the iron, say 10,000 lines per square centimetre, and then work out the core and windings.

**Eddy Currents.**—The alternating field sets up little eddy currents in the iron plates. Each plate represents a conductor in a magnetic field, and any change in the value of the field will induce a voltage in the plate. These small voltages combine to set up eddy currents in the core ; hence the laminations and the insulation between. The idea of the insulation between the plates is to make the path of the eddy currents of as high resistance as possible, and reduce them. But there is a limit to the splitting up of the core, and a certain amount of eddy current loss must be tolerated. If the sheets are made too thin there will be difficulty in assembling the core.

This loss depends on the thickness of the plates, the square of the induction density, the square of the frequency, the quality of the plate, the plate insulation. Makers' figures again are available. Much the same precautions as with hysteresis must be taken with eddy currents.

A transformer will have a certain secondary or output voltage on no load, but this is found to fall in value as increasing loads are connected. Obviously, good regulation is required by amateur transmitters because the load will be keyed on and off, and a varying plate voltage will produce in most cases an unsteady note, i.e., a chirpy note. This fall in volts of the transformer output is serious enough of itself, but the amateur has also a rectifier and smoothing circuit which will cause a further drop of volts on load.

The expression "percentage regulation" is the relation :

$$\frac{\text{(no load volts — full load volts)}}{\text{no load volts}} \times 100$$

This percentage will vary with the power factor of the load, getting worse with a lagging current. For leading currents (condenser loads), the regulation will improve and for certain values of leading power factor there will actually be a rise of voltage on load.

This drop of volts on load is due to two causes, the resistance drop in the windings and the leakage reactance drop. The latter arises because not all of the flux set up by the primary currents will link with the secondary winding. Some of the flux will leak across the window, and not all of it confines itself to the core. In order that as much of the flux as possible will link with the secondary, it is usual to split up the two windings and put one half of each on either leg of the core. Sometimes the windings on each leg are divided again and secondary coils sandwiched between primary coils. The window is made higher than it is broad to discourage leakage across, and other more technical methods are employed to reduce this magnetic leakage as much as possible. But, however careful we are, a certain amount will always be present, and will increase with load.

This leakage magnetism is surging in and out of the turns and doing no useful work. It is merely producing a voltage in the turns like the back voltage of self induction, and hence the effect can be represented by a perfect transformer with a reactance coil in series with the windings.

(*Continued column* 2, *page* 6.)

# On Starting Up.

By "Uncle Tom."

In this, the third of my short effusions for the purpose of helping along the prospective ham, I have been asked to assume that the previous articles "did the trick." That is to say, that they just gave said prospective ham the necessary confidence to apply for his licence and get it without too much difficulty. If this desirable state of affairs has not prevailed yet, it doubtless will very soon, and in any case this short article on operating procedure will not be amiss.

We have all noticed that certain newcomers to the "ham game" make themselves popular and personal friends of all that they work within a few months or even weeks of coming on the air. Others, unfortunately, are content with turning out a nasty noise and upsetting all the local transmitters in their mad quest for super DX.

Now you, G2LO or whatever your newly-assigned call may be, are the sole means of deciding which type of station yours will be, and no one else can possibly do it for you.

The first choice you will meet is this: "Shall I turn out all the power I can afford, using one-and-a-quarter microfarads for smoothing and a thousand volts on the plate (with a 10-watt licence), or shall I turn out the prettiest signal possible and give up worrying about high power?"

It must have been drummed into our ears thousands of times that it is not the noisy signal that attracts the attention of other listening hams, but the *pretty* signal; unfortunately, no one seems to believe it yet. True, if you can put out a signal that is both noisy and pretty your luck is in, but there aren't many of them yet. Not in this part of the world anyway.

I am going to keep right off the technical aspect: there have been plenty of good articles in the Bull. on transmitters and transmissions, and you should from them be able to decide what circuit to use, and what power supply to feed it from, and so on. I would, however, emphasise this; if you are contemplating high-power work (which you should not do at first, obviously) *do* get a suitable valve for the job. All these punk notes that we hear are due to hopeless overloading of almost everything in the outfit.

And don't for the love of Mike say that you can't afford a big valve, but still want to use high power. If you can't afford the valve you can't afford the high power, and that's that! The whole thing wants considering carefully, and it is necessary to remember that if one wants to make a real job of high-power work the cost goes up as the square, or possibly as the cube of the power used.

An ideal start, in my humble opinion, may be made with 10 watts on an LS5 or an LS5B in T.P.T.G. circuit, and this may be converted to C.C. later on without an unreasonable amount of extra expense. A set with everything working well within its safety limits can turn out a wonderfully nice signal without being C.C. It is these lids who put on thousands of volts and don't feed them into the gear that is necessary to receive them that cause all the trouble.

You may think I am getting unduly heated on the subject; perhaps so, but no one takes any notice while you remain cool, so it may be just as well.

Now, having jumped on by several weeks, we will imagine that nice 10-watter all ready on the 7 and 14 M.C. bands. The *next* thing (and again it's no good saying you can't afford it—you've *got* to) is a monitor on which to listen to your own transmissions. This is simply a small heterodyne wavemeter in a box with its L.T. and about 9 or 18 volts of H.T. It can combine the functions of a wavemeter to keep you in the bands and a check on your note, and must be used on all occasions.

Now we will do another jump and imagine you putting out a beautiful signal on one or other of the bands, listening to it on the monitor. First of all, don't call "test" for ten minutes or so. It is far better at first to listen to another man calling test or CQ and to reply to him. Don't take ten minutes over that, either. It is the short, snappy calls that get there as a rule, and if you go on too long the fellow at the other end will simply curse you and listen for someone else. I do it myself, so I know.

When you do call "test," send it three times, "de" (not "from" as on the licence) and your call three times. Then repeat the whole lot three times and you will have done quite enough.

If you don't get a reply, listen for some minutes, and if there is no one to call, try another short "test" later on. If everyone did this the ether would be a paradise instead of a—well, you know what I mean.

Again, don't do as some of our prize hams do to double the QRM. When a fellow reports your signals QSA4 or QSA5 there is no earthly need to send each word twice. Who on earth invented this poisonous habit I can't imagine. If there is QRM, send slowly by all means, but don't don't do do this this sort sort of of thing thing! It is sheer childishness unless your signals are being wiped right out. At all events there can be no excuse for the people who send twice *fast*. Send once slowly. Several old stagers might note this, too.

When the other fellow replies to you (to a "test" call) he will simply call you for a while and then say "K." Of course, you know all the abbreviations and Q signals from your BRS days, so we will not elaborate. You then reply to him something like this: "G5XX de G2LO r OK ge om ur sigs QSA4 R6 (or whatever it is) . . ." After that, just go ahead with anything you like, but do give the poor fellow his report right away so that he knows how fast to send, and so on.

Also, if you are a novice and can't read too fast yet, don't be afraid to say "Pse QRS 12 w.p.m." or anything you like. The other chap won't laugh at you—he will admire you for being honest instead of letting him send all out and then going back and saying "Sorry om. QRM here pse repeat." We all know that kind of QRM!

(*Continued column* 1, *page* 6.)

# The Loyal Relay.

AN important milestone in Empire radio as applied to amateur operation was passed during June, when the first loyal relay was worked.

Earlier in the year our Publicity Section conceived the idea of arranging for our many B.E.R.U. groups to transmit loyal greetings to our patron, H.R.H. the Prince of Wales, on the occasion of his thirty-sixth birthday. That their plans were well laid can be judged from the appended copies of messages. It was decided by Council that the following British stations should assist with the reception of the messages: G2VQ, G6VP, G5ML, G6HP, G6QB and G5YK, and that they would maintain a definite listening schedule on the two week-ends prior to June 23. Conditions during the period were not quite up to expectations, but by excellent all-round co-operation, almost every Empire group succeeded in passing its message of greeting.

First honours fell to Jamaica, when on June 15 NJ2PA made contact with G5ML. On the same day VQ4MSB delivered to G2GM greetings from Kenya, Uganda and Tanganyika. This message was also received *via* VQ4CRE and G6VP. June 16 brought the message from Mayor Craig, of St. Lambert, Quebec, Canada, *via* VE2BE, whilst at about the same time G6VP copied solid the lengthy greetings from Egypt, *via* SU8RS. On June 18 G6HP was in contact with VS7TD, and in spite of very severe fading, succeeded in accepting the Ceylon and Southern India message. This message was also received *via* VS7AP, G6XJ, G5RS and G2VQ. The following day G5ML received personal greetings from VE2BE and another *via* VE2CA from Mr. and Mrs. Turner. VE2AP (Mr. Adai) also joined in with a message, which was followed by a loyal greeting *via* VE2AP from VE2BE on behalf of the officers and members of the Canadian Division, A.R.R.L. June 22 brought the Newfoundland message, also received by G5ML, who accepted it from VO8MC. On the same day Mr. Old (G2VQ) worked YI6HT and received the Iraq Group's greetings. Two further personal messages from Canada were received by Mr. Miles and one by Mr. Old, the former *via* VE2BE and the latter *via* VE2BB. During the afternoon ZS4M was heard, and after prolonged efforts contact with G2VQ was effected, and the S.A.R.R.L. message accepted, a fine piece of work, as conditions were bad. On the morning of June 23 a further message was received from all South African and Rhodesian amateurs.

The deliverance of the messages to York House was entrusted to Mr. Arthur Watts, who, we understand, was accorded by mistake a military salute—an honour well deserved.

The value of this relay cannot be underestimated, and to all who assisted in any way we convey our warmest thanks and appreciations.

The messages as received follow :—

The Headquarters' message :—

"The Council and Members desire to tender to Your Royal Highness their loyal greetings and best wishes on the occasion of your birthday."

(Signed) GERALD MARCUSE (G2NM),
President.

From Jamaica, *via* NJ2PA and G5ML :—

"To His Royal Highness the Prince of Wales: Greetings from far-off Jamaica. May you be spared long life and happiness."

From Division Eight, South African Radio Relay League, *via* VQ4MSB and G2GM :—

"Kenya, Uganda and Tanganyika send their loyal greetings to His Royal Highness the Prince of Wales, *via* amateur radio with best wishes for a happy birthday."

From Egypt *via* SU8RS and G6VP :—

"We, of the Egyptian Section of the British Empire Radio Union, are united in conveying to Your Royal Highness our heartiest greetings and sincere wishes for your continued good health and prosperity on this anniversary of your birthday. We would also assure Your Royal Highness of our loyal and wholehearted support to the scheme that enables amateur radio to further strengthen the bonds of goodwill that exist between the Dominions of the British Empire."

From Ceylon and Southern India, *via* G6HP and VS7TD :—

"To His Royal Highness the Prince of Wales: Very many happy returns of the day and best wishes."

From Canada, *via* VE2AP and G5ML :—

"The Officers and members of the Canadian Division, A.R.R.L., wish you heartiest congratulations and many happy returns of the day."

(Signed) ALEX. REID (VE2BE)
Canadian General Manager.

From Newfoundland, *via* VO8MC and G5ML :—

"To His Royal Highness the Prince of Wales: Best wishes and heartiest greetings on your birthday from all amateurs in Newfoundland."

From Iraq, *via* YI6HT and G2VQ :—

" Iraq Group joins with fellow-members throughout the Empire message of loyal greetings to Patron, His Royal Highness the Prince of Wales, on the occasion of his birthday, June 23, 1930."

(Signed) YI6HT.

From Canada, *via* VE2BB and G2VQ :—

" Birthday greetings and best wishes to Your Royal Highness for a long and happy life."

(Signed) VE2BB,
Canadian Representative,
British Empire Radio Union.

From South African Radio Relay League, *via* ZS4M and G2VQ :—

" South African Radio Relay League, South Africa, send birthday greetings and wish Your Royal Highness long, peaceful and happy life."

(Signed) S.A.R.R.L.

From Johannesburg, South Africa, *via* G6UN :—

" Please convey to His Royal Highness the Prince of Wales, loyal birthday greetings from South African and Rhodesian Transmitters."

The message from Headquarters was included on behalf of all home members of R.S.G.B.

The following letter was received from St. James Palace :—

June 24, 1930.

" THE PRESIDENT,
" The Radio Society of Great Britain.

" SIR,—I am desired by the Prince of Wales to convey through you to the Council and Members of the Radio Society of Great Britain, His Royal Highness's thanks for their birthday congratulations, which he greatly appreciated.

" Perhaps you would be good enough to convey to those Radio Relay Leagues, groups and other amateurs whose greetings to the Prince you have forwarded, the enclosed message from His Royal Highness.

" Yours truly,
" GODFREY THOMAS,
Private Secretary."

" The Prince of Wales sends you sincere thanks for your good wishes, which His Royal Highness much appreciated."

# G.M.T. or G.C.T.

Members will doubtless be interested to read the following letter, which was sent as a reply to a letter received by Mr. Arthur Watts, our Publicity Manager, from Mr. K. B. Warner, of the American Radio Relay League. The letter is self-explanatory and definitely clears up any uncertainty as to the correct method of giving time.

DEAR MR. WARNER,—Replying to your letter of April 22, signed by Mr. De Soto, the following is an extract from it :—

> " In regard to your inquiry as to G.C.T., we use this standard since it has been adopted as the official time standard in astronomical and nautical circles. The old G.M.T. (Greenwich Mean Time) which it supersedes started the day at noon, whereas in G.C.T. (Greenwich Civil Time) the hours are numbered from midnight."

This extract has been submitted by me to (1) the British Admiralty, (2) the Corporation of Trinity House, (3) the Royal Observatory, Greenwich, and (4) the Meteorological Office, Air Ministry.

I now give you the replies I have received.

(1) The British Admiralty says :—

(*a*) In reply to your letter dated May 23, I am commanded by My Lords Commissioners of the Admiralty to inform you that the expression " Greenwich Civil Time " has in recent years been superseded by the expression " Greenwich Mean Time." Until a few years ago G.M.T. was reckoned from " noon to noon," whereas G.C.T. was reckoned from " midnight to midnight," and in order to terminate this anomalous arrangement the method of reckoning G.M.T. was changed to " midnight to midnight."

(*b*) Greenwich Mean Time has always been used for all nautical and astronomical publications and the necessary changes in these were made when the alteration in the meaning of G.M.T. came into force.

(2) The Corporation of Trinity House says :—

" (*a*) G.M.T. is universally used to-day in astronomical and nautical circles.
(*b*) G.M.T. reads from midnight to midnight.
(*c*) G.C.T. is never used at sea.
(*d*) *G.C.T. does not and never has* superseded G.M.T."

(3) The Secretary of the Royal Observatory, Greenwich, has sent me the following, which was the recommendation made to come into force on January 1, 1925 :—

" La désignation Greenwich Mean Time (G.M.T.) pour les dates anterierures au 1 janvier 1925 se rapporte au temps compté à partir de midi, mais après cette date elle signifie, dans les publications britanniques, le temps compté à partir de minuit. Il est conseillé aux astronomes de ne plus employer dans aucun sens les lettres G.M.T.

" Quelques astronomes désirent employer le temps compté à partir du midi moyen de Greenwich ; dans ce but, les lettres G.M.T. ne sont plus disponibles.

" L'expression Greenwich Mean Astronomical Time (G.M.A.T.) quoique longue est la plus satisfaisante pour indiquer le temps compté à partir du midi moyen de Greenwich."

(4) The Meteorological Office informed me *that G.M.T. is always used by them in all their weather reports*, and that *anybody using G.C.T. would be looked on as a crank.*

I hope the opinions of these four authorities will convince you that *nobody over here ever thinks of using G.C.T.*, and only about one in a million knows what it means. It therefore seems most desirable to drop using the term, and I shall be obliged if you will kindly let me know what action the A.R.R.L. propose taking in the matter.

I am placing this correspondence before the Council of the Radio Society of Great Britain.

With kind regards,
Yours sincerely,
A. WATTS (G6UN).

June 18, 1930.

# Our President.

## An Appreciation.

THOSE of us who are enjoying the use of the 80-metre band over the week-ends are extremely pleased with this latest concession which is now appearing upon the trans-oceanic permits. Most readers are now aware that this benefit arose from the continued efforts made by our worthy President in negotiating with the Post Office, and are feeling particularly grateful to him in consequence.

But, as a matter of fact, this is only a small matter compared to all the other work done by Mr. Marcuse during many years past. He has always acted as negotiator with the Post Office authorities whenever anything had to be done, and practically every benefit we enjoy is the outcome of his efforts. Let us remember some of the restrictions imposed upon the early transmitter. The limit of power to 10 watts; communication for ten minutes only, and then only with a few specified stations; inland communication only; wavelengths 200 and 440 metres, and other hampering restrictions. With the overcoming of all these difficulties and the obtaining of short-wave permits, our President was largely interested, and his efforts in their removal was continued until he succeeded.

Perhaps few among the early transmitting amateurs will be so well remembered as Gerald Marcuse (G2NM). When the available stations working were less than fifty you could always rely upon him to work with you, and he always was ready to assist any newcomer to get his station into being.

In the R.S.G.B. he has always been an untiring worker. Whether working upon the Council, as Secretary first of the old T. & R. Section and then of the main Society, and latterly as our President, he has always given us his best and has steered the Society round many an awkward corner by his able and practical assistance. Few have done more for the amateur radio cause than "Gerry" Marcuse, and it gives us great pleasure to reproduce again his photograph as a fitting accompaniment to this tribute.

A very practical suggestion has been made by one of our members as a method by which our gratitude for all he has done for us might be made effective. Briefly, it is as follows:—

We all have QSL cards. Let every member of the R.S.G.B. and all overseas who read this tribute write the words "TKS OM" on their card and forward it to the Society at 53, Victoria Street, S.W.1. The cards so received will be handed to our President *en masse* at the annual dinner next Convention. We feel sure he will appreciate this much more than any other manifestation of our gratitude. All cards must be sent to arrive at the latest by September 1 next and should be sent unenclosed. Those who do not use QSL cards can send ordinary postcards, but must sign their names.

Now, directly you have read this reach for one of your cards and fill it in and post it straight away before you forget it. We want to get a collection of QSL cards such as has never been heard of before and which will cover the entire walls of his house, affording a permanent memory to him of those who have appreciated all his work for us and himself as a true British amateur transmitter and real friend.

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**On Starting Up** (*Continued from page* 3.)

And another thing to remember is this: you will never become a popular station if you simply get a report out of the other fellow, ask him for a card, and say good night. Surely you can find something of interest to talk about. After a few reasonably long QSO's with the man at the other end you get to look upon him as a personal friend. After the "QSL-QRU" type of QSO he is still merely a call-sign.

I am afraid all the foregoing is rather scrappy, but I have had to condense matters to get it down to a decent length for this all too small BULL. of ours, and perhaps the Editor will let me loose again in a later number. 73 everybody and CUAGN.

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### The Transformer in Action.

(*Continued from page* 2.)

This naturally produces a reduction of the output voltage as the load increases, and gives bad regulation.

To this drop must be added (vectorially) the drop due to the resistance of the windings. Any attempt to reduce this drop must be treated exactly as the attempts to reduce copper losses dealt with previously in this article.

# Volume VI., No. 1.

"THE T. & 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."

Such were the opening words of the first number of the BULLETIN, published in June, 1925, and penned by the writer. That was five years ago, and now we celebrate the anniversary with the first number of volume six. The completion of five volumes might not be a conspicuous event in the ordinary course of journalism, but in the case of the BULLETIN there is a considerable difference, and certainly a just excuse for a short article about it.

When the T. & R. Section was a subsidiary portion of the old R.S.G.B., and gradually building up a large country membership, it was felt that something was wanted to bind the whole together, other than mere meetings which could only be attended by a few. Hence the BULLETIN was born (actually over a cup of coffee in a Lyons teashop) and started a career which has been eventful throughout. In the first place it was to be only an experiment, and even its most sanguine proposers little dreamed it would ever become the power it has since attained. It attempted something which, perhaps, had never been tried before, at least in the field of Radio journalism — to establish itself upon a purely voluntary basis with unpaid workers and absolutely unbiased principles. The downfall of the paper was speedily predicted and openly declared upon more than one occasion. We should never get a continuance of matter to fill the pages, while support from the advertisers would be entirely lacking. But the prognosticators were wrong for once; they had not counted upon the enthusiasm of the transmitting radio amateur when he undertakes a matter and intends to see it through. They had overlooked the fact that we were a body of young men brimful of push and energy and not likely to be overawed with pessimistic predictions. The BULLETIN, once begun, continued to grow and flourish and survived all difficulties.

Obviously, there is a considerable difference between No. 1, Vol. I., and No. 12, Vol. V. The former had only twelve pages of reading matter, while the latter numbers twenty-eight. Again, as our regular readers will have noticed, the various sections of the paper have become organised and split up into definite departments. Still, those associated with the production of No. 1 will always be proud of their baby, which has since grown into so lusty a child and will always preserve their copies as an example of one of their youthful rash ventures, which for once in a way made good. It is interesting at this point to recall the names of those concerned with No. 1. In the first place, the Editor, who took up the idea with such enthusiasm and gave up such faithful voluntary service for so many years, Mr. J. A. J. Cooper. Few of us will fail to appreciate all that he meant to the "BULL." Then, scanning through the pages, we find the names of Messrs. H. Andrews, E. J. Simmonds, W. J. Royle, our President, Gerald Marcuse, and the late Admiral Sir Henry Jackson. These, together with others, all helped to make up No. 1 and launched it upon its sea of life.

In No. 1 it was definitely put up to the members that the success or otherwise of the BULLETIN depended upon them, both for support in the form of contributed articles and assistance in other ways. The response was fully justified, and when No. 2 came to be compiled it was a question of finding room for all that had to go in. In fact, this condition has practically existed ever since; a standing rebuke to those who submitted that we should never get articles unless they were paid for. Many members forthwith undertook to give permanent help, which was gratefully accepted. To give a list of names of those who have so generously assisted would be impossible for, in fact, few members of the R.S.G.B. have not at one time or another dipped their pen in the ink in the cause.

Few of our members, except those who have actually taken part in the work, know what it means to produce the BULLETIN. Let it, in the first place, be fully remembered that, apart from the actual printing, the whole of the work is voluntary and done outside business hours. Under the present able Editorship of our good friend, Mr. G. W. Thomas (G5YK), the work has been split up among a band of willing workers, who take up definite duties. The articles as received have to be read through, and in many cases put into readable form, rough sketches have to be turned into printable drawings, and frequently letters have to be written to contributors regarding contributions. Then there are galley proofs from the printers to be read through and checked, and all sorts of detail to be attended to. Finally, there is one grand evening once a month when, to the accompaniment of much cigarette smoke, the coming issue is made up. This is known among the elect as "paste up" evening, and everybody retires from it dead beat and covered with paste and paper cuttings. This may all sound simple, straightforward work, but it is not. All sorts of snags are continually turning up, rendering the duty arduous and irritating. Anyone wishing to doubt this statement should take a hand at the duties and see what it is like. We owe a deep debt of gratitude to our Editor and those who work with him in all they do for us.

With the BULLETIN as the official mouthpiece, not only of the R.S.G.B., but also of the B.E.R.U., the work has further increased and the mass of correspondence multiplied to an amazing degree. The needs of the Colonial and overseas members have to be carefully scrutinised and arrangements made for detailing all their activities.

In addition to the Editorial work, it must not be forgotten that quite a lot of toil in connection with the BULLETIN falls upon the officers and Council, who have to keep constantly under

(*Continued on page* 10, *column* 2).

# Television.

## PART II.

By P. D. Walters (BRS273).

IN last month's issue reference was made to the necessity of running the scanning disc of a televisor at exactly the same speed as that of the transmitter before a visible and steady image is obtained. It has been recognised for a long time that complete and continuous synchronism of transmitter and receiver is necessary before television would ever come to the fore as a commercial success, and with this end in view many methods have been devised to maintain synchronous speed.

The most obvious solution to the problem is to control both ends by A.C. synchronous motors running off the same A.C. supply. This method, which has been mentioned in the recent "Science of Television" articles in these pages, is largely employed in America, but, of course, its range of operation is limited to the extent of the particular A.C. supply which controls the transmitter.

For some time it was maintained that the best way of effecting synchronism was to transmit a special signal for that purpose on a different frequency to that used for the vision signals, or to superimpose one signal on the other.

A very satisfactory solution of the difficulty is that used by the Baird process. The actual television signals are used for synchronising by employing each signal strip which has a definite beginning and end and occurs 375 times per second to actuate a special synchronising apparatus.

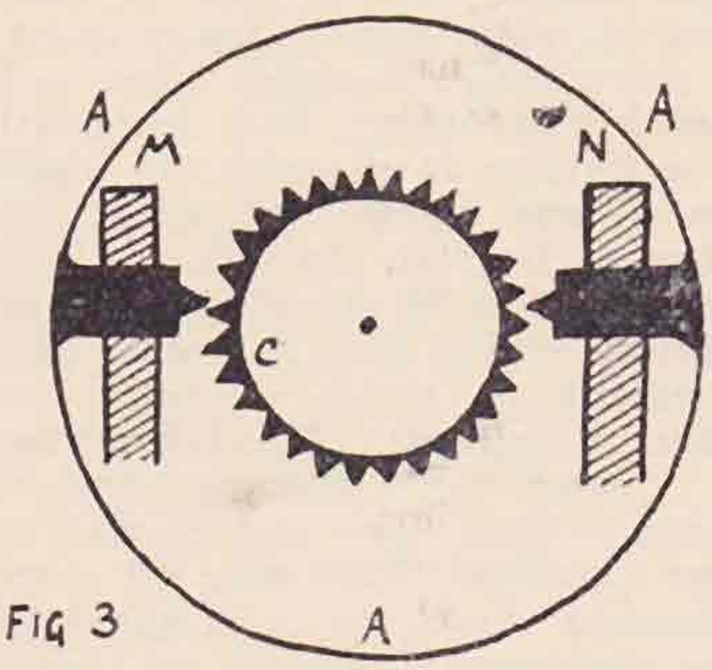
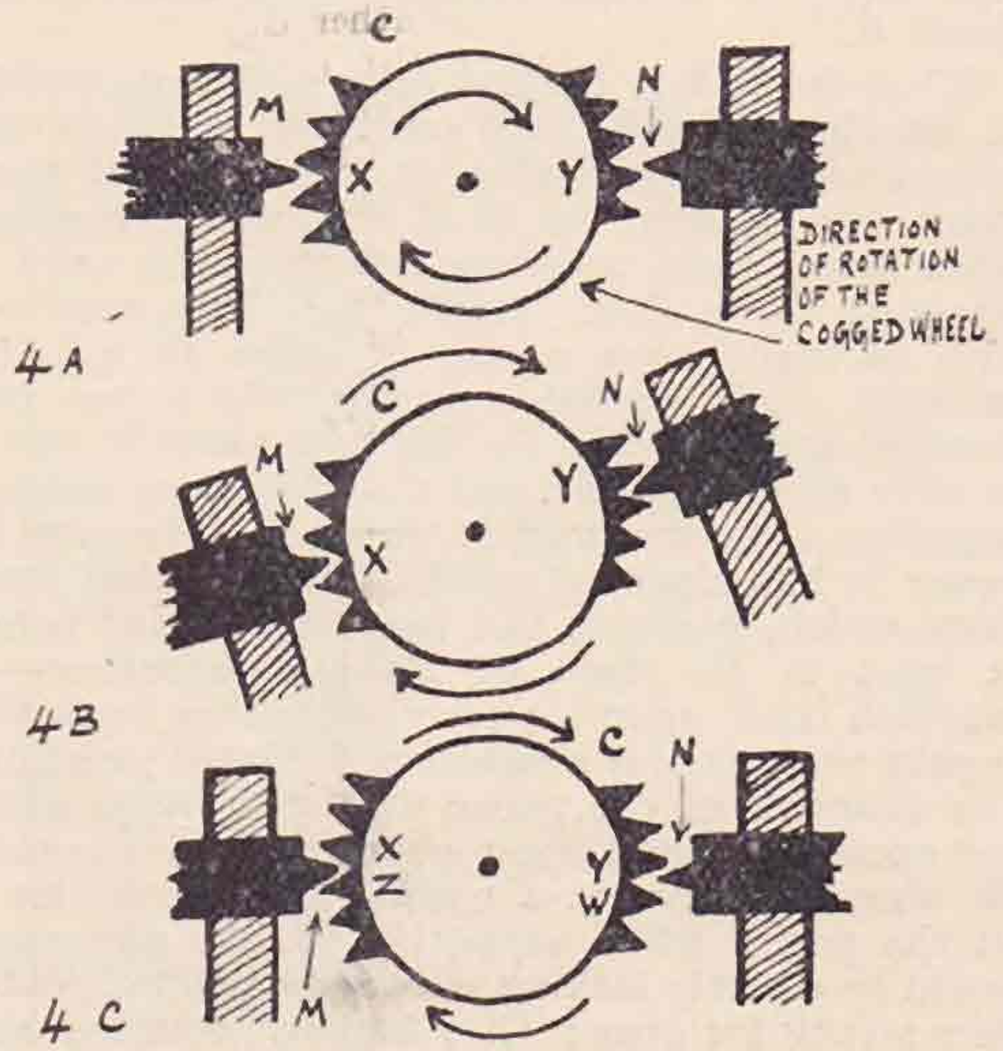



FIG 3

A.—Metal case carrying coils M and N capable of being revolved around the cogged wheel C (30 teeth).

A cogged wheel, similar to a phonic wheel except that the teeth are very narrow compared with the distance between them, is mounted on the shaft of the motor which revolves the scanning disc. In the commercial model televisor sold by the Baird Company the wheel is built up of laminations and has thirty teeth, corresponding to the thirty holes in the scanning disc and the thirty synchronising strips thereby obtained during one revolution of the disc. Two high resistance electro-magnets are arranged 180 degs. apart on either side of the toothed wheel so that a very small clearance is made with the pole pieces (Fig. 3). For a purpose which will be discussed later on, the two electro-magnets are arranged so that they can be rotated as one integral part around the circumference of the wheel.

These two coils, which are wired in series with each other and a ·1 mfd. condenser shunted across the two, are connected so that part of the vision signals from the output of the radio set pass through them as well as through the neon lamp, the actual method of connecting to the set depending upon varying circumstances which will also be dealt with later on. The condenser shown across the coils is for the purpose of by-passing the higher frequency component of the signals, as this is not required for the operation of the magnets.




**A.** Motor too fast; attraction between M and X, N and Y slows down speed.

**B.** Motor too slow; in this case attraction between M and X, N and Y speeds up motor.

**C.** Motor at correct speed; equal pull on X, Z and Y, W causes no change in speed.

Now, it is obvious that the motor driving the scanning disc, whatever supply it is fed from, is bound to vary slightly in speed due to small current fluctuations and to heating, mechanical and other minor causes. The action of this synchronising device is to correct any small variation in speed of the motor and thus hold the image stationary in the field of view. It should be mentioned at this stage that unless synchronous speed is maintained in the televisor, one can see nothing but a number of blurred and distorted pictures rushing up or down, the direction depending upon whether the speed is too fast or too slow.

Each time the synchronising "strip" signal passes through the coils M and N a certain magnetic pull is exerted on the teeth of the wheel (Fig. 3), there being thirty "pulls" during one complete revolution of the motor.

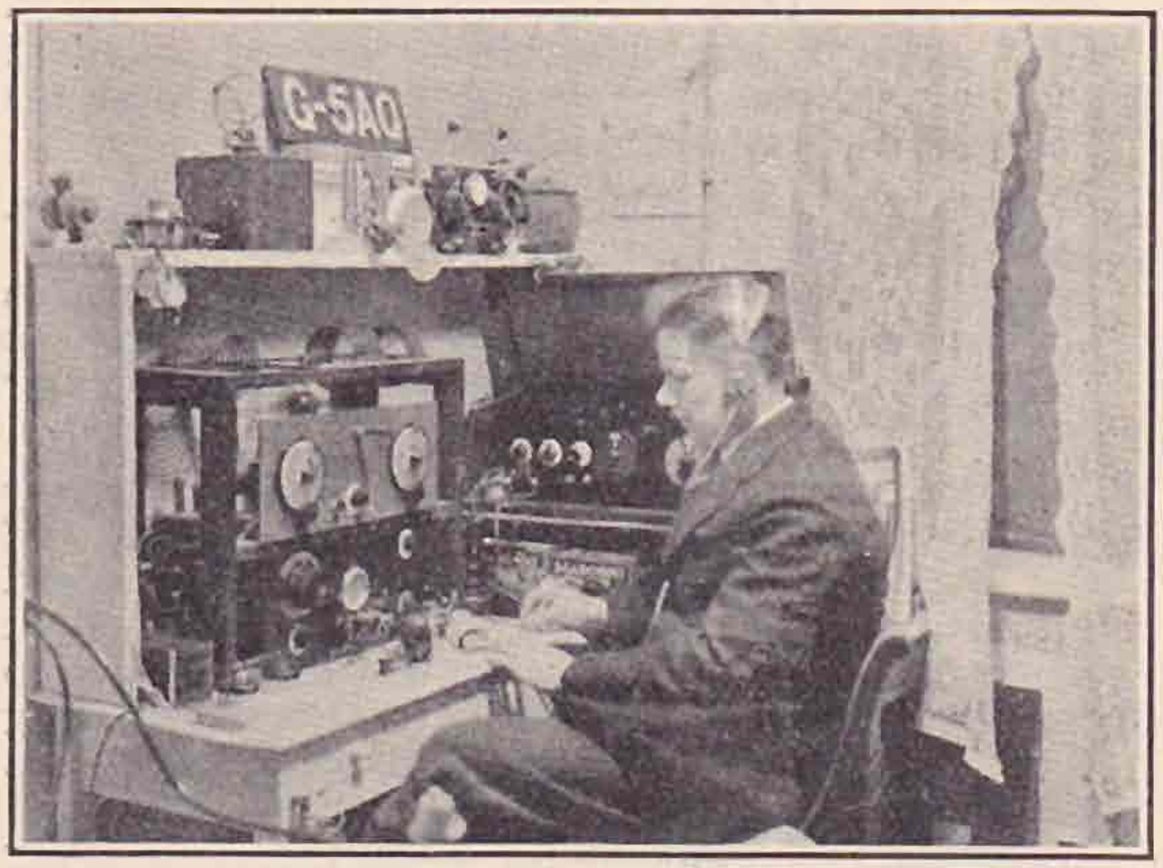
If the motor is running a little too fast the effect

(*Continued on column 2, next page.*)

# Station Description No. 7.

# G5AQ.

G5AQ is a comparative newcomer to the ranks of amateur radio, having been the possessor of this call-sign since February, 1929, only. Prior to this, about twelve months were spent as BRS114, and six months on artificial aerial with the call 2AGC. The station is situated on high ground, in a delightful part of Sussex, about mid-way between Tunbridge Wells and Eastbourne. Essentially a low-power station, a very humble beginning was made, using a TGTP transmitter with optional supply from either dry batteries or hand generator. Most of the earlier work was done with 2-volt receiving valves, a PM2DX giving exceptionally good results. Crystal control has always been used, the harmonic system being first tried, but eventually discarded in favour of the CO/TGTP system. Before this, however, in April, 1929, a good deal of time was spent on the 14-M.C. band, and it was during that month that the majority of the DX contacts were made; the




best being PK4AZ, of Sumatra, with an input of six watts from the hand generator. For the past six months, efforts have been entirely directed towards making the outfit as efficient as possible on the 7-M.C. band, and when this has been achieved, the construction of a separate outfit for 14 and 28 M.C. is to be undertaken. The most recent step is the change-over to an "all-A.C." supply, power now being taken from the 230-volt 50-cycles mains *via* a valve-rectifier of the full-wave type (U.8). The lay-out of the gear will be seen from the photograph, and little is required by way of explanation. The receiver is an 0—V—2 straight circuit, using throttle control reaction and valve base coils. These were found a great advantage in reducing the QRM from the Electric Light Co.'s transformer, situated in the garden. The transmitter is arranged on the "Rack" principle, the crystal oscillator and choke modulator being arranged on the "ground floor," with the T.P.T.G. portion above. The eliminator gear is not shown, being situated under the bench out of the way. The gear is housed in the bedroom, and owing to the difficulty of arranging a lead-in, it was eventually decided to employ zeppelin feed, passing the feeders out through the roof *via* a special skylight fitted with "window-pane" type insulators. Originally the "roof" portion of the aerial was 60 ft. long, and the feeders 16 ft. each side. This arrangement, using parallel tuning, gave excellent results on 14 M.C. and quite good on 7 M.C. Later the roof was increased to 65 ft., and the feeders lengthened to 32 ft. 6 ins. each side. This gives splendid results on 7 M.C., but does not appear to be at all suited to 14 M.C. Series tuning is now employed, the H.W. metre being so arranged that it can be switched into either line at will. (This is an advantage, as by using the same meter one can rest assured that the current reading in each line is exactly the same, which otherwise is questionable unless one employs the better class instruments, owing to the fact that it is difficult to find two H.W. meters which will read the same.) Much has been written of the marked directional effects when using zepp. aerials, but at this station the results definitely prove that so far as the above aerial is concerned, radiation is equally good in all directions. A very careful study has been made of this point, and none of the theories so far expounded in the columns of the BULLETIN have corresponded with the results obtained here. The aerial is supported at the home end from a chimney mast, and the height at this point has been reduced to 28 ft., so as to bring the free end rather higher. At the free end a wooden mast is used, 40 ft. high.

Being situated in the country, G5AQ gets few visitors, and would welcome many more. He is most keen to meet fellow "hams," and trusts that anyone finding themselves anywhere near his district will not forget to drop in on him for a look-over and a rag-chew.

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*(Continued from previous page.)*

of each "pull" is to slow down the speed (Fig. 4a), and to a lesser degree, when the motor runs too slow to accelerate it (Fig. 4b). When the speed is correct, the "pull" is distributed equally between two consecutive teeth (Fig. 4c), and has no effect on the motor speed.

No reference was made in Part 1 to the possible use of selenium cells as substitutes for photo-electric cells at the transmitting end, as, owing to their inherent time lag, their response to high frequencies is unsatisfactory.

*(To be continued.)*

[Acknowledgment to Baird International Television, Ltd., was inadvertently omitted after Fig. 1 in Part 1 of this series.—ED.]

# Television At Last!

THE time is 3 a.m., and I have just returned from visiting my old friend Professor Milson. The last thing I said to him before I left was that I would sit down when I got home and write to the "BULL." telling them all about his wonderful discovery in television.

Well, you know, the Professor is something of a cricket enthusiast besides being deeply immersed in the radio world, and it was quite usual when we met yesterday forenoon to discuss the "Tests" which have just finished in Australia. When I say "just finished," I mean that *we saw* the finish of the last match before I left the Professor, and this in his house in London at the fireside enjoying our pipes. Now I suppose you will think I am beginning to rave, but just wait and I will try and explain to you what happened.

While we were discussing the cricket, the Professor casually mentioned that he had been working on a new system of television; if I cared I could come round that night, and if conditions were good we might see the (now famous) ending of the match. So hardly believing my ears, I left him then and got down to his house in the evening all excitement about this new discovery.

We went into his laboratory first and saw the apparatus (nothing very special, I thought) and he informed me that reception was very good. We returned to his study, and he handed me a pair of very ordinary looking headphones, which I put on. He did the same, telling me while doing so to shut my eyes, and, wonder of wonders, I might have been sitting in the front seat of the stand overlooking the field of play. There were the players, there the crowd in their thousands, and through it all a pleasant voice was giving a running commentary of the play.

I sat enraptured for a while, and then, pausing to collect my scattered thoughts, I removed the headphones and asked the Professor to tell me how he had at last solved the problem. Now I am privileged to reveal to you the vital facts relating to his great discovery.

He told me that he was working very secretly in collaboration with a friend in Australia, and that they had just managed to get their apparatus perfected a few days ago. They discovered that the nerves running from the back of one's eyes to the brain carry a minute oscillating current, which is "modulated" by the light frequencies acting on the eye. This means that when the eyes are shut, there is no "modulation" due to light sources. They managed to find out the frequency of this carrier current, and at last were able to absorb a small part of it by means of a light metal band placed across the head.

They used this tiny current to control an immensely powerful amplifier which was afterwards connected to the power amplifier proper, of the usual broadcast transmitter. The receiving end is somewhat on the same lines; the same type of metal band is used to re-impress the received signals on the eye-to-brain nerves of the person wishing to see the broadcast. The metal band is concealed inside the headband of the phones, and by shutting the eyes and so stopping the "modulations" of the carrier by ordinary sources, the carrier is "modulated" by the received signals and the distant view as seen by the transmitter is also "seen" by the receiver.

By this method the television problem is solved once and for all, and the whole world should be grateful to these two men, who have spent their lives in the advancement of the science of radiovision, and have at last given the world something which will make their names live for ever.

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**VOLUME VI. No. I.**—*Continued from page 7.*

review the question of ways and means, among other things.

Then there is the advertisement side of the paper, which has been for some years so ably handled by one of our members, Mr. H. Freeman, of Messrs. Parrs Advertising, Ltd. This in itself is quite a big piece of work, and he deserves all the help of every individual member. To our advertisers themselves we are particularly grateful for their ready support, and here we must mention particularly Messrs. Mullards, who have adorned the back page of our cover practically from the start. Capt. Mullard has always been a good friend of the Society, and we cannot but think that his influence has assisted us here.

We must also refer to our printers, Messrs. Loxley Brothers, Ltd., who from the start have taken a keen interest in giving us an attractive make-up to our little paper and affording us assistance and help in many ways which, in our amateur efforts, have been greatly appreciated.

So, with this humble effort of "giving ourselves a pat on the back," we start another volume of the BULLETIN, wishing it continued success and further triumphs. At the same time, we must not forget that we each and everyone have a duty to perform. It is no good sitting down and thinking that the BULLETIN, now so firmly established, can go along on its own. It will do nothing of the sort. We must still continue to work for it in every way as in the past, remembering that it is part of our property and that every single member of the Society has a duty to perform in preserving his part of the property and endeavouring to make it more valuable to himself. Therefore, encourage those who you have appointed to look after your interests in this direction by giving them every possible support and readily acquiescing in their calls upon you for assistance, even if it involves you in a certain amount of work. It will be a small outlay compared to the toils which they so cheerfully undertake for you month by month.

## STRAY.

2BQF, Mr. G. E. Bull, Jnr., 64, Arthur Street, Ryde, I. of W., will be pleased to have a rag-chew with any transmitting or A.A. member, especially QRP hams, who may be visiting the Isle of Wight during their holidays. A p.c. to make arrangements.

## A Night with VMZAB.

Having been coerced by 2CX into offering to co-operate on the Trans-Atlantic Flight, I thought I had better do my utmost to get what was going, with as little inconvenience to myself as possible. The weather on Monday night was such a joy to gardeners that I was sure the airmen would not start next day, until I heard the news bulletin. On Tuesday I jumped out of bed at 3.00 B.S.T., listened till 5.05 without hearing a sound, so I went to bed again, quite unjustifiably cursing the B.B.C. I begged (or wangled) off from the office and at 14·30 started the search. At 14·45 I heard a T5 note struggling through the QRN and QRM and held it for an hour before I was certain that I had VMZAB. QRN was bad but the 'plane gradually got better and I was able to read more and more when conditions allowed.

At 16·45 a friend came along to keep me company for an hour or two and I let him listen to IDO's key thump to tune his ears up a bit. Then IDO got going really well and we worked half-hour reliefs to avoid going deaf. My wife looked in at 22·30 to suggest that friend should spend the night, but he said he was going soon. QRN and IDO were wonderful now and about 23·00 I went downstairs leaving my phones on the table, and as I came up again I could hear IDO five or six yards away. Another day commenced, IDO SK'd and QRN disappeared, and at 0·10 Wednesday we copied a message complete. Friend decided to stay on a bit now it was better. Then VMZAB got going good and proper and sent out six messages in the hour R8 QSA4. When he announced he was going to try for a bearing friend decided to wait and see where he was. He gave us this at 2·5 and things got quite exciting. Everything went swimmingly till 4.35 when IDO awoke complete with key thump and QRN appeared gradually. However, we held on until 5.45 when my friend decided that he really must go home. And so to bed for 90 minutes before catching the train to the city for another day's toil.

## Book Review.

A Critical Review of Literature on Amplifiers for Radio Reception. Radio Research Special Report, No. 9 (Department of Scientific and Industrial Research). Published under the Authority of H.M. Stationery Office, 1930. 239 pages. Price 5s. net. Copies obtainable at Adastral House, Kingsway, W.C.2, York Street, Manchester, 1, St. Andrew's Crescent, Cardiff, 120, George Street, Edinburgh, 15, Donegall Square, Belfast.

Every British amateur is *ipso facto* an experimenter. The experimenter must study the work which has been done in his subject in order that his energies may be profitably directed. Therefore, every British amateur must be interested in this publication, which directs him not only where to look for information, but what sort of information it will be; not only that, but he is told what the compiler thought of the information.

(*Continued column* 2, *page* 15.)

## THANKS!

To many Members:—

Will those Members who kindly replied to my letter of JUNE 11, please accept this notice as a sincere expression of THANKS for the valuable information supplied me.

It is not too late for other Members to write me and thereby support their own Official Organ. Here's to progress to the ONLY BRITISH WIRELESS JOURNAL PUBLISHED BY AMATEUR RADIO EXPERIMENTERS.

Horace Freeman,
Member R.S.G.B.

Advertisement Manager of the T. & R. Bulletin.

# Correspondence.

## Morse Code Practice.

*To the Editor of* T. & R. Bulletin.

Dear Sir,—Those who want Morse code practice may be interested to know that the British official Press bulletins from GBR can be heard with an ordinary broadcast set on a wave-length of about 468 metres. This seems to be a 40th harmonic of the 18,740 metre wave on which the scheduled transmissions are sent, since the engineer-in-charge at Rugby tells me that he knows of no transmissions of the GBR news bulletins except on the 18,740 and 34·5-metre wave.

I would be interested to hear from anyone else who listens to this 468-metre transmission of GBR.

W. S. Hughes.

10, Little St. Mary's Lane,
Cambridge.

## Ham Holidays.

*To the Editor of* T. & R. Bulletin.

Dear Sir,—Might I ask you if I could use your friendly offices to enable me to get into touch with a young English amateur in order that we might both become more efficient in our respective languages.

As I am a member of the top form at the High School at Lübeck, I should prefer an amateur about 23 years of age.

The young man must be of good family, and whom I can introduce freely amongst my family, and would take his summer holidays with me (say in July).

I am living in the East Coast resort of Haffrug, where my mother has a boarding house overlooking the sea, so that we can ensure him a good holiday, and if, through your introduction, I could effect an exchange of communications, I shall be pleased to furnish the best references and hope the young man can do the same.—Yours sincerely,

D4TY.

[Will those interested kindly communicate with H.Q. This method of taking a holiday has much to recommend it, and it is hoped that many of our members will visit their friends abroad this summer.—Ed.]

# HIC et UBIQUE.

### *Concerning* 3,500 *K.C. Permits.*

*The Editor regrets that he was misinformed in his statement as to the* 3,500 *K.C. permits in the May,* 1930, BULLETIN, *and the following statement has been received from Mr. Gerald Marcuse for publication. A note is also appended regarding a new official Calibration Service.*

The 80 metre band will be issued to all holders of the Trans-Oceanic permit, for week-end tests. The Trans-Oceanic permit was originally issued to all members who participated in the Trans-Oceanic tests, and, as there is some misunderstanding as to the constitution of this permit, the Post Office will issue it to members free on the recommendation of the Society for 10 watts, but for increased power a charge is made. The Post Office will not, however, issue the 80 metre band simply on the application of members for inter-communication.

* * *

With regard to calibration waves : At the request of the R.S.G.B., with the kind co-operation of the Post Office, the Treasury has sanctioned the cost for the transmission of calibration waves on 1780 K.C. and 168·5 metres quarterly ; it is hoped that later on these calibration waves will be transmitted more frequently. Due announcement will be made when the calibration waves are to commence.

* * *

### *Empire Link Stations.*

In accordance with the notice published in the May BULLETIN the Council have pleasure in announcing the appointment of the following Empire Link stations :—J. D. Chisholm (G2CX), G. E. Jones (G6XB), J. W. Mathews (G6LL), F. W. Miles (G5ML). F. R. Neill (GI5NJ), H. B. Old (G2VQ), A. Smith (G6VP), F. L. Stollery (G5QV), G. W. Thomas (G5YK), M. Wilkinson (G2YU).

With the coming into being of these official liaisons between Great Britain and the Empire it is hoped in an early issue to give details of the first British Empire network. It is the intention of the Council to establish an all-Empire Red Route encircling the globe.

The aim of the Link stations is to rapidly pass details of tests and to forward up to date general amateur information concerning local conditions for publication in the periodicals issued by the several Empire Radio Associations.

* * *

### *W.B.E. Certificates.*

The following members are now included in the ever-growing list of holders of W.B.E. certificates :—G6LK, E. J. Laker ; G6GS, W. G. Gilhespy ; G6WO, W. S. Woodhams ; G6OO, T. Woodcock ; G5BD, A. C. Simons ; G6NF, A. D. Gay ; G6XB, G. E. Jones ; VK2HC, H. R. Carter ; G5QV, F. L. Stollery; VK3BQ, Maxwell Howden ; G2DZ, Basill Hall ; G6XN, L. A. Moxon ; ZL1FW, Eric Whiteley ; G6UN, A. E. Watts ; CT2AA, M. S. Killen ; G6LL, J. W. Mathews ; G5VL, H. J. Powditch ; G2IP, C. J. Reed ; GI5NJ, F. R. Neill.

### *First Contacts.*

GI5NJ claims the following first contacts from Ireland :—U.S.A., on August 22, 1925, at 00.10 G.M.T., with U1PL ; Canada, on February 10, 1926, at 23.30 G.M.T., with C1DD ; South America, on December 15, 1925, at 07.45 G.M.T., with BZ1AF ; India, on January 24, 1926, at 00.23 G.M.T., with Y1WP ; South Africa, on December 13, 1925, at 21.15 G.M.T., with A6N ; Borneo and Malaya, on October 31, 1926, at 20.12 G.M.T., with BNSK2 ; Indo-China, on December 5, 1925, at 18.10 G.M.T., with FI8QQ * ; Philippine Islands, on February 14, 1926, at 19.15 G.M.T., with NAJD ; China, on October 24, 1926, at 19.00 G.M.T., with BXY.

*This appears to override Mr. Houston-Fergus' previous claim.

* * *

### *District No.* 15 *Conventionette.*

A Conventionette was held at Cardiff on June 4, and was attended by the following members :—G5PH, G5AS, G2HH, G6FO, G5FJ, G5VM, G5BJ, 2AKG, 2BDZ, and BRS239. On opening the meeting regret was expressed that HQ had been unable to send a representative, and those present were sorry to hear that G2VQ was unable to be present owing to illness in the family. Letters and telegrams were received from the following expressing their best wishes and regretting they were unable to be pressent :—G2VQ, 5OC, 6RB, G5TJ, G6TH, G2AV.

During the general discussion it was reported that certain of our members were using unlicensed bands, and it was decided that should this occur again it would be reported at once. G5AS, the district representative, was asked to write the offenders to this effect. G6FO asked those present to use the 170 metre band for local work and modulation tests ; this would reduce some of the interference from the higher frequencies. Complaints were also brought forward regarding the QSL section and several suggestions were put forward which the D.R. will bring up at the Annual Convention in September. As a fitting climax to a very pleasant time station visits were arranged.

We should also like to pass our best thanks to the Director of the B.B.C. station, 5WA, Cardiff, for the courtesy shown us, also to G5VM and G5BJ, of Birmingham, for attending our District Conventionette.

## QRA Section.

As mentioned in the February " BULL," Czechoslovakian amateurs are now being granted transmitting permits, and the first list of licensed stations is now to hand, and will appear in the next issue of the *Radio Amateur Call Book*.

Applicants for licences must be over 21 years of age, and must satisfy the Ministry of Posts that they are proficient in the use of transmitting apparatus and capable of conducting serious experiments. The licences cover the use of the 3.5, 7, 14 and 28 M.C. bands, but transmission is prohibited during broadcast hours, *i.e.*, between 11.00 and

# District Representative Elections, 1930-31.

Members are particularly asked to give the question of the election of their District Representatives a few moments' thought, and to complete the following form and return it to Headquarters.

New D.R.'s take office as from September 26, 1930.

Below will be found a nomination form, which should be returned to Headquarters not later than August 1.

In the August issue a ballot form will be issued for the use of members in districts from which more than one nomination has been received. These forms should be returned to Headquarters not later than September 1.

The September issue will contain a list of new district representatives so that members may (prior to Convention) make arrangements for their new D.R. or a deputy to attend as a district delegate at Convention.

**District Representative Elections, 1930-31.**

NOMINATION FORM.

I wish to nominate Mr.....

call sign....., of .....,

as representative for District No.....

I have ascertained that the above gentleman is willing to accept office.

Signed .....

Call Sign .....

Address .....

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13.00, and between 19.30 and 22.30 Middle European Time. The fees payable are 200 Czech kronen (about 25s.) for the examination in proficiency, and 60 kronen (7s.) per annum for the licence. Amateurs must also have a broadcast receiving licence, costing 120 kronen (15s.) a year.

About 60 amateurs applied for permits, but only 40 of them passed the examination.

**New QRA's.**

G2IG.—R. H. HAMMANS, 119, Nelson Road, Gillingham, Kent.

G2JA.—A. D. STENNING, 25, Woodlands, North Harrow, Middlesex.

G2OC.—L. R. SEAL, 28, Dovecote Lane, Beeston, Notts.

GI2OO.—CAPT. G. C. WILMOT, Ebrington Barracks, Londonderry, N. Ireland.

G2QS.—S. WARD, 32, Gleneldon Road, London, S.W.16.

G2WP.—P. L. WATERS, "Hollybank," Oxford Place, Victoria Park, Manchester.

G2ZN.—J. E. JOHNSON, "Lagos," 25, Clivedon Road, London, E.4.

G5GJ.—J. BEVIS, Singlewell, The Rookery Estate, Stanford-le-Hope, Essex.

G5JF.—G. WEBSTER, JR., 99, Blackburn Road, Darwen, Lancs.

G5WL.—F. J. RHODES, 318, Canterbury Street, Gillingham, Kent.

G5WP.—W. E. RUSSELL, "Wych Dell," Oak End Way, West Byfleet, Surrey.

G6SK.—E. D. SYKES, "Rockville," Knaresborough, Yorks.

G6SO.—J. SOTEN, 7, Potters Lane, Polesworth, Tamworth, Staffs.

G6VB.—V. P. P. BLAKE, Aslockton, Nottingham.

GI6WG.—R. CARLISLE, "Langside," Croc-na-mac Road, Portrush, Co. Antrim.

G6XK (Portable of G6XJ).—A. C. EDWARDS, 62, Wellhead Lane, Perry Bar, Birmingham.

G6XL.—F. W. GARNET, Ashburn, Calverley, Leeds, Yorks.

2BPB.—A. WATTS, "Flint House," St. Peter's Road, Sheringham, Norfolk.

2BQF.—G. E. BULL, 64, Arthur Street, Ryde, Isle of Wight.

The following are cancelled :—G2NJ, G5HS, G5WS, G5XI, G6FW, 2BIC.

M. W. P.

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# QSL Section.

It is evident from a large number of letters received that many members, particularly the newer members, are not at all clear as to the exact functions of the QSL service, and in order to avoid any future misunderstandings it has been decided to print a small sheet of instructions explaining the working of the section. These will be ready for distribution by the time these notes are in print, and anyone desiring a copy should forward a stamped addressed envelope to H.Q. for that purpose. A copy will be forwarded as soon as possible to those who have already written, and indulgence is asked for the delay involved in replying to their letters, which, owing to the fact that this step has been contemplated for some time, answers were postponed pending this.

It is proposed to discuss QSL business at Convention, and I shall, therefore, be glad if you will

## CALIBRATION SERVICE.

The R.S.G.B. Calibration Service (Standard Frequency Transmission) will be transmitted from station G5BR on the first and third Sundays in each month and by station G5YK on the second and fourth Sundays according to the following schedule :

9.55 a.m. Series of X's, followed by a telephonic announcement that the calibration service is about to be transmitted.

10 a.m. Transmission on 7,050 K.C. (nominal).

10.5 a.m. Transmission on 7,250 K.C. (nominal).

The actual transmission will consist of the call (in Morse) " RSGB DE G—— " (repeated), followed by a two-minute dash and the frequency used. The frequency of the preliminary announcement will be the same as that used for the first transmission : at the close of the second transmission a further short telephonic announcement will be made. Times are G.M.T. or B.S.T. as in force at the time.

save up your grouses and comments so that we may have a profitable discussion then. It would be of the greatest assistance if members would think over the matter and come to Convention with something definite to say on the point.

I should like to express thanks to G6QB for practical help with the sorting on several occasions.

J. D. C.

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### NEW MEMBERS.

C. J. Curtis (YI1CD), Royal Air Force, Mosul, Iraq.

F. W. Hudson (VU2ZX), Royal Air Force, Lower Topa, Murree Hills, India.

W. J. Devoil (YI1GN), Royal Air Force, Mosul, Iraq.

R. H. Johns (2BPM), School House, Painscastle, Erwood, Brec.

J. W. Davies, Western Union Cable Station, Horta, Fayal, Azores.

J. R. Camp (BERS4), No. 1 Coy. 2nd Indian Divisional Sig., Quetta, India.

S. G. King (BERS5), 2nd Indian Divisional Signals, Cherat, India.

G. W. G. Benzie (VU2BG), Sessa Tea Estate, Jokai P.O., Dibrugarh, Assam.

(*Continued column* 1, *page* 20.)

# Trade Notices.

## Valve Patent Infringement.

MULLARD COMPANY ISSUES WRITS AGAINST REPRESENTATIVES OF FOREIGN MANUFACTURERS AND AGAINST BRITISH DEALERS.

Steps likely to have far-reaching effects in the radio industry are indicated by the issue yesterday (June 5, 1930), by The Mullard Radio Valve Co., Ltd., of writs against certain representatives in England of foreign valve manufacturers and also British dealers for infringement of various patents, the property of the Mullard Co.

The products, in the manufacture of which infringement is alleged by the plaintiff company, are radio valves of the Oxide Coated Cathode, Indirectly Heated A.C. Mains, and Pentode types. The writs, which are to secure perpetual injunctions to restrain from manufacture, use or sale, have been issued against The Tungsram Electric Lamp Works (Great Britain), Ltd., of 72, Oxford Street, London, and Impex Electrical Ltd., of 538, High Road, Leytonstone, E.11. Dealers in the infringing valves are involved in the following towns:—Newcastle, Leeds, Manchester, Birmingham, Bristol and elsewhere, and writs have been issued against them also.

The Mullard Company's numerous publications of Injunctions, Apologies and Warnings for several years past are so familiar to dealers and the public that it is not surprising to learn of their determination to protect the radio industry in patented articles. The present cases are likely to be a vivid chapter in radio history.

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## Mullard's "Super" Pentode.

A new super "Super" Pentode has just been released by the Mullard Wireless Service Co., Ltd., namely, the P.M. 24B. The characteristics which will immediately concern the buyer are given for the information of members. Filament 4 volts 1·0 amps. Anode voltage 400; auxiliary grid voltage 300. Amplification 50; Impedance 24,000. This valve should be particularly useful where a very large A.C. output is required, and the apparatus in the output stage should be beyond reproach as peak voltages as high as 2,500 volts may be obtained. Price 35s.

* * *

## Ferranti, Ltd.

We have been asked to draw the attention of members to the revised prices of Ferranti's Anode Feed Units, mentioned on page 317 of the June issue. The No. 1 Unit now sells for 8s. 9d. and the No. 3 Unit for 25s. 9d.

We have also received from Messrs. Ferranti a folder containing a very complete set of pamphlets, and they will be pleased to supply full details of the apparatus listed therein. Space will not permit mention of more than a few of the items of their manufacture that are of especial interest to members. Perhaps the list dealing with meters might have first call, as no transmitter can be in proper working condition without a full knowledge of the meter readings at various points. Thermal radio meters are being used more and more by up-to-date transmitters, and the Ferranti range will be found to meet every requirement. Turning to the side of quality, members need no introduction to the AF3, AF4 and AF5 types of L.F. Transformer, as no microphone amplifier is complete without at least one of these. For super power output two new types of push-pull output transformer are now available; a large number of ratios are to order, and the OPcX is designed for 200 m/as primary current and the OPcXX for 400 m/as. For C.W. Reception, the AF6 (ratio 1/7) is already becoming popular on account of the large step-up of signal strength with the minimum of background obtainable. Other lists include details of Trickle Chargers, fixed condensers and wire-wound resistances in many values, H.T. Supply Units, Bellringer Transformers, Radio Switches, etc.

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## Book Review.

(*Continued from page* 11.)

He is also treated to critical essays on the various sub-sections of the subject, and these alone are worth the modest price of this well-bound and clearly printed book.

The compilers are to be congratulated on the arrangement of the report, which is convenient, useful and interesting. Let us hope that other branches of the art will soon receive similar treatment.

The report deals only with R.F. amplifiers, rectification, A.F. amplifiers, and measurements, and a section and several sub-sections are devoted to each of these subjects.

Abstracts are given, and, in a large number of cases, the compiler adds critical comments on the article.

The survey of the subject given before each sub-section deals with the general properties of each item in a simple and lucid manner.

Section 1 is divided into four sub-sections, dealing with (*a*) circuit arrangements and general properties (reflex, super-regenerative, super-het. circuits, etc.); (*b*) analysis of R.F. amplification; (*c*) R.F. transformers; (*d*) retro-action and stabilisation.

Section 2, Rectifiers, is divided into sub-sections covering general theory, rectifiers, other than thermionic valves, and valve rectifiers.

Section 3, Audio Amplification, deals with circuit arrangements and general properties, analysis, A.F. transformers, distortion.

Section 4, Measurements, includes valve constants, R.F. and A.F. amplifiers, rectifier performance, distortion and overall performance.

The Survey is of great interest and use to all interested in the art, and every amateur should procure a copy. T. P. A.

## Erratum.

Page 308, June BULLETIN, for April 15, 1929, read 1930.

## Stray.

VK3GO is working all day Sundays and irregularly during the week on 28 M.C.

# Contact Bureau Notes.

By H. J. Powditch (G5VL).

WE were very glad to be able to notify some 150 members of CB regarding the flight arrangements of the "Southern Cross." The story is that GI6YW was entertaining Captain Donisthorpe, of the General Electric Co., Ltd. (and a special G.E.C. receiver—has it gone back?), when the suggestion that CB should be asked to stand by for the flight was made. As G6OT had been asked by the plane's operator to do this work, I did not care to butt in. However, later on, official requests from Captain Kingsford Smith were received for amateur co-operation by the R.S.G.B. Some 150 circulars went off from CB within a few hours and 30 odd members wrote to say that they were standing by. Thanks are due to G.E.Co. for the host of telephone and telegraphic messages they sent notifying the plane's start.

I am expecting that some of you will call me over the coals if you did not receive a copy of the circular. The number available were distributed to active members, and as far as possible, isolated stations. It was thought that in the more "hammy" districts the news would quickly circulate.

From all that is being published, it seems that a good number of members kept in touch with G.E.C. and relayed the plane's messages.

As this is written before many reports have reached CB (these things always happen at press time), some note of what happened at my own station may be of interest to go on with. A D.1 or 2 L.F. set taking Colvern coils was dug out, as this set was the only one not converted to the amateur bands.

Notice was received from G6OT and G.E.C. by wire about 12 B.S.T. of the plane's departure and signals were picked up within a few seconds, R7 to R8, swinging a bit. All the messages since published by papers were pulled in and one or two extra. At 16.02 "Can't get the big aerial out," and the following message at 16.30 appeared to have a double note, possibly due to some trouble of the same nature. Strength then dropped to R4-7, the lowest for the day. At 09.37 on next day, signals were R3, shortly before the plane landed, and the greater part of a message was copied through QRN.

It's not my business, but I hope that our HQ will take up IDO and his activities with P.M.G. All day and up to 24 B.S.T. he swamped the plane's signals with broad CW and a key click like nothing on the æther. An output filter was hurriedly rigged here, which cleared his CW, but the key thumps alone were worse even than his note. Obviously, something slipped in the wave arrangements, for the plane or at IDO, but I have no information which. The plane's A.C. carrier came through the QRM all the time, although his keying was badly broken up by it.

No doubt a message of urgency would have been read by some of us, even under the worst conditions, and one cannot help comparing the position of the Southern Cross with that of previous cross-Atlantic flights. Almost a minute to minute touch with dozens of amateurs (I leave the commercials out) in place of doubtful reports from one or two ships . . . and then a blank.

The 33-metre band needs no boosting for DX work, but it is interesting to note that right through the day and night the average signal strength here was maintained. The only variation I could find was some slight increase when the plane reported flying high. Fog and cloud seemed to have no effect.

Those of us who may have had to deal with urgent messages for hours on end will appreciate Mr. Stannage's key work. At 09.30 on 25th his key was as clear as the early message "Easy, if all like this." I suggest a chicken sandwich and "coffee royal" for the next hamfest to remind us of his great work.

All congratulation, too, to the other members of the "Southern Cross" crew. We feel that we have a very personal interest in the flight, and are part of the "VMZAB Gang," to whom Stannage referred to one message.

Since the above was written some early reports have come along:—

G2OD (West Drayton).—Reports signals as R6 at 09 on 24th, dropping to R4 at 11.30 and R2 by 14.30. IDO is described as "swinging continuously across the plane in the operation of keying," and as having a "wide band of frequencies with keying clicks particularly intense." The plane's signals were always easily recognised through the QRM by the "distinctive TT quality (on S.Het)." No signals were heard from 06.30 to 09 on 25th.

G2DT (Dorking) was only on for a few short periods. "R5 on 1—V—2 QRN, QSB."

G2ZN (Walthamstow) had R7 reception from midnight to 01 B.S.T. Nothing heard up to 08 on 25th. "Signals remarkably steady, practically R7 whole time, with some fading R5." Some change of tone due possibly to speeding generators up.

G5UB (Yorks) took all messages letter perfect from midnight to 08. R8 with some fading.

G6PP (London) got first message at 06.30, R7-8. I note he experienced a fade-out at 11.45, with return to R6-7 at 12.45. Again, strength is given as only R2 (average) between 15 and 21 B.S.T. R5 later and R8 after midnight. IDO is described, pictorially, as!!!!!!

G2OL and G2OW tried to get G5DH on land line—*re* IDO. The P.O. station is four miles away, but the phone operator did not know his number. "Enquiries," likewise, being a P.O. Department, did not know the number of the P.O. experimental station! Finally, another local exchange tried and in half an hour was able to to announce that the station was closed and no

night staff was on duty. Signals at Ealing were R4 at 12.30 with QRM, QSX and some QSB. As with other London stations, the strength dropped to R2 average in afternoon. QRN piled up all over the country as well about the same time. At midnight, R5 and at 01, R7 reception, the latter till 04.38, when R8 was registered and IDO recommenced operations. At 05 R9 with no indication of fade-out. 06.42 and 07.42 gave doubtful signals, just audible, but broken.

G2BI (Calne, Wilts) had the usual fade of signals from 14 to 16.30. From then to 24 IDO obliged with a general wipe-out, plane about R3. The following messages were logged and R1 carrier followed up to 08.35. The 09.40 message was copied, but strength is not stated. Midnight gave R6. Comment is made on the absence of signals in afternoon and early on 25th. The writer's station (G5VL) seems so far to have been the only one to get the afternoon messages at any strength or readability.

G6RB (Bristol) returns a very fine log of evening messages with word-perfect reception to 03. Strength is given as R5 at 19, R3 at 21 and R6 at 22. After midnight, R6 to R7. At 20, signals were fading with bad swing. IDO receives the usual few kind words, "R9 with terrific key thump."

G6RG (Galashiels) had not located any signals up to 13.45. It will be interesting to know how he got on later in the day as bearing on Northern reception.

G6TW (Nantwich), together with Mrs. TW, followed the plane until noon, when fading set in. Fair signals were again heard from 19.20 to 20.45. Another fading period then until 22.25 and final fade-out at 23.12. "Continental interference was shocking"—quite mild expression of opinion by comparison with some others.

BRS250 (London) watched from 18 to 08. IDO as usual—but all messages from 22.20 were got in the main, although a halt for refreshments lost part in the small hours.

EI2B (Baltinglass) first heard the plane at 11.45 G.M.T. From then until 04.19 the plane was followed, but the commercial interference seems to have been—if anything—worse than in London. Added to this was heavier QRN than others experienced. High-speed fading was troublesome at 14.00 and after. Conditions in morning were as bad as possible.

G6YL seems to have been having exciting times. Her watch lasted for 26 hours, and thanks to the mention of her name in some papers, was followed by a mass attack of newspaper reporters. QRM appears to have been very bad in Northumberland and local thunderstorms possibly accounted for general complaints of QRN in other districts. The messages logged are known to all—so I am not giving them in detail, but a consistent list of QRK/QSA figures from G6YL may be of interest. These are all G.M.T.: 09 to 11.30, QRK7, QSA3, QSB. 12.00, QRK5/6, QSA4, QSB. 12.00 to 14.00, fading, with QRN and QRM bad. 14.00 to 17.00, QRK, R5/3, QSA3/2, QRN, QRM, QSB. 17.00 to 23.00, QRN mostly. 23.00 to 23.30, QRK, R6/5, QSA4, QRN, slight QSB. 23.45 to 00, R8/7, QSA5. 00 to 02, QRK, R6/3, QSB, QRN. 02 to 03, R8/7, QSA5 and tone changed from T3 to T2 (daylight). 03.45 (sunrise), QRK, R7/6, QSA4, QSB, QRN. Tone again T3. 04 to 04.30, QRK R8/7, QSA5.

GI6YW was assisted by GI5MO. They report: "Due to skip distance some hours elapsed before VMZAB was heard at Belfast. When heard her note was good to copy, faded a little and with a slight swing, but considering all the circumstances, the note was excellent. At midday and in early afternoon the signals were weak, probably due to skip again; the idea of transmitting a carrier was excellent and greatly assisted reception. An Italian station, IDO, caused extreme interference . . . and only the intervention of natural laws causing his signals to creep away from VMZAB allowed the latter to be copied. The watch was ended at 07. . . . May we, as listeners, pay our humble tribute to the excellent work done by the plane's operator and his cheery remarks during the flight." A message at 19.30 appears in this log which I do not remember seeing elsewhere, viz., one to G.E.C., London, saying how "absolutely perfectly your receiver—Marconi's transmitter—worked in conjunction . . . believe the 'Southern Cross' has got the best air communication ever done." IDO accounts for blanks in message.

G6WN (London) copied solid throughout the night.

G6MN (Worksop) was on from midday and, needless to say, found QRM from usual source. He got R3 signals, rising to R8 round midnight and at one time R5 on moving coil speaker. G6MN criticises the failure to keep schedule, but, I think, overlooks that DF and traffic on 600 metres was bound to take precedence of any schedule on 33 metres. Anyhow, G6MN seems to have been able to follow the plane up to 05, at which time he notes very erratic sending—the only spell which our stations seem to have been able to find when Stannage's lack of sleep and strain affected his key work in the slightest.

G6OO (Bridlington) was unfortunate, but tells us that G2VQ—in addition to reports to G.E.C. —kept the operator's mother informed of progress. FB, G2VQ!

2BIV (Sheffield) suffered the usual interference troubles, plus local QRM, and only got "Bits."

I, personally, find the afternoon fade-out of interest as it was not noticeable in my station in extreme S.W. England, although Bristol reports it. Later, London reports R9 signals and both at midday and after midnight the 'plane's signals were actually taken on L.S. here with D.2LF. Had IDO been absent, most of the messages could have been so treated.

* * * *

To return from the clouds to ordinary matters. There has been quite a strain put upon the energies of many lately by various tests and stunts. I am not going to stress the point greatly, but would just ask all members to keep in touch with their G.C.'s during the summer time. Very few keep up intensive work, and it would be foolish to expect this. Yet, if touch is kept by an occasional card or message, things go along a lot smoother and G.C.'s feel they have a Group behind them.

Please don't forget that

**JANUARY, 1931, IS 28 M.C. MONTH.**

I asked for comments and conjectures based upon the March 28 M.C. tests. GI6YW points out that Hoyt Taylor in Proc. I.R.E. shows certain

results for S.W. propagation, and, based on these, Baker and Rice have shown the minimum sky wave for day work to be 2,000 miles for 10 metres. Following this up, he finds that of 29 English reports, FM was only heard six times, whilst 30 reports come from stations outside the area. GI6HI gives three reports for instance. Of 18 stations heard in FM, only two were G's. Again, in the 1929 tests, GI5WD and GI6YW were the only stations to report FM and in this year's OZ and OH have no difficulty in getting signals both ways. These seem to give a rough skip distance for the band with England just on the edge and liable to hear a signal now and then. The distance from GI to FM seems to be, roughly, 1,300 miles, so that on the test's results, as was mentioned in the comments, skip might be taken to occur up to that distance. However, GI6YW adds that OZ seems to be getting FM even better than GI, and therefore the distance for certain contact could be taken to be greater (OH and GI are nearly equal distances from FM) at approximately the 2,000 miles first mentioned. Another theory, published some time ago, that signals on this frequency travel better across isobars than along them appears to receive some support from the weather maps.

G5SY wishes that maps for all four weeks had been reproduced. His letter is based on my rough description of pressure distribution for the missing weeks and I am asking him to work up the theory in detail with the maps before him. It is not fair to endeavour to compress it into a summary of this nature.

W1ADK suggests more work on 28 M.C. during the early hours in America. He intends to be on every morning from 10.30 to 11.30 G.M.T. I have told him that there appears little prospect of QSO's here for a time, but give the information in case you care to follow it up. Anyhow, a sked for autumn might be arranged. Any skeds will be kept.

From the "R.E.F." comes a short account of their doings. Some are said to have suffered disillusionment regarding the 28 M.C. band as regard transmission, whilst reception has given interesting results. Normally (they consider) the waves are absorbed by the lower and more highly ionised layers of the atmosphere. Powers used have been low. F8BL has, during 1929 and 1930, received five Continents. J2BY on May 12, 1929, and VK5HG. This was at 02 G.M.T. The latter station was heard many times in 1929. Other countries heard are YI, VU, PY, OH and W. Huppel, of Nantes, has heard on March 9 this year VQ, ZS, W1, 2, 8, 9 and two W6 stations. F8OJ heard on March 9, ZS, W1, 2, 8 and 9. VQ and SU have also been heard. FM8CT obtained the first W contact and emphasises the activity on 28 M.C. in FM. FM8IH QSO'd VQ on 40 watts and has been QSO G5VB and many Europeans. FM8BG, with 20 watts, worked GI6HI, Europe and ZS. FM8CR QSO's OH and OZ. It is noted that the W's are badly received in FM, only W2BG has been heard. During our March tests, G's were received only for a half-hour in Algiers. (This will interest GI6YW—see his notes earlier.) Many attempts have been made to receive FM8IH in France, but his signals are only heard for a few seconds and lost in fading.

By the way, in case some think that 24-hour stand-by during the tests was bunkum, may I draw their attention to the French reception of Japan at 02 G.M.T.! You never know!

XU2UU (Shanghai) wonders if G's are speculating as to whether their signals have reached China. The answer is that they have not! The "season" there lasted from March 9 to May 4, 36 QSO's were made (including 7 with VK5HG on one day between 08 and 17 local time). A very interesting point is made by 2UU—that the "area of good conditions" (for 28 M.C.) seems to have travelled Westwards from Europe across America to the Far East. The best conditions in China appearing to coincide with the worst in Europe with the optimum some two to three weeks after Europe had passed through the same point. (During March tests, YI reported "conditions improving every week," whilst the G's were finding a rapid fall-off.—G5VL.)

The W-VK and W-ZL routes attained maximum before the China one to these countries.

In addition to VK and ZL, only W6BAX was logged. VK was more consistent than ZL.

* * * *

BRS324 wants to get some stations who are more interested in the theoretical side than the usual run of our stations. The idea is to deal with problems or queries lending themselves rather to theoretical solution. More regarding this later —but meantime, drop a card to BRS324 direct.

# Group Reports.

Group reports suffer a serious diminution. Here are such as have come along.

## 28 M.C. Work.

*Group* 1*B*.—G.C. G5SY tells me he did report last month. I'll grant it, but C.B. Notes were away before the report arrived. As the members don't give G5SY anything to report upon this month, that's that!

*Group* 1*C*.—G.C. G6VP remarks on the tendency to consider 28 M.C. as just a short season for stunts. It always will be if no one keeps awake for the rest of the year. G6WN has rebuilt and has some difficulty in getting 28 M.C. controlled yet. G6DH is working on aerials with special regard to eliminating standing waves. (We would like to have results.—G5VL.) 2BIV hopes to get some results from ARRL tests. G5YK misses. G6VP has ARRL tests, BERU relay, and some local work on 28 M.C. with BRS250, G2JU and G5VB.

*Group* 1*C*.—G.C. G6OO tells me that I left out G6UJ's report on 28 M.C. tests. Sorry, OM's, very! However, to give you some idea, I put my file of letters and reports on the household scales —just 1¾lbs. This without maps and analysis sheets—so that's the only excuse. During the tests periods, FM8BG was heard on 2nd working

GI6HI. BRS77 is unable to be on for the time —and tells us so—which saves letters. G.C. has a new shack under a 48-ft. antenna, full-wave CF for 28 M.C.

A new receiver of G5VL's type is said to be FB with HL210 as Det. No luck with ARRL tests.

## Fading, Blanketting, etc.

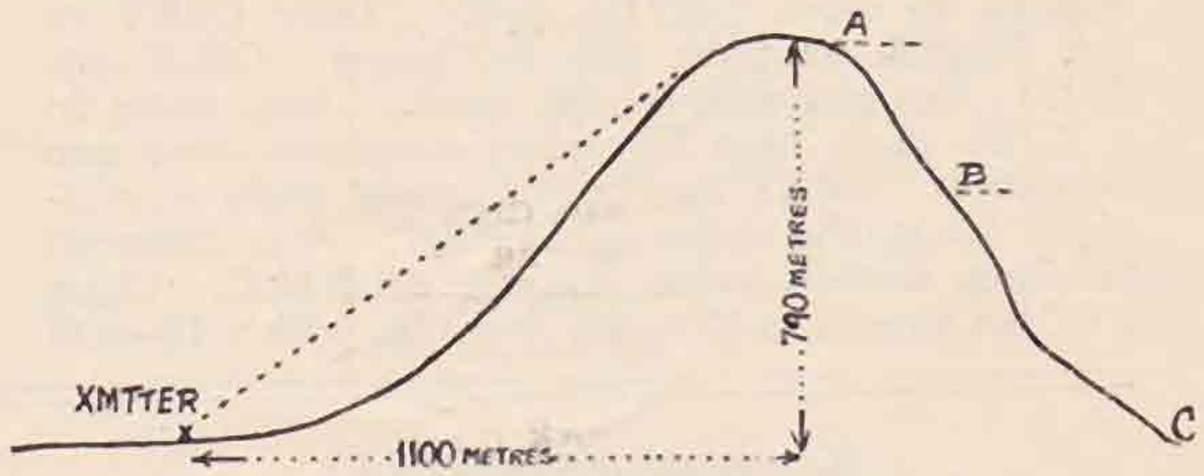
*Group 2B.*—Bad conditions are prevalent over Europe. G6YL recently QSP a msg from SM5TN to SM6UA, they being unable to hear each other. Fog banks are said to cause QSB and QSC. The Heavyside layer is the subject considered this month and the CT stations maintain that a cure for its effects could possibly be found at the transmitting end. G6PP's view is that a greater height of the layer during day than night and summer and winter gives the differing ranges by altering the angle of refraction. He gives the heights as approximately 80 miles. G2IM add that Prof. Appleton has discovered the existence of a second layer at about 150 miles from earth.

## 56 M.C. Work.

*Group 7A.*—G.C. G2DT writes :—

G6XN appears to be so busy on this band that it's extremely difficult to give coherently what he is doing! He hopes to send an article on his activities shortly, and this is awaited with interest. He says that he finds that the best oscillator in a receiver is the Triotron XD4, followed by the B.S.A. P612. Whilst on this subject, I would just like to mention for the benefit of anyone who may just be starting up in this band that the following valves have been tried out in an Ultra-audion receiver and oscillate up to 100 M.C.: PM6D, PM5B, PM6, PM256, PM5X, DE5, DE5a, HL610, L610, P625. Of those mentioned, the G.C. prefers the PM5b, followed by the PM6d. G6LK has returned to the fold and is " restored to the Establishment." He is to be congratulated upon getting on the air in one week and running skeds. He used a single-turn coil of minute diameter in an Ultraudion circuit as a start and thinks he was on the next band—400 M.C. Hi! G6TW reports that he has in use the circuit arrangement of the G.C. as in these notes for June, and that it is FB and goes down to 1 metre easily. He uses a PM1HF valve as detector. G6TW gives as his reason for inserting a variable condenser of 500 mmfd.'s in series with the transmitting aerial as follows: " I have found that it should be inserted about 3 ft. from the plate coil, because if you place it any nearer it will have a tendency to attract the field—yes! its 56,000,000 cycles!! —and now in all H.F. work we find that the heavier capacity condenser will store up when same is charged and then release. If I place a Neon with one contact to the condenser side that is connected to the plate coil, it will not light up, but if I do the same thing to the aerial side it will. G2DT has been keeping the published skeds with G6TW and others with G6LK, but regrets to report ND. He is using the Ultraudion receiver with PM5B and not SG215, as he was unable to keep the receiver steady with this valve, but attaches no blame to the valve! No news from G5WK—G.C. suspects a dark horse. G6TW made exhaustive tests over Whitsun through the kind help of Mrs. TW, who was at the helm, G6TW going off to various distances, and he reports that a 5-metre signal will go through anything at one mile distance except a mountain. He again reiterates the dictum of W2AIU that a 5-metre signal will never be picked up over a distance (except by luck) when using an ordinary small variable condenser if it covers more than 7 centimetres, *i.e.*, the inductance must be so designed in conjunction with the variable capacity that when tuned one cannot cover more than 7 centimetres, thus necessitating four inductances to cover the band or some other means to mechanically effect alteration. He then goes on to say that three circuits were tried for efficiency and reports them as follows: Reinartz-Grebe: good over all the band; W2AIU receiver: suffers from damping; Ultra-audion: the best when perfectly resonant. Dr. K. Stoye, of Quedlinburg, has kindly sent diagram (which is reproduced as of general interest) showing an audibility test conducted when his transmitter was placed in a valley. At " A " a 3-metre signal is just audible, ditto on 5 metres at " B " and 6 metres produce audibility at the base " C."

*Group 7B.*—G.C. G2OL confirms reception at 36 miles of signals from portable set by G6CO.




Transmitting aerial was 10 ft. high, running up from ground level. BRS310 has heard eight lots of weak DC signals on the band and an apparent harmonic of FM8CR (? KR). At 19.02 on May 20 the following was copied. Will anyone who can trace the transmitting station let us know, please. " OK, but QRM vy. Vy glad rcvd fotos es card OK. Wl send you other fotos when I get them.. My WAC USA Hi! Hr nw testing . . ." with a fade-out. T7, 56400 K.C. harmonic. The time is roughly the same as that at which BRS received a EU harmonic. G5QY has business QRM and has to drop out. G2BY has a good receiver and worked the latter. He is kindly lending a car for another field day. G6WN has still power supply troubles. G2OW and G2OL were heard and the latter's beam signals found stronger. With reversed aerial (*i.e.*, for direction) no signals were heard. G2OW has been collaborating with G2OL on reflectors. The first type tried was a vertical $\frac{1}{2}$-wave radiator with four reflectors in a line, the centre two being $\frac{1}{4}$-wave distant from radiator. The second type tried was, in plan, a $\frac{1}{4}$-wave equilateral triangle, one wire being used as radiator. This gave very strong signals when pointed to G6CO's station. A CC harmonic of 28 M.C. from G5BY and another unidentified harmonic have been heard. No QRN has been heard and no rapid fading. A large amount of mush comes in now and then. An aeroplane at 1,000 ft. caused QRM. Metal rubbed together can be heard at a considerable distance and G6WN has been heard when combing his hair close to receiver!

## QRP Work.

*Group* 8*B*.—G.C. G2VV regrets the loss of G2RT. Business QRM is the sole reason. G5JF sends in a marvellous list of 5 watt QSO's. PY1, PY2, K4, FM's, Ws and YI! He hopes to try 28 M.C. soon. The above were all 14 M.C. G5CM has been busy and successful on 2 M.C. Receiver now on all bands. G6SO is held up by new QRA, but finds 2 M.C. fair and 7 M.C. poor. G2OA also gets 50 miles with 5 watts on 2 M.C. Other conditions bad. He is helping G6RH to get started. Note modulation tests will supply a separate article. G2VV finds also bad conditions on 7 M.C. 2 M.C. work is again prominent and giving good results. Some form of coupling is used on TPTG for all waves.

*Group* 8*A*.—G5RV reports for the group. They are still short of members. Things are quiet, but everyone is doing something. G2ZN reports that his standard 1.3 watts has reached EU2, OZ7 (R7), HB and FM, giving 20 countries on this input. An A.O.G. aerial is found to get out better at right angles to its direction lengthways. 2AZR is persuading P.M.G. for a full ticket. Meantime helping to work G6UT's outfit. Only G5RV of the English stations can be heard. G6LF (ex 2AUT) has got well off the mark. Two watts to a TPTG gives nine European countries—and one G station. G5RV has been burning pints of midnight oil in the chase of a WAC. Asia (Siberia) has been worked in consequence on 7 M.C. Using a CC set from 2 to 10 watts, together with a 10-watt D.E.T. set, trials of QRP.v.QRO have been carried through on 14 and 7 M.C. G5PH gave valuable help with these.

*Group* 8*D*.—G.C. G2XB is rebuilding. G2YU weighs in with remarkable results on 14 M.C. with only 4 watts—PY2 and W3. With 7 watts maximum, he has covered W, VE? FM and Europe. G2SA finds confirmation that the week preceding new moon gives best DX. Some work on 14 M.C. G6GL has an Ultraudion going on 7 and 2 M.C., but not time to note performance. G2GA's best DX is Azores, with 4 watts. 2 M.C. work also at his station.

## 2 M.C. Work.

*Group* 10*A*.—G5UM seems to have heard every G station on the band once more. Thirty-six are listed on 0—V—2. He is trying to find information on the effect of Heaviside layer as special to this band, but has, so far, not had much luck. BRS164 has no local transmitters and finds he gets no daylight signals. The sked. with G5UM appears to point to conditions being not so good this month. Can any one fix up skeds with him in the morning? (How about this for Groups on QRP 2 M.C.?—G5VL.) G2AX has had to close his station at Croydon, but hopes to get going elsewhere. He has been on modulation experiments and—by dint of much work—has been getting out some really good music from gramophone. G.C. G6OT has been busy with many activities and has not been able to spend much time on the band. Something is promised for next month.

(*Continued from page* 14.)

H. W. Hamblin (YI6HT), W/T Section, 84 (B) Squadron, R.A.F. Shaibah, Nr. Basra, Iraq.
Cecil Rees (ZT2C), 11, Union Avenue, East London, South Africa.
Edward Thomas (G2AV), 81, Heol-Fedw, Morriston, Swansea.
R. A. Hill (FO3SR), P.O. Box 122, Salisbury, S. Rhodesia.
H. P. Breitinger (W3JR), Newtown Square, Del. Co., Penna, U.S.A.
C. S. MacLachlan (VS7AL), Sheen Group, Pundaluoya, Ceylon.
G. D. Forbes, (VS2AT), Batu Gajah, Federated Malay States.
G. E. Bull (2BQF), 64, Arthur Street, Ryde, I.O.W.
R. M. Nicholson (VK4KG), Coombe Martin, Ilfracombe, Queensland, Australia.
K. S. Rancombe (YI2GQ), Wireless Section, R.F.A., Mosul, Iraq.
R. M. Bonner, (BRS353), 4, Lydford Road, Willesden Green, N.W.2.
H. F. Alton (ZCQ), Central Post Office, Victoria, Mahe, Seychelles.
Maxwell Howden (VK3BQ), Greenwood Avenue, Ringwood, Victoria, Australia.
Kremen Paskievic (UN7CC), Tuskanac 18g, Zagreb, Jugoslavia.
B. H. Henderson (ZL3CE), 100, Rugby Street, Christchurch, N.Z.
I. de B. C. Fynn (FO2SRA), Department of Lands, Salisbury, S. Rhodesia, S. Africa.
J. W. M. Brown (VS6AB), 3, Dorset Cres., Kowloon Tong, Hong Kong, China.
C. F. Johns (BRS354), Blenheim House, High Street, Camberley, Surrey.
F. Clarke, Junr. "Inzivar," Hobart Road, New Milton, Hants.
W. J. Thompson (G2MR), 22, Portman Road, Kingston-on-Thames, Surrey.
J. Abraham (G6FX), "St. Adrien," Van Diemens Road, Chelmsford, Essex.
F. T. Wilson, 85, Risca Road, Newport, Mon.

## CALLS HEARD.

By CT2AA, Western Union Cable Station, Horta, Fayal, Azores, April and May, 1930:—14 M.C.: G—2ao, 2by, 2cb, 2cj, 2cx, 2dh, 2dx, 2dz, 2gf, 2gm, 2hp, 2ip, 2iy, 2ja, 2jf, 2kf, 2kl, 2lz, 2ma, 2nm, 2oa, 2op, 2un, 2ux, 2vq, 2yu, 2zp, 5bj, 5bo, 5bp, 5br, 5fc, 5fs, 5is, 5jf, 5ml, 5pj, 5qf, 5qv, 5rq, 5rs, 5ru, 5sy, 5uq, 5ux, 5vm, 5wb, 5xq, 5yg, 5yk, 5za, 6ca, 6cl, 6cm, 6co, 6cr, 6dh, 6fy, 6gc, 6gd, 6gs, 6hp, 6mc, 6mn, 6nt, 6nx, 6oh, 6pp, 6qa, 6qb, 6qx, 6rb, 6rc, 6rh, 6vp, 6wk, 6wl, 6wn, 6wt, 6wy, 6xb, 6xj, 6xq, 6za, 6zr, gi5hv, gi6wg, ei2d, ei7c, ei8b, ei8c, ve1bd, ve1br, ve2bj, vs7td, vs7ap, vo8ae, vo8mc, yi1cd, su8rs. 7 M.C.: G—2im, 2kl, 2ky, 2ol, 2ow, 2pp, 2sl, 2ug, 5cx, 5fa, 5gy, 5ib, 5kl, 5lw, 5lx, 5pj, 5qy, 5rr, 5rv, 5vl, 6gx, 6hk, 6iz, 6ko, 6pa, 6rh, 6zs, ei2d, ei8b, ei8c.

By W. A. Makepeace (BERS1), "H.Q." Wing, 1st Battn. The Worcestershire Regt., Shanghai, China:—Ce2cr, ce3ch, ct1aa, ct1ae, cx1fk, cx1ga, cx1oa, cx2ax, f8bu, f8fem, f8gb, f8gd, f8gdb, f8lw, f5ssy, f8wh, f8wrg, fm8ms, g2nm, g2zw, g5is, g5vm, g5yk, g6qb, g6wt, g6xn, g6xg, lu2ca, lu2de, lu3de, lu5ac, on2os, ok2ny, ok2rm, on4dj, on4fm, on4jj, pa0dw, pa0hb, pk1cx, pk1jr, pk2aj, pk2bm, pk3bm,

(*Continued column* 2, *page* 23.)

# NOTES & NEWS FROM THE BRITISH ISLES.

## DISTRICT No. 1.

Representative : D. J. BEATTIE (G6BJ), 14, Rosehill Mount, Manchester Road, Burnley (Tel. 3659).

G5JF has done a little DX, but was inclined to be tempted by YL QRM and the bad conditions, and so loses the star position to G6RH, who has increased his bag to 26 countries, including several W's and VE's, VO, SU, YI and a report from Siberia. Pretty FB for 10 watts! G2XB is inactive, or nearly so. G2OI finds conditions on 7 M.C. best in the early morning, as do several others. G5ZN has done little owing to bad conditions. G5RX finds that in his case a 62-ft. top with 30-ft. feeders is best for his Zepp. G2DH had a report from ZL2GH, and has finished his push-pull transmitter as per June QST. BRS161 is now G2WP and is on 7 M.C. with 5 watts in the usual TPTG circuit with AOG aerial. G5CI also finds 07.30—08.30 B.S.T. best for 7 M.C. G6BJ has been away during the month, but has a new crystal and hopes to be on C.C. shortly. Fine weather and other things have caused a drop in radio this month, but considering the conditions reports are not too bad. Keep it up, Lancs.

## DISTRICT No. 2.

Representative : T. WOODCOCK (G6OO), " Santos," George Street, Bridlington, Yorks.

G6BW has TX's now going well on 14 and 1.7 M.C. but little time for actual operating. Trouble experienced with F.D. for 14 M.C. found to be due entirely to faulty valves. New LS5B solved all difficulties, but drives LS5 so hard that 160 volts grid bias is needed on latter with only 400 volts H.T. G6LF has dismantled, ready for move to new " shack," with three new TX's covering 7, 14 and 3.5 M.C. respectively with QRP. Finds G skeds very difficult to keep owing to abnormally poor conditions on 7 M.C. Hopes to keep 18-hour watch on Transatlantic flight. G2KO has had more trouble with TPTG circuit, and found all due to leaky grid condenser. So far only two contacts made, i.e., G6UJ and G6OO on 1.7 M.C. during those tests. G6DR is going to look out for VMZAB on Transatlantic flight. Best QSO's last month were SU8RS on 14 M.C. and G6SO on 1.7 M.C., using 5 watts on each band. Has C.C. running on the 1.7 M.C. band, direct control. Hand generator now installed. G5QY reports very bad conditions and time spent on improving aerial system. Using 4 watts on 7 M.C. with parallel fed Hartley and DFA6 valve C.W. and fone. A correction *re* last month's report which stated his aerial was " Window " type should read " Windom." BRS336 is hoping for licence soon, and is now busy building xtal controlled TX. G6UJ does not report. Mr. Wetherill, of Hull, visited G6OO. Morse test has been passed and licence granted, and now awaits call letters. G6OO has now practically finished 28 M.C. beam, and has great hopes. Organised listening periods for VMZAB have been arranged. Conditions have been abnormally poor on 7 M.C., whilst 14 M.C. has not been up to usual standard. I was very grieved to hear of our provincial representative's sad bereavement, and condolences have been sent.

## DISTRICT No. 3.

Representative : JOSEPH NODEN (G6TW), Coppice Road, Willaston, Nantwich.

There is a slight improvement this month, and I have hopes of further improvement. G2VP has reconstructed aerial tuning gear, and is now reconstructing power supply. G2CG is now using 10 watts to a TPTG circuit, and generally overhauling. G5FC has been holidaying in Budapest, and paid a visit to HAF7A and other Continental Hams. G2OA : The usual 7 and 14 M.C. work has been done, and his 1.75 M.C. fone is now O.K., modulation being choke control ; he finds it better and deeper ; he also finds that the 1.75 M.C. band in North Cheshire and Liverpool District to be blind spots against the excellent tests he has made in North Wales. G6TW : Mostly receiving has been done on the 7 and 14 M.C. band this month ; has also built a portable for 56 M.C. band and great deal of time spent out of doors with it, and having good results. I should like to hear of more Hams testing this band, for it is quite easy.

## DISTRICT No. 4.

Representative : A. C. SIMONS (G5BD), Lynwood, Mablethorpe, Lincs.

Please remember that July 27 is the date for our own special Convention. I have notified all known district members, and any of you who have not been advised please accept my apologies, and do your best to attend 38, Wellington Road, at 2.30 p.m or as you arrive.

14 M.C. conditions for the month have been very dull, but 7 M.C. has been quite active, only marred by the thunderstorms. G2AT is working all over Europe with a very bad aerial and under 3 watts dry cells. G2XS visited G5BD whilst on holiday. Is experiencing difficulty in raising anyone with his 2.5 watts, but is rebuilding TPTG and hoping. G2QH also called on D.R. Has got lots of home-made crystals F.D. and harmonic all O.K. Is concentrating on 100 per cent. speech modulation. Chile best DX. G2OC is going well with C.C. on 7 M.C. band with 1.8 watts. Has worked most local Europe and on 14 M.C. with 2.3 watts. G5GS, another visitor, just started up again with C.C., and getting out very well. G5CY, as usual during summer, is cramped for space and time, but does some local work on odd occasions. G5BD had for DX a solitary W4 during the whole month. Conditions have been the worst experienced on 14 M.C. for years. Had five ham visitors. G6LI, D.R.'s fourth visitor, is now active on 14 M.C. G6HK also visited D.R. Active on 7 M.C. Best DX Canary Isles on 5½ watts. Considers G5BD's screen grid s/w RX a thing of beauty and a joy to operate on 14 M.C. !

## DISTRICT No. 5.

Representative : D. P. BAKER (G2OQ), Crescent House, Newbridge Crescent, Wolverhampton.

I am in receipt of some interesting reports from stations around Birmingham, and perhaps the

most important thing to note is that all stations are now crystal controlled.

G6XJ has been carrying out experiments on 7 and 28 M.C. with portable transmitter XG6XK, and would welcome reports. Rebuilding for crystal control with G6XJ. He has done good work with a portable in Wales, but finds conditions of 7 and 14 M.C. very poor. G6XQ has completely rebuilt for crystal control. G5BJ is getting most consistent results now that he is crystal controlled, working regularly with all six continents. He has just received W.A.C. and is waiting card for W.B.E. He found he could not work any stations out East before he erected a new aerial with half-wave top and three-quarter feeders, but is now getting excellent contacts with VK, ZL, PK and VS. G5VM is also now crystal controlled, and has worked all continents except Oceana which he feels sure he will get when conditions are better.

## DISTRICT No. 6.

Representative: R. C. Horsnell (2ABK), "Hepani," Wickford, Essex.

I must first explain the reason for the district budget delay.

It was held up about a month by a member who had no QRA book and did not know the QRA of the station to whom he was to pass it.

Perhaps I was to blame for not writing out all QRA's in full, but I expected all to whom I sent it to be active enough to have a call book.

Reports are very few this month. G5RV has been busy testing aerial systems and finds the ½-wave end-on takes a lot of beating. G2HJ is starting up on QRP using an H.T. eliminator built for B.C.L. work. G2SA has been getting T8 and T9 reports on 7 M.C., but finds many snags in getting TX to go on 14 M.C. Heard Byrd Expedition on 14 M.C. once at R5. 2BVR is using a debased AC/HL A.C. valve for detector in 28 M.C. R.X., using accumulator on the heater, this being separate from the RX accumulator. BRS191 and BRS233 have been busy with R.X, but no special reports. 2ABK has rebuilt R.X. and uses Lewcos 6 pin coils, slightly altered, and tuned in series or parallel at will. R.X.. is now in a complete metal container, and TH and hand capacity are completely absent.

## DISTRICT No. 9.

Representative: G. Courtenay Price (G2OP), 2, St. Annes Villas, Hewlett Road, Cheltenham.

Conditions on the higher frequencies have again been patchy, with one or two short but good periods. Individual reports are not included, but are being sent round to all those who report in Budget form. May I have your reports on July work to reach me not later than August 3, on which date they will be pinned together and circulated. Our congratulations to G6RB on the birth of a junior op. and future recruit for the Society.

## DISTRICT No. 10.

Representative: J. Clarricoats (G6CL), "Ciel," Hartland Road, London, N.11. Telephone: Finchley 3512.

The following stations were active during June :— G6PP, G5UM, G5QF, G6CL, and BRS36. The former rendered much useful assistance during the recent transatlantic flight and maintained almost continuous watch. BRS36 was also in operation at the same time, but has had little chance to carry out extensive listening. G6PP erected a new aerial, but reported conditions poor on 7 and 14 M.C. G5UM continues work on 1.7 M.C. using choke control. He employs a CT25X modified and a DE5B for the crystal oscillator. Owing to H.Q. duties, it will be unfair to continue to act as D.R. after Convention. I shall be glad to hear that an active member, who has considerable "ham interest," will be prepared to undertake the job.

## DISTRICT No. 11.

Representative : L. H. Thomas (G6QB), "Conway," 66, Ingram Road, Thornton Heath, Surrey.

This is just too early to print the full exploits of the BRS stations with VMZAB, but I believe BRS250 did some great things that we shall hear about next month. To date he reports very bad conditions compared with last year, but a fine log notwithstanding. HH7C (Haiti) was logged on 7 M.C. and YS1X followed all down the South American coast on 14. BRS300 logged PXMG and a sudden influx of QSA Europeans on 14 M.C. G2AI is starting on 1·7 M.C. shortly. G2CX has worked YS1X and Peru but is preparing for another rebuild. G2GM has worked plenty of DX again and is now rebuilding. G6SC has settled down in Wimbledon and hopes to be on regularly soon. We were very pleased in the Area to meet VE2BH and W1BOB, who at the time of writing have visited G2CX, G6HP, G6NF, and G6QB. A small "hamfest" of the Area gang was arranged on this occasion followed by a tour of S. London stations.

In the Prince of Wales' relay G6HP handled two incoming messages and G2GM one. The outgoing messages are just being dealt with as we go to press !

## DISTRICT No. 12.

Representative : T. A. St. Johnston (G6UT), 28, Douglas Road, Chingford, E.4. Telephone : Chingford 118.

G2ZN is moving to 25, Clivedon Road, Highams Park, E.4, and will welcome reports from his new QRA as the mains will be there ; it is rumoured that QRP may meet an untimely end ! During the past month has chiefly conducted tests on 1.75 M.C. G6FY now has a 50-watt Permit. G6LB reports conditions generally bad on 14 M.C., but has managed to make contact with several South American stations. G6LL is still rebuilding and combining this work with 28 M.C. experiments. G6UT has several South American contacts to report. Members of other districts visiting London are always welcome at the monthly district meetings held at Chingford on the fourth Tuesday of each month. This invitation is also extended to Colonial and Foreign Hams. If members of the district will indicate where they intend spending their summer vocations your District Representative will try and put them in touch with local stations with a view to arranging visits. Members should give inclusive dates of their stay, together with temporary QRA.

## DISTRICT No. 13.

Representative : H. V. Wilkins (G6WN), 81, Studland Road, W.7.

With this month comes a report from one of the oldest amateurs, namely G2XO. This is very gratifying, and shows that there are still some of the older members still interested in the newer comers to "our game."

**TECHNICAL ARTICLES ARE WANTED**

G2XO is now on C.C. with 'phone on 7 M.C.; found Gs' bad, but Western Europe good. Worked ON4NCX, using phone, the ON station used 1 watt, speaks English well, wants QSO's with England. G2XO will stand by for any G on 56 M.C. G6VP found conditions very indifferent, South America VQ and VS being the only DX. Says 14 M.C. has been exactly like 7 M.C. Has report from Paris on his 28 M.C. signals. G6CO has been trying a clipped-on aerial with little success on 14 M.C. Spent Sundays on 56 M.C. G2OL sends an interesting letter describing his station for the benefit of other members of the area. G2OW also tried an A.O.G. aerial with negative results on both 7 and 14 M.C. Found static during storm altered transmitter frequency with a kick. G6WN spent a most interesting night copying VMZAB crossing the Atlantic. Some DX has been done with South America. A new all mains receiver is being designed, and will be described later in the BULL. G6VP was visited by G5YK, G6LL, G6CL, G6QB, G2OL, G2OW, G6WN, G2NH, G5MA, and G2CX, and wishes to thank them all. Many other interstation visits have taken place.

## DISTRICT No. 14.

Representative: J. WYLLIE (G5YG), 31, Lubnaig Road, Newlands, Glasgow.

The period May-June has, in Scotland, produced no amelioration of the poor conditions experienced in the previous period; indeed, quite the reverse, as things appear to be going from bad to worse. I have been looking through my logs for the corresponding periods in the past six years, and cannot find a parallel to the conditions prevalent during the past eight weeks. Rapid fade, QRN, and dearth of signals at the recognised hours have marked the period as one of the worst on record. This fact, coupled with the fine weather, has not been conducive to a display of perseverence on the part of Scottish transmitters, hence there is little to record.

Two new countries have been worked from Scotland, as follows: Paraguay (ZP2AB) was worked by G6NX on 6.6.30 at G.M.T. 00.30 on the 14 M.C. band. G6WL made contact with the Soudan, working ST2A on 22.4.30 at 22.00 G.M.T. G6NX Paraguayan contact constitutes "first blood" in G6IZ's competition, as G6WL's new country was worked prior to the start of the said competition. A new QRO station will have taken the air in Glasgow ere July is out. It will be owned and operated by our old friend Frank Dearlove (late of VO8AE), who has just been offered a licence by the P.M.G. The station will be as stated, QRO, and crystal controlled. The call-sign has not been issued yet, but will be indicated in due course. Here are such reports as have been received. G6WL has, in conjunction with BRS266, been experimenting on 112 M.C., and has been successful in transmitting telephony over three miles on this frequency. G6NX continues to work South America practically at will, but can contact nowhere else. G2MA, G5XQ, G2WL and G5YG are definitely closed down temporarily, the latter until September. G6MS continues to experiment with television. He is now using for the plate supply of his TX a transformer formerly used by G5YG, and succeeds in getting a much better note from it than from the generator. G6IZ reports that he has been working on 28 M.C., but so far has nothing to show for his work. He states that conditions are very bad in the north. G6VO is working away with very low power, and is getting very consistent results. He is expending a lot of energy on Quartz at present, and G6IZ thinks it should be quarts. Hi! G5JK has got delivery of his QRO gear, and with the added stimulus of a visit from his brother, AC8JK, of Shanghai, is expected to make himself heard soon.

## DISTRICT No. 15.

Representative: H. ANDREWS (G5AS), Wireless Depot, Ystradgynlais.

G5OC is now on crystal control on 7062 and 7151·6 KC.; best fone R7 from Finland. Best reports are obtained from Russia, the aerial at this station is due east to west. G6FO is doing very good work on the 2 M.C. band and reports are coming in from all over the country. 2BZB reports that he is doing little now and is busy fixing talkies. G2HH is mostly on the 2 M.C. band with very excellent modulation. G5AS is now C.C. on 7 M.C. and thinks conditions are improving; CV reports R8 and ES R7; has built a separate transmitter for 14 M.C. He wishes to thank G6UU and G6RG for their kindness showed to him during a recent visit.

## DISTRICT No. 16.

Representative: C. MORTON (GI5MO), Simla, Glastonbury Avenue, Belfast.

GI2CN has now got a C.C. transmitter going with A.C. mains, and is getting good reports from all over Europe. He spent a pleasant afternoon with G2ZC, who visited Bangor during the regatta. GI2OO has been away for the past three weeks, and consequently nothing to report. GI5HN hopes to have D.C. mains in soon. BRS312 has passed his Morse test, and expects to receive his licence any time now. GI5WD, GI6YW, GI6MG, GI6HI, and GI5MO are all inactive at present.

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## Calls Heard.

(*Continued from page* 20.)

pk3bq, pk4az, pk6bq, py1ah, pyZax, py1cl, py1cr, py2ac, py2ak, py2ba, py2bf, py2bo, py2bg, sp1yl, vk2cs, vk2hb, vk2zk, vk3cx, vk3jk, vk6nk, w6bax, w6cxw, w6egh, w6hm, w6icp, zl1ao, zl1as, zl2gw, zt2e.

By W. LOCKERSBY, H.M.S. *Dahlia*, Red Sea Patrol, c/o G.P.O., London:—7 M.C.: ct1as, ct2ac, ear94, ear96, ear97, ear122, ear104, ear13, fr-ear 75, d4hnx, f8kwt, f8fem, fm8cfr, f8az, g6lf, g6yl, g2ux, g5zn, haf9as, haf9af, on4iv, i1tmt, i1coc, ok2va, oz7sv, oz7jo, oz1k, oy7ii, sp3mb, sp3mo, sp3tb, sm7yg, sp1ae, pa0xh, sp3da, uo1jh, ve2ap, w1cz, w2alo, w2ano, w2bmn, w2df, w2hs, w2aet, w3cjn, w3aws, w3afw, w3avj, w3dw, w3wzo, w3bbb, w3dhw, w3au, w4mk, w4we, w4nb, w4ft, w4aim, w4dv, w4vw, w4rx, w4ae, w4agr, w4pf, w4as, w5dj, w8bwk, w8lt, w9hdw, w9cme, w9ell, (All QSA5 R9 through bad atmospherics while patrolling the Southern Red Sea.)

By G6YL, Felton, Northumberland, during the 2MC. tests: *April* 6, *dark period*:—g2ax, g2ci, g2gg, g2ip, g2nf, g2oa, g2po, g5av, g5bc, g5jo, g5lx, g5nr, g5qa, g5ub, g5wb, g6am, g6fo, g6io, g6nf, g6rb, g6qc, g6oo, g6ot, g6uj, g6yq, g6zh. *Light period*: g2gg, g2ii, g2nz, g2oa, g5cx, g5lx, g5xm, g5yn, g6ax,

(*Continued column* 1, *page* 25.)

# Empire B.E.R.U. News.

WE welcome this month several new contributors to these columns, and would like them to know how much we appreciate their support of B.E.R.U. We hope that we may hear from them every month in this connection.

You will notice that two of the following news paragraphs have been received by radio, and it would stimulate the interest in B.E.R.U. if Empire link stations would try to receive monthly notes from the Empire in this way.

It would not be out of place, we think, to record here our pleasure at welcoming amongst us VE2BH, one of the Montreal gang, who is spending a short holiday in England. He is the third member of B.E.R.U. from Montreal to visit us in recent years, and we would like to ask the rest of the Dominions to follow Canada's good example and spend holidays with us. We can assure you of a right royal welcome and a host of friends before you leave for home. Let us know when you expect to be here and we will do the rest. Be sure to do this, because we have heard of Colonial amateurs who have missed half the fun because they omitted to let us know beforehand. This welcome is by no means limited to Dominion and Colonial amateurs, and English transmitters are always glad to meet their fellow amateurs of whatever nationality, colour or creed.

Our thanks are due to all those Colonial societies who so nobly responded to the call for a "Prince of Wales Relay" at short notice, and they will doubtless be gratified to learn elsewhere in these pages that the relay was a great success, and that a personal message of thanks from His Royal Highness is now being sent to them.

## AUSTRALIA.

By H. R. Carter (VK2HC).

From reports to hand, none of the British stations were heard in VK or ZL in the recent 28 M.C. tests. I believe one New Zealand station had worked F on 28 M.C., which is good work. The G signals are very few and far between on 14 M.C. too; the best signal heard here for some time was from G2KF on that wave. DX conditions seem to be rapidly falling off, and the South Africans have entirely disappeared on 14 M.C., but several can still be worked on 7 M.C. The W signals are coming in again, in the afternoon, now, the same as last year, but the signals vary greatly in strength every week-end. The best DX signal on 28 M.C. is from our old friend Rodman (G2FN), now XU2UU, who is generally R5 on Sunday mornings. We have quite a few crystal-controlled stations here now, and on the whole I think the average VK signal ranks with best of those of any other country. This is evident, from the list of high quality signals, published in QST. Mr. Don Knock (ex G6XG and VK2NO) is now up at Wyndham, N.W. Australia, operating a meat company's station. His own call is VK6NK, and he is getting out well on 14 and 7 M.C. bands. Our well-known DX "ham," VK2RX, is back on the air again, after making a QSA QSO with a motor car, Hi!

## CANADA.

By Chas. J. Dawes (VE2BB).

We are glad to report a few contacts with English stations, but generally DX with Europe still continues very poor, though South American stations and others are heard and worked very consistently. From May 25 to 30 G stations came in with very good strength, but contacts were few. Amongst those heard were: G6VP, 2NM, 2MA, 6WT, 6MA, F ON and EAR came in well on June 9 and 10, the most consistent being G6VP. Most stations were heard from 23 to 1 G.M.T., but VE2BE worked GI5HW and G6YG later on May 25 and 28. We are hoping that DX will improve so that the Prince of Wales relay will be a success.

## CEYLON.

By G. H. Jolliffe (VS7GJ).

VS7AL has kindly offered to act as up-country district representative, and shortly I hope to get someone for Colombo. Information received from amateurs over the island will be, I hope, of interest to the R.S.G.B. and B.E.R.U. as well as others who work VS7 stations.

Unfortunately, owing to heavy rains, resulting in floods early in May, the Colombo electric power station was put out of action. This, of course, for a while, put VS7AP out of action. VS7GJ is at the moment not working, due to generator breaking down, so VS7AL was at one time the only amateur transmitting.

VS7AL reports having worked during May G2VG, G2ZP, G2AM, ON4JE, AF8ST, OK2VA, F8GSB, Y1ICD, VQ4MSB, SU8WY, and VS6AD. QRN and QSB on all stations bad before 11 p.m. to midnight.

During this time of the year when the N.E. monsoon is going out, and the S.W. monsoon putting in an appearance, DX conditions are very bad, especially before the hours just mentioned.

Australian and South African amateurs have not been coming over for some time now, speaking, of course, on the 14 M.C. band. This, no doubt, is due to weather conditions.

## EGYPT.

By C. E. Runeckles (SU8RS) (received on 14 M.C. by G2NM).

Ham activity has been at a minimum this last month, with really bad conditions prevailing on all bands. Now and again there was a good patch, but not of long duration. Nothing has been heard on 28 M.C. during the A.R.R.L. tests by either 8WY or 8RS, although many hours have been spent listening. SU8JK and SU8NK are awaiting the return of decent conditions, when they will be heard on 14 M.C. SU6HL is working on 7 M.C., but no reports from him are to hand. Can anyone tell

SU8RS whether his 28 M.C. signals were ever heard on the American continent?

## HONG KONG.

From G. MERRIMAN (VS6AH).

It gives me great pleasure to acquaint you with the formation of the Hong Kong Amateur Radio Transmitting Society on May 3, 1930, to foster co-operation among the amateur radio operators of Hong Kong and to assist and co-operate with the many radio societies scattered throughout the world. It is proposed as soon as possible to publish a journal of the Society, which will be available to all members. Present members of the H.A.R.T.S. are all joining the R.S.G.B. and B.E.R.U., and it is hoped that some G's will join the H.A.R.T.S. The entrance fee is approximately 7s. and the annual subscription the same. The B.E.R.U. representative has not been appointed yet, but it is hoped that he will be shortly. The H.A.R.T.S. send their cordial greetings to the R.S.G.B. and B.E.R.U.

VS6AB also informs us that VS6AB, VS6AD, VS6AE, VS6AF, VS6AG, VS6AH all operate on 14,000 K.C. band from 10.00 G.M.T. to 18.00 G.M.T., and are all out to work a G station. All these stations are WAC, and some of them are just waiting for the cards to prove contact. (We hope to get your applications for W.B.E. soon, OMs.—ED.) A meeting is to be called with the object of forming a group of the B.E.R.U. in Hong Kong.

## INDIA.

By J. S. NICHOLSON, Travancore, Southern India.

Conditions here are very variable at present, and, generally speaking, there is nothing worth listening to above 30 metres some evenings, due to atmospherics, and they are a revelation to newcomers. This is at present the worst period of our year for listening, i.e., between the north-east monsoon and the breaking of the south-west monsoon.

I have a transmitter here—two, in fact—but am waiting for a " private " call sign. I am, however, working on 44 metres at present when local conditions permit and using a military call sign for test purposes. Signals here during the 3rd International A.R.R.L. contest—February 15 to 28—were much weaker than they were at this time last year. During that week VS7AL worked OA4Z in Peru. VS7AP also made contact with OA4Z and CM8UF in Cuba. English amateurs are heard here as early as 8 p.m.

The first week of March showed poor conditions. PY2BG and OA4Q and OA4I were heard. Australians who were coming through strongly are at present hardly audible. VS7AL, however, worked VK3DX, VK2JP. South Africans put in an appearance with strong signals from ZT6X, ZU6N, ZS5Q, ZT5R. VS7AP made contact with G2MA and G5FS. During early morning W1BAY, W1ASF, W1MQ, W2JN, W4RR and W9EF were heard. Continental stations are best about 10.30 I.S.T. ON4JJ, ON4FP, D4FW, G2KF, G5YG and G2GM were also good. A good VU station to look for is VU2BF. Dr. Watson, Bangalore, who works 12.30 p.m. I.S.T. Sundays, and evening at 9.30 p.m. I.S.T. on 4 M.C.; and also Dr. Mitcalfe on 6.8 M.C. Reports sent to me will be forwarded to any of these, as I report regularly.

## IRAQ.

By H. W. HAMBLIN (YI6HT).

YI6HT is on 28 M.C. daily from 13.00—13.30 G.M.T., and will welccme reports. He hopes to be running a schedule on 28 M.C. with Connerton at Karachi. YI2GQ has packed everything up, and is leaving Iraq shortly. YI1CD is on 14 M.C. and has taken over the QSL agency for Iraq.

## IRISH FREE STATE NOTES.

By Col. DENNIS (EI2B).

This month's notes will, I fear, be very short, as, for various reasons, there are not very many stations active at present, and those which are active have found conditions on all bands about as bad as it is possible for them to be, DX being non-existent. Many of us hope to log the signals from the Southern Cross on her flight to America, but unless conditions improve considerably it seems unlikely that we shall be able to follow her very far across the Atlantic, as W stations have only been coming in on very rare occasions. One freak, perhaps, deserves mention, viz., that on a few days during the past month G stations have been heard strongly on the 14 M.C. band, whereas normally they are not heard at all on that band. I have had reports from several stations, but as they contain nothing of special general interest I am not occupying valuable space with details.

## NEWFOUNDLAND.

By VO8MC (received on 14 M.C. by G5SF).

Weather poor for DX, and very few European stations are being worked; in fact, 7 M.C. seems better than 14 M.C. VO8AW has improved his tone. VO8Z has daily sked with VO8WG. VO8J has sked with VO8MC. VO8MC is first W.A.C. Newfoundland, and also came first in A.R.R.L. international tests. The Newfoundland gang hope to become members of B.E.R.U. soon, and send 73 to all.

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## Calls Heard.

(*Continued from page* 23.)

g6fo, g6oo, g6ot, g6qa, g6tx (?), g6uj, g6yq, g6zh, g6zr.

*April* 13: *dark period*:—g2ci, g2gg, g2ip, g5av, g5ub, g6dr, g6fo, g6io, g6mn, g6ot, g6qc, g6qa, g6rb, g6so, g6uj, g6yq, g6zh, g6zr. *Light period*: g2ci, g2gg, g2nz, g5ub, g5vn, g6fo, g6mn, g6oo, g6qc, g6so, g6uj, g6wf, g6zh.

*April* 27, *dark period*:—g2ci, g2gg, g2hp, g2ip, g2po (fone), g5av, g5ub, g6dr, g6fo, g6io, g6mn, g6rb, g6uj, g6zh, g6zr. *Light period*: g2bi, g2cw, g2gg, g2po, g2ii (fone), g5av, g5cx, g5ub, g5vn, g6ax, g6mn, g6oo, g6ot, g6sf, g6so, g6uj, g6zh.

By J. DRIDGE-COATES (X2DCR), c/o. P.M.G., Anglo-Italian Boundary Commission, British Somaliland: 14 M.C., March to April, 1930:—g2cj, g2dh, g2dg, g2gf, g2gm, g2ip, g5bj, g5hj, g5is, g5ml, g5nj, g5tz, g5jo, g5yg, g5yk, g6dh, g6hp, g6ou, g6qg, g6qb, g6qx, g6nf, g6vp, g6xb, g6xj, f8da, f8dh, f8ex, f8fr, f8fo, f8fk, f8lx, f8xx, f8zb, f8wrg, w1dp, w1bhm, w2hs, w4ru, oz1do, pa1qq, pa0hb, py1id, on4dj, on4fe, on4fp, on4or, on4ww, on4zz, yi1cd, d4jl, ear2l.

By D. WOODS (G5WV), S.S. *Athelmere*, c/o. Pure Cane Molasses Co. Ltd., P.O. Box 409, Calcutta, India. 14 M.C. between Java and Calcutta. *June* 1, 700 miles S. of Rangoon: g6yk r3, g2gm r3,

g6ot r4, g6wt r4, g6gd r4, g2op (or o1) r2, g2lz r5. *June* 2, 450 miles S. of Rangoon : g2gm r4. *June* 3, 280 miles S.S.W. of Rangoon : g6wt r4, g6qb r4, g6gd r4, g2lz r3. *June* 4, 240 miles W. of Rangoon : g6wt r3, g2op r3, g2nh r3, g6gd r3. *June* 8, at Calcutta : g6vp r3, g2gm r4, g6gd r5, g6wt r5, g2cx r3, g6ot r5, g5sy r3, ei8c r4.

By D4RH : 14,000 K.C. :—ei8c, ei7c, py1ah, vq4lq, vs6ah, ve1cr, yi1ce, yi6sa, au8at, au7kad, ct2aa, w2qf, w1av, un7cc.

By VO8MC : g2gm, g5ml, g5bj, g5jo, g5jf, g6rh, g6rb, g6up.

* * *

## European Notes.

Very poor conditions still appear to continue over the greater part of Europe, although Portugal reports an improvement. We are pleased to be able to announce that, during May, the first official licences were granted in Czechosovakia. The qualifying tests are rather severe, and as yet only six stations have obtained licences ; many others will doubtless follow soon.

On 28 M.C. the first OK-SU contact was made during May by OK2SI and SU8RS, and the first PA-W contact by PA0QQ. Conditions on this frequency elsewhere appear completely dud.

The fact that the British Postmaster-General has opened the 3.5 M.C. band to British amateurs has been received in Holland with great pleasure. The general complaint of amateurs using this band is the small number of foreign stations working there. Contacts with VK and ZL on 14 M.C. seem more difficult than ever in Holland, but we understand that Australia is heard fairly regularly in Denmark on Sunday mornings, although North and South American stations are not heard on 14 M.C. with the same reliability of previous years. DX QSO's on 7 M.C. appear almost impossible in Denmark : the only band that seems normal is 3·5 M.C. There is no lack of activity among the Norwegian amateurs, in spite of bad conditions. A great number of these amateurs are transferring their transmissions to the 14 M.C. band. The bi-annual general meeting of the N.R.R.L. will be held in Oslo on August 9 and 10, and it is hoped to arrange a hamfest on one of these dates. A warm invitation is extended to all foreign amateurs, and the N.R.R.L. wish to thank those who are responsible for the many invitations received by the N.R.R.L. to attend conventions and congresses this summer. The invitations have been passed on to the members, as it is regretted that the League will probably be unable to send special delegates.

We hear from Belgium that nothing at all was heard by ON amateurs during the June international tests on 28 M.C. ON4JB has worked five continents, using only 3 watts input. ON4FT wishes to point out that the official call sign allotted to his sailing boat *Tenacity* is ON4FX, and not XON4FT as previously announced.

Germany reports the fifth annual convention of the D.A.S.D. held at Halle A/S. on June 7—9, when about eighty amateurs from all over the country gathered together. The convention was a great success, and included an opening address by the President (Colonel Fulda), and very interesting lectures by Prof. Wigge and Rolf Wigand, of Berlin. Letters and telegrams from many foreign sections of the Union and from special foreign friends were read out amid great applause. The Union desire to thank all fellow societies and amateurs who so kindly thought of them on the festive occasion. On Sunday, June 8, the business meeting took place. Yugoslavian amateurs as a whole have now become affiliated to the D.A.S.D., and will in future be represented in the Union by this section. All QSL cards for UN amateurs should now be sent via the D.A.S.D., Berlin.

Foreign amateurs visiting Germany are requested to get in touch with the D.A.S.D., Berlin 57, Blumenthalstrasse 19 ('Phone : Kurfuerst 5773). Those travelling via Hamburg should communicate with the Hamburg district manager, Dr. R. Wohlstadt, Hamburg 5, Liibecker Tor 22 ('Phone : Alster 1385). German amateurs hope to see many of their foreign friends during the holidays, and will only be too pleased to show them round.

During the last month in Spain the most active district was Catalonia, where up to now more than one hundred members have been enrolled in the E.A.R. Roughly twenty amateurs took part in the special tests organised by the U.R.S.I. during June, but no reports are as yet to hand. During March and April the annual Argentine-Spain 14 M.C. tests took place ; the most successful E.A.R.'s being 96, 98, 21, 10, 136 and 116. EAR98 succeeded in communicating with Argentine on 32 successive days.

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Printed for the Inc. Radio Society of Great Britain, 53, Victoria Street, London, S.W.1, by Loxley Brothers Ltd., 50, Southwark Bridge Road, London, S.E.1.