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T&R BULLETIN.

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EDITORIAL.

Interference on Amateur Bands.

In response to numerous requests from our members who have complained about interference from foreign commercial stations working in our bands, we take this opportunity of summarising the Postmaster-General's correspondence on this matter.

He refers us to Article 5, paragraph 1, which states :—" The Administrations of the Contracting Governments may assign any frequency and any type of wave to any radio-electric station under their authority upon the sole condition that no interference with any service of another country results therefrom."

He also states that it may be necessary for experimental stations of foreign Governments to use frequencies in the amateur bands for the purpose of checking and controlling transmissions from their amateur stations.

From this it will be seen that at present we are unable to take any steps in this matter.

* * *

In the correspondence columns of the March BULLETIN appeared a letter suggesting that transmitters desiring reports from British stations should arrange to have their calls included in a list which would appear in each issue of the BULLETIN. We considered this to be an excellent suggestion, and have accordingly published short lists in the last two issues. We should like to see such a list grow in size, as we think it would be a great saving of money and time which is otherwise spent in sending cards to transmitters who quite frankly show by their action that they do not want them. The short-wave reception enthusiast cannot possibly know who of the many amateurs he hears transmitting wish for a report, and such a list would be of immense value to him. Amateurs who have had any dealings with QSL cards will agree that a large proportion of these cards that do not relate to actual contacts are thrown away and never acknowledged. This is a pitiful waste of effort, and we hope that members who receive or send cards will bear in mind the following few suggestions of ours which have been formulated with a genuine desire to assist. There is a well-founded suspicion that the usual reception report is a request for " wall paper," and transmitters soon get tired of filling up their cards for unsought and valueless cards. Whatever may be said to the contrary, we are inclined to think that there is some truth in the statement. We are amateurs ourselves; we

have sent and received cards and we consider we are qualified to discuss the matter.

This is a subject that requires reviewing from two sides. First allow us to address a few remarks to the sender. If you want a card in return you must make your report of value to the recipient. This can be done either by reporting on points of particular interest to the transmitter (be it clouds overhead, crystal out of control, quality of modulation, or anything else), or by sending a complete report of your own speciality, in the hope that the recipient will recognise that your efforts are well meant and that you will give him further reports of interest to him if requested to do so at a later date. Give sufficient data to identify the transmission and then a detailed report which might include some of the following points: (1) Accurate frequency with figure for possible error. (2) Jamming with call sign of offender. (3) Fading or wobbling signals, key-thump or chirp. (4) Honest reports on strength and note (and modulation if used). (5) List of any stations heard replying to a test call, with reception details of each one. (6) Audibility of spacing wave, if any, and of the harmonic if the distance between the stations is not great. Which of the above suggestions are used must depend to a certain extent on the distance between the stations and the frequency used. Now for a few points that are not of interest to the transmitter. Omit references to local jamming, such as motors, as this is just your bad luck. Don't give too many details about an ordinary receiver; they are all about the same. The number of countries you have received is chiefly a question of luck and spending a lot of time on the job. Don't ask for photos or replies direct: if your card deserves a reply it will probably be sent through the QSL Bureau.

We hope these few points to the short-wave listener may save him a lot of time and trouble in sending cards to transmitters with rather useless remarks on them. There are many cards in existence that conform to all our ideas of what a reception card should be; on the other hand, we have seen so many poor cards from various parts of the world that we consider our criticisms and suggestions are called for, and we hope there will be a certain response.

Before closing may we address a few words to the recipient. Reception reports are sent by people who are trying to help. They have gone to some trouble to send you one, but you cannot expect an unsought report to be on the subject on which you are passionately interested. Send a reply if you can see that an attempt was made to give an interesting report; possibly you have some special cards printed for the purpose of acknowledging such reports. Remember you were once in the same boat, and every listener is a potential transmitter unless he is put off and generally subdued at every turning.

* * *

Will members kindly note that in the Editorial on page 252 of the May issue, the words (referring to Mr. Somerset's kind offer of a prize for 56,000 KC work) "reported from a distance of *three* miles or more" should read "reported from a distance of *ten* miles or more."

(*Continued from next page.*)

100 per cent. readable from 1145 to 1220 G.M.T. G5YK and G6LL also heard at 1100 G.M.T. G6HP heard at 10.50 G.M.T., working G5BY, but no trace of latter.

March 9-March 10.—QRN here. N.D.

I have been using my G2FN transmitter with 9-10 watts input on 28 m.c.; the set remains substantially the same as when in England except that all leads have been reduced in length by mounting the tuning condensers on stand off insulators and attaching the coils direct to the condensers, and the filament chokes have been reduced slightly. A slight gain in efficiency has been noted.

At present very few Australian transmitters are operating regularly on 28 m.c., I understand the chief reasons being the lack of DX and the heat of summer. Several of the coast dwellers plead the beach and sea are so attractive. VK5HG is the only station logged.

ZS5U (FOA7D) is a regular performer but he tells me that lack of DX from South Africa has caused a lack of interest in 28 m.c. Z54E, ZS6P, and ZS4A are working on 28 m.c. but no details to hand.

Of the Asiatic transmitters YI1LM is on 28 m.c. but I expect that VS1AB and VS3AB will be operating on this frequency soon.

I cannot agree with G6LL in his comparison of the LS5 and LS5D valves in the February Bulletin. In my opinion, in a T.P.T.G. self-excited oscillator the LS5D is very good and the LS5 quite satisfactory; in other circuits the same classification seems to hold good.

In conclusion I should like to thank all G stations for their kindness and hospitality during my stay in England, and express my regrets that I was unable to visit several stations to which I was asked, an omission I hope to repair during my next visit to England.

Forthcoming Events.

June 29.—Meeting of the Northumberland and District Radio Societies at Newcastle-on-Tyne.

July 20.—Visit to Hillmorton Radio Station.

September 23 to October 3,
RADIO EXHIBITION AT OLYMPIA.

September 27 to 28,
FOURTH ANNUAL CONVENTION.

A Few Notes from India

By F. Rodman (VU2KT).

My first few weeks in India can be divided into several pleasant and unpleasant periods—a hectic rush between February 3 and February 9 to instal apparatus in readiness for schedules on the latter date, a brief operating period, a tour with football and hockey teams, during which time a large portion of the available water supply collected on one of my knees, a rest period in quarters, with operating interludes, trying to persuade the said water to disperse, and finally a so far undetermined stay in a hot hospital, confined to bed with a baulk of timber lashed to my person (they call it a splint—I don't), in a further endeavour to re-radiate the fluid.

The old home of 2KT being not available, a temporary abode was sought and it turned out to be about the worst ever experienced from an aerial point of view. In the end, what is supposed to be a V.F. Hertz was allowed to "snake" over the countryside, 23 feet above ground, the affair looking more like a couple of dogs' hind-legs in series than anything else, As for screening, well—I defy anyone to produce more perfect screening in a receiver H.F. stage. Quite good results have been attained, but these are attributed to a cunning system of reflectors (buckets of water and mirrors) arranged to divert the disturbances caused to the free air via my front door and bathroom. The whys and wherefores of the system have not been explored as I hope to move to a location more suited to the erection of radiating systems.

Observation has shown that several "1929" points have cropped up, the Q code is not well known and many stations use the old code and one is told that QSB is "fb pdc, etc." Lengthy "test" and "CQ" calls still rule the roost, A.C. and poor R.A.C. notes very much in evidence, more "spacers" than ever are in use and the old R code and QSA mixed up to some tune. (I have been in receipt of variations extending from "Your QSA2, etc.," and on sending double have been asked "QSZ?" as I am apparently at eardrum breaking strength; up to "Your QSA5 no QRN, QRM, QSX, QSB, etc." On sending single I have been told I am too weak for QSQ. An interim stage being QSA R6.)

On several occasions when I have had traffic for a certain country a directional call has produced answers from countries other than the one called; one could cope with it if short calls were used but this is not the case and much time has been wasted thereby; this practice is not worthy of amateur tradition. This happened on three occasions one evening a short time ago when I was trying to pass information regarding the 28 m.c. tests.

The 14 m.c. bands' performance during February has been different from previous years. Usually in February it is only possible to have occasional poor QSO's with G stations from the Central Provinces between 1400-1430 G.M.T. This year good QSO's were made with fair regularity between 1400 and 1630 G.M.T., but the standard is not up to the April-May period for constancy. Very little trouble has been experienced from QRM., the worst being caused from "spacers" and badly spreading notes. On the other hand QRN has surpassed itself for the time of year.

On 28 m.c. certain ideas have been altered and others modified. There can be QRN on 28 m.c., On March 10 QRN was strength 5 here, and a jolly good 5, too. In view of experience in England in the reception of W signals it was expected that fading would be of the same order in India. Of all the stations logged, only G6HP faded badly enough to show a big difference between maximum strength and minimum. This station too, was the only one which remained audible for short periods only. At the same time G6HP alone produced the punch similar to that attained by W stations in England last October and November. Of the other stations logged the strength did not vary greatly from week to week, neither was fading very marked except G6LL who never bettered QSA2, and fading put him right out. As might be expected, these stations at intervals faded very badly but the general run of fading could not, by any stretch of imagination, be called bad.

A word about weather may be of interest. The general run of the climate for the majority of the year shows that the weather "stays put," that is to say, the sky is clear, clouds, if any, few in number, wind from nil to a breeze (generally from the South), air very dry, barometer high, temperature varying according to the time of year (at present mid-March the shade temperature is in the region of 90°); these conditions are fairly constant between October and the following June. The period July-September being the monsoon, is very variable. Unsettled periods between October and June do occur but they are few and far between and their effect varies so greatly on signals that no opinion can be given.

Perhaps certain transmitters may be interested in a few points not contained in my 28 m.c. reports sent via various G stations, To the latter I wish to express my thanks for taking so much trouble in relaying the reports. On February 10 G5YK was audible from 1130-1220 G.M.T. During this period fading occurred about twice in ten minutes at irregular intervals. OH2NAP and OH2NM subject to very slight but regular interval fading.

Feb. 14.—VK5HG logged at 0600, 0815 and 1000 G.M.T., although VK5HG changed his radiating system there was no change in his strength.

Feb. 24.—Contact maintained with VK5HG from 0500 to 0550 G.M.T. and again from 0600 to 0620 G.M.T.; fading very bad indeed. G5ML faded badly between 1115 and 1127 G.M.T., but between 1215 and 1250 G.M.T. remained steady enough to copy at least 80 per cent. of his signals. During this QSO my signals were heard by RWX, who was off the coast of Greece. EF8CT remained fairly steady between 1150 and 1210 G.M.T. G5YK fairly steady strength between 1130-1140 and 1150-1200 G.M.T.

March 3.—G5ML almost 100 per cent. readable between 1105 and 1145 G.M.T. G5YK almost

(*Continued on previous page, col.* 2).

Dull Emitter Valves as Laboratory Oscillators

By Maurice Gibson, (2BAA), F.T.S.

Part I.

In *Amateur Wireless* of May 10, 1924, I was interested to read an article by 5YM entitled " Dull Emitters for short range work." This article interested me exceedingly as I had always held that the economy of consumption of filament current was one of the most important of factors in reliable transmission. On December 22, 1928, I determined to start a course of experiments attacking and amplifying the work of 5YM from a laboratory point of view.

Experiments were commenced with a modified form of the transmission circuit used by 6GM in his article in *Amateur Wireless* of June 28, 1924. (See Figs. 1 and 2.)

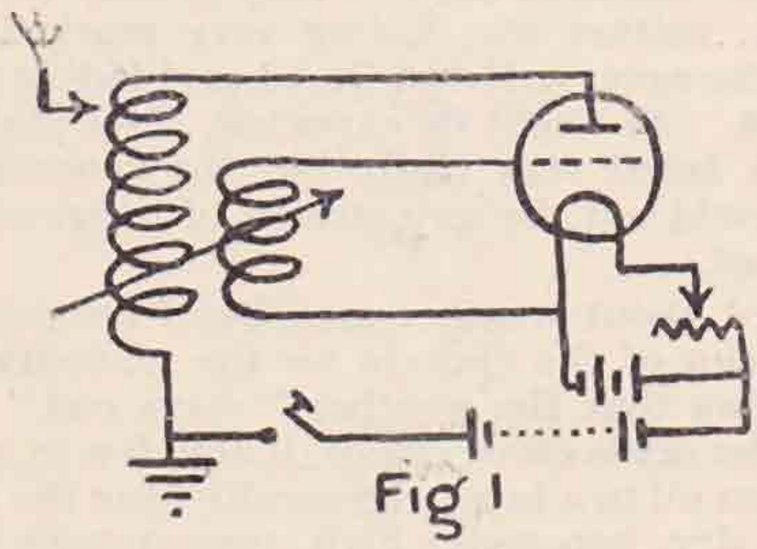


Fig 1

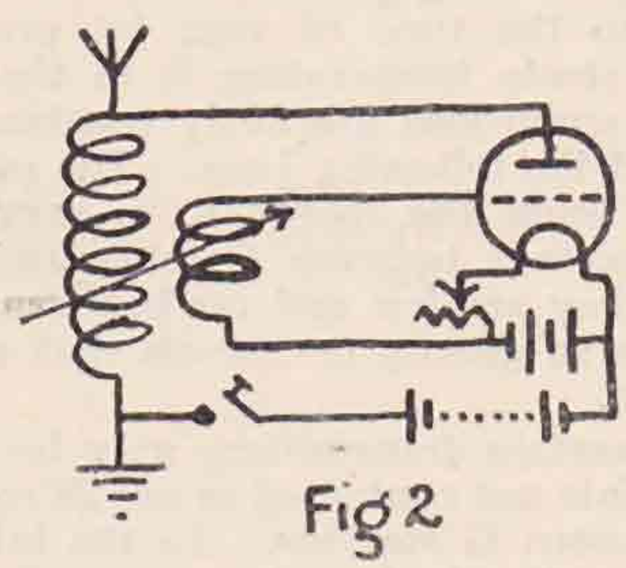


Fig 2

Oscillatory Circuit.

The tuning of the oscillatory circuit will be seen to have been considerably simplified. In fact, except for the variation of the coupling of the grid coil and the A.T.I., the tuning is fixed at about 300 metres. The position of the filament rheostat is one of convenience only and the modulation systems employed (as will be shown later) were either increment or grid control. Later, a variable condenser of a capacity of ·001 microfarads (the laboratory type with a celluloid case) was placed in parallel with the grid coil to obtain greater selectivity (Fig. 4). The oscillating circuit in Fig. 2 was at first used only as shown with no artificial aerial. The local crystal receiver was of the circuit shown in Fig. 3. The A.T.I. was variable, being tapped in tens and units.

The A.T.I. and grid coil of the transmitter consist of the stator and rotor of a Peto-Scott variblock variometer. This is exceedingly well made and the wires are brought to separate terminals mounted on an ebonite panel on the top. The coupling can be very easily adjusted on this type of tuner, and because of its strong, well insulated, construction it can be easily fitted with modulation and radiation lamp loops.

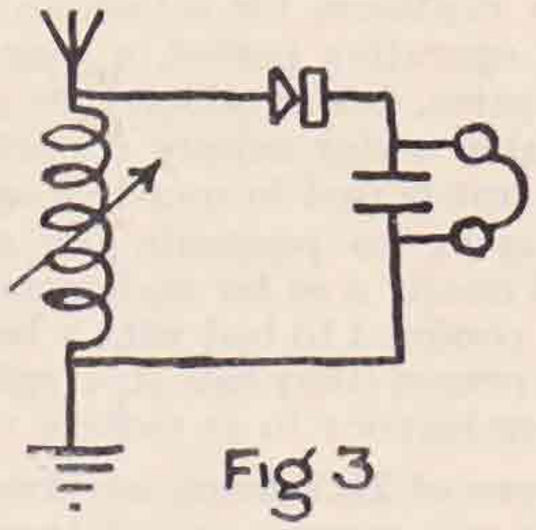


Fig 3

Valves.

The first valve used was a 4-volt ·06 amp. Radio Micro, the filament was heated by means of an ordinary 4-volt thick plate accumulator. The plate current used at first (this will be referred to later under Transmission Power) was obtained from dry batteries at a pressure of 130 volts. This valve, after working for two years as a receiving valve, was used through the greater part of these experiments. It gave very good results indeed, and was ultimately burned out with 400 volts at 25 watts on the plate from a hand generator. In spite of this it had, during the previous week, stood up regularly to 350 volts at the same rate on the plate, and would have continued to do so during the normal life of a valve. This should, I think, about constitute the record for D.E. receiving valves. It will be shown later when the transmission power and aerial radiation is discussed what splendid oscillators these valves are for low range work.

The second valve used was a Dutch semi-bright R. 4 volt, ·4 amp. of the " Frielat " type. This, of course, consumed much more current and it was found that it was not nearly such a good oscillator as the first.

The third valve tried was of a similar make, being a Dutch semi-bright R, 4 volt, ·35 amp. This gave similar fade results, and was, like the second, abandoned.

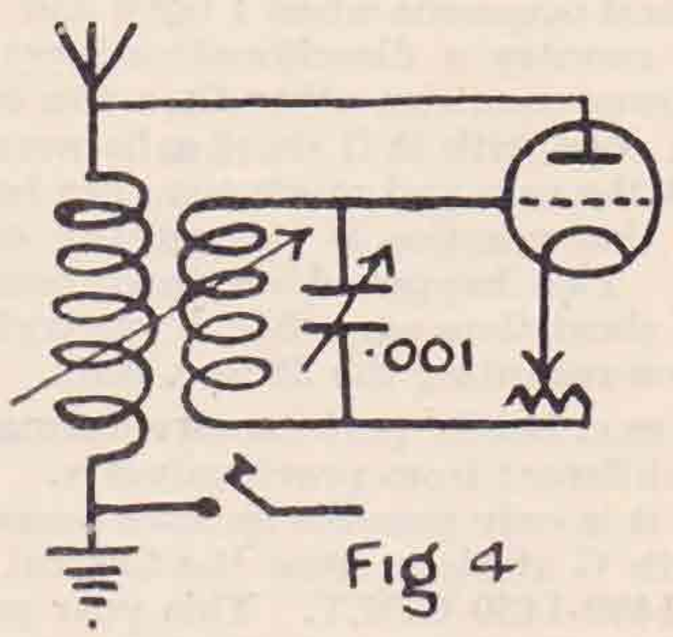


Fig 4

The fourth valve was an old type bright emitter Marconi R, 6 volt, ·65 amp, chosen for purposes of comparison. This valve consumed a great deal of

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

The 2 Megacycle Band.

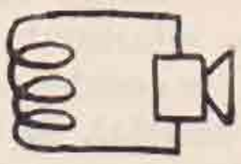
By H. C. Page (G6PA).

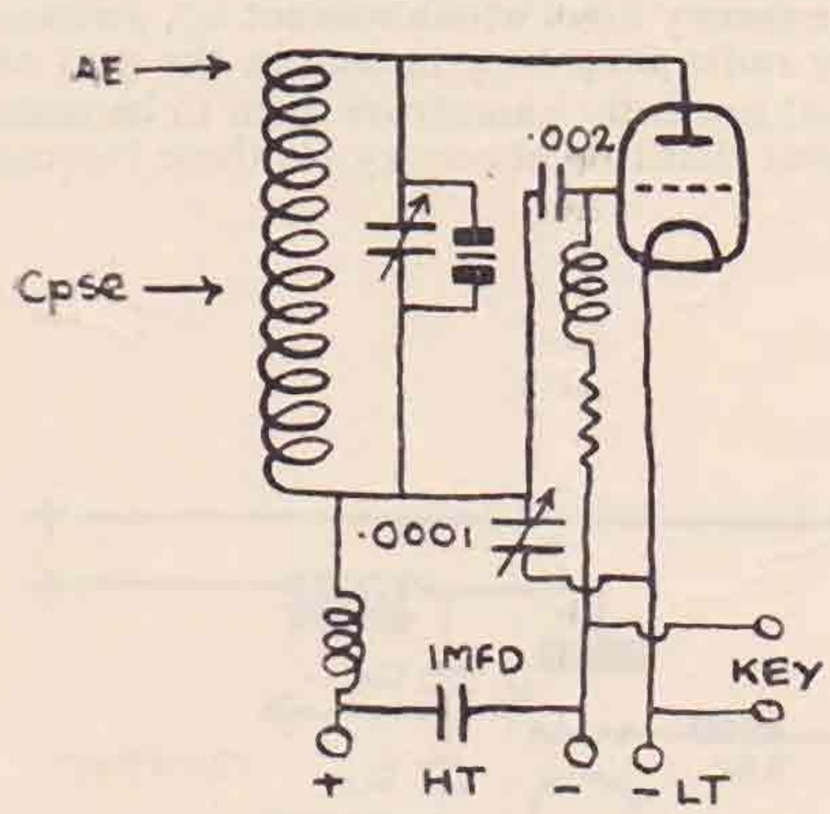
I suppose that all of us have permits for the above band. This being the case, there really seems to be a great opportunity being missed. Just rake out those old coils and take a look round for yourself any Sunday. Half-an-hour's listening will confirm my statement. If you hear more than half-a-dozen stations you will be very lucky. Now, surely, this is all wrong. We are not making the most of our opportunities by any means. Here we have a nice wide band that is the very best possible for telephone work, and is also quite good for C.W. work, but do we use it? No, we prefer to bury ourselves in the fight on the higher frequencies, often for local work which could be done far better on the lower band.

I know it used to be considered *infra dig*. to work there, but now that anyone can become W.A.C. without much difficulty on the higher frequency, that really does not apply.

However, it is not to the DX man that I want to appeal, but to the man who finds it necessary to do his local work on our all too precious higher frequency bands. Most of the local work we hear could quite well be done on the lower frequency. In many cases it could be better done there.

Well, that is enough talk. Let's see what is necessary in the way of apparatus for this band.





First, let us take a look at the receiving side of the matter. This is quite simple, as the ordinary short-wave set is quite all right for the job. However, if you have a screen grid receiver, so much the better. With such receivers the range of phone and C.W. work will be greatly increased.

Now we will see what is necessary in the way of a transmitter. As this is the most important part of the station, perhaps a full description of a suitable set will be of interest.

The circuit used is an Ultraudion. This was chosen because I happen to use that circuit on both my higher frequency sets, but the circuit you like best will, no doubt, be quite all right. The coil used consists of thirty turns of 16 gauge bare copper wire wound on a skeleton former six inches in diameter. The turns are spaced ¼ of an inch. This coil is tuned by a ·0003 mfd. variable condenser. The regeneration condenser can be a ·0001 mfd. variable condenser. The chokes consist of three inches of No. 36 D.C.C. copper wire wound on two-inch cardboard formers. The valve used is a CT25X, and this handles ten watts quite comfortably. The lower frequencies have not, of course, the same effect on a valve. The aerial is just an ordinary 65 ft. Hertz tapped straight on to the anode end of the coil, with a hundred foot counterpoise, which is tapped on to about the centre of the coil. This arrangement is used as being the most convenient at hand. Loose coupling is, however, to be preferred. I use a crystal across the whole of the coil, and this gives a very nice note indeed. The power supply is from dry batteries. Do not use a good crystal across the coil, unless you want to loose it. Almost any lens that will give clicks will control on this frequency.

Now most of us want to use phone, and this is really quite easy. Absorption control is quite permissible on this frequency. It has not the detrimental effects found on the higher frequencies. Used in conjunction with crystal control it offers a very simple form of modulation, and one capable of giving excellent results. A suitable modulating coil would consist of about five or six turns of 16 bare copper wire about four inches in diameter With crystal governing quite full modulation can be obtained in this way. Of course with a full crystal control set very little modulation would be obtained.

I think that the above should give most people some idea of the values required. Of course, very much more elaborate sets can be used with advantage, but what I want to show is that it is a very easy matter to give the other bands a rest for a while now and then.

Just have a try one Sunday. I think that you will be surprised at the distances you can reach on the key, and that without any interference, too.

(*Continued from previous page.*)

current and had about the same oscillatory powers as the second and third. This may be due to the fact that it had deteriorated through being in hard use in the laboratory for over five years.

The fifth and last valve tried also for comparison, was an A.T. 40 transmission valve (W.D.) made by B. Th. It required an anode voltage of 200-1200 and a filament voltage of 7 volts at 1·5 amps. Its maximum output was 48 watts (i.e., 1200 volts at 40 M.A.). An 8 volt accumulator was used for filament heating (which the filament rheostat brought down to 7 volts), and a hand generator giving 400 volts at 25 watts was used for the plate current. The filament current consumption compared with the others was of course colossal. The oscillatory powers at 400 volts, in any case, were no better than with the first valve. When the first valve was burned out a Radio Micro Bivolt, 2 volts, at ·2 amps, was used instead, with equally good results. However it was found best when working for a long time to use a small thick plate 4-volt accumulator with an 8 ohm rheostat (all in) in series for filament heating.

In the second part of this series the systems of modulation and transmission power that have been used with the laboratory oscillator will be discussed.

A Five-Metre Receiver.

By W. F. Floyd (G5WF).

Much has been written during the past few months on the subject of short-wave receivers, but no article has appeared for at least five years on a receiver designed especially for five-metre reception. In the November (1928) issue of the Bulletin the writer described a receiver which would receive five-metre waves, but it was only at the lower limit of its range. The set about to be described has been designed with a view to its working only on the ultra short waves from about two or three metres to about ten or twelve metres. So far, there are

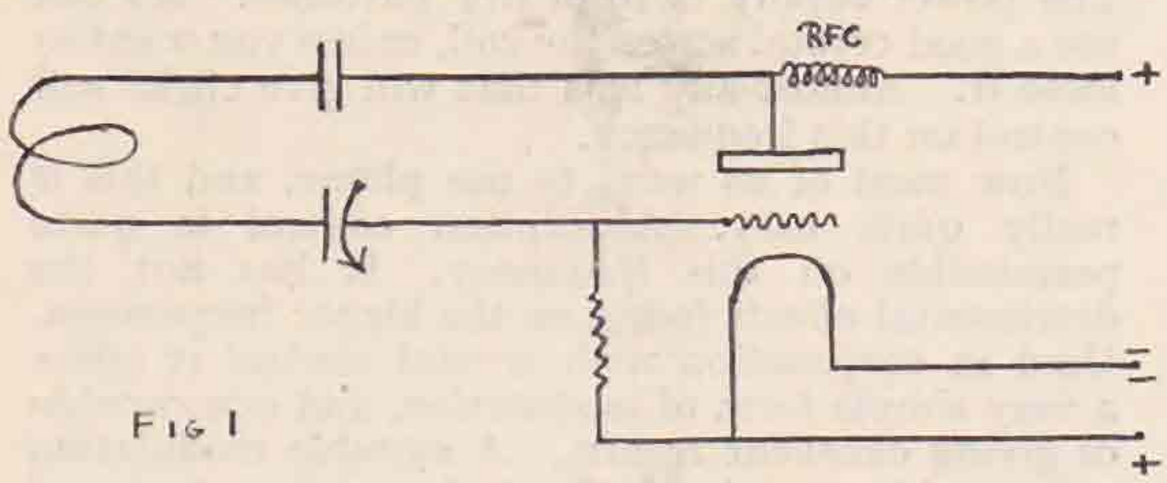


Fig 1

very few stations working on the five-metre band, and it has only been possible to receive the writer's own transmissions on this wave. The receiver was taken to different points in the neighbourhood of the transmitter and attempts made to receive the signals which were automatically sent out. The transmissions were received at distances up to about a mile and a half. The ease with which reaction can be obtained with this set seems to indicate that the circuit is one which we shall hear more about in the future when short-wave receivers are being discussed. Not a little of the success is also due to the efficiency of the radio frequency chokes employed and to the type of valve chosen.

The circuit diagram of the original oscillator is shown in Fig. 1, and the complete two-valve receiving circuit in Fig. 2. The oscillator is that which was employed in the transmitter in the first instance. Its great success led to its adoption in the receiver.

At first sight it would appear that there are four condensers to be controlled. This is not so because C_1 and C_2 when once set for smooth reaction and easy working need not be altered. The reason for putting variable condensers in these positions is two-fold, viz., the power factor of an air condenser is almost zero, (cos φ = O, where φ is phase angle), and also, different capacities at C_1 and C_2 will be needed according to the aerial used, and the amount of H.T. available.

The values of the components are given in the table beneath the diagram. The numerous small condensers of ·0001 capacity are necessary to prevent the feed-back of radio frequency energy which would otherwise occur. It must be remembered that these enormous frequencies of sixty million cycles will take every available path unless special precautions are taken to confine them to one particular path only. The writer wishes to apologise to Messrs. Ferranti for placing the ·0001 condenser in the position C_3. He is aware that they incorporate a fixed condenser within their transformer, but in order to make sure of the radio frequency path to the filaments the extra condenser was included. The condenser across the grid bias battery was also essential, in that it prevented a low frequency howl which was set up, presumably, by stray radio frequency energy in the grid circuit.

A great number of amateurs seem to be under the impression that it is necessary (at these frequencies) to use valves which have had their four-pin bases removed. This is an entirely erroneous impression, and for many months the writer has used an ordinary four-pin holder and valves fitted with the

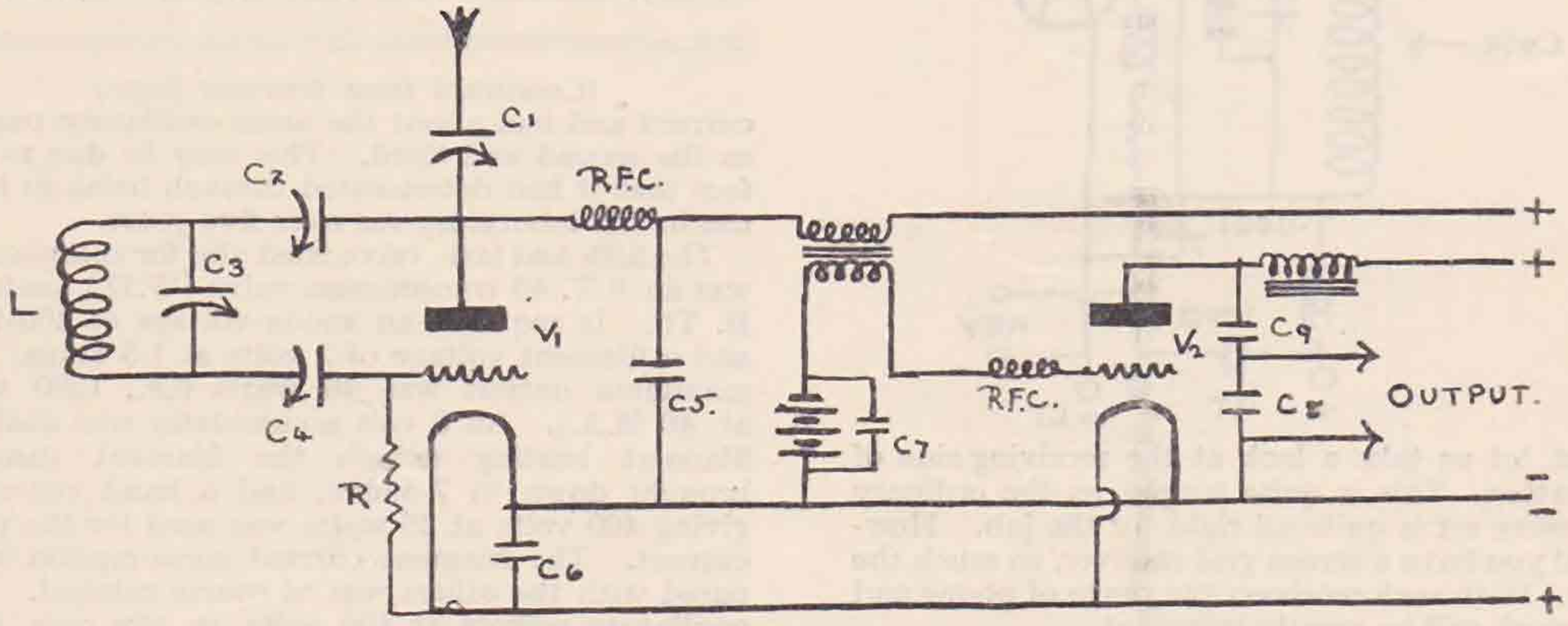
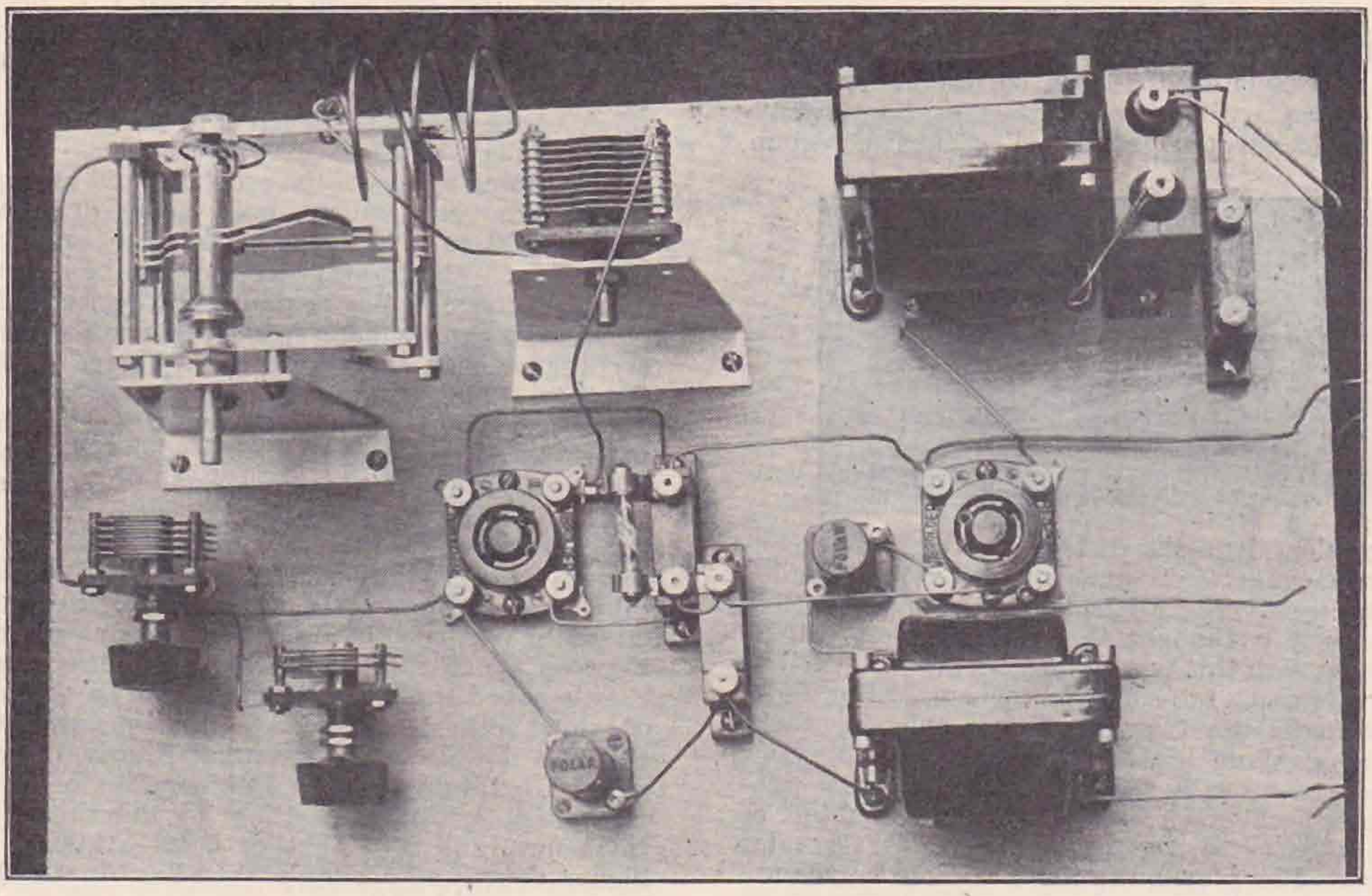


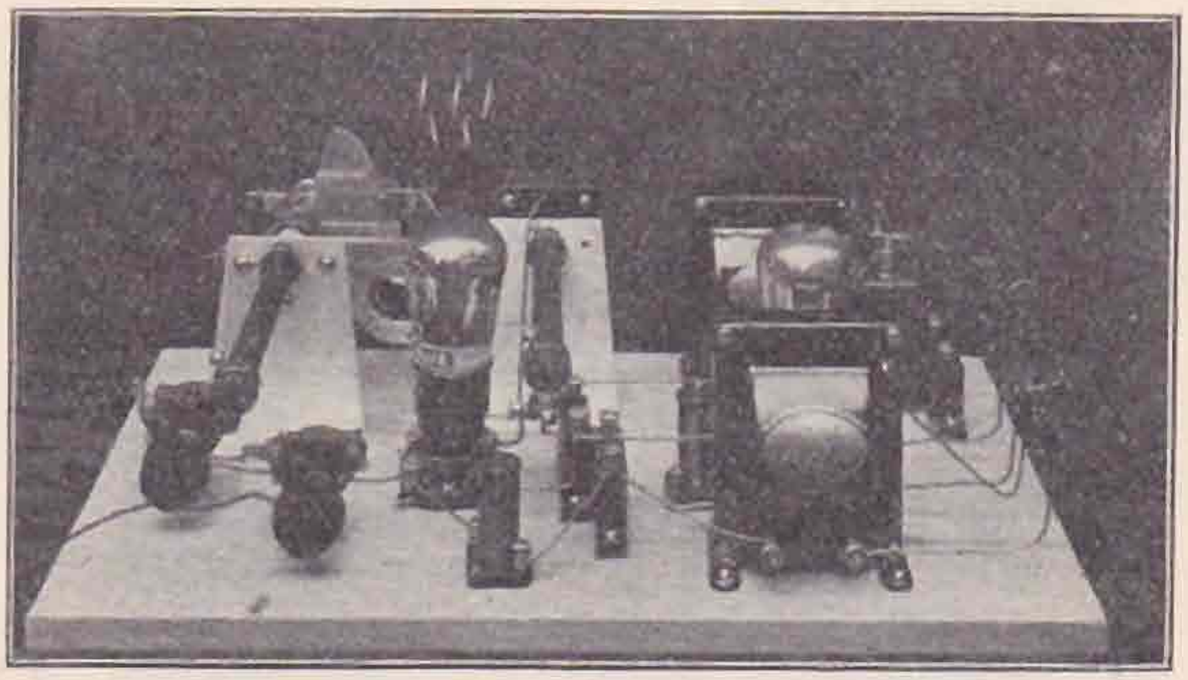
Fig 2.

C_1 ·000015 mfd. (15 mmfd.) G.R. Coy. Micro-condenser.
C_2 ·00005 mfd. (50 mmfd.) G.R. Coy. Micro-condenser.
C_3 ·0001 mfd.(100 mmfd.) Cyldon S.W.1.
C_4 ·0001 mfd. (100 mmfd.) G.R. Coy. Micro-condenser.
C_5, C_6, C_7, C_8 ·0001 mfd. fixed Dubilier.
C_9 2 mfd. T.C.C.
L 2 or 3 turns of 12 S.W.G. on 1¼" diam. spaced about ½" apart.
V_1 and V_2 Cossor 610 P. valves.

usual four pin base. The same has also been employed for the transmitter, and the only heating that has been noticed is due not to dialectric losses in the base, but to the reflection, by the getter on the walls of the valve, of the heat dissipated at the anode of the valve.



The actual construction of the set presents no great difficulty, and Fig. 3 shows quite clearly the lay-out of the components on the baseboard. The left-hand half of the board contains only those components concerned with the detecting part of the set, and the rest of the apparatus is placed on the right-hand half. The two fixed condensers in



the middle of the baseboard correspond to C_5 and C_6 in Fig. 2. Plenty of space has been left around the choke in the anode circuit of the detector valve in order not to cause any blind spots in the tuning or reaction feed-back. The grid leak is fitted into the clips supplied with the Dubilier type 620 condensers. The ebonite clip is connected to the grid of the valve, and the metal clip is attached to the negative or positive side of the condenser across the filaments (negative or positive according to the bias supplied to the detector valve).

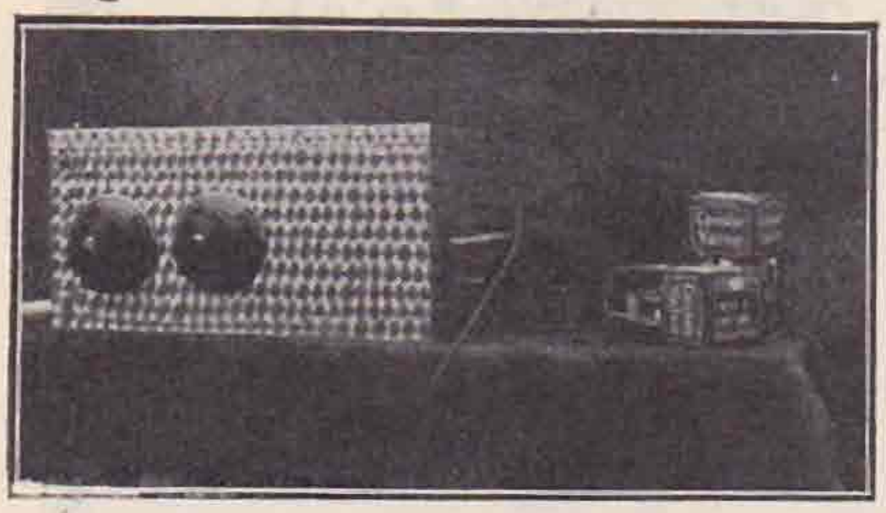
The extra E.T.1 outfit is for mounting the 100 $\mu\mu$F condenser in the grid feed. The extension handles have both to be cut in order to make them fit in the box easily. When ordering the Ormond dials care should be taken to specify them for $\frac{1}{4}$ inch spindles, as they are normally supplied for 15/64-inch spindles. The aerial connection to the set is made to the two nuts on the mounting collar of the 15 $\mu\mu$F condenser seen in the left foreground of Fig. 3. No terminal is seen for the aerial lead, but the most useful place for it seems to be in the top left-hand corner of the front of the box, just above the tuning condenser.

The terminals are mounted on a small piece of ebonite measuring $8'' \times 1\frac{1}{2}'' \times \frac{1}{4}''$, fastened to the end of the box. In order to prevent shorts across the aluminium seven holes one inch apart have to be drilled at the end of the box in the positions where the terminals and terminal nuts would come. The holes need only be sufficiently large just to clear the large fixing nut on the terminal.

When the wiring is being soldered to the tags on the condensers care must be taken to ensure that not the slightest traces of flux are left behind, for flux will act as a high-resistance leakage path and cause numerous scratching noises, and it may even get between the condenser vanes and cause particles of dust to stick to the vanes and so set up more scratchings.

Another view of the set is given in Fig. 4, and this shows everything in position for a preliminary try-out. The coil is fixed in position by attaching its two free ends directly to the condenser which tunes it. The gauge 12 S.W.G. is sufficiently rigid to prevent the coil from " wobbling " and so changing

the wavelength. The construction of the coil is very simple. It consists of two or three turns of gauge 12 S.W.G. bare copper wire on 1¼ inches diameter. The exact number of turns will even vary with the alteration of the position of individual components, and also with the exact spacing of the turns. The average spacing to use is about half an inch between turns. The operator will have no difficulty in determining his wavelength if he rigs up an experimental oscillator, corresponding to the circuit given in Fig. 1, and attaches about twenty feet of twin wires rigged as a Lecher wire system.



The wavelength is the distance between two consecutive current maximums along the wire multiplied by two. No further description is needed of this as it is thought that most readers will be conversant with this type of measurement.

There remains only one more point. For those who normally use two volt valves this set would seem to demand the buying of extra filament batteries. This is not essential. The Cossor two-volt valves will work very well in this set, but of course, as is usual, the six-volt type give greater emission. For portability the two-volt valves are certainly desirable.

The attached list is a schedule of five-metre transmissions which will be sent out from G5WF or G5QB during the next month.

June 16 to July 6 inclusive, from 9 to 10.30 p.m., Summer Time, also June 16, 22, 23, 30, and July 6, at 10 a.m. to 12.00 noon. The signals will consist of a series of v's (automatically sent) with the call signs interpolated by hand sending. Reports should be sent to the writer at 88, Ilbert Street, London, W.10.

The following components are used :—
1 S.W.1 Cyldon (·0001 mfd. short-wave condenser).
2 E.T.1 Cyldon (extension handle outfits).
1 100 mmfd. G.R. Coy. (code word MIDAG).
1 15 mmfd. G.R. Coy. (code word BULLY—Type 368).
1 50 mmfd. G.R. Coy. (code word BURIN—Type 368-B).
4 ·0001 mfd. Dubilier (Type 620).
1 Grid leak Loewe 7·5 megohms.
2 Benjamin Vibrolders (valve holders).
1 Ferranti Transformer Type A.F.3.
1 Ferranti Choke Type B.1 (for output).
1 T.C.C. 2 mfd. Condenser.
2 Ormond Friction Control Dials (drilled to ¼" spindle).
2 Cossor 610 P's.
2 Polar Short Wave High Frequency Chokes (10 to 200 metres).
1 Aluminium Box, dimensions 16" × 10" × 8" (Paroussi).
1 Baseboard to fit Box, 15⅞" × 9⅞" × ½".
Several lengths of No. 14 or 16 S.W.G. bare copper wire for wiring and a short length of 12 S.W.G. bare copper for the coil.
9 or 10, Belling Lee Terminals marked according to wiring.
1 piece of Ebonite 1½" × 8" × ¼" for mounting Terminals.

Stray.

W2OT requests contacts or reception reports of his station on the 7,000 K.C. band; he uses C.C. and works every day from 3.30 p.m. E.S.T., and all day Saturday and Sunday. His address is 24, Perkins Avenue, Oceanside, Long Island, N.Y.

(*Continued from next page.*)

Clix Multi plug, the socket of which is mounted on the baseboard behind the crystal oscillator. Connections to the oscillator are taken behind the absorption box. On the panel immediately in front of the crystal oscillator are fixed two Benjamin switches. By means of one switch L.T. negative is connected to the panel, and as the L.T. negative leg of the oscillator valve is also connected to the panel this serves as a switch for this valve. The other switch connects the panel to the L.T. negative leg of the crystal oscillator valve holder.

The tuning ranges of the oscillator and absorption circuit are very similar, both being designed to cover 3,500 to 4,000 K.C. with some to spare at both ends. The crystal oscillator can be calibrated to an accuracy of plus or minus 100 cycles, and any corrections can be made to the other calibrations in accordance with the suggestions on page 77 of the October, 1928, BULLETIN.

On measuring the frequency of an oscillating valve the oscillator of the meter is adjusted to give zero beat note with the oscillations to be measured and the absorption condenser varied until two peaks are obtained, with a silent point between them. The reading of the dial at this point is taken. A milliammeter in the H.T. lead to the oscillator may also be used to determine resonance between the oscillator and the absorption circuit.

It is hoped that the above remarks on the results obtained from experiments with frequency meters, and the details of one particular form of meter, will be helpful to other amateurs, in order that they may be in a position to determine their frequency, and also that of other stations, to a higher degree of accuracy than has often hitherto been the case.

The following list of components are used :—
One .0003 mfd. Cyldon Log Midline variable condenser.
One .0005 mfd. ditto.
Two .00025 mfd. Ormond fixed air-spaced condensers.
Two .0003 mfd. ditto.
Two .001 mfd. T.C.C. mica fixed condensers.
Two 3" lengths Becol ribbed ebonite former, 3" diameter.
Two Pye valve holders (rigid type).
Two Benjamin push-pull switches.
One Polar slow-motion dial.
One standard 4" dial.
One 3500 K.C. crystal in fixed holder (Oscillating Xtal Co.).
One No. 25 Gambrell coil and baseboard mounting coil holder.
One Clix multi plug and socket.
One LS5b or DE5b.
One PM5X.
One 6 volt 20 amp. (actual) Exide accumulator.
One 60-volt H.T. battery (Ripault).

Obituary.

It is with much regret that we have to record the death of one of our old members, Mr. F. A. Eliff, G6AV, of Sheffield. Mr. Eliff has been with us since early in 1926 and we shall miss him greatly; to his relations and many friends we extend our heartfelt sympathy.

If your Subscription is due, you will help us by remitting without further demand.

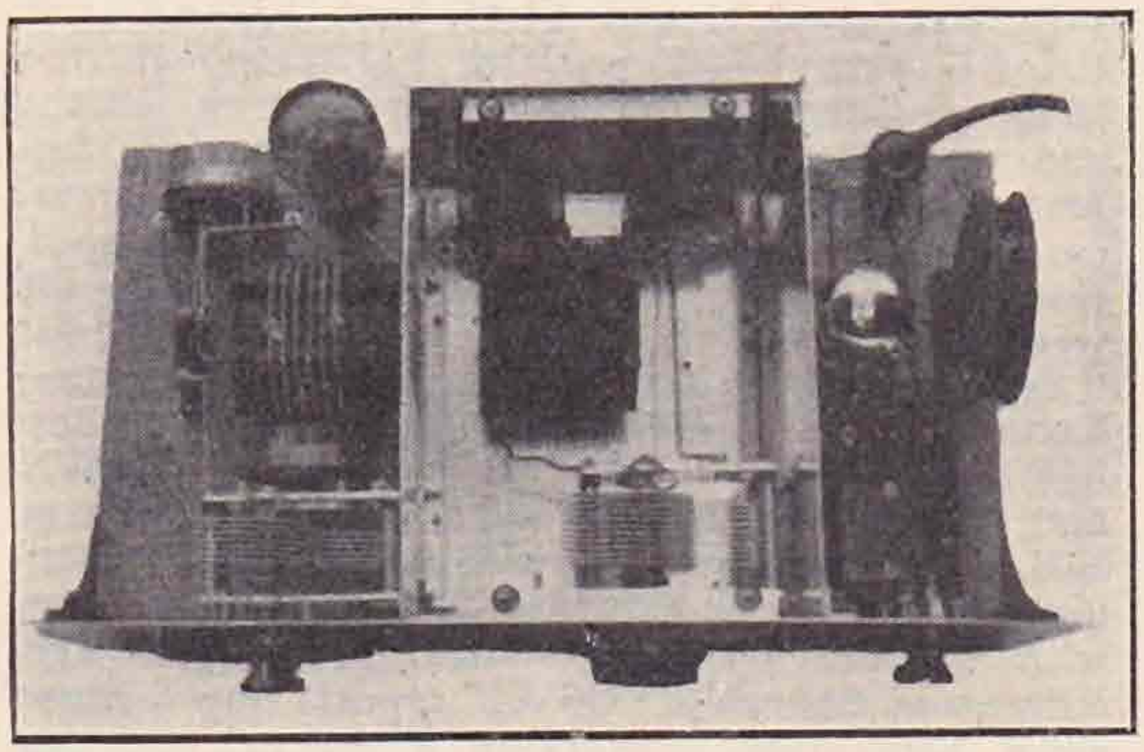
The Construction of an Accurate Frequency Meter.

By G. W. Thomas (G5YK).

(Concluded from previous issue.)

The third individual piece of apparatus is the absorption circuit. The coil consists of six turns, spaced 1 cm. apart, wound on a piece of ribbed Becol former, 3″ diameter; knotches may be cut in the ribs in the usual manner. The size of wire used must depend on individual circumstances. It is useless to use heavy wire if it cannot be put on tight. The writer's coil is wound with 18 S.W.G. wire and is wound on as tight as possible without resorting to a lathe. The ends of the coil are fastened to soldering tags fixed to the ebonite former in the manner previously described. Two .0003 mfd. Ormond fixed air-spaced condensers are shunted across the coil, which is tuned by a .0005 mfd. Cyldon variable condenser. (Two fixed condensers are used in parallel, as it was not possible to obtain one of a larger size.)

For those having access to a good workshop a tip may be given for winding these coils. To hold the turns as firm as possible and prevent movement, it was suggested that the covered wire be run through hot wax first. This also has the advantage of holding the turns doubly firm, as when the wire cools it will contract and so grip tighter on to the former. The wire for the absorption coil could well be run through a Bunsen burner just before it is wound on to the former; the wire will then melt its way into the ribs and on cooling will become very tight indeed. With care this method could also be used when winding the grid coil for the oscillator.



The centre, totally enclosed, partition contains the absorption circuit. On the right of this, *i.e.* on the baseboard measuring $4\frac{1}{2}'' \times 10''$, are mounted the components for the crystal oscillator. The oscillator is mounted on the left of the absorption circuit and utilises the $6\frac{1}{2}'' \times 10''$ baseboard space.

The absorption coil must be loosely coupled to the oscillator coil, and this is done by cutting a window in the aluminium forming the left side of the centre box, the two coils in question being spaced either side of this window with their axes in line. It is not desirable to allow the two coils to be too close to the window for obvious reasons, and as it is left to the constructor to decide upon this layout the exact size of the window cannot be given. An opening cut up from the bottom 4″ high and $2\frac{1}{2}''$ wide has been found satisfactory: this actually leaves a window of only $3\frac{1}{2}'' \times 2\frac{1}{2}''$ when allowance has been made for the angle strip along the base. If the coupling between the two coils proves to be too tight one of them can be staggered slightly. On listening on the oscillator to the beat note produced from the crystal and adjusting to zero beat, the coupling between the two coils needs to be just sufficient to give two audible peaks with a silent point between them when the frequency of the absorption circuit passes across that of the oscillator. The window may appear to be larger than should be necessary, but it should be remembered that no lines of force from the oscillator would pass through a small hole, even if set along the axis of the coil, as there could be no return path. It was found that if the lid was taken off the centre partition, a very small window would suffice. An experimental absorption circuit wired up carelessly with thin wire and poor joints will produce very much less pull on the oscillator than will a low-loss circuit.

No mention has yet been made of the dial used on the absorption circuit. It has not been found necessary to use a slow motion one here, though such a dial would undoubtedly be an advantage if a suitable one could be obtained. It is, however, possible to obtain very accurate adjustments on this condenser, and accordingly the dial should be one that can be read to better than a quarter of a degree. A standard 4″ dial is therefore used, fitted with a vernier scale so that it can be read to a tenth of a degree. The dial must, of course, be marked at every degree, and the markings must be fine cut. In order to prevent possible slip of the dial on the condenser shaft, a small depression is drilled on the shaft in a predetermined position: the grub screw of the dial fits into this depression and prevents any posible movement. The writer found a 4″ celluloid protractor would make an excellent and inexpensive vernier scale. The inner edge of the markings forming the degrees of such a protractor is about 3.6″ diameter, and the degrees at that point are of such a width that ten of these correspond to nine degrees on the outside edge of the dial. This combination, therefore, makes an excellent vernier. A portion of the circumference was cut off the protractor and was carefully trued up so that the ratio of nine to ten was accurate and that the inner rounded edge of the cut portion fitted close to the dial.

60 volts (Ripault) H.T. and 6 volts (Exide) L.T. are supplied to both valves. In the H.T. feed to the oscillator is connected a pair of phones for use when listening to the beat note. The three battery wires and two phone leads are fixed to a

(Continued on previous page, col. 2.)

Contact Bureau Notes.

By H. J. Powditch (G5VL).

A very quiet month, if we judge by reports to hand at CB. 28 M.C. has apparently given little or no results in the majority of cases, and it seems that the best we can do with this band for the present is to get ready for a revival of its powers by a general overhaul of gear. Yet there is always the golden chance of " first across " to the Antipodes waiting for one of us, and the lucky station may be you—if you keep at it. I am expecting to hear that G6LL has clicked with his daily schedule with PK4AZ. Our stations must look to their laurels for, as mentioned in the European notes last month, D4UAH has worked ZS5C, the first Europe-Africa contact for the band. This was on March 10 at 16.00 G.M.T., and at the African end signals were R8-R2, ZS5C being R7/R2 in Germany. I have also confirmation from D4UAH of the partial contact between YI.1LM and himself on March 24. Each station heard the other, but both seem to have faded out together. The power used was about 25 watts, and the aerial is stated as 100 metres long ! I am writing for confirmation of this last point ; if correctly stated it may be of interest to some of our stations who own enough of the earth to allow of such an erection.

Group 7A is, as you know, working on 56 M.C. or thereabouts. I want to get some more groups on this subject. The work is of a pioneer type and gives every scope to those who like to get away from the beaten track. G6TW has encountered some remarkable effects when working on the frequency ; I have only enough information to whet my appetite so far. There are two prizes offered already for the first 56 M.C. successes, and I am certain that members of 7A will put the information already gained at the disposal of other groups. For those building receivers, G6TW is putting out test calls, 14.00 to 14.30 B.S.T. on Saturdays and 11.00-11.30, 14.00-14.30, 18.30-19.0 B.S.T. on Sundays.

G2ZN is getting together a group for QRP work. His article in May number will explain the idea. Shortly, it is that, given efficiency, power may be reduced to extreme limits. He now wants a couple of B.R.S. stations to help with the work. Volunteers, please, to C.B. In passing, our friend GI6YW has, I understand, been doing wonders with about 4 watts since the strain of C.B. has fallen from his shoulders. I gather he is considering ordering a new lot of cards with " W.A.P. " (worked all planets) in intelligent anticipation.

G6BR promises help with a group for studying angular propagation in the autumn. Meanwhile I am looking for further help for a group on this subject. Anyone interested in aerials and propagation who can give the time during the summer will find plenty of work.

G5SY makes a suggestion which rather anticipates one of my own. 28 M.C. lately has completely diverged from the other bands and has thus emphasised the differences existing for good work on the various frequencies at various times of the year. Here is work for some BRS men who may be able to give us information from their observations concerning the extent, if any, to which the frequency bands run parallel for reception conditions—and why !

I would like to suggest to all Group Centres that they can get out a summary of the letter budgets giving us the more salient points that have been noted in these, and especially any points open to argument. Members have only a day or two in which to assimilate the letters, and if G.C.'s will do as suggested while the slack time is on, many points that have possibly been passed over at the time will be brought forward for further examination.

Group 1A.

G.C.G2NH does not send anything in. We trust he has entirely recovered, and will take action to get reports from his Group.

Group 1B.

G.C.G5SY draws attention to the lack of parallel working during the month between 14 M.C. and 28 M.C. This point is referred to above. G5ML has received YI2GQ and VT2KT, the only success for the Group. G6LL is staying with the Group, although very full up with other work. G5LU has a C.C. set nearly ready for action. BRSI36 does not report.

Group 1C.

Congrats to G.C.G6VP on his Group's reports. They come along sharp to time and show the Group is keen. G5YK's schedule with VU2KT failed on 14th, but at 14.30 and 14.45 both VU2KT and PK4AZ were heard working FI1E, though the latter was not heard. Also working on aerials, and concludes that the meter readings in Zep feeders should not coincide for maximum aerial current. He asks for other opinions. (My suggestion is that Zep feeders of the usual length do not work well on 28 M.C., and that G5YK is not " Zepping " under the above conditions of unequal feeds. G5VL.) G6VP has listened every day but only got out locally. Schedules with G6WN and W2TP who reports impossible conditions in U.S.A. He also wonders with G5SY at the divergence of 14 M.C. and 28 M.C. conditions, and agrees with the previous suggestion that unequal feed current is desirable. G6WN reports the " worst since September." Working a FD.CC. set for comparison against TPTG, but the former does not like their aerial. They find G6VP better on 28 M.C. than on 14 M.C. ! BRS15 logged 7 W's and G6VP. Has been trying out aerials for receiving and finds his 7.5 mtr. of ¼-in. tube the best. PAODU is in London and reporting to G.C. OK2YD's letter has not yet arrived.

Group 1D.

G.C.EI7C finds conditions bad and no DX. He anticipates no improvement until September ! G6GC drops out of this Group, and the other members promise some information for next month

on the question of aerials for 28 M.C. 2AAK has a notebook for extracts from the budgets, a good idea for all members. This Group will close down for August and September.

GROUP 1E.

G.C.G2OD has been heard in U.S.A. and by VU2KT. He was in contact with the latter at 15.00 G.M.T., but motor-car QRM is making all work very difficult. Will the other members of Group please report to G.C. for certain this month. Nothing has been heard of them lately.

GROUP 1F.

G.C.G2CX is another punctual reporter. His transformer is unfortunately requiring treatment after an accident. G5WK has a pentode, and reports it to be an improvement as regards " mush." G6HP rebuilding and holidays. BRS.25 heard VU2KT working D4UE, otherwise a blank. PAOCX reports dud conditions in Holland. " Man-made static " on receiver and frequency creep on transmitter worry him. While holiday-making in Denmark, G2CX has made several schedules, and also states that OZ7T is on most Sundays and wants to get in touch with G's.

GROUP 1G.

G.C.G2YU is rebuilding. G5PL also rebuilding transmitter, but has heard only locals on new receiver. G5GU and 2AUX do not report. G6BW will be on 28 M.C. next leave. R.M.A., Woolwich keeps him busy at present.

GROUP 1H.

I owe G.C.G600 an apology for demanding a report last month before the Group was in action. Sorry, OM. He has been keeping a schedule over 10 miles with G6UJ, but no luck. G6UJ has a 'bus park outside his station. 'Nuf said! An early morning schedule with G6OO is kept. C.B. offers its congrats. on a new G6UF junior and wonders if this accounts for the early rising. G6NG is in for 28 M.C. licence. G5DR away, and G6DR has only harmonics so far. BRS77 joins up.

Group 2A and 2B do not report. I suppose there is no skip these days with conditions as they are. Group 3A is also missing, but I cannot think they have no quartz with G2QY in the group.

GROUP 5A (3,500 K.C. FADING).

The licence question is still holding up G.C.G6FY and his Group.

GROUP 6A (SUNRISE EFFECTS).

G.C.G6VO notes two distinct peaks on signals, the first shortly after skip lifts, and the second an hour or so later. He finds that the first peak is sometimes a false life, signals appearing for a few minutes only. He puts the lift for 400 miles at 30 minutes to one hour, and for 200 miles at one to four hours after sunrise. A noticeable effect is a definite one-hour period before or after daylight for skip. G2MJ also notes that signals 400 miles north of him reach a peak just after the lift and then drop, and that 200-mile signals are slower to rise and have greater variations. G6QA finds nothing definite at sunrise. European stations are two hours, and G's four to five hours late, East Coast being the first to appear. He notes skip is longer drawing in after a sharp barometric drop, and incidentally the W's then come in well. G6AH on sick list.

GROUP 4A (BEST TIMES).

G.C.2AUH sends the forecast printed below.

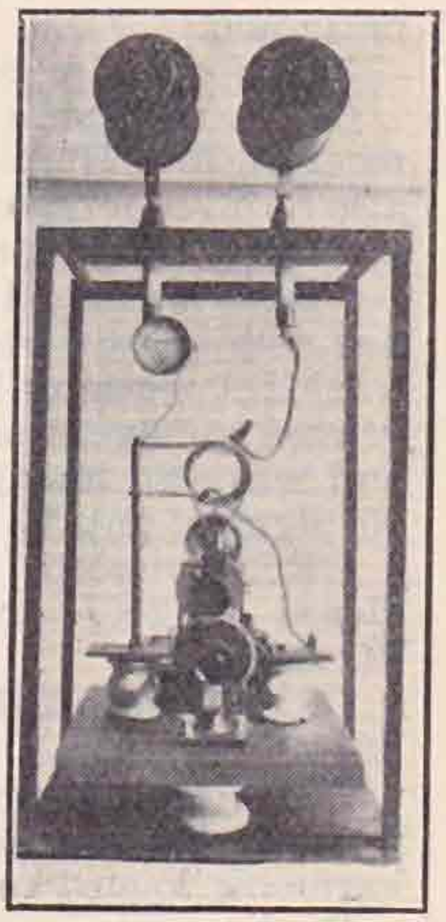
JUNE 20—JULY 20.

ALL G.M.T.

	14 M.C.	7 M.C.
Australasia ...	06.00—08.00	06.30 (scarce)
North America...	East. 16.00—06.00 West. 03.00—06.00 Including Alaska and Hawaii.	After 23.00 scarce.
South America...	21.00—24.00	22.00 onwards
Africa N. ...	16.00—19.00 10.00—11.00	
,, S. ...	17.00—19.30	
Asia	16.00—21.00	22.00 about

GROUP 7A (56 M.C. WORK).

G.C.BRS125 has his receiver working well on the band, and is standing by for G6TW's transmissions, but is worried by the possibility that he is within the skip zone of these. A C.C. set belonging to G2AO gives R5 harmonics of 21.1 metres at a distance of 50 yards from receiver. G6TW is running tests for G schedules, and looks for W schedules in near future. Please look out for his signals, especially at 11.00 to 11.30 B.S.T. on Sundays. G6DH will be on the air shortly, and G6HX has receiver ready, and is busy on transmitter. BRS107 and 2AAM are both building. G6LK is at the same pastime. A later report from G6DH says his transmitter is now OK, and he is suffering from shock of hearing harmonic of G5QV at a distance of half a mile. BRS125 also had hard luck lately. He received what may prove to be a genuine 56 M.C. test call from G6TW, but a fade out occurred on the call sign. Still, it all shows Group 7A is gradually getting towards definite results.



I have to thank G6VO for stamps. New members of C.B. are :—G2AXN, GI5OT, G5UF, G6LK, BRS186. And to finish these notes, may I take space to thank the members who have expressed their intention of supporting C.B. I deeply value your kind notes, OM's.

56 M.C. Stop Press news. The reception by BRS125 of G6TW on the afternoon of May 19 is confirmed. Splendid work by both, and another triumph for the stations who stick to it! I am sure all members of C.B. will join me in congratulations to their two fellow members and hope both

stations will let us have further details for next month. For the benefit of those who have not a call book handy, G6TW is at Nantwich and BRS125 at Burgess Hill; I make the distance to be roughly 170 miles.

Activities on 28 M.C.

Before commencing the notes for this month, we should like to voice a "moan."

We are aware that there are quite a number of stations operating on 28 M.C. who do not send us any reports. Now O.M's, this should not be! Is it that the call of 14 M.C. DX has proved too strong, or is it just apathy? We are afraid it is the latter.

We want to make these notes as complete a record of the month's 28 M.C. work as possible, and this can be done only if you *all* back us up with your reports.

We do not ask for any lengthy epistle—just a post card, giving particulars of stations heard or worked, is sufficient.

Granted that at this time of the year one's attention is often directed to other objects than radio, and that the conditions on 28 M.C. prevailing during the past month have been very discouraging, but there should have been more reports this month.

Now, O.M's, see to it next month and drop a few lines to either G6LL or G5YK, telling them what you **have** done, even if it is only logging WIK's harmonic.

Now for the reports.

G5ML has made contact with VU2KT again and received him R9 maximum, fading to R5. He has also received a report from ZT6K reporting reception of his signals on April 7.

BRS25 heard VU2KT on May 5 working D4UE, but fading was very bad. On May 12 he heard YI1MDZ working PK1JR, but this has since been proved to have been a harmonic of his 14 M.C. sigs., and was also heard by at least two other stations. No signs of any W stations.

BRS36 reports no improvement in conditions. Heard VU2KT and YI1MDZ. No signs of any W stations.

G5YK heard YI1MDZ, on May 12, at R4 QSA3, but nothing else.

G6LL has been running skeds with VE2AC and PK4AZ, but so far only negative results. WIK's harmonic logged several times, but very weak.

We have received a request from WICQL to insert a notice to 28 M.C. enthusiasts that he would like to arrange some 28 M.C. tests with a high-power (!) G station.

We are convinced that the above reports are not a true summary of all the 28 M.C. work done during the month, so roll up with your reports by June 25.

On May 26 at 13.00 G.M.T., BRS72 logged UOXY on 28 M.C., calling CQ ten pse QSL via RW. The strength was R7 fading to R2.

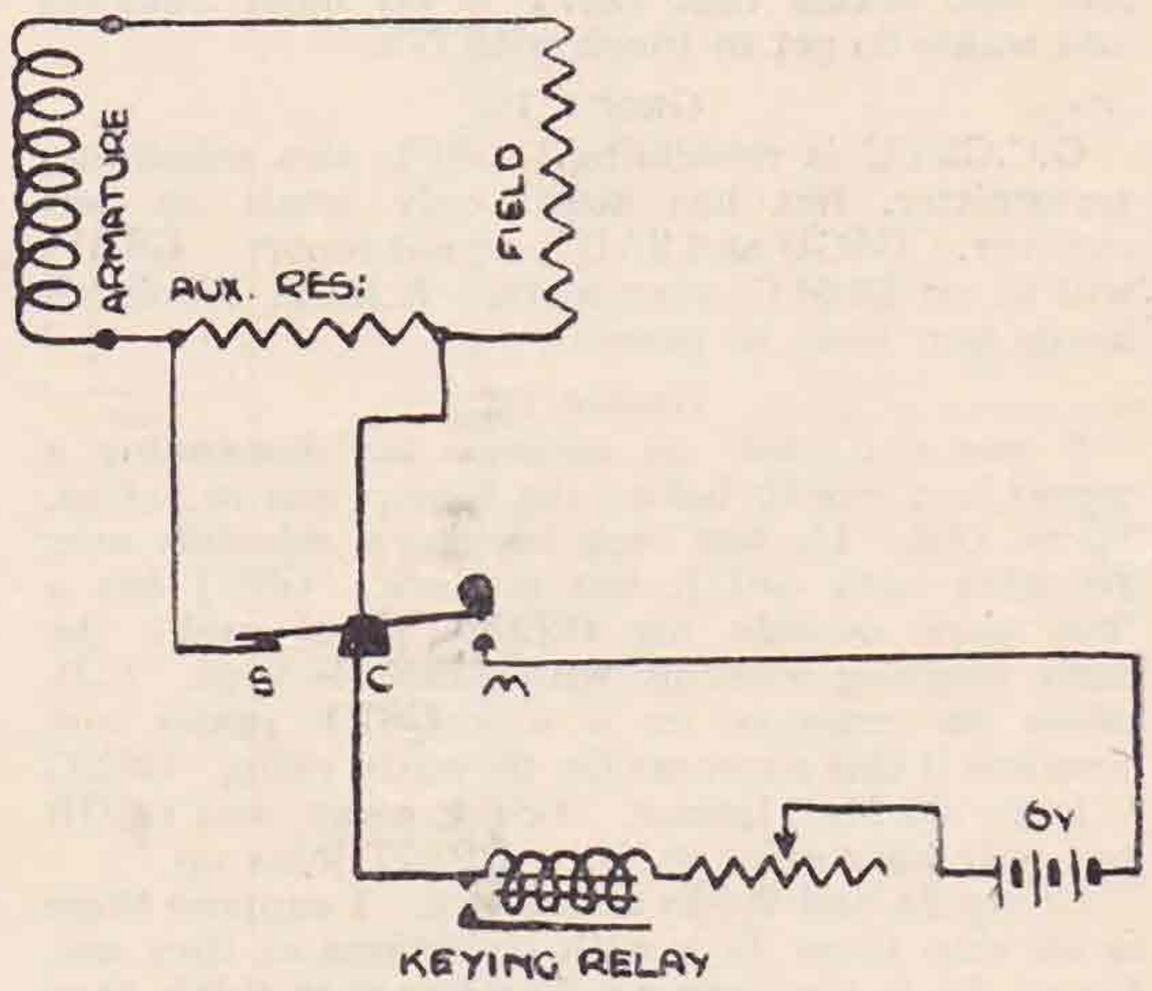
Thanks for that

Article, O.M.

A Note on Keying

By M. S. Killer.

The following wrinkle may prove useful to some of the gang who use motor-driven generators for their H.T. supply, and who are having trouble with their note due to the motor speed varying each time the generator takes its load. At this station the usual method of joining a high resistance equal to the load between positive H.T. and the spacing contact on the key proved unsatisfactory, so some other method was looked for. Ultimately, the idea described below was adopted and proved so successful that no longer do we have QSSS and T2 thrown at us each time a QSO is made. Like ours, most motors used for this type of work are shunt wound, but the scheme is equally applicable to compound wound machines. First of all one field lead is disconnected from one armature terminal and connected to a variable resistance the other side of which is joined to the armature in place of the field lead. Two leads are then taken



from this resistance to the operating table and joined to the "spacing" and "centre" key contacts respectively. As can be seen by the diagram, the motor runs at normal speed while the key rests on its "spacing" contact due to the auxiliary resistance being short-circuited, and as soon as the key is depressed the generator takes its load and tends to slow up the motor in the ordinary way. However, the key is now on its "marking" contact, which allows the auxiliary resistance to be cut into circuit, thereby increasing the total field resistance of the motor and speeding the latter up accordingly. It takes only a few minutes' trial now to determine the proper resistance required to hold the motor steady whether the load is on or off. In our case we found 80 ohms to be the right value, but a variation of five ohms either side did not seem to make much difference. It is advisable to work with as small a key gap as possible in order to reduce to a minimum the travel time required by the key lever to move from one contact to the other.

Constructing a Polariscope.

By N. W. Wright (2BFA).

It is just about 12 months since I wrote an article for this journal on "Pebbles," and a few paragraphs on an allied subject will, I hope, prove of equal interest.

One of the big drawbacks in using pebbles for crystal control is that they are cut at random, and unless one is lucky in one's choice much time can be wasted in grinding pebbles that are utterly useless for radio for the reason that it is impossible to tell without the aid of a polarised light whether the quartz is properly cut, *i.e.*, along the optical axis. With the aid of a simple instrument the proper pebbles can be picked out before grinding and the bad specimens become visible and can be discarded.

The construction is simplicity itself, as will be seen from the accompanying sketch. Sizes have been omitted as it is thought that each constructor would have his own ideas as to sizes, etc. The principle is based on the fact that light is polarised on being passed through glass at an angle of 32½° from the axis. Therefore, it was a matter of experiment to find the right number of glasses and manner of construction. Many different ways of construction were tried and various glasses employed, but readers will be well advised to adhere to the design given here, as it is the result of much experiment and over six months' use.

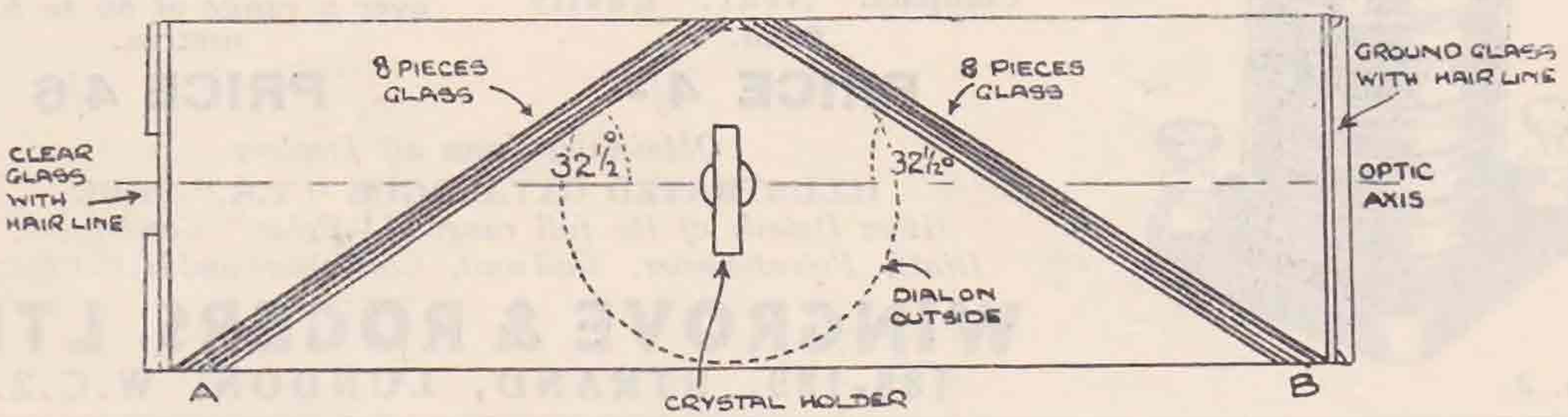
The glass should be perfectly clear and clean. Photographic plate-glass is ideal. Sixteen pieces of glass are required—eight on each side. The eye-piece is a piece of clear glass about 1in. diameter with a hair line both ways. The back screen is ground glass with a hair line both ways. This glass can cover the whole of the end. A holder for the crystal to be examined is arranged so that the centre falls in line with these two lines. To its spindle is fixed a 180° dial so that the optical axis can be accurately read off.

There is no bottom to the polariscope, as one must place the crystal in the way shown in the sketch to examine it. The inside should be painted drop black, and three-ply is convenient for the case.

Daylight or artificial light can be used, and the instrument should be held similar to a telescope. First hold the crystal by hand and rotate in various ways until colours appear. This gives a rough idea of the axis. Then fix in the holder and adjust until the strongest colours are visible. Read off the dial and you have the axis. In possessing such an instrument the constructor will have something equal in effect to a Nicol prism costing about £5. It has the additional advantage of being a great time saver.

It is obvious that a crsytal cut along the optical axis would give negative results unless it is of a sufficient thickness and its edges are polished to make it visible throughout its length. Therefore there is only the risk that Twins might be present in an otherwise perfect crystal. One of these instruments has been in use at 5MU for some months. The following is some of the information gained—it must be taken as general and not specific :—

A crystal that is cut within 10° to 15° of the axis will oscillate without reaction; 15° to 40° with reaction; over 40° no use for radio. But, just as this is written, I have heard of a British patent which uses crystal cut at something like 75° to the axis.



When examining any ground crystal that is not transparent a little thick oil spread thinly over the surface will make it transparent. Don't forget that when examining a lens that its uneven surfaces must be taken into account; therefore such reading is only approximate.

I trust that this effort may prove of use to "grinders." I am always pleased to hear of results and to help readers with their queries—if they will send a stamp when a reply is required.

Fama Semper Vivat.

The DE listener who did not ask for a "foto."

* * *

The slow morse reader who asked for a reduction in speed, and did not say, "Sri QRM OM."

* * *

The man who sends single until asked for double.

* * *

The fone merchant who once reduced power for a shorter distance contact.

* * *

The ship's S/W operator who kept a schedule.

* * *

The Russian station who promised a "foto"—and sent one.

* * *

The man who can read the above without a blush.

By B. P., of G——never you mind!

Stray.

ON4HL using 4 watts to a Mesny transmitter would be glad of reports from BRS stations. Please report direct if possible as expediency is particularly required. Address: H. Thomas, Boulevard des Martyrs 16, Gand, Nr. Ghent, Belgium.

Modulation on Crystal Control.

By L. A. LAFONE (G6ZA).

On changing over to crystal control some three months ago, the transmitter at G6ZA was entirely rebuilt, and no preparations were made for telephony working. When once the initial stages were safely passed, and the crystal had been persuaded to oscillate, the frequency doubler to double, and so on, our minds wandered once more to telephony. Up to this time, since 1924, we had always used choke control at G6ZA, but the modulator unit had been spirited away to act as an amplifier for an electric gramophone equipment, so that, having no other choke of sufficient size to pass the current taken, we thought of grid control as a possible alternative.

Now it seemed to us that if we could persuade the crystal oscillator to act as the source of modulated H.F. currents, then the frequency doubler would also act as an amplifier of the modulated output. So the secondary of the microphone transformer was wired between the grid choke and bias battery of the crystal oscillator (Fig. 1); we then started to test this out, and all went well the very first time, which was rather alarming, as generally this is too good to be true! We received reports of quality being as good as on the old choke control, and as we had always rather prided ourselves on quality, this was good enough.

However, there are one or two snags lying about, as we discovered fairly quickly; the first is that unless the oscillator is working at its maximum efficiency the modulation is very bad, and the speech quality is rotten; at G6ZA the oscillator plate condenser is gradually increased from the minimum position and the valve comes into oscillation quite quietly, the anode current meanwhile rising, as the capacity is increased; however the anode current suddenly falls away until it is less than the current taken if the valve is not oscillating; after a very sharply defined minimum position it then rises very quickly and finally goes out of oscillation suddenly. The only position at which the output is modulated correctly is at the minimum anode current position, and this must be carefully obtained if good results are required.

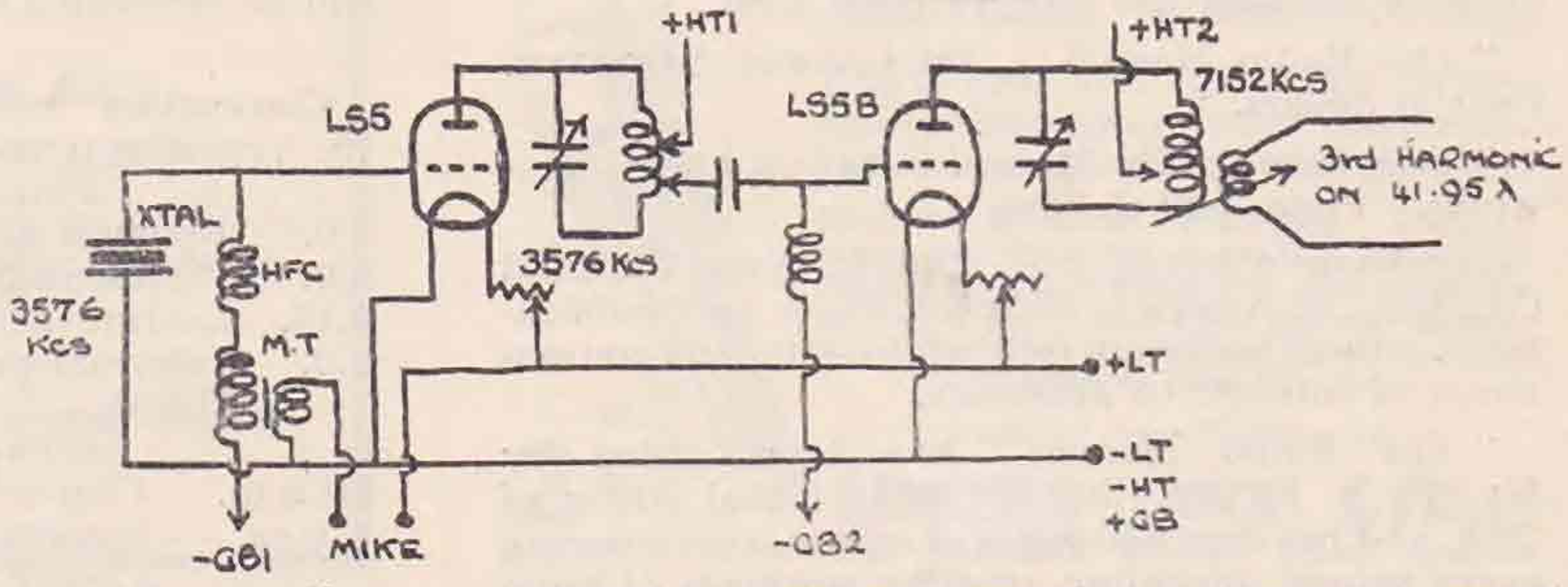
The second snag is that if the speaker is too close to the microphone the fluctuations set up in the grid circuit are sufficient to send the valve out of oscillation; but as the percentage of modulation may be up to 70 per cent. before this happens, it is not really a very great disadvantage if good quality is desired. Don't be worried if the feed milliammeter to the oscillator varies considerably during speech as it does not seem to indicate any audible distortion.

This article is written because it is an easy method of modulating a low-power crystal transmitter without any extra apparatus except a microphone and transformer; also the system does not seem to be widely used amongst amateur transmitters; and last, but by no means least, the frequency is kept dead steady by the crystal and no frequency modulation is introduced, thus bringing interference on an already crowded band to the minimum possible.

If any other snags are discovered by stations trying this out, we shall be glad to hear from them, and if possible to help them. Our address is correctly given in all the usual call books, so drop us a line or give us a call if you hear us on the ether.

Just as a matter of interest to those who are calibrating their receivers, G6ZA is working on 7,152 kilocycles or 41.95 metres.

[It is wrong to say the frequency is "kept dead steady by the crystal." The slightest alteration to any of the constants of a crystal oscillator will change the frequency, though possibly not much. For perfect transmission a crystal oscillator should be followed by a "separator," which must not be keyed or modulated, in order that the load on the crystal valve shall be kept dead constant.—ED.]



Calibration Service.

Calibration waves will be sent from G5YK on June 23 and July 28 as follows:—

13.00 G.M.T. 7,050 K.C. (nominal).

13.05 G.M.T. 7,250 K.C. (nominal).

A similar schedule will be transmitted on July 14, commencing at 09.00 G.M.T. The call will be R.S.G.B. DE G5YK, followed by a two-minute dash and the frequency used. The accuracy may be taken as better than plus or minus two kilocycles.

W.A.C.

Requests for information have recently been received concerning the W.A.C. certificate. The following is contained in a reply from the American Radio Relay League. A W.A.C. certificate is issued when a member (of A.R.R.L.) submits QSL cards confirming two-way communication with the six continents:—North America, South America, Europe, Africa, Asia and Oceania. Only one card from each continent is necessary. The Philippines, Java, Sumatra, Borneo, New Guinea, Australia, New Zealand and Hawaii all count as Oceania for W.A.C. purposes. Nobody is entitled to call himself a member of the W.A.C. unless he is appointed as such by the A.R.R.L.

Book Reviews.

RADIO RESEARCH SPECIAL REPORT, No. 8. Price 1s., from H.M. Stationery Office or through any bookseller.

Here's a real chance for the amateur. What the professionals want is some form of meter or test which can be applied to a transmitter to determine the amount of interference (outside its assigned waveband) that it is going to cause. The pamphlet analyses the causes of interference, and gives the requirements of an "interference meter." Apparently existing types are practically useless, and a real brain-wave is wanted. Every amateur interested in measuring interference as a preliminary to reducing it should read this account of the work that has already been done.

"The Radio Manual." By GEORGE STERLING. Price 6 dollars.

"Television." By Messrs. SHELDON and GRISEWOOD. Price 3·50 dollars.

We have received from the D. Van Vostrand Co., Inc., of America, copies of these two publications. Both books are fully up to date, and contain much of interest to amateurs.

"The Radio Manual" has been edited by MR. R. S. KRUSE, the former technical editor of QST, and has over 600 pages of information covering every sphere (including amateur working) of radio communication.

"Television" is the first American book published to deal exclusively with this new science, and its 200 pages are filled with numerous photographs and diagrams. Detailed reviews will appear in our next issue.

Amateur Regulations in America.

To the following extract from Amateur Regulations in America we are indebted to Mr. A. S. Williamson, BRS26.

American amateurs are allowed to make use of the whole of all the bands made available for amateur work by the Washington Convention; they are also given the use of a band from 401,000 K.C. to 400,000 K.C. They may transmit at all times unless interference is caused to other Radio services, when quiet hours must be observed from 8 p.m. to 10.30 p.m. local time and during the transmission of local church services on Sundays. Telephony is permitted in the 56,000, 3,500 and 1,715 K.C. bands only; and television in the following bands: 56,000 K.C. and 1,715 K.C.

Amateur stations must use loose coupled aerial circuits or devices that will produce equivalent effects to minimise key impacts, harmonics and plate supply modulations. Conductive coupling, even though loose, will not be permitted, but this restriction shall not apply to the employment of transmission line feeder systems to Hertzian antennae.

The remaining regulations are similar to those laid down at Washington for general observance by amateurs.

Social Notes.

By J. CLARRICOATS (G6CL).

Details are now to hand in connection with the special summer outing to the Rugby Station. London members will be enabled to make the journey at an inclusive charge of 12s. 6d., which will include a char-a-banc trip from Rugby to Hillmorton. In order to obtain these specially reduced fares we must guarantee 25 seats. This should be an easy matter, and therefore we ask all those who propose to avail themselves of this unique opportunity of visiting the Rugby Station to write in AT ONCE to headquarters.

The date is July 20, and the time of the train will be about 1 p.m. from Euston. Exact details will be forwarded to all persons requiring tickets.

* * *

Convention arrangements are proceeding, and the provisional programme is as follows:—

FRIDAY, SEPTEMBER 27.

5.0. Reunion and tea.
6.0. Presidential greetings.
6.15. Lecture and demonstration.
8.0. Informal gathering at Lyons' Strand Corner House.

SATURDAY, SEPTEMBER 28.

10 a.m. Char-a-banc party to a place of interest.
1 p.m. Informal gathering at Lyons' Strand Corner House.
1.50 p.m. Photograph at Institution of Electrical Engineers.
2.0 p.m. Business meeting.
4.30 p.m. Tea at Institute of Electrical Engineers.
6.30 p.m. Fourth Convention dinner at Pinoli's Restaurant, Wardour Street. Price 5s.

Intending visitors to London are requested to advise me as early as possible if they require accommodation.

* * *

A feature of the R.S.G.B. stand at Olympia will be station photographs. Copies will be welcomed from all members. These should be sent carefully packed to headquarters, with a note advising us whether the photograph is to be returned.

* * *

Suggestions for improving the social side of the Society are welcomed.

* * *

On May 25 an informal conventionette was held at Manchester at which BRS90, BRS152, BRS245, 2AJC and 2AUH were present. They aim at holding another in June, provisionally fixed for the last Saturday. They meet in the afternoon and arrange the programme for the day on the spot. If any members in that part of the country would like to join them at their next meeting would they please get into touch with one of the above? Communications may be sent to BRS245 at "The Willows," Buxton, Derbyshire.

Reports Wanted.

G5RV wants reports on strength of marker and spacer wave—any distance on 7MC.

Also LU2FI would like to QSO or get in touch with some of the G stations.

GET THAT "BULLETIN" FEELING AND TELL US ABOUT IT.

CQ G de "s.s. Krassin."

The senior wireless officer of the Soviet ice-breaker *Krassin*, Jean G. Echstein, wishes all English amateurs who heard the S.W. transmitters

xeuKS (s.s. *Krassin*),
xeu43RA (s.s. *Krassin*),
xeuML (s.s. *Malygine*),

during the days of the Nobile expedition to send reports via SKW, Moscow.

The transmitter xeuKS was an ordinary Hartley with an input of 250 watts. It served chiefly for traffic with other ships of the expedition and with Moscow, and could be heard at great strength all over Europe on about 38 metres; xeu43RA was a smaller amateur station belonging to the wireless officer and the well-known amateur J. Eckstein (now RK3AG) with which practically only PSE QSL via SKW Moscow was sent from Spitzbergen and Francis Joseph Land, since almost the whole available time had to be spent in working the big long wave station (2.5 K.W.). Wavelength of xeu43RA was about 44 to 46 metres.

Mr. Eckstein asks all G station and BRS men to be good enough to send reports via SKW Moscow, or direct to J. G. Eckstein, 1st Officer fm S.S. *Krassin*, Detskoe, Selo, Licei, U.S.S.R. English amateurs are also requested to listen for the ice-breakers at present in commission. These are :—

Truvor, xeuRCZ, at the present in Germany.
Lenin, xeuRDA, ditto Sweden.

The *Lenin* uses a 500 cycle machine and is easily audible on 43 metres.

Membership.

NEW MEMBERS.

J. C. Martin (G6MC), 15, Avondale Road, Coventry.
H. Fogedgaard, Skroebelev, Langeland, Denmark.
C. W. Parton (ZL3CP), 69, Huckthorne Road, Cashmere Hills, Wellington, N.Z.
C. W. Liversidge, R.A.F., Sulaimania, Iraq.
J. W. Trolan (W1CQL), 237, Ledyard Street, New London, Conn.
C. H. Mudge, 163, North Road, Bishopston, Bristol.
J. H. Blakeley (G6LY), 5, Hazel Grove, Blackpool.
E. Kuykendall (W5AXC), Needville, Fort Bend, Co. Texas.
Jaap de Heer (UOJH), 1, Rudolfsplatz, 13a, Vienna, Austria.
T. W. Gregson, "Graziella," Mount Boone, Dartmouth.
G. O. Marsh, 26, The Avenue, London, S.E.19.
J. Davies (G2OA), 13, Exeter Road, Wallasey, Ches.
W. H. Heathcote (ZT6X), P.O. Box 1167, Johannesburg.

BRS NUMBERS ISSUED.

254.—C. H. Mudge.
255.—T. W. Gregson.

BRS NUMBERS RELINQUISHED.

247.—J. R. Beeton.
112 (now 2BDG).—J. Lees.
170 (now G5JF).—G. Webster.

QSL Section.

By A. Hinderlich, G2QY.

It is with the very greatest regret that, owing to pressure of business, I must relinquish this job. In spite of the numerous moans that I have allowed to appear in print, the work has been extremely pleasurable, and I would have liked to continue had it been possible.

Now for a terrible confession. When I took over I obtained from various sources a list of all the QSL agencies that had been published in the Bulletin and various other publications. I wrote to nearly all of them, telling them which cards we accepted, and asking them to confirm. To my horror, only half of those addresses were correct. I held up most of the cards for other countries till they jibbed, or until I could find out. Now 95 per cent. of the cards received here for abroad are going to real live agencies in their respective countries, and as we in turn receive batches of cards from them there is no doubt that the situation has improved a lot.

But there are still countries from which no reply has been obtained. Usually I split the outgoing batch, and sent them to the fellows for whom most of the cards are intended, and begged them to forward the remaining few cards, and let me know their proper QSL address. In the case of the following countries no reply whatever has been received. Don't blame me too much—they are very distant, and there has only been time for a couple of attempts. Here is the list of countries, whose QSL Bureau has not communicated with us during the last six months: Australia, India, Kenya, Brazil, Argentina, Chile, Cuba, New Zealand, Switzerland, Uruguay. Should you work any of those countries, would you help my successor by trying to find out their QSL agent? The majority of cards for those countries are probably getting to their destination, but we would like to be sure. By the way, Canada and the U.S.A. do not send cards via R.S.G.B., but direct to the G station, which explains why so very few arrive in your own envelopes.

I have recommended my successor not to give you a count of envelopes remaining, as it takes too long, but to continue with the warnings that one or no envelopes remain.

Additional Notes.

By J. D. Chisholm (G2CX).

I am sure we all join in thanking Mr. Hinderlich for the immense amount of work he has put in (with the able assistance of Mrs. G2QY) on the QSL section.

Mr. Hinderlich has succeeded in making our QSL service one of the finest in the world, and from the chaos that previously existed he has produced a system that insures the quickest and most efficient working. As one who has had the privilege of working with G2QY on occasions, I have had, perhaps, more opportunity of watching the development, but I am sure that all of you who have been using the section will have noticed the difference.

I have been asked to carry on the duties of running

WE WANT MORE TECHNICAL ARTICLES.

the section, but the address for all communications and cards will be :—

C/o Radio Society of Great Britain, inc.,
53, Victoria Street, S.W.1.

In conclusion I should like to thank Mr. Bradley (G2AX) for his kind offer of practical help, and to endorse G2QY's suggestion with regard to the QSL agencies, of which little is known. Here is an opportunity for some of our DX men to do a service of real value for the Society.

We print below a list of calls for whom we have cards but no envelopes at the section. These cards will be put in the " unclaimed " file at the beginning of July if they are not claimed before June 30, and will be disposed of later at the discretion of Council.

2.—aak, agt, aqg, ayn, ayx, aun —— ao, ay, cc, cs, gz, iv, na, nh, nu, nz, od, og, oj, oq, pp, qv, ra, rg, to, tt, vg, wn, zv.

5.—aa, ad, as, bl, bq, cm, gq, gs, gy, ha, hg, ho, jy, is, mg, nc, ra, ro, sk, sr, un, vk, wg, wq, xn, xq, yz.

6.—ay, br, bz, da, dp, fa, fh, fj, gl, hf, hj, hw, ia, li, ml, mt, nh, ql, rk, rl, rm, sj, sn, sv, sw, td, tn, tq, tw, ty, uj, uo, uu, ux, uy, vy, vz, wc, wk, wo, xd, yb, ya, yg, ys, yt, yv, yz.

BRS.—31, 38, 92, 102, 115, 116, 127, 144, 162, 209.

QRA Section.

By M. W. Pilpel G6PP.

I am sure that we are all very glad to hear that the Dutch Government has at last decided to grant transmitting licences to private persons, and that our friends of the clan of " PA " will shortly be " pirates " no longer. The first permit, under the call-sign PA0AA, was issued to the N.V.V.R. for use at their stand at the Radio Exhibition in Scheveningen, and only very few weeks can elapse before all the Dutchmen are licensed. As soon as a list of QRA's comes to hand I shall get it into print. We can only hope that the German Government will follow the example of that of Holland, so that all the " D's " will get their long-awaited " tickets " too.

New Prefixes.

CP	Bolivia	RX	Panama Canal Zone.
VP	Ceylon		

New QRA's.

G2CX.—J. D. Chisholm, 58, Lanercost Road, Tulse Hill, London, S.W.2.

G2SA.—H. A. Savage, 53, Station Road, Burnham-on-Crouch, Essex.

G5PJ.—C. G. Phillips, " Trewyth," Kewferry Hill, Northwood, Middlesex.

G5UX.—G. Hume, 53,Eccles Road, London, S.W.11.

G5XD.—B. C. Christian, 41, Victoria Road, Douglas, I.O.M.

G6FH.—A. A. Fayers, 1, Dane Road, Southall, Middlesex.

2AJC.—D. J. Beattie, 14, Rosehill Mount, Manchester Road, Burnley.

The following are cancelled :—2ARV, 2AVR.

QRA's Wanted.

LA1G, the President of N.R.R.L., is anxious to trace the whereabouts of a station using the call LA3K. Any information to LA1G, Voksenlis Ner, Oslo.

G5SR, B2D.

Notes and News from the British Isles.

DISTRICT No. 3.

Representative: Joseph Noden (G6TW), Coppice Road, Willaston, Nantwich.

There has not been a great deal doing in this area, but the report sent in by BRS234 is a wonderful one; it is very lengthy, and I cannot do justice to it in these notes. It's a STAR station.

Cheshire.

G5BR reports working several DX countries on 14 M.C., using 10 to 12 watts of M.O.P.A. method of C.C. frequency doubling from 3.5 M.C. He is still trying to work South America.

2AZN about to start on crystal control. He has heard some good 14 M.C. DX reception—K1, AU1, U1, PK, CE, etc.

BRS126.—Not a great deal done this month, but has applied for a full licence.

BRS90 having an interesting time listening to DX on 14 M.C., also helping with DX chart for C.B.

BRS186 has found conditions on the 14 M.C. O.K., but QRN bad on 7 M.C. A new aerial has been erected, and FQ and FA new countries have been heard.

BRS152 has been on holidays, but has now got a short wave portable working.

BRS234 sends in a very wonderful report. All Continents have been heard on 7, 9 and 14 M.C. Some dozens of station calls have been sent in with times of working. (We regret we cannot publish the full report, but congratulate BRS234 on his work.—Ed.)

G6TW.—The usual 'phone work on 7 M.C. has been done; also, I am pleased to report that my 56 M.C. signals have been picked up, and tests are still going on, so as to find the most suitable aerial for this wave. See C.B. notes.

Monmouthshire.

Reports to: Harold Harding (G2HH), Treve Cottage, Ebbw Vale, Mon.

BRS237 has been doing some S.W. DX and has made quite a large bag this month.

BRS239 has been in Scotland and paid a visit to BRS228 in Edinburgh.

G2HH only worked once this month, and QSO with G2BG after a long silence. The occasion was worthy of note, for it was also with Mrs. 2BG, who is, I understand, an F.B. op.

DISTRICT No. 4.

Representative: E. R. Martin (G6MN), Castlemount, Worksop, Notts.

BRS225 reports that conditions were very bad this month on 7 M.C. He will be at Yarmouth from July 6-20, and would like to meet hams in that district, if they will drop him a card.

BRS245 sends in a very fine reception list for first report and states that he would like to see the area notes kept up.

G5BD reports first four stations worked this month in four different Continents. Finds the new Zepp. aerial good for DX. Canada, W5, W9 and Iraq worked for first time.

G5CY has been very busy and has feeder troubles. He has worked W on 14 M.C.

G6LN has been off the air for most of the month, but had a few QSO's with E. Europe.

G6MN now working again with CO, FD, PA on 7098.2 K.C./S.; hopes to be on C.C. on the 14 M.C. band shortly.

DISTRICT No. 5.

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

Staffordshire.

Sub-Representative: G5UW.

G6SO has been carrying out tests with current-fed Hertz and finds results compare favourably with a Zepp. aerial.

G5UW has managed to smash up his H.T. gear; previous to this he worked with S. America.

Warwickshire.

Sub-Representative: G6CC.

It is regretted that only two active stations have reported. Others are known to be working, but have failed to send in anything. This is no encouragement to brother amateurs.

G5ML.—DX on 14 M.C. has been quite good. Most parts of S. America have been regularly worked, and an unconfirmed QSO between G and Bolivia (CP1AA) reported R7 and R8. Reports from W 1, 2, 3, 4, 5, 6, 8, 9, ZS, VK, ZL, K4 and K7GM (Alaska); 28 M.C. improved; a report from FOA4M and another QSO with VU2KT. Other signals have been heard in this band.

G6CI.—A new valve, an American ux210, is being tested out in a T.P.T.G. circuit in 14 M.C. band. QSO's have been mainly with South America, and the following new ones added:—YI2GQ (R8 here), CX1NA, CX1OA (R8 here), PY1CM, PY2AD, PY2BC, LU2CA, LU3DE, LU9DT, VE1BR, and Madeira Islands.

G6CC has been inactive and will be quiet until middle of July. On 20-metre band harmonics have been heard of stations working on 40-metre band, but not received here on that band.

DISTRICT No. 6.

Representative: G. W. Thomas (G5YK), 169, Hills Road, Cambridge.

The reports received this month show very little interest in radio generally: I can only presume it is the natural outcome of more summery weather, but I do ask all in this district, when you read these notes, to stop two minutes and drop me a card so that we can have a better show next month.

G2XV and G5YX have furnished no report and little has been heard of them on the air.

G6CR has had good contacts with South America and has a very excellent S.G. receiver.

G5YK has worked VE5AW on 14,000 K.C., reported R6, but nothing else of interest; has logged YI1MDZ on 28,000 K.C.

G2HJ has nearly finished a new monitor frequency meter, but the imminence of exams has put a stop to radio.

2AAK and BRS69 have found fine weather too attractive. What about the rest of Norfolk—G6JV, G5UP, etc.?

BRS77 has nothing to report this month, having blown his DEQ detector valve.

Essex.

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

BRS231 (brother of G6DH) sends in his first report; he has been busy with a receiver on all waves and sends in an excellent log of countries heard.

2BVR has been busy on ultra high frequencies and finds the Schnell receiver the best of all. No signals, only cars.

BRS233 has built a portable high frequency receiver to take away on his holiday; has had a visit from BRS191 and 2ABK.

BRS191 has rebuilt his receiver with gratifying results, and has done the donkey work on a hand generator at G5QK.

2ABK has been on the air testing G5QK. They have worked five counties on 'phone on 1750 K.C., and although a hand generator is used, there appears to be no hum in the carrier.

G6QO has shifted his gear from the house to the garage, and although only on dry batteries, is "quite up to standard."

G2NU, G5QV, G5OK, G5SN, G6WI, and others, are all using 1750 K.C., but there are no reports. Please, OM's!

DISTRICT No. 7.

Representative: H. C. Page, Newgardens Farm, Teynham, Kent.

As usual there are far fewer reports than the size of the district warrants. Will some of you just take a look at last month's Editorial.

I would very much like to have a "Conventionette" in this district. Tunbridge Wells has been suggested as a fairly central spot for most of us. Please will anyone interested write to me on the subject. A postcard will do, and it only costs a penny, so let's have a good number.

I am pleased to announce that G5AQ is on the air again, and is the star station this month. Now for the reports.

Surrey.

By G2VV.

BRS188 sends a report for the first time, but not, we hope, the last. He also sends a list of countries heard, as long as my arm. (I wish I could work all the countries you have heard, OM.—G6PA.) He reports nothing doing on the 28 M.C. band.

G5CM is still doing well with four watts on the 14 M.C. band. Has worked 11 countries in three week-ends. Best DX EU2DU, who reported him R5. Report from OK3SK giving him R8. Transmitter here is a T.P.T.G. with a V.F. Hertz aerial.

G6GS has got his R.A.C. working satisfactorily.

G5WP held another miniature "Conventionette" during the month. Those present were G6GZ, G5IR and G6NK. (Why have I no reports from these stations, OM's? Something wrong here.—G6PA).

G6LK is still working local W's, but is only on the air at week-ends now. He has been experimenting with various types of aerials.

G2VV is still trying to work DX on the 7 M.C. band, but the best so far has been OK2SI, who reported him R5, when using 6 watts. With same input and "haywire" aerial and transmitter has worked several stations on the 14 M.C. band. First test raised SM5ZE. Later he worked XOZ7XU, but the best was SU8RS, who reported R3-R4.

G5WP.—A period of considerable activity on the 7 M.C. band resulted in a fair amount of DX, a QSA5 report from VK and a burnt-out rectifier bank! QRT for a fortnight while rebuilding, but now resumed, using a chemical rectifier—bulky, but cheap! 28 M.C. dead here; only station heard G6VP (QSA4).

Sussex.

By G5UY.

G5AQ is now out of hospital, and has been very active lately. He has worked PK, PY, SU, FK, YI, FA, VE, and half a dozen W's (Districts 1, 8 and 2), thus qualifying for his W.A.C. The maximum input here is seven watts, but mostly five watts are used. He has only been active eight weeks, and has worked 145 stations in 25 different countries. He has been trying telephony on the 7 M.C. band.

BRS125 has had a lot of visitors, all of whom have taken a great interest in his 56 M.C. receiver. He has been keeping schedules with G6PA (2 M.C. band) and FK5CR (14 M.C. band). He is very busy with Group 7A of C.B. Is running a week-end schedule with G6TW on 56 M.C., but has had no luck so far. He has applied for his full transmitting licence, and is anxiously awaiting a reply from the powers that be.

G5UY has been working a fair amount, and has been experimenting with RF chokes. Has erected a new aerial 22 ft. high and 65ft. long. This is connected direct to the plate coil through a series variable condenser. Is getting good reports from Europe, but has not had any DX on 7 M.C. so far. 14 M.C. has been tried quite a lot at various times, but so far not with success. He hopes to put his aerial 10 ft. higher soon.

Kent.

By G6PA.

G6PA has got the Kent report all to himself this month, and I suppose he ought to be grateful, but I am afraid he is not. There have been several alterations here. The Ultraudion used on the 14 M.C. band has been superseded by a T.P.T.G. The results have been better, especially as this transmitter is crystal, governed by means of a 4.66 M.C. crystal. The aerial here has been raised with a corresponding increase in signal strength. Work is shortly to be started on a separate 2 M.C. band transmitter, thus enabling the 7 M.C. transmitter to be made more efficient. All the transmitters will be crystal governed. A surprise visit was paid the station by G2LZ, who was very amused at the telephony arrangements. DX here has been practically nil. Only the usual local W's have been worked, besides one or two Canadians.

G5BD sends in his best report to date. New Zeppelin aerial been up a month and DX on 14 M.C. improved remarkably. W.A.C. at last with PY1AW, LU2FI, ZL2BG, PK4AZ. W5 raised for first time.

G5CY.—New Zeppelin here, mostly working on 7 M.C. with improved results. Asia worked on 14 M.C.

DISTRICT No. 9.

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

The Conventionette is taking place at Bristol to-morrow, and I expect to collect many of the reports there. These, and an account of the Conventionette, will therefore appear in the next issue.

Reports should reach me on 23rd of each month and should apply to the month 22nd to 22nd, otherwise it takes two months to appear in print.

G5FS is now on 1.7, 7, and 14 M.C. bands, all C.C., and is the man on the spot, and has made most efficient arrangements for the Conventionette.

G5BK is on 1.7 M.C. on speech on Sundays.

G6UG is on 1.7 M.C. on speech on Sundays.

G6RB is on 7 and 14 M.C. and has been co-operating with 2AWV. Has been doing interesting experiments with half and full-wave aerials. Found good DX on 14 M.C. all April, best results with full wave antenna to S. America and half-wave system to U.S.A. with R6 results.

G6RR has been on the air for six months and has been using low power on 7 and 14 M.C., using T.P.T.G. Now QRT until June 23.

G6XB is C.C. on 7 and 14 M.C., and hopes to be on 28 M.C. soon. Is getting excellent reports, and continuing investigation of C.C. work.

G2YX is on 1.7 M.C. on speech on Sundays, and is building a new C.C. outfit.

G2OP has been on 1.7 M.C. on Sundays and 7 M.C. during early mornings. After the Conventionette will be QRT until the end of June on account of holidays.

BRS122 is working with BRS145 in study of fading. Will be glad to co-operate with a transmitter wishing carefully complied reports.

BRS212 is now building a receiver for 56 M.C. Reports hearing 27 countries, excluding Europe, during the month.

BRS242 has logged W7, W6, VE5 and four other American countries during the month.

DISTRICT No. 10.

Representative: J. CLARRICOATS, (G6CL), "Ciel," Hartland Road, N.11.

G6SC has given up C.C. on all bands as he has no room for three or four F.D. valves, and he has had no luck with harmonic control. He is keeping early morning schedules on 1.75 M.C. He has tested a Phillips TB 04/10 and found it satisfactory. He cannot get a good note on 14 M.C. without obtaining abnormally high feed currents. He is awaiting a 4,000 r.p.m. motor to drive his generator in order to increase his power up to 50 watts. He has heard only commercials on 28 M.C. this month. The "BULL," in his opinion, improves each month.

G6OT sends a report at last. He has been active on 1.75 M.C. with musical transmissions (especially piano). Further microphone development work is in hand, and a new 14 M.C. set is under construction.

G6PP has for the first time on 14 M.C. worked VE and W. A miniature Conventionette was held on May 12, when D4CL, SM4ZF, G2CB, G2AX and the D.R. attempted to erect a new mast but couldn't!!

G5QF is still out of action—and spends DX hours gardening.

G6UN has had many interesting contacts on 14 M.C., including an R7 'phone report from Iraq. Several W stations have been worked recently.

G2AX continues his DX work. Jamaica has been worked several times, and also both North and South America.

G6CL has now worked all continents with a maximum input of 7 watts to a Cleartron valve with Pertrix plate supply. The most surprising contact was with Yokohama, when signals were reported R6. The input was 4.8 watts and the input at the Japan end was 3.8 watts. Is this a record low-power G-J contact? Practically all work has been done on 14 M.C. with 3 watts input, but the Azores was worked on 7 M.C. with a similar input. SM4ZF is now staying at G6CL, and many good QSO's have been made with his home country.

G5UM is experiencing difficulty in working stations south of London on 1.75 M.C. He could not raise G6PA, although the same transmission was heard R4 in Newport (Mon) and R7 in Luton. The L.C. T.P.T.G. is now being used with a Cleartron CT25X and —36 volts bias. Input is fixed at 3.5 watts. (I would assure G5UM that reports of any sort are always welcomed. Unfortunately his previous report was omitted, and he thought that we had no use for 1.75 M.C. activities. Letters like his last one are NOT appreciated here.)

DISTRICT No. 11.

Representative: L. H. THOMAS (G6QB), 66, Ingram Road, Thornton Heath, Surrey.

The winner of the first Area Competition proves to be G5WK, with a total of eight British Dominions and Protectorates worked during the month. The list is Australia, Tasmania, New Zealand, Iraq, Kenya, Canada, Egypt and India. No one else comes within a mile of him! Congratulations, WK, and I will hand over the prize personally long before this is in print!

Area Competition No. 3 is for the benefit of BRS stations in the area, and I think the judging should be on the basis of the number of different countries outside Europe that they hear on any waveband during the month. Please wake up, BRS's, and show that No. 11 is awake as regards reception!

G2AI reports a few QSO's during early April on 7 M.C., but nothing much since. A.C. is now installed and chemical rectifiers on the way.

G2CX has returned from Denmark and had a burst of activity on 14 M.C. A change of QRA (for the better) will be all over by the time these notes appear, and freedom from 'bus magnetos should make things smoother for 28 M.C. work.

G5WK, as is already evident, has been fairly active in spite of a short holiday with G6QB, during which they called on G6PI, G6SU and BRS125, to all of whom their thanks are due.

G5RM has been making a fair-sized hole in the ether, particularly in the direction of South America, and has worked PK and VK, thus making him W.A.C. He was reported R8-9 by a W3.

G6HP has built a new transmitter and has been busy in the early mornings with seven W6's and five W7's. He has also worked LU2FI (R7) and PY1AA (R7), although he always says he cannot reach South America!

G6NT has been working W stations a fair amount, but is working on CC and hopes to have it on the air soon.

G6WY has worked W6 and W7, and says his average strength in the States is R7-8. He also had R9 from YI2GQ.

G6QB has worked all districts U.S.A. and Canada during the month and one or two odd VK's and ZL's, but has spent most of his time on two separate and complete "rebuilds." He and G5WK both use "detector and pentode" receivers and find them F.B.

BRS25 has heard VU2KT on 28 M.C., also a harmonic of YI1MDZ. He remarks on the absence of South Africa on 14 M.C., although East Africa is still there. Seven M.C., he says, is no longer any good as a waveband. I agree with you, OM!

Please let me have reports by the 20th, OM's. I hear that one or two people in the area are aggrieved because their reports have not appeared; how can they if the letter with the others is in the pillar-box? Anything after the 20th is "dead," so please remember next month.

BRS240 has been working on 14 M.C.

DISTRICT No. 12.

Representative: L. J. FULLER (G6LB).

G2ZN reports a good month on the 7 M.C. band, having worked SP, OZ, OK and EAR with 1.2 watts input. This brings his total of countries worked to 13. On 1750 K.C., and using 0.8 watts, he worked G5QK on 'phone, a distance of 20 miles. He is also GC to a QRP group of C.B.

G6FY has worked Rhodesia (R4) and Persia (R6), using 10 watts on 14 M.C., and has got 'phone going on 1750 K.C.

G6UT has worked several "local" W stations and is having a little trouble with his note.

G2NU sends a very interesting report. Working on 1750 K.C., he has worked TFEEF, who could only speak Turkish. He would welcome his QRA from anyone knowing it. He has been running a schedule with a ship, and was given R6, CW and R4-5 on 'phone at the Pacific end of the Panama Canal. This was also on 1750 K.C., and he is awaiting confirmation of the reception of his CW in Central Africa on the same band.

G6LB has QSO'd again after 12 months' silence, EAR, CT and several W's having been worked, using 6 watts on 14 M.C. All stations report T8 signals, and W1KM gave R8 at 19.30 G.M.T. and R4, using no aerial for receiving.

DISTRICT No. 13.

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

Some of the usual reports are missing this month, and I do not know whether to put it down to the hot weather or the good DX, and you have been punching the key and cannot find time to drop me a line.

It is interesting to note that most of the active stations in this district are either C.C. or rebuilding for it. This, at any rate, is all to the credit of the district, and it will be interesting when you are all crystal controlled to see if any other district can beat it.

G5RV, using quarter-wave end on V.F. Hertz on 7 M.C., had consistently good QSO's with most of Europe. This aerial came down in a gale, and a ½-wave V.F. Hertz was substituted, and the results were not so good. Best QSO's with 4 watts C.C. was Leningrad and Lisbon, also heard in Poland. Finds PM3 as C.O. handles three watts quite comfortably.

G6VP is still working the world with reports of R9 from the States, and R8 from LW and CE on 14 M.C. Has worked AW, "New Siberia." He is busy rebuilding for C.C., and grinding crystals, also studying G5YK's question, "Current in Zepp Feeders." Not much to report on 28MC.

G5LY is experimenting with aerials, and so far the half-wave Zepp has proved the most successful. He has worked a few local Yanks, also got R5 from Argentine on 14 M.C. Only wants VK or ZL for WAC (go to it, OM G6WN). Contemplating crystal control.

G6WN has been QSO PY, LU, W, RW, FK, YI, and most of Europe this month on 14 M.C. Experiments carried out on current fed half-wave Hertz to find best length seems to point out that a difference of four feet (two feet either side of the centre) does not make much difference to the DX.

G2XO is working phone when time permits, and has removed all trace of A.C. from the carrier. Intends to remove all rectifying unit, valves, transformers, etc., to another room and remote control from bench via lead-covered (earthed) cables. He reports having a 50-watt valve on fire.

BRS72 is still listening on 28 M.C., and found conditions poor. Has heard VU2KT several times best QRK. R6, also heard harmonic of CT1AA's 14 M.C. transmission—nothing more.

DISTRICT No. 14.

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

In so far as DX on the 14 M.C. band is concerned, April stands by itself. Conditions in Scotland, at least, were as near to perfect as they ever will be, and phenomenal distances were regularly spanned with an expenditure of a very few watts. These conditions seem to have pertained throughout the entire northern section of the society, as I know of at least five QRP stations which qualified for their W.A.C. in the course of the month.

One regrettable feature of the 14 M.C. band at present is the incursion of certain semi-commercial stations, which use a particularly poisonous brand of ICW, and which on occasion clutter up more than half the band. Notable among those offenders is the station which seems to have a passionate fondness for sending traffic to ANA; also, friend RWX is no small sinner in this respect, Why can't these fellows put "their house in order"?

7 M.C. during the month seems to have produced very little apart from complaints of the dreadful QRM. Few, if any stations, "across the pond" have been worked, and such as have been were worked for the most part at unusual hours.

By the way, can anyone tell me the identity of XAU2BJ?

We had the pleasure during the month of a visit from D4CL

—Dr. Lamm, who has only recently returned from U.S.A., and he had many interesting things to say about conditions there. From what he told us, it is quite evident that we know NOTHING of QRM over here, and have reason to be thankful for our comparative immunity.

5YG was visited during the month by 2WL, 6WL, 5XQ, 2MA, 6NX, 6WZ, BRS159, Mr. Groom, and D4CL.

Owing to the fact that my house will be closed during the months of July and August, our monthly gathering will, after that of June 26, be discontinued till Wednesday, September 25.

Mr. Sturrock (G6KO), who has been in touch with the ARRL relative to his W.A.C. certificate, has been informed that for this purpose the Philippine Islands are permitted to rank as Oceania.

"A" DISTRICT

Representative: David D. Marshall (2MA), 41, Kelvinside Gardens, Glasgow, N.W.

G2MA has been almost completely silent during the month owing to family illness, and consequently has nothing to report.

G2MG is now signal officer with the H.L.I. (T.F.), and finds that his duties in this connection leave him little time for amateur work.

G5CL has got going on the 7 M.C. band, with a MOPA transmitter, and is reported to be getting out well.

G5ST was in Paris all month, and consequently has nothing to report.

G5XQ completed a new Hartley TX for the 14 M.C. band and first call raised "W." 3rd District. (He is something of an Isaac Walton-ite, and I am afraid that little will be done with the TX for a month or two.—5YG.)

G5YG has had a splendid month's DX on the 14 M.C. band, having had contacts with W 1, 2, 3, 4, 7, 8, 9, PK, K1, XA, ZL, YI, LU, PY, CE, VE, VO, NJ, and many others. A split Hartley TX is in use, and the "juice" is fed to an aerial system which is theoretically all wrong, but which nevertheless "does its stuff." Signals are always reported PDC and rock steady.

G6NX has had rather a mixed month, and has found conditions at his station somewhat "patchy." Work has been done mostly on the 14 M.C. band, and some quite good DX contacts have been achieved. He is now licensed for 50 watts, and has, in view of the fact that his house mains are shortly going over to 25 cycle A.C., purchased a D.C. generator, which he hopes to have in commission at an early date.

G6WL has also had a pretty good month, using the Ultra-Audion circuit on 14 M.C. Using 10 watts and a DFA8 valve contact was made with W 1, 2, 3, 8, 9, VE, 1, 2, 3, PY 1 and 2, YI, VU, and FK. A report has been received from FO9SR giving "QSA3 DC stedi." This relates to March, when the input was 7 watts to a CT25. 28 M.C. was found to be very dead, only one station being heard during the month, and that one a commercial.

G6WZ has at least found a little time to get on with his TX, and ere these notes appear, will be on the air.

"B" DISTRICT

Representative: E. G. Ingram (G6IZ), 20, Cairnfield Place, Aberdeen.

2AP has given up short wave work temporarily, and is studying for approaching examinations.

G6VO is carrying on with the CB group work, so that his reports will appear elsewhere.

G5JK has now got all his gear together, but has not managed to start up yet.

G6IZ has not been able to do much, owing to pressure of business, and his gear is temporarily dismantled. Some experiments were carried out with the MOPA circuit, and it is considered that this circuit gives from a readability point of view a better signal than C.C.

"C" DISTRICT

Representative: J. B. Sturrock (G6KO), Kirkbuddo, Forfarshire.

This district includes the undernoted stations, and, in spite of the fact that several are known to be working, not one has considered it worth his while to report to 6KO. How do you expect him to maintain his enthusiasm on your behalf. I can't for the life of me see, and to say the least of it, your attitude is discourteous to a degree.

If you are not doing anything, then for goodness sake drop 6KO a line and say so. This "silent contempt" business can be overdone, and, after all, he doesn't owe you anything. The stations to whom my remarks are addressed are: 2SR, 5NW, 5GK, 5WT, 5JD, 2BZH, 6GY, BRS71, BRS96, and BRS211, BRS158, BRS209. —G5YG.

G5GK is reported to be doing a good deal of phone work, and is understood to be running skeds in this connection.

G6KO has only managed week-end work, and that with C.C. on the 7 M.C. band. He hopes, however, to be on the 14 M.C. band shortly, also with C.C.

BRS158 is set-building, and is doing a little work on 28 M.C.

DISTRICT No. 16.

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

Conditions have improved greatly here during the month, especially the 14,000 K.C. band, and some excellent low-power work has been done on that band.

GI6WG has been active on 14,000 K.C., and contact was made with OA4O (Peru), several Australians, Persia, Canada and U.S.A. This now makes 6WG W.A.C., and it has all been done with a hand generator and an ancient B4 valve.

GI5WD is also on 14,000 K.C. with a hand generator, and has worked several more Australians, Brazil and a fair number of U.S.A. stations.

GI6HI has done very little, with the exception of some 28,000 K.C. work.

GI5HN is still on 14,000 K.C. and has worked all of Europe, with the exception of five countries.

GI5OT sends in a report of "nothing doing" at present, but expects to be "on the air" again before the end of next month.

GI2CN has only time to be on at week-ends, but has managed to work most of Europe.

GI5MO has not been on as the aerial fell about two weeks ago, hence nothing to report.

GI6YW is at present almost QRT, but worked Persia (R5) and several U.S.A. stations at the beginning of the month.

BRS251 is a newcomer, and is at present learning the code, and fixing up his receiver.

Channel Islands.

Representative: A. M. Houston Fergus (G2ZC), La Cotte, St. Brelades, Jersey, C.I.

With all but one of our stations still inactive, there is little to report from this district. I hear we no longer come under Dominion status, but are now included in a district of Great Britain, but at the time of writing these notes, no official notification has come to hand. As in previous years, the passing of blanket to fading has gone through the same procedure as we passed from February into April and May, though there have been some mornings that a partial blanket has been noticed on the 7 M.C. band. The one station active, G2ZC, has nothing of importance to report, apart from the keeping of schedules, and odd Q.S.O.'s. The fact that G2ZN, who is now working on ultra-QRP (under 1 watt) can be worked with the greatest of ease in the morning is an indication of the power really needed, so long as there is no jamming. Using TPTG, series-fed transmitters (C.C.), G2ZC can find no difference between the usual British lay-out, and the 1929 QST layout, so far as note and strength goes, one seemingly being as good as the other.

Notes and News from British Dominions.

Irish Free State.

Representative: Colonel Dennis (EI2B).

As the general feeling seems to be in favour of retaining the original form of these notes, the writer is now reverting to it.

Conditions on 7 M.C. band are reported to be very erratic, and typical summer conditions are beginning to prevail. On 14 M.C. conditions have been consistently good but are now beginning to fall off, whilst the 28 M.C. band seems to be absolutely blank.

The following reports have been received, mostly, as usual, via EI7C:—

EI8B is rebuilding a Mopa C.C. transmitter for 7 and 14 M.C. bands.

EI6B has been inactive.

EI8B is doing well on 14 M.C. and reports having worked numerous W stations, FK, YI, SU (CW and 'phone), RW, and also Mexico, R5, this being the first occasion on which that country has been worked by EI. On 7 M.C. he is keeping a schedule with CT2AA (Azores). His input is about 8 watts C.C. on both bands.

EI4C is at work on a S.G. short wave receiver.

EI6C is now C.C. on 7 M.C. and is testing on 14 M.C., but has nothing of special interest to report.

EI7C, on 14 M.C., is using a new Zeppelin aerial with 1/4 wave feeders and finds it very effective, getting good DX, especially eastwards. He reports having worked YI, Persia, Sumatra, Egypt and Canada, getting signal strength R5-9, with input usually 7 watts and 9 watts maximum. He reports nothing of interest on 7 M.C.

EI8C has just recently started C.C. on 7 M.C. and has been testing on 14 M.C., but has nothing of special interest to report.

EI2D has been experiencing trouble with his C.C. when using hand generator, but hopes to overcome it shortly.

EI4D is putting out excellent 'phone on 7 M.C. On 14 M.C. CW his best has been OH.

EI2B, on 7 M.C., has nothing of special interest to report. He is in trouble with his Zepp. aerial on 14 M.C. when using feeders tuned to 3/4 wave, results being very poor, although with his old inverted L and counterpoise aerial he used to get excellent results on this band. Incidentally, EI7C told him that he had had much the same trouble when using tuned feeders and had, therefore, as reported above, changed to 1/4 wave (actual) feeders. As EI2B cannot use 1/4 wave feeders without making his aerial too low for local screening conditions, and is anxious to use his Zepp. aerial for both 7 and 14 M.C. bands, he would be grateful for any hints as to the cause of the inefficiency referred to.

NEW MEMBERS ARE WANTED.

Notes and News from Europe.

Holland.

By J. H. Koen, M.Sc.

Last month the first successful two-way contact between two Dutch amateurs and two Dutch East Indian experimenters was accomplished. Since that time the number of these contacts rapidly increased and many others succeeded in performing the same work. Even QRP had a good chance. 14 M.C. proved to be very kind in helping to carry the 8 watts input of PA0QF to those isles in the Far East. Old 9 M.C. still is very troubled by wobbly 'phone, better known as speech-modulated A.C.!!! Wonder what kind of ears those fellows have to be satisfied with for this kind of 'phone. Of course the above does not apply to all 'phone stations; there are some very good ones left—yes, very, very few. On 28 M.C. conditions were no good: nothing was heard on this band.

The big radio exhibition at Scheveningen, to be held this month, will contain a big amateur stand. Our experimental department has constructed a half-kilowatt Xmtr, crystal controlled on 7, 14 and 28 M.C. for exhibition.

Germany.

By W. Rach.

The most important event of the past month was our annual Convention, which took place at Frankfurt-on-Main from May 18 to 20. Amateurs came from all parts of the country, and the attendance also included representatives of the Austrian, Czecho-Slovakian and Swiss amateur organisations.

The Convention itself was a very amicable affair. Many visual QSO's were made and old friendships renewed.

In particular two lectures, which had subsequent interesting discussions, are worthy of mention. The first was given by Herr Plisch (OK3SK), of Brno, Czecho-Slovakia, and dealt with aerials. He expounded some new theories and gave details of their practical use. For the second lecture we were very lucky to have the services of Professor Hundt, of the Bureau of Standards at Washington, D.C., whose name is familiar to every amateur, and who gave a most interesting talk on crystal control and the experiments that are carried out with it at the Bureau of Standards. The heated discussions and the splendid ovations that followed these lectures were the best proof of their popularity.

The following new committee members were elected :—

1. President: Col. Fulda.
2. Editor of "CQ": Dr. W. Titius (re-elected).
3. Technical Editor: Engineer Kron (D4SAR).
4. Hon. Secretary: W. Rach (D4AL).

In future OM Rach will take the place of OM Reiffen, who has, unfortunately, been obliged to resign his position on account of his studies. OM Rach will deal with the affairs of the German amateurs in relation to our friends abroad, and will prepare the monthly reports of our activities. All amateurs in this country would like to take this opportunity of expressing their hearty thanks to OM Reiffen for his services during the past year, and at the same time hope that our foreign friends will show OM Rach the same amount of trust and friendship that they always did to OM Reiffen and his predecessors. It is our perpetual aim to increase and expand our relations with our friends in other countries.

We will not report anything about DX this time, but we should like to mention that there is increased activity on 28 M.C. D4UE has succeeded in working VU2KT for the first time with 25 watts input. FB, OM!

Czecho-Slovakia.

By L. Vydra.

The meeting of the Radio Telegraphy Convention in Prague has been the chief event of the month. The new distribution of B.C. waves will take effect on June 30. The possibility of issuing amateur licences in our country has been discussed, but no definite decision has yet been made.

DX conditions on 7 M.C. were again poor, and only high-power stations made contacts. In order to reduce interference on this band our Society has decided to bar the use of 'phone during week-ends.

On 14 M.C. conditions were also poor, with only occasional good days. North American stations were louder than in previous months, but still weak for the time of year. South America is the worst place in the world to work from Czecho-slovakia. Australasia is comparatively easy to work with low power, but even high power will not raise the South American continent.

The best performance of the month was done by 3SK, who worked ZL4AO with only 3.2 watts input.

British stations were weak all the month.

On 28 M.C. 2YD has bagged some Americans, and YI-1LM, calling D4UAH, but no contacts have been made yet.

Calls Heard.

G. Stations heard by G5WQ at sea between 52.08N 164.07W and Yokohama, April 8 to 20, on 14 M.C. band, on 0-V-1 :—

April 9, 1929.—06.30 G.M.T., Test de G5BZ, R5-6, stdi RAC; 06.52 G.M.T., Test de G6XB, R4 FB stdi DC; 07.07 G.M.T., Test de G6HP, R5 DC with sl. ripple; 19.21 G.M.T., Test de G6XB, R3 FB stdi DC; 19.29 G.M.T., Test de G2AO, R5 T9; 20.25 G.M.T., W9BPM de G6TA, R6 T8; 20.48 G.M.T., Test de G5BJ, R5 T8.

April 10, 1929.—18.45 G.M.T., I1EF de G6VP, R5 DC slite ripple.

April 11, 1929.—18.38 G.M.T., W8 XH de G6VP, R6 DC sl. rip. and chirp; 19.28 G.M.T., Test de G5BD, R5-6 T7.

April 12, 1929.—08.00 G.M.T., Test de G6QB, R5 DC sl. ripple; 18.15 G.M.T., Test de G6VP, R5 DC sl. ripple; 18.25 G.M.T., Test de G2AO, R4 T9.

April 13, 1929.—18.13 G.M.T., W1AZE de G5YG, R4 DC sl. ripple; 18.15 G.M.T., VU2KT de G5YX, R3-4 T9.

April 14, 1929.—18.45 G.M.T., G6WN de G6VP, R6 T6; 18.50 G.M.T., Test de G2LZ, R6 T8; 18.55 G.M.T., Test de G6RB, R5 DC sl. rip. and spacer; 19.01 G.M.T., Test de G5BJ, R4 T8; 1906 G.M.T., de G5YK, R3 T9; 1913 G.M.T., Test de GI5NJ, R5 T9; 19.30 G.M.T., Test de G6IA, R3 T8; 19.44 G.M.T., Test de G2XV, R4 T9; 19.48 G.M.T., Test de G2SW, R5 Stdi. mod. DC; 20.10 G.M.T., de G2QV, R3 T8; 20.15 G.M.T., 1JR de G6XQ, R3 T8.

April 20, 1929.—20.17 G.M.T., Test de G6CL, R6 (with 2 lfs.) T8 chirp.

G5WQ will QSL if asked.

Calls heard by M. S. Killen, Horta, Fayal, Azores, (during March and April, 7 and 14 M.C.) :—

G2AO, G2BM, G2HD, G2MA, G2NZ, G2QH, G2VQ, G2XY, G2YU, G2ZP, G6BR, G6CL, G6DH, G6IZ, G6KO, G6LN, G6NX, G6QL, G6SO, G6TZ, G6UJ, G6UZ, G6WD, G6WN, G6WO, G6XC, G6XN, G6YC, G6YQ, G6YR, G6ZA, G5AD, G5BD, G5BJ, G5FG, G5FQ, G5JO, G5MB, G5MQ, G5PH, G5TQ, G5TZ, G5UQ, G5WP, G5YU, GI2CN, GI5OT, GI5SJ, GI6HI, GI6MU, GI6QD, GI6WG, EI2B, EI2D, XE15B, EI6B, EI6C, EI7C, EI8B, EI8C.

Correspondence

Air Currents.

To the Editor of T. & R. Bulletin.

Dear Sir,—With reference to the article of Mr. E. Philip Allen in the May (1929) issue of the Bulletin, I would like to point out that the heated air to which Mr. Allen refers does not pass over Europe after leaving the equatorial regions. The air which rises at the Equator descends to the earth again at the latitudes of the Mediterranean seaboard. This is quite a well-known fact, and accounts for the ever-present region of high barometric pressure in that part of the world. The exact location of the belt of high pressure changes with the season of the year, but the total variation is only about three degrees of latitude. I would also like to add that a trip in an aeroplane will convince Mr. Allen that "far up above," the conditions are much colder than "on the ground."—Yours very truly,

W. F. Floyd.

88, Ilbert Street,
London, W.10.

Thank You, OZ!

To the Editor of T. & R. Bulletin.

Dear Sir,—May I take the liberty of expressing through the medium of the T. & R. Bulletin my grateful thanks to the transmitters of Denmark for their great hospitality to me during my recent stay in that country.

Many, if not all of them, see the "Bull." regularly, and I should like them to know how much I have appreciated the welcome that they extended to me.

The "Ham Spirit" that one hears so much about is certainly very strong amongst the OZ amateurs, as I have good cause to remember, and one hopes that should any foreign "ham" visit England this summer, we shall do our best to see that he is not disappointed in the English representatives of the "Ham" Brotherhood.—Yours faithfully,

Douglas Chisholm (G2CX).

"Dunscore," 58, Lanercost Road,
Tulse Hill, London, S.W.2.

P.S.—Please note my change of address from 27, Gresham Road S.W.9, to the above.

A Word of Thanks.

To the Editor of T. & R. BULLETIN.

DEAR EDITOR,—Last October's BULLETIN contained an article by Mr. W. F. Floyd on "The Universal Receiver for all Waves from 5 to 5,000 Metres." I at once said to myself, "This is the receiver I require." So I devoured the article, and made up my mind to build one like it in the very near future. Well, I have now completed the receiver and have had it on test for several weeks now. Well, I am more than satisfied with my "Floyd" receiver and wish to thank Mr. Floyd very much for the description and details as given in the article referred to above. I chiefly desired the set for short wave work, so I scrapped my old short wave receiver and used some of the components. I have used it once on 5XX and got very good results, but, for the time being at any rate, I have been using it solely for short waves. I can use two or three valves, and do not use a switch. However, I will describe that later. The other evening, at 11 p.m. B.S.T., I received KDKA on two valves, on 25 m., using indoor aerial and headphones, so strongly that I switched over to loud-speaker and could hear comfortably. Reception was not what I call loud, but was so clear that I was easily able to follow every word, and music came through better still. Just a week previous to this I received, under the same conditions, 2XAF on 31.4 m., on the loud-speaker, at about the same strength. It was also clear and steady. I have never received these stations so easily, so strongly and so steadily, on any other short wave receiver. And this is my fifth short wave set. I have tried 5SW several times and can only just hear him, and distorted at that. I have heard PLF on 17 m. and can oscillate well down to 10 m. with little or no hand capacity.

I have not yet tried a one-turn coil. But at present I am chiefly concerned logging and comparing the two American stations 2XAF and 2XAD. Of course the receiver behaves excellently on 42 m. and am now able to follow my fellow transmitters' transmissions much better. I think there are a good number of transmitting amateurs up and down the country who could do with a better receiver. I can thoroughly recommend the "Floyd."

In building mine, I started with a five-ply baseboard and placed copper foil underneath at the "live" end. In order to protect the foil, and also any table top, I placed a piece of three-ply over all and tacked it on. The edges were planed up and now it looks like a piece of eight-ply. The front panel is a piece of oak-faced three-ply, with copper foil fastened on the back. I have adhered to dimensions and lay-out as given by Mr. Floyd. I think my only difference is the use of two medium-priced transformers instead of one transformer and a resistance unit. I am using "Eddystone" coils and Mullard valves; PMIHF as detector, PMILF as second valve and PM2 for last stage. As regards obviating a switch for use of two or three valves; this is possible by having flex connections to the grid of each of the last two valves. When only two valves are required, take the flex connections from each of the *transformers*. The connection which comes from the centre valve is carefully laid aside so that it does not foul any wires and the valve is withdrawn from its holder. Then the other flex is now fastened to the first transformer and there you are. It takes much less time to do than it does to describe it. You may say even then it takes too long. Well, I find that two valves are quite sufficient for headphone work, and only when I want America at real loud-speaker strength do I use the three valves. Or when I want a few friends to hear some amateur telling me off during a contact. I may mention that I can "switch" from two to three, or *vice versa*, in less than ten seconds.

Just one more slight deviation from the original circuit. As I use low resistance phones and loud-speaker coupled with telephone transformer, I used the latter in place of the output choke.

All I can say now is, if you want a good receiver, build this one.

Yours, etc.

RALPH BATES (G5OD).

Lincoln.
May 12, 1929.

EXCHANGE & MART.

TRANSFORMER LAMINATIONS AND BAKELITE BOBBINS. No. 25 size giving iron area 2in. by 1¼in., (requires only 3½ turns per volt at 50 cycles) and winding area of over 4 sq. ins. Core and Bobbin complete, 13s. 7d. post free. Smaller sizes available. Winding data willingly given.—SAVAGE, 146, Bishopsgate, London, E.C.2. 'Phone, Bishopsgate 6998.

WAVEMETER, Claude Lyons (General Radio), No. 358, 14 to 220 meters, new, in case, cost £4 10s., first 50s.—G6FW, 5, Scargreen Avenue, West Derby, Liverpool.

FOR SALE.—Transmitting and Receiving Station, complete or in parts, including Newton 500-cycle alternator, coupled on bedplate to high-speed 230-volt D.C. motor; provides ideal H.T. supply; together with starter, special transformers, meter, etc.; £5. Also Neon Wavemeter, 15s.; Mullard 30-watter, 7s. 6d.; 'Phones (Western Electric), 4,000, 10s.; Brown's F., 4,000, 5s.; Milliammeter, 0—50, as new, 15s.; high-class Low-loss Condensers, two at ·0005 and one at ·0002, 5s. each; Dubilier, fixed, 20,000 volts, ·0025, 7s. 6d.; Stand-off Insulators, 1s. each; two special Window-pane Lead-in Insulators, 1s. each; Edge-wise Wound Copper Strip Helices and much good useful Junk.—Write for further particulars to GALPIN, Chardstock, Herne Bay.

HI HAMS!—Ediswan 250-watter, bargain £2 10s.; G.E.C. H.T. Transformer, made to specification, a F.B. job, little used, 200 volts 50 cycles—750-0-750 volts 50 v.a., £3 10s.; Motor Generator, 200 volts 50 cycles—600-1,000 volts 30 milliamps., Marconi Generator, offers.—G5WP, 5, Walton Road, Woking, Surrey.

SURPLUS at G5ML.—One ML.1,000v. 80ma. D.C. Generator, direct coupled to 200-volt 50-cycle A.C. motor. Both mounted on channel iron. Used about 30 hours only. Cost £28; sell 10 guineas. New Mullard SW50 Valve, £5. Burndept Trickle Charger, 35s. R.E.L. 11-turn Inductance, 12s. 6d.—MILES, Beechwood Avenue, Coventry.

POTENTIAL DIVIDERS, wire wound; designed to carry extra heavy loads; five variable tappings; values in stock, 10,000 and 20,000 ohms; other values to order. Price, 6s. 6d. Always ask your dealer for "ALWAYS" Grid Leaks, etc.—ABINGDON WIRELESS SUPPLIES, Abingdon, Berks.

TANTALUM AND LIONIUM.—Make your own Battery Chargers for alternating current. Simple, reliable. Lionium Rectifying Electrodes, 2-4 amps., 10s., 5-10 amps., 15s. Also Transformers, Blue Prints, 1s. each, and complete Chargers.—BLACKWELL'S METALLURGICAL WORKS LD., Liverpool.

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SURPLUS AT G6DR.—Mackie m/g, T.P.-T.G. Transmitter, Reinartz Receiver, Camera, Valves, etc. Write for list and prices.—D. E. SCARR, Hailgate, Howden, Yorks.

YOUR next QSL Cards from G6MN—better printing and better cards.—BRS Cards a speciality.—E. MARTIN, Bridge Street, Worksop.

SURPLUS GEAR; 1500 volt generator and 1-5 H.P. motor, 230 volt, mounted on base plate; also 50 watt Mullard, the latter unused.—Offers to G6CC.

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