



T. & R. Bulletin

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The Journal of the Inc. Radio Society of Great Britain

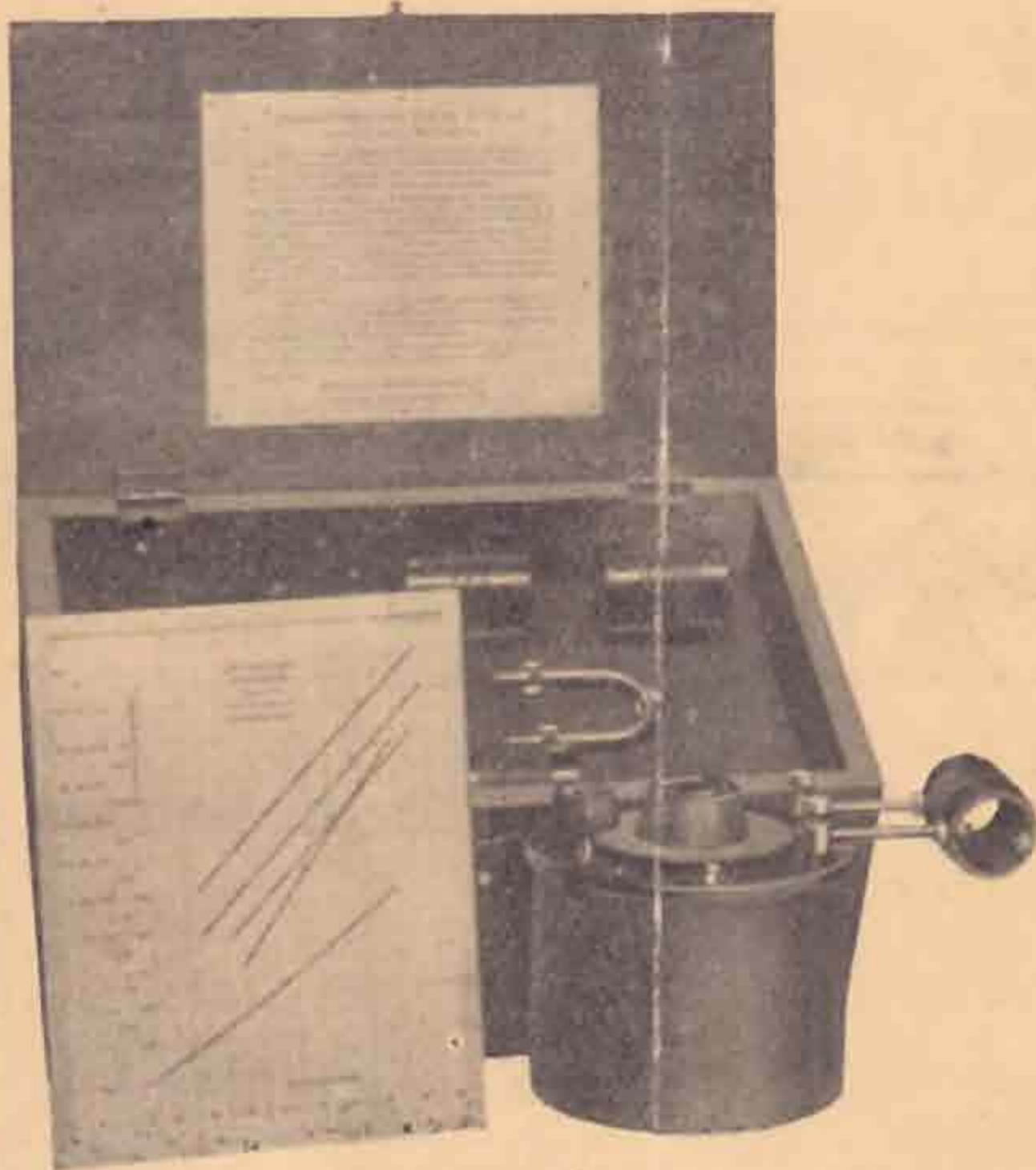
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Vol. 4. No. 11.

May, 1929 (Copyright)

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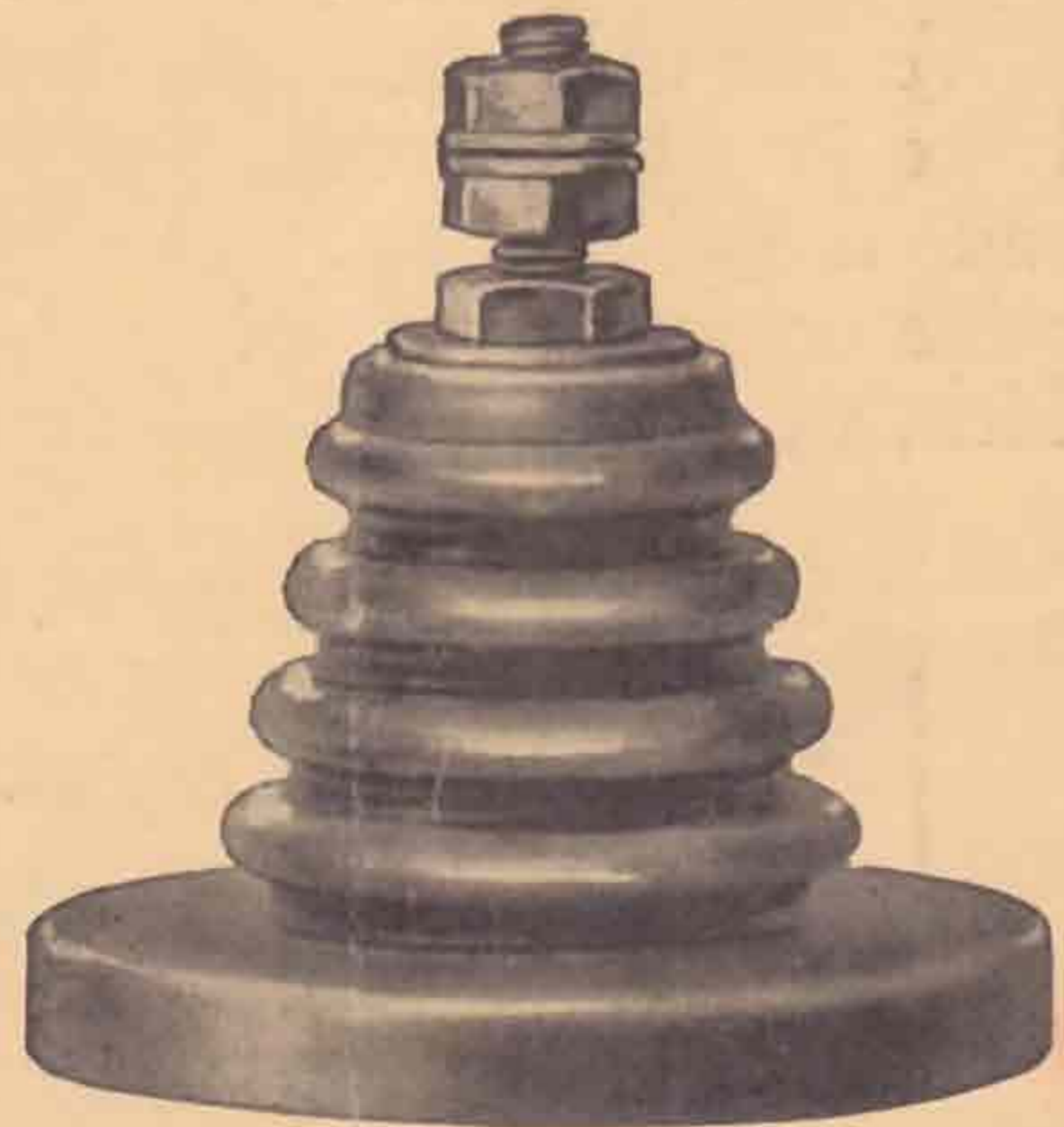
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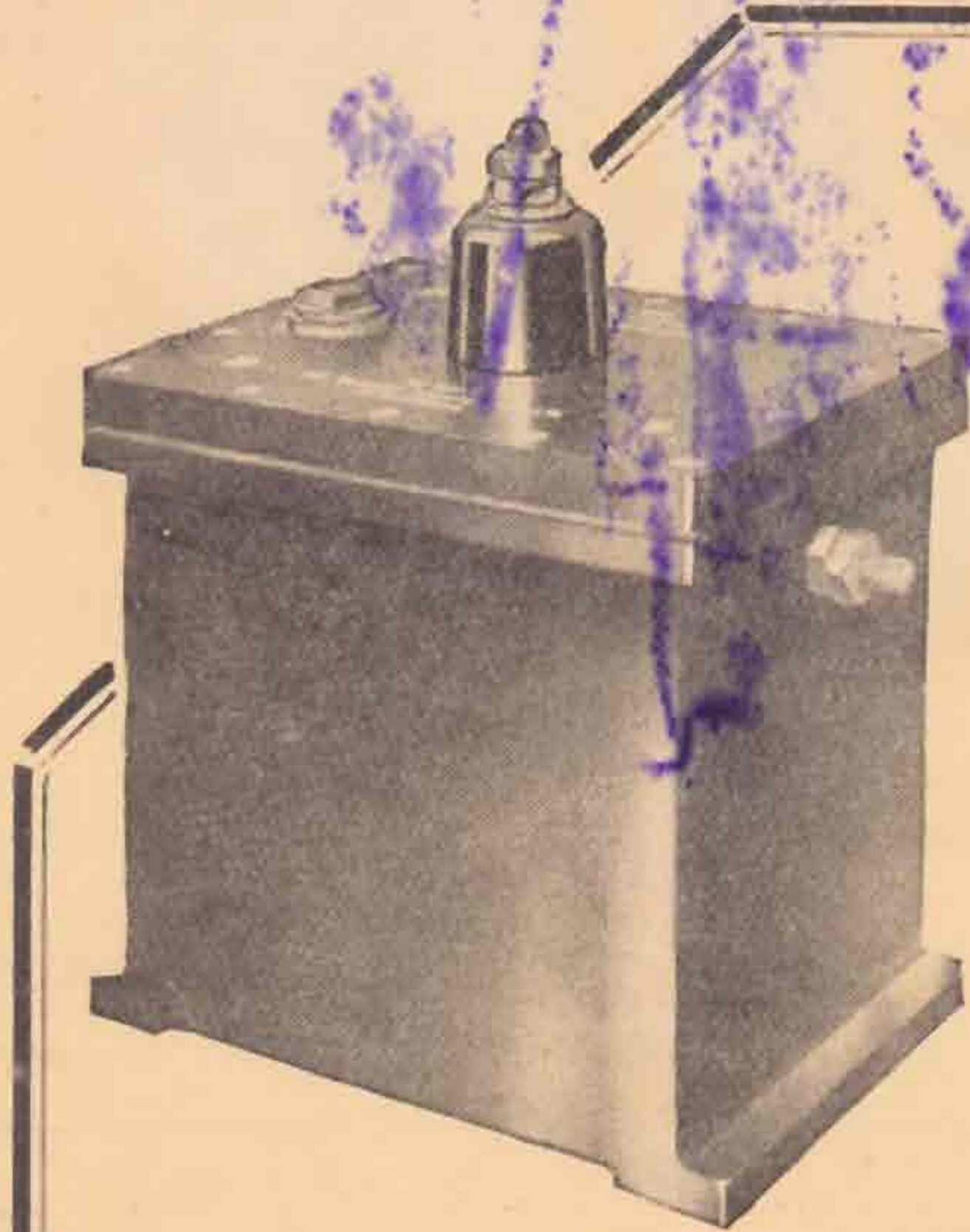
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TRA BULLETIN.

The only British Wireless Journal Published by Amateur Radio Experimenters

*All correspondence and matter for publication to be addressed to the Hon. Secretary, 53, Victoria St., London, S.W.1.
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MAY, 1929.

Vol. 4. No. 11.

EDITORIAL.

The QSA scale of signal strength has been causing a little confusion in the amateur world and we have published some suggestions from members on the subject. Whilst this new scale leaves nothing to be desired for the traffic handler, it is generally considered not to fulfil all the requirements of the experimenter. We are quite ready to believe that some amateurs do not mind whether their signals are QSA2 or 5 as long as they are R8; others only wish to be QSA5, not troubling whether they are R3 or R7. Your Committee have carefully considered the question from all its aspects, and hope that the following suggestions, if generally adopted, may help to clear up any ambiguity and confusion that exists.

The first thing to be understood is that the R scale is an audibility scale, indicating only the plain signal strength: under which circumstances the number of valves in use in the receiver should also be given, and we think that this is often the case. The QSA scale, on the other hand, is entirely a readability scale, and does not give any indication of the actual signal strength; it automatically takes into account the ratio of signal strength to *all* forms of interference and also the detrimental effect of any unsteady or bad notes. Attempts have been

made in the past, largely through the columns of QST, to introduce some form of readability scale but without success. Now that such a scale has already been prepared, it is a splendid chance to adopt something that we have been wanting for years. For the traffic handler, either commercial or amateur (and, we venture to suggest, for ordinary "rag-chewing" as well), the QSA scale is indispensable. We therefore suggest that when necessary both scales be used and be sent as follows:—

. . . .QSA5 R7

but the individual interpretation of both scales must be adhered to. Any transmitter receiving a QSA5 report knows he can go ahead sending single at a good speed; QSA4, careful, sending single, or fast double (the former to be preferred); QSA3, sending double at average speed; QSA2, slow, sending double; QSA1 is not readable. Use one scale or both, but don't misinterpret either or give them new meanings.

Anyone who has had experience as a District Representative knows that one of his duties, and we are assured that it is only one of minor importance, is to collect reports from his District and pass them on to us in a compact form. We see no reason why he should literally conjure reports from

his District ; but it is a fact that often his only other alternative is to make up reports himself from hearsay or from what he has heard on the air. A note was inserted in the February BULLETIN to the effect that the continuance of these notes was under consideration and members were asked to state their views on the subject. The result has been rather a poor response, but the verdict is all for their inclusion. It is, however, widely felt that the notes are not serving such a useful purpose as they might, but their increasing usefulness is entirely in your hands and in those of your District Representative.

Here in London, and in other large towns, where we can easily see half-a-dozen amateurs each day, we must be careful not to lose sight of the fact that in some parts one amateur may not see a fellow-member from one month's end to another : his only sources of contact with the outside world, as it were, are via radio and the BULLETIN. He has the sympathies of all town dwellers, and it is to him that our efforts must be directed. We think a solitude of this type would lead along a very unprogressive path if the BULLETIN did not reach him, the contents of which should furnish two separate links with the rest of the amateur world. First, the articles and C.B. notes keep him in touch with new developments on the technical side ; and second, the District notes furnish him with more concise news as to what the other members are doing. We feel justified in continuing these notes, even if they are of interest only to a minority, but they would be of vastly greater interest if they were a little more complete. It should not be necessary for your District Representative to coax reports out of you, but he realises that one of his many duties is the preparation of these notes, and he is going to do his job whatever it costs him, so it is up to you to pull your weight.

* * *

We were very pleased to publish in the April BULLETIN a very kind offer from Mr. E. T. Somerset, BRS125, to encourage 56,000 kc work. The offer was in the form of Radio gear to the value of £3 3s. or a cup, at the choice of the winner, to be presented to the first British transmitter in Great Britain or the Irish Free State whose signals are reported from a distance of three miles or more. A small souvenir will be presented to the receiving station, whether it be British or foreign. In the event of a contact (either British or foreign) the prize will be to the value of £2 10s., and a similar one will be presented to the other station by the donor.

Since then we have gratefully acknowledged a prize offer of £5 5s. from Mr. L. W. Parry, G6PY, for the first contact on 56,000 kc. between Great Britain and America, or alternatively over 3,000 miles. Conditions :—

1. The money to be spent on improving the Radio Station.
2. Only members of R.S.G.B. are allowed to compete.

3. Power unlimited.
4. A full detailed description of the British station to be published in the BULLETIN.
5. Proof of contact to the satisfaction of a select committee of fellow amateurs.

(Rule 1 may be deleted where conditions may prove that the money may be more useful).

We think that these two offers should act as a great stimulus to 56,000 kc. experimenting, and we are eagerly looking forward to the day when we may be able to announce the winners.

* * *

The attention of members is drawn to the use of the G preceding Artificial Aerial Call-signs. It is incorrect to use the G in this case, as any holder of such a licence can at once verify. If the habit persists, an official complaint may be received from the authorities. We would ask those responsible for the District Notes to help us by refraining from using the G in these cases.

* * *

In the next issue of the BULLETIN we propose publishing a complete list of those persons whose subscription is more than three months overdue. We have been reluctantly compelled to take this course in order to let the 1,400 paying members know who are not helping to support the Society.

We hope that this notice will serve to show the delinquents that we do not intend in future to run the Society as a philanthropic institute.

We prefer to have a paying membership of 1,400 than an imaginary membership of 1,600.

We are the biggest and oldest-established European Radio Society, and we look forward to increasing our numbers to 2,000 before the end of 1929.

To our present members we ask that you will use your influence wherever possible to further the cause of R.S.G.B. and the British Empire Radio Union.

Forthcoming Events.

May 24.—Lecture. By A. Hinderlich, at the Institute of Electrical Engineers, London.

May 25.—Bristol Conventionette. See announcement on page 266.

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

July 20.—Visit to Rugby Station at Hillmorton.

Charging High Tension Accumulators from Alternating Current Mains.

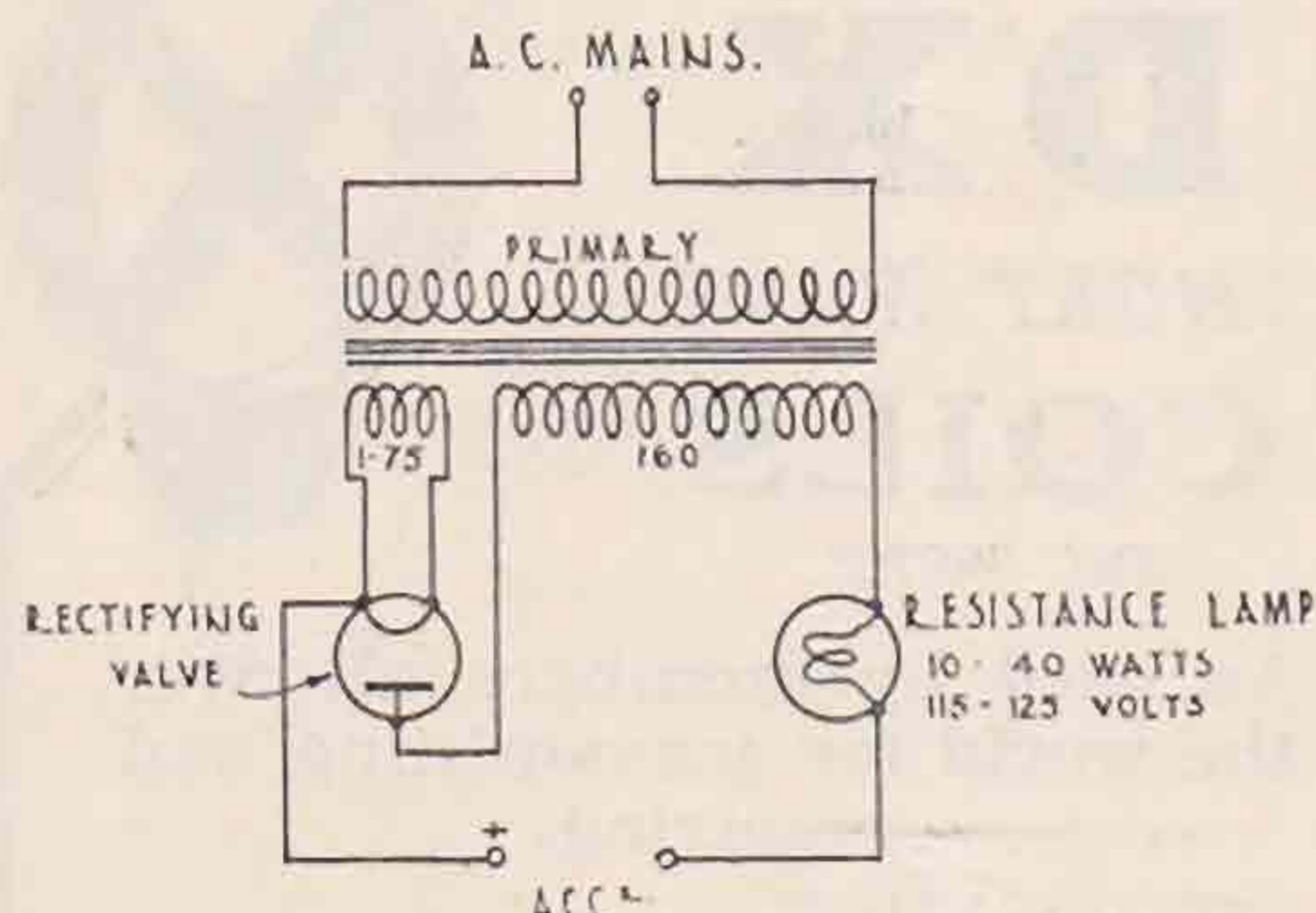
By B. H. ROLFE, M.A., F.C.S.

In a previous issue of the T. & R. BULLETIN (September, 1928, p. 58) you were good enough to publish some notes of mine on the subject of electrolytic charging.

Of the methods then described there seems no doubt that the "differential" system is the most popular and the most widely used. I would therefore welcome the opportunity of calling attention to a refinement which is, perhaps, worth the consideration of those interested in the subject.

When the house mains voltage is 200 R.M.S. volts or over (which is generally the case in the United Kingdom) there is a decided advantage in interposing a small transformer between the mains and the rectifier. It need be quite small—a secondary power output of 50 watts will probably be more than sufficient in normal cases. For dealing with 80-volt accumulator units the secondary voltage should be about 110. If it is also desired to charge 120-volt accumulator units the secondary should be arranged to give about 160 volts with a tap at 110, so that either may be employed as required.

The charging circuit is, naturally, identical in principle with that shown accompanying the original article; but when such transformer is used the mid-tapping of the accumulator unit and the mid-tapping of the series of rectifier cells are respectively connected to the transformer secondary outers instead of to the house A.C. mains.



The use of the little transformer has unquestioned advantages. All sparking trouble is avoided—and no matter what precautions are taken sparking will sometimes occur with certain specimens of rectifying metals at voltages exceeding 150. It makes also for electrical efficiency. As one buys current in *watt* hours and stores it in *ampere* hours it is, obviously, advantageous to operate at the lowest convenient voltage.

While on the subject of charging H.T. accumulators, mention should be made of a system which should appeal to workers who prefer valve methods, and which offers qualities of simplicity, efficiency and cheapness which are not invariably associated with pure thermionic rectification. I refer to what

is popularly known as the mercury vapour type of valve.

The one I am using was bought on the Continent at a cost of about ten shillings, and is called Phillips No. 1002. It was stated as passing 100 milliamperes of rectified current, and I have found mine to pass about 120 milliamperes without distress. One rarely requires more than this. I believe that several firms now make similar lamps.

The sketch appended shows the simple charging circuit. The secondary of the tiny transformer has two separate windings. The first of these furnishes current (in my case at just under 2 volts) for the valve "filament." The second yields the few necessary watts of charging current at about 160 volts. The latter is governed by the usual resistance lamp.

With a 25 to 40-watt (say, 125 volt) lamp as resistance the arrangement described charges an 80-volt accumulator unit as satisfactorily as could be wished. With slightly increased voltage on the secondary it should charge 120-volt units equally well. For "trickle" purposes a perfectly satisfactory charge current is obtained with a 10-watt lamp as resistance, the current density being, of course, moderate. For charging currents of the order of 100 milliamperes the system seems to be more efficient than the electrolytic method, though the latter should prove far more economical in handling large charge currents.

Too much prominence cannot be given to this question of the easy home charging of accumulators. Modern H.T. consumption has made the H.T. accumulator indispensable in all but the most rudimentary installations; and a H.T. accumulator is *not a working proposition* unless it can be charged at home and *in situ*.

At the risk of being thought old-fashioned I regard the "Mains Unit" craze as one which will pass! While I should be sorry to have missed the pleasant hours in "smoothing" intractable "ripples," I cannot sincerely regard the mains unit as having added anything to wireless science beyond an unnecessary, if sometimes fascinating, complication. No reliable smoothing system surpasses an accumulator in anything except cost. Neither (certain very special cases excepted) can it offer any advantage whatever over a properly installed accumulator-rectifier system.

Reports Wanted.

The following stations require reports on the subjects stated from British listeners:—

G6CI.—Quality of 7,000 K.C. phone transmissions.

G6LL.—28,000 K.C. transmissions from 18.00 G.M.T. onwards, Monday to Friday.

G5RV.—Crystal control transmissions, any frequency.

G2ZN.—Working on skip at dusk with ultra QRP of 1-2 watts.

Hertz Aerials.

By ARTHUR WATTS (G6UN).

For just over twelve months a so-called voltage-fed Hertz aerial has been used at my station. It was 74ft. long, not including the wire round the insulators, fed 18ft. 6in. from the transmitter end, and the feeder was 33ft. in length. The wire used was 14 gauge enamelled, but I do not think the enamelling makes any measurable difference compared with bare wire. A seven-strand wire was not used because six strands are the same length but the seventh is shorter, so that the seventh is out of tune with the other six. It would be interesting to know if any member has information on this point. I have had many opinions on this aerial and I have read everything about it I have been able to find. Whatever may be its shortcomings, no report of unsteady note has been received. I had little difficulty in getting it to work, but it seems that the efficiency of this type is much lower than any other type of aerial. How to improve was the next question, still keeping to the Hertz aerial, as I understand that Hertz is practically synonymous with steady note. The questions contained in the summary accompanying these notes were compiled with the idea of trying to form an opinion as to which, if any, is the best type of Hertz aerial. * These questions were sent to all R.S.G.B. stations who were known at the time from the monthly area reports in the BULLETIN to be using some form of Hertz aerial. Everybody replied, so that evidently many of our members are interested. The replies are also very interesting. What conclusions can we draw from them?

Question 4.—The length does not appear to be at all critical; the answers to No. 5 support this.

In the BULLETIN for January and February, 1928, Mr. Megaw, in an article on "The Design of Short Wave Transmission Aerials," says the length of wire for a given wave length can conveniently be found by multiplying the wave length by about .99 for a horizontal unscreened wire. Mr. Megaw's article is well worth studying; it contains much useful information.

QST October, 1928, referring to Zepp antennæ, states that there appears to be no reason why the formula "length of antennæ in feet=fundamental in metres by 1.56" should not be applied to all types of voltage and current-fed radiators where the antennæ itself is not loaded by lumped inductance or capacity. Can anyone explain these two statements?

Question 9.—Apparently anything between four and twelve inches is satisfactory.

Questions 8, 10 and 11.—For voltage feed no feeder at all appears to be best. For current feed it is noticed that some say the feeders should be of a definite length, others say the length of feeders does not matter. It seems that both are right, but only partly so. Possibly the correct way of putting it would be to say that the feeders must be either of a definite length or tuned to a definite length. Can anybody say what proportion of the

power used is taken or wasted by the feeders in cancelling out each other's radiation?

Question 12.—TPTG and Hartley are the most used, but the aerial appears to be far more important than the transmitter.

My aerial has been altered recently to a voltage-fed Hertz with the end of the aerial tapped straight on to the anode coil.

From the answers to the questions, it seemed to me to be the best, and during the short time I have been using it my signals have been reported R6-7 on one to five watts where they were R3-4 before on seven to ten watts.

It is realised that this article deals in a limited manner with Hertz aerial questions, but I suggest that many problems can be dealt with in a similar manner on a much larger scale. Information can be collected from all our members and, when sifted, could form valuable starting points for Contact Bureau groups. The main point I have in mind is how to make the best use of the information we have between us and save newcomers experimenting on problems which have been definitely solved already. What do members think?

In conclusion, I hope you will one and all point out any errors in the statements made and the opinions given. And last, but not least, my best thanks to all those who kindly helped me by answering the questions sent to them.

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As used by members all over
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SPECIFICATION

Wound with 16 gauge tinned
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PRICE

7/6 PER SET

4 coils; 3, 5, 7, & 9

or any number of turns up to 9
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* Space forbids publishing all the replies, and a selection has therefore been made of those answers giving more detail. If any readers would care to have copies of the remainder, G6UN will be pleased to supply them.

Call Sign.	Exact W/L.	Type of Hertz.	V.F. C.F.	Length of Roof.	Does 4 include Wire round Insulators?	Details of Coupling Coil.	Size of Condenser.	Length of Feeders.	Feeder Spacing.	Should Feeders be of Definite Length? What?	Best Transmitter with Hertz.	Other Information.
	1.	2.	3.	4.	5	6.	7.	8.	9.	10.	11.	12
G2YU ...	45.1 23	Semi-vertical.	V.F.	35.8 ft.	Yes	9 turns 16 S.W.G.	.00025 Series	12 ft.	Single Feeder	$\frac{1}{4}$ length of aerial, fed at 8.8 ft. approx.	Split Hartley	Same type of aerial used on 23 ms., indoors 18 ft. long fed at 4.5 ft. Direction of both E. and W. QSO W 1, 2, 3, 4, 5, 8, 9, VE 1, 3, FM. QRA one of highest points in Yorkshire. Input 8 watts. So far experiments very rough. Not sure that system is working properly.
G6LL ...	8	$\frac{1}{2}$ -wave Zeppelin	V.F.	13 ft.	Yes	3 turns, 2 ins. diam., spaced $\frac{1}{8}$ ". Not usually used	.00002	10.5 ft.	4"	Feeders undesirable, tend to affect fundamental and introduce losses.	T.P.T.G.	
G6MN ...	45 23	Full Wave $\frac{1}{2}$ -wave vert. Levy	V.F. C.F.	100 ft.	No	When used, 2 turns, 3" diam., 2" long	.0005	No Feeder $\frac{1}{4}$ -wave	7"	Cannot give opinion yet	T.P.T.G.	Finds aerial 138 ft. long acts O.K. on 23 ms. as double wave Hertz: first call answered by U.S.A. using 11 watts, but W/L 20.9 ms. Was aerial working as a Hertz?
G5MA ...	23	Full-wave Zeppelin	V.F.	22.5 ms.	Yes	3 $\frac{1}{2}$ " diam., 7 turns, 3" long	.00025	5.25 ms.	6"	These should be an odd number of $\frac{1}{4}$ waves for Zeppelin feed.	Only type used is Series Split Hartley	Considers this type is most efficient he has used, but has not had it in use for long.
G5JW ...	23.0 45.0	Zeppelin	V.F.	73' 10"	No	12 turn pancake, spaced $\frac{1}{4}$ " edgewise copper ribbon, innermost turn 3 $\frac{1}{2}$ " diam.	.0005 in series with each feeder	For 23 ms., 18 ft., and for 45 ms., 36 ft.	10"	Yes, $\frac{1}{4}$ -wave	Any if properly adjusted. It's the radiating system that does the trick, not the oscillator	Zeppelin type aerial seems to be fairly directional.
G6DR ...	45.2 22.6	Zeppelin	V.F.	74 ft.	No	4 turns, 6" diam., $\frac{1}{4}$ " Copper Tube	Nil	33 ft. for 45.2 ms. 15 ft. for 22.6 ms.	10"	Any uneven multiple of $\frac{1}{4}$ -wave	T.P.T.G. or Colpitts	Uses different feeders for each band for maximum efficiency. Finds it best to insert a lamp at current loop when testing, otherwise you may get resonance due to feeder radiation, which may not be same as resonance for roof portion, unless feeders are of correct length. All continents worked on 10 watts. Believes V.F. Hertz gives best results when high anode voltage and low current is used. As far as he can see, the higher the voltage applied to antenna the better. Is there any maximum voltage for consistent and satisfactory operation?
G6KM ...	45	Bent Hertz $\frac{1}{2}$ -wave	V.F.	30 ft.	Yes	None	—	Single Wire forming part of aerial, 42 ft.	—	For this type, the more wire in flat part the better. Suggest 72 ft. horizontal with transmitter at one end would be ideal.	Any Standard Circuit.	
G6TW ...	45.5	Zeppelin	C.F.	70' 9"	No	8" diam., 5 turns spaced $\frac{1}{8}$ "	.00025 in both feeders	27' 6"	8"	No, but endeavour to tune to a harmonic of the fundamental used.	Hartley best. Tried T.P.T.G. and Colpitts	Feed 26 ft. from end; length of wire from coil to condensers 2 ft.; finds this type very elastic for 44-46 ms. working. Finest type tried, also most consistent.
G12CN ...	45	$\frac{1}{2}$ -wave	C.F.	70 ft.	No	6" diam., 2 $\frac{1}{2}$ " long, 6 turns	.0003	22' ft.	6"	No, have tried all lengths and found no difference. Present type seems O.K.	T.P.T.G. with C.F. Hartley with V.F. $\frac{1}{2}$ -wave.	Have found with C.F. Hertz that it is necessary to keep coupling coil spaced about 3" to get good strength at distances over 600 miles with 4 watts and coil tuned to verge of resonance; for distances up to 600 miles, the coupling coil about 1".
G6LB ...	23	Zeppelin	C.F.	74 ft.	No	2 turns $\frac{1}{4}$ " diam.	.00025	7 ft.	4"	No, any length will work O.K.	T.P.T.G.	Aerial runs E. and W. Appears to have strong directional properties. Open end at W. Sigs strong westwards, weak north and south; almost impossible east.
G5UY ...	45	$\frac{1}{2}$ -wave	C.F.	68 ft.	No	No coupling coil; direct tapped on 4th turn of plate coil	Nil	17 ft.	—	No	T.P.T.G., Hartley	Feed 17 ft. from end. Received in Tasmania R4 on 6 watts. Worked Iraq on 6 watts.

The Construction of an Accurate Frequency Meter.

By G. W. THOMAS (G5YK).

The frequency meter described in this article is the outcome of many experiments conducted by the writer in conjunction with G5YX and G6CR in an endeavour to produce a meter that would hold its accuracy over long periods.

The theoretical considerations outlined in G6CJ's article* were studied, and it was thought that if a coil was constructed having as tight a coupling between the grid and plate windings as possible, one of the chief difficulties of maintaining constant calibration would be overcome. It was also decided to use lumped capacity across both windings in order that small capacity changes in the valve and other parts of the circuit would not have such a great effect on the accuracy of the meter.

An oscillator was therefore constructed, details of which were very similar to those shown in the figure, operating on about 3,500 K.C. The valve used was an LS5b, and battery voltages were 6 volts L.T. and 60 volts H.T. Changes of voltage amounting to 30 per cent. produced negligible frequency changes, about 100 cycles or so. On the face this appeared very good, but alarming frequency changes were noticed from hour to hour and day to day. That these changes were due to temperature variations, if not also to other causes, was at once evident when an electric heater was directed on to the meter. As it was also possible that the humidity of the atmosphere would have an effect on the calibration, it appeared that without a considerable amount of trouble in coping with all atmospheric conditions a high degree of accuracy could not be maintained.

When two tuned circuits are loosely coupled together and the frequency of one varied so that it passes across the frequency of the other, the frequency of the fixed circuit varies in the manner shown in Fig. 1, in which f represents the frequency of the fixed circuit and F that of the variable circuit. At the point X, where the frequency of fixed circuit passes through its original value, the two circuits are exactly in tune. It was thought that the calibration of a carefully constructed L/C circuit would remain more constant over long periods of time than a valve oscillator. If, therefore, a simple L/C circuit be loosely coupled to a valve oscillator as mentioned above, and arrangements made to listen to a beat note, the arrangement will act as a very accurate frequency meter. Upon these lines the meter described below has been designed.

The instrument consists of three distinct units, namely, a crystal oscillator, an oscillator and an absorption circuit. The case for the meter is constructed of aluminium $1/16$ " thick. This may be purchased from the British Aluminium Company, Ltd., cut to the following sizes: One piece $7" \times 18"$, one $7" \times 16"$, three $7" \times 9"$. The front panel measures $7" \times 18"$, and is fixed to a baseboard $10" \times 18"$. The space behind the panel is divided

into three partitions by means of two of the pieces, each $7" \times 9"$; the centre partition being $7"$ wide, the left-hand one $6\frac{1}{2}"$, and the right-hand one $4\frac{1}{2}"$ wide. The piece of aluminium $7" \times 16"$ is bent at right angles along a line $7"$ from one end; the $9" \times 7"$ section forms the base of the centre partition, and the $7" \times 7"$ the back. The third piece $7" \times 9"$ forms the top. Sufficient length of $\frac{1}{2}" \times \frac{1}{2}"$ angle will also be required to fit the case together. No allowances have been made in the above sizes for the thickness of the metal, though if a really good job is to be made of the box this must not be overlooked.

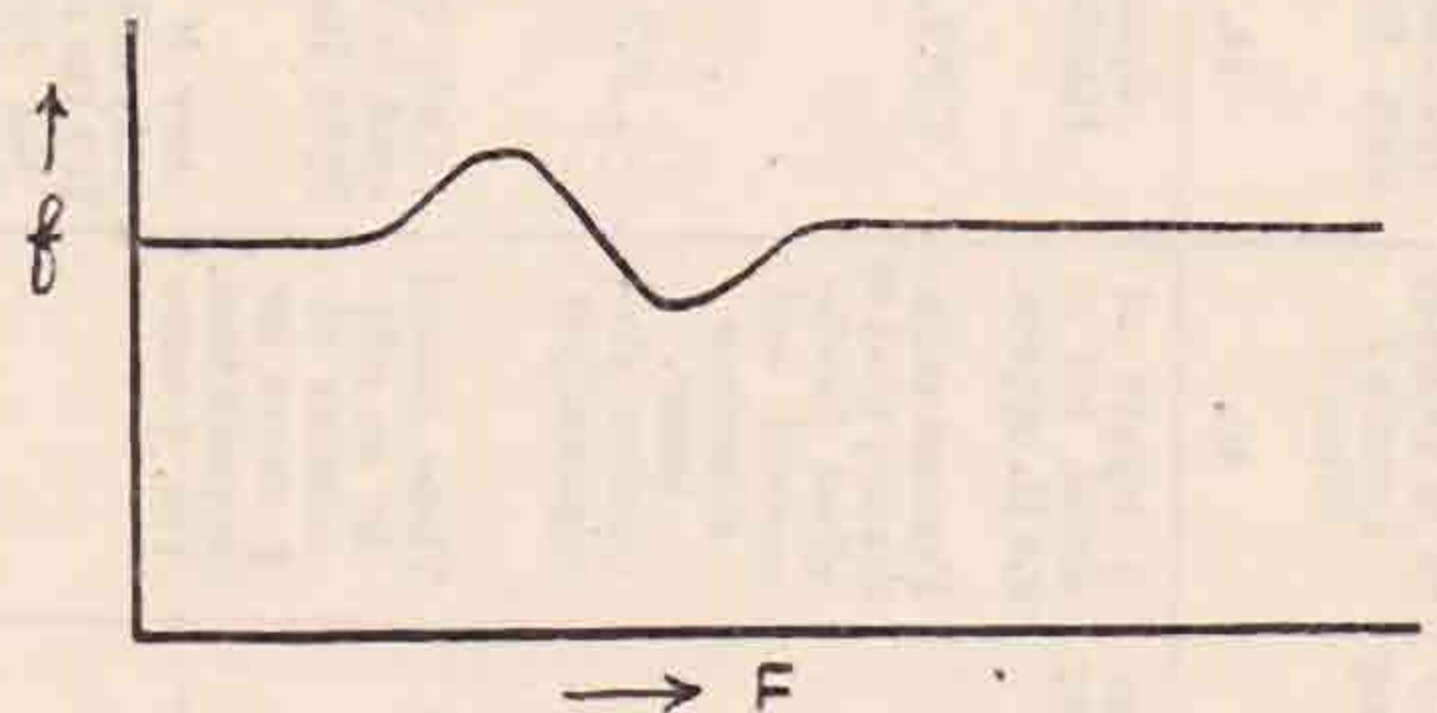


Fig 1

The circuit of the oscillator is shown in Fig. 2. The coil is wound on a ribbed Becol former $3"$ diameter. Small notches are cut with a triangular file $\frac{1}{8}"$ deep on the ribs, spaced four to the inch. At the bottom of these notches a slot is cut to a depth of $1/16"$ by means of a fine fretsaw. The plate winding consists of five turns of 36 S.W.G. D.S.C. wire wound in the slots; a suitable means of securing the ends of the winding may be obtained by fastening soldering tags to the former (between the ribs) by means of 4 B.A. screws. As the grid winding is on the top of the plate winding, and consists of more turns, the heads of the screws and the tags will be below the grid winding and no trouble will be experienced. This upper winding consists of $6\frac{1}{2}$ turns of 20 S.W.G. D.C.C. wire, the turns resting at the bottom of the notches; the ends of the wire are fastened off in a manner similar to that already described. The grid winding therefore extends two-thirds of a turn past either end of the plate winding. Having made the coil, it will be seen that the two windings are very close to each other, and as the field of one almost encompasses that of the other, a near degree to unity coupling is obtained. Both wires are run through hot paraffin wax just before going on the former, so that they will be held in position to a certain extent and also be impervious to moisture. It will be obvious that unless the capacity between the two windings remains constant the accuracy of the meter will be upset. Although in this particular instrument the absorption circuit is the meter proper, these details have been given to

* See T. and R. Bulletin, August 1928, p. 34, "The Design of a Heterodyne Wavemeter."

assist anyone who desires to use the heterodyne meter alone, and because it has been found useful to have such an instrument for general use, even if it is not used for accurate work. The four connections may be taken from the ends of the screws inside the coil former.

As will be seen from the figure, each winding of this coil is shunted by a .00025 Ormond fixed air-spaced condenser, and the grid winding is tuned by a .0003 Cyldon Log-Midline condenser. A Polar slow motion dial is fitted. A .001 T.C.C. mica condenser is placed between the earth potential ends of the two coils.

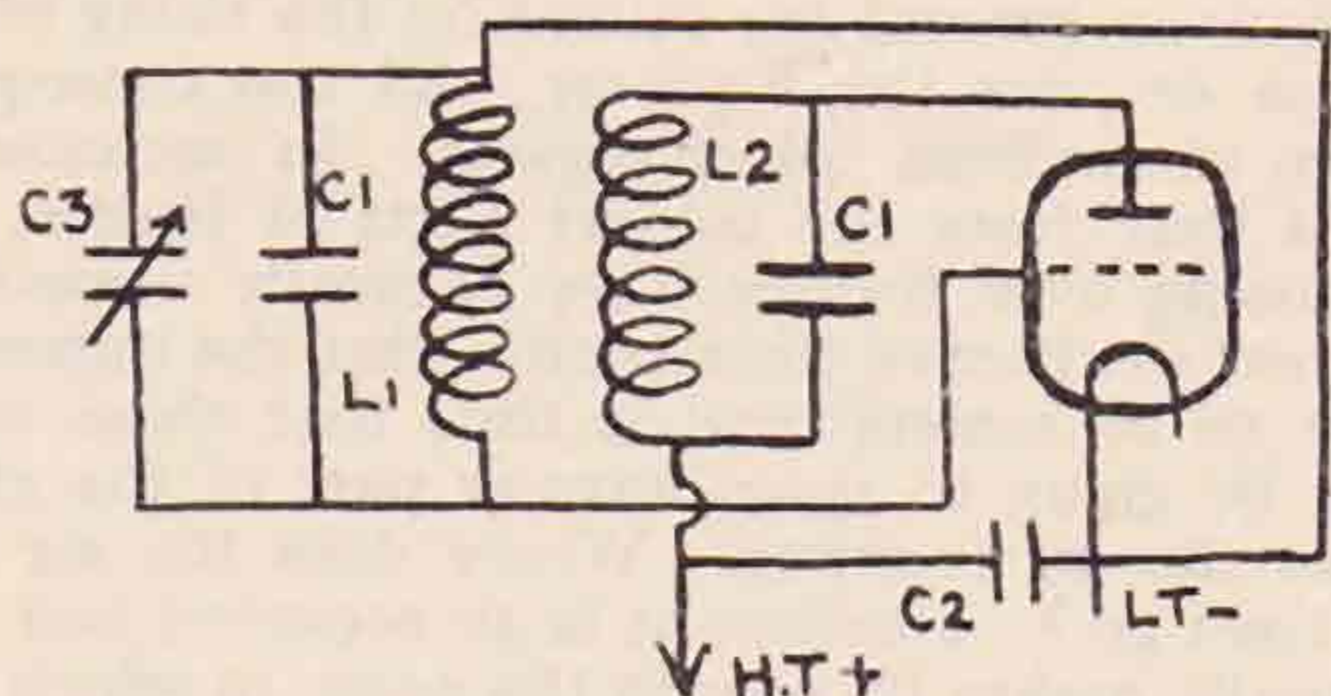


Fig 2

The LS5b valve is an excellent one for use in this oscillator; an alternative being the DE5b. If the oscillator only is to be relied upon, the former valve should certainly be used. It need hardly be mentioned that all wiring should be carried out with heavy wire so that no changes are likely to occur in the position of individual wires; the effect of any such changes, however, will be considerably reduced because of the capacity across each winding.

The crystal oscillator circuit is of the free grid type and is not reproduced here because it must be very well known. The valve may well be a

PM5X, or possibly a similar one of higher impedance as there will then be a greater saving in milliamps. The crystal is around 3,500 K.C., and is supplied in a sealed type holder by the Oscillating Xtal Company. With such a crystal in a specified circuit the frequency can usually be guaranteed to within 100 cycles, so that it will act as a splendid standard. The plate coil is a No. 25 Gambrell, and no tuning condenser is used. Unless a crystal is used right on the low frequency edge of the band, 25 turns will probably be found slightly too large. A few should therefore be taken off until the crystal is made to oscillate. If the oscillations are too strong a beat may be heard due to the valve going in and out of oscillation at one or two times a second. To get rid of this beat the size of the coil should be still further reduced, one turn at a time, until unbroken oscillation is obtained. A milliammeter in the H.T. lead will be found very useful in the preliminary adjustment and the beat note may be picked up with an oscillating receiver. A .001 mfd. fixed T.C.C. condenser is connected between the H.T. positive and the filaments.

The following list of components are used:—

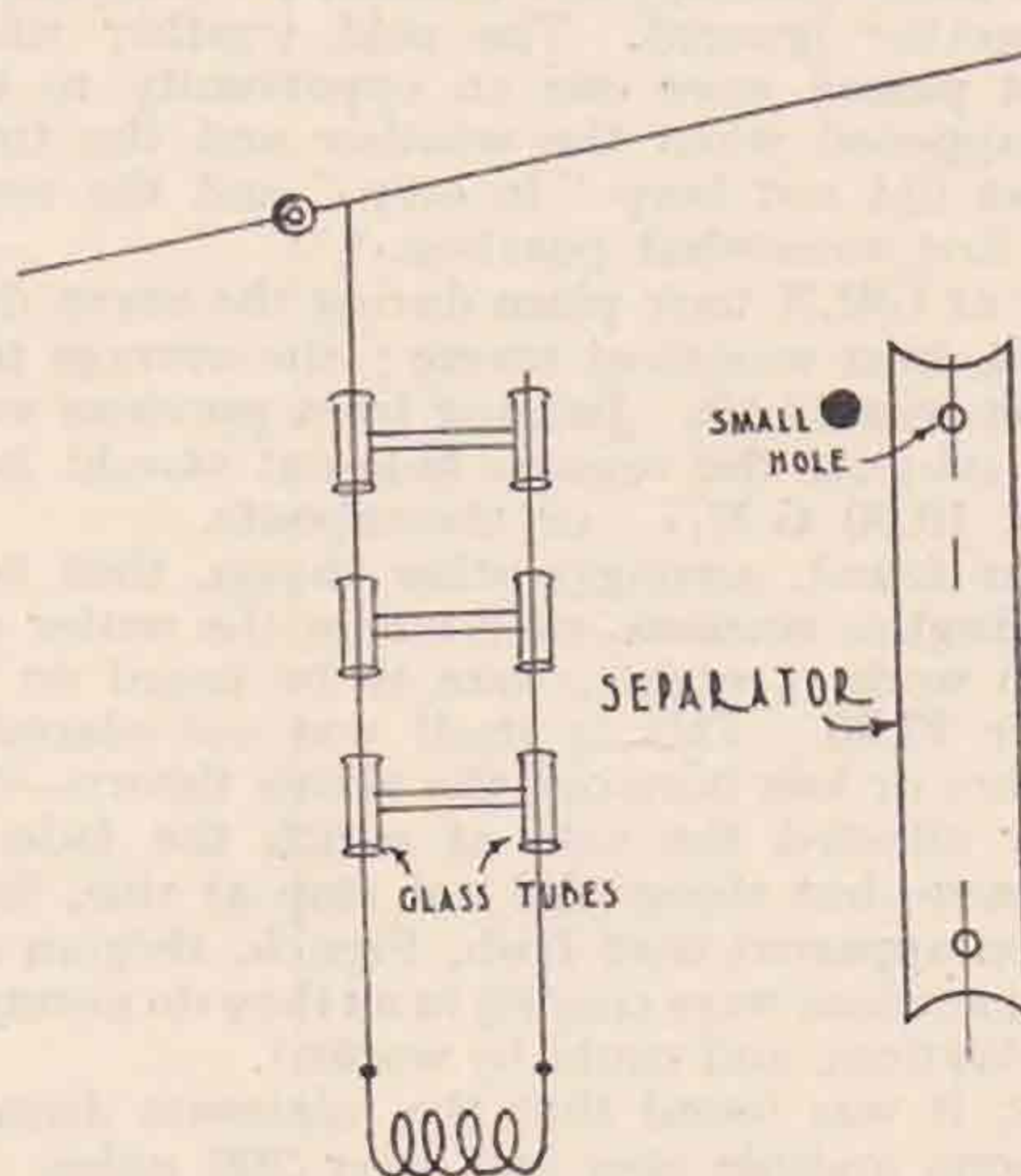
- One .0003 mfd. Cyldon Log Midline variable condenser.
 - One .0005 mfd. ditto.
 - Two .00025 mfd. Ormond fixed air-spaced condensers.
 - Two .0003 mfd. ditto.
 - Two .001 mfd. T.C.C. mica fixed condensers.
 - Two 3" lengths Becol ribbed ebonite former, 3" diameter
 - Two Pye valve holders (rigid type).
 - Two Benjamin push-pull switches.
 - One Benjamin slow motion dial.
 - One standard 4" dial.
 - One 3500 K.C. crystal in fixed holder (Oscillating Crystal 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).
- (To be concluded.)

"Zeppelin" Aerials.

By W. A. HAYES (GI2WK).

At the conclusion of Mr. Secretan's admirable article in the January BULL., the Editor asks for ideas for spreaders or separators for Zepp. aerials. In advocating the use of wax-baked wood, apparently "Sec" has been caught sleeping at last, but I imagine that, having tried wood prepared in this manner, he finds it moderately reliable. Teakwood strips were used here for a considerable time with success, but since it was desired to have a contented mind about this part of the aerial, the following method was tried with a marked improvement in range.

Over both the feeders are slipped a sufficient number of glass tubes such as were once used for house battery plate separators. The glass in these tubes is of quite decent quality and they can be obtained up to 18in. in length. The tubes are placed at equal distances along the feeders and opposite each other. Between the opposites a piece of waxed wood with a suitable nick in each end is placed and secured by string through a hole in the wood near the nick and round the tube. Where the feeder line is horizontal and/or indoors no further treatment is necessary except an occasional wipe to clear dust or moisture. If, however, the feeders run at an angle or vertically the tubes are secured in position on the wires by



means of a small wedge of waxed wood. The open ends pointing upwards can be closed with wax or compound. It will not be necessary to borrow the local brigade's fire escape to do this as the procedure should be carried out before the aerial is hoisted.

By the way, the Zepp. aerial has been stated to be very directional. The writer has not found it so.

On 7,000 K.C. During the Second Ice Age.

By E. PHILIP ALLEN (G6LN).

Work on the 7,000 K.C. band was affected here to no small extent during the recent cold snap, and it is thought the results of the tests performed during this period, while not being in any way conclusive, may possibly help to explain the somewhat strange effects of the frost, which we all noticed. These few notes are being written before any authoritative information regarding the causes of the severe weather has become available to the writer, and any theories or explanations advanced are merely attempts on his part to account for the phenomena noticed during the experiments. They must not be taken as being dogmatic.

The tests which were carried out here related more especially to the effect of the weather change upon the fade-out, and, in a lesser degree, to the general effect on radio "conditions." Here it is proposed to deal only with the first of these two subjects, as it is thought that it will run to quite a sufficient length for one article.

Before discussing the present problem it is necessary to be in the possession of a few facts governing skip. To begin with, in mid-winter sunset takes place at about 15.50 G.M.T., and in these circumstances signals fade out at somewhere around 16.15. In midsummer, though, the sunset takes place at 21.20, and yet signals do not fade away half an hour later as in winter, for it is no uncommon thing for local stations to be audible nearly all night. We see from this that as summer approaches the rate of fading after sunset decreases, and it would appear that although the time at which sunset takes place governs the time of fade-out to some extent, there is another factor entering into the case—namely, the weather—which cannot be altogether ignored. The cold weather which has just passed gave one an opportunity to test what happened when the weather and the times of sunset did not keep "in step," and the result was at first somewhat puzzling.*

Tests at G6LN took place during the seven days when the frost was most severe; the average time of sunset was 17.10. Judging from previous work on the subject, the normal fade-out should have been at 19.00 G.M.T., or thereabouts.

It was found, amongst other things, that none of the English stations, with whom the writer was wont to work o' nights, were to be heard on the air after 17.30. This in itself was not alarming, as it more or less bore out the above theory—that weather affected the rate at which the fade-out took place—but things did not stop at this, for it was soon apparent that Irish, French, Belgian and German stations were coming in as they do normally in the daytime, and could be worked.

Later, it was found that the minimum distance of stations audible was just over 200 miles, and several stations were worked at this distance during the week.

The great puzzle presented itself when it was found that these signals did not seem to fade out

until 19.00 G.M.T., which was normal for time of year, but hardly in harmony with the early disappearance of the more local stations.

After consulting the daily Press weather reports, together with those of the B.B.C., and using what small knowledge of the weather he himself has, the writer has come to the following possible explanation of what has occurred.

Winds in general are caused by the rising of hot air, on or near the Equator, and the consequent inrush of air from colder regions. In our case the winds were from the coldest parts of Russia, and in passing over Europe have naturally caused the severest weather in their train. But the important point to be remembered is this, that these winds must be going to some warmer part of the globe, where the air is rising. Where does the air that has risen go? I believe it is an accepted fact that it usually makes its way to the poles, in which case it is not unreasonable to suppose that a large amount of it is passing over Europe, whilst the other cold wind passes below it.

If this is actually the case, then we have cold and wintry conditions on the ground, whilst far up above the conditions are warmer than is normal.

Continuing our previous line of thought, we see that the return to wintry conditions on the ground (and for some considerable distance into the air) will cause the sudden rise of the Heavyside Layer after sunset. After a short period of time, however, the layer will no longer be situated in the cold lower atmosphere, but will become part of the more temperate region above, and hence its rate of rising will be checked. The first rapid lifting of the layer would be sufficient to cause stations within 200 miles or so of the receiver to skip, while the more distant ones would be unaffected until the later rise.

(I think most adherents of the Heavyside theory are agreed that nearby stations suffer the fade-out first.)

Here, then, is the attempt to explain the result of a rarely-met-with phase of weather upon short-wave signals. The tests in this connection have been of necessity short, but it is thought that with the benefit of past experience to work on, valuable results may be gained in even so short a period.

Be merciful, dear reader, and before you write to our Editor, informing him that things like G6LN are usually kept in padded cells, just run over the first paragraph again.

I do hope, all the same, that someone will let us hear his experiences or explanations, for it is inconceivable that there are other stations who found conditions similar to the above, and who did nothing to find out the reason.

Perhaps at this point I ought to mention that during the week I was working there was one day which seemed to be quite normal in every way, and on this day none of the effects I have outlined occurred. This was Saturday, February 16. I have yet to find out why this relapse should have taken place, because the weather remained almost the same, except for a very slight rise in temperature.

(Continued at foot of next page.)

*The meaning of this sentence may not be quite clear to some readers. What is meant is that, although we were getting a fade-out normal to February, we were getting weather which was normal to December.

Low Power at G2ZN.

The object of this short article is to give encouragement to those amateurs who, like the writer, are up against the difficulties of efficient power supply.

When one is faced with the problem of no mains, no generator, and, up to the present, no H.T. accumulators, it will be seen that there is plenty of scope for experiment in *ultra* QRP work. By the latter I mean power of 1 watt and less derived from dry cells; with this power there is always that element of uncertainty which lends fascination to the game. Efficiency has to be studied closely.

It was with considerable misgivings that the writer first came on the air with no more than .6 watts! Flash-lamp cells were used as H.T., approximately 90 volts. The circuit was just a plain T.P.T.G. with a Triotron 2-volt power valve as oscillator! With the full anode voltage of 90, about 6-7 ma. was passed by the valve. Aerial current, of course, could not be measured. Throughout the construction of the transmitter ordinary components as used in a receiving set were used.

Various aerial systems have been tried, the one giving by far the best results being the "end-feed Hertz." Up to the present six countries have been worked on 7,000 K.C. band, G, E1, F, ON, PA, and D. Outstanding QSO's have been R3 (old scale) from D4ABR, Frankfurt, and R7 from F8CIO, Nancy. A chirpy note is the only bugbear on 7,000 K.C.

With regard to work on 1,750 K.C., results seem to be exceptionally encouraging. The same input of .6 watts is used. It was anticipated at first that only purely local 'phone could be done, and that C.W. would have to be resorted to at distances of greater than a mile or two. However, apparently this is not so, for the writer now almost invariably uses 'phone only on the longer wave with every satisfaction.

Two-way 'phone has been achieved with G6ZH, Willesden, who reported sigs. as R4 and quality quite good; whilst C.W. has been reported as R7 from Greenwich. It can, therefore, be clearly seen that real QRP work is by no means to be despised. Apparently the QRA here (Walthamstow) is suitable, although the station is certainly not in an elevated position.

And now, as a last few words, may the writer plead for a greater interest in real "fly-power" transmission, as he is firmly convinced that just as good results may be obtained with this as with higher powers, providing attention is given to details. After all, what is the interest in sitting down key pushing a 50 watter, and knowing that you will get there any time and anyhow?

(Continued from previous page.)

In conclusion, might I strike a personal note and thank all those stations with whom I worked during the week of February 11 to 17 for their help. Although they may have been unaware of it at the time, their reports were of the utmost value. In particular, I would mention GI5HN, G6KO, G6SO and G6XB. Last, but not least, I must thank my good friend BRS98—but for his report this article would never have been written.

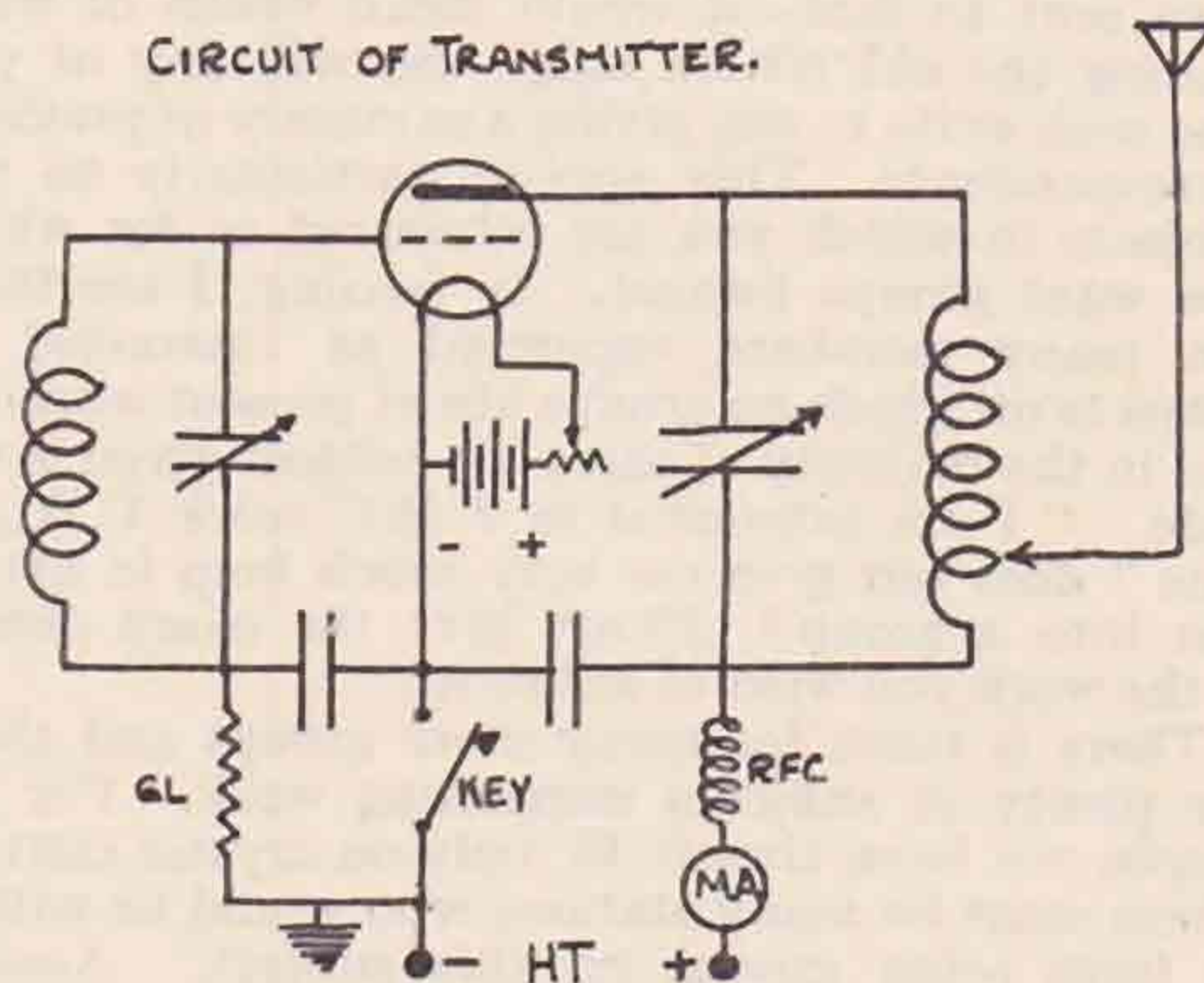
28 M.C. Activities at G6CI.

By BRIAN W. WARREN.

During the early part of this year, some tests on 28 M.C. were planned, and it was intended to adapt the crystal-controlled transmitter for this purpose. However, minor troubles arose which prevented the completion of the transmitter in readiness for the tests. The result was a hastily constructed T.P.T.G. lay-out, which, in operation, proved itself to be quite efficient. The set has been successful in communicating with the U.S.A., and it is thought that a description will interest readers of the BULLETIN. By the time these lines appear the crystal-controlled lay-out should have been completed and put in operation.

The construction of the transmitter can be clearly followed from the circuit diagram and mechanical lay-out shown. The plate coil consists of four turns 2½ in. diameter of 12 S.W.G. wire with ½ in. spacing between the turns. The condenser shunting this coil is perhaps out of the ordinary, the construction of which is clear from the sketch. The brackets A and B each have a tapped hole in them through which the 2BA rod is threaded. Hence by rotating the knob C we can either advance or retard the disc D in respect to disc E, thus obtaining a fine adjustment of capacity. Such an arrangement has but very small loss, and it enables a symmetrical lay-out of the plate L/C circuit to be obtained.

CIRCUIT OF TRANSMITTER.



The grid coil has three turns of 12 S.W.G. wire 2½ in. diameter with ½ in. spacing between the turns. Across this coil is placed a condenser having three fixed and two moving plates, each being double spaced, its maximum capacity being about .00005 mfd.

The grid and plate-blocking condensers each have a capacity of .001 mfd., while the grid leak is of 10,000 ohms. Anything above this figure causes the valve to emit a mass of harmonics, while the feed current is not too high with such a leak. The radio frequency choke in the H.T. positive lead has 50 turns of 36 S.W.G. D.S.C. wire on a glass tube ½ in. diameter. Attention is here drawn to the method of keying. This system has much to recommend it, the keying being clean cut, no chirp whatever, and, of course, no spacer wave. Inci-

(Continued on page 265.)

Contact Bureau Notes.

By H. J. POWDITCH (G5VL).

CB notes, without the familiar GI6YW below the heading, do not seem the authentic article we have all looked forward to each month. Probably last month's announcement of Mr. Allen's retirement came as a great surprise to most of you and it is only fitting that these, the first notes since he said good-bye to us all, should record our indebtedness and thanks to the founder of CB. Had the day (or night) an extra twelve hours I know that Mr. Allen would still be at the head of things. As it is there are certain duties and obligations which must take first place and have forced the resignation of "one of the best." I want to ask all CB-ites individually to do all they can to support CB as the best acknowledgment to its founder that they appreciate his work for them. As a member of the Committee and also of a group he will be in close enough touch to follow the progress of affairs.

Why G5VL was picked to follow GI6YW, only the Council of the Society can say. The request to do so was the first intimation of any coming change in the managership. However, having agreed to do my best at the job, I must point out that it is not possible for me to have the intimate knowledge of my predecessor of all the letters and facts you have sent to him—it would mean weeks of work reading the old letters only. So will any of you who wish write to me, giving a summary of previous correspondence. This applies particularly to the subjects in which you are interested or for which you want groups formed. In passing, I see there are many members registered as interested in subjects on which no groups are at present working, and in the majority of cases the subject given is too wide. "I am interested in 7 M.C. work, C.W., or fone" does not give me very much help in fitting you into a group! Please give the exact details of the work you wish to follow up.

There is room for many more groups and there are plenty of subjects warranting work. For example, we have Group 3A only on crystal control. There must be many stations who would be willing to form other groups on this subject. Aerials, directional work, polarisation and many other problems await groups. These are only the first that occur at random on the CB register. With summer due, portables too should help to solve the apparent blind spots specially noticeable on 28 mc. And what is responsible for "dud" periods? Sun, moon, clouds? High barometer or low barometer? Will anyone organise a group of widely distributed stations to plot receiving conditions against some of these variables?

And just one other thing before I come to reports. There was a strong Editorial appeal to all group members to play up and support their group centres by contributing to the budgets each month. I hope to have reports from all groups this month showing the appeal has gone right home. But—there is still another thing not touched upon. That is the question of letter budgets that are missing. These letters represent the work of fellow-members

and when you join a group you have the benefit of their work. Surely, in common decency, one would think the letters would go forward, yet several have disappeared and much valuable work is lost or mislaid. Perhaps some one has kept them beyond the allotted time and then not cared to forward at a late date. If so, will they send them on to their group centres, or to me if conscience is too tender for the first course. Thank goodness, there are only one or two cases of this particular sort, for it is a very poor example of our co-operation. All reports or letters concerning the recent 28 mc. tests should go to GI6YW. All other correspondence should come to me. The address is: Porth, St. Columb Minor, Cornwall.

The month's reports are not very heavy. Good DX conditions may account for a falling off in some groups.

GROUP 1A.

Only G2NH, the group centre, reports this month. He has been laid up and out of action. But—what have you other six stations in 1A been doing? We shall expect to hear next month.

GROUP 1B.

G.C.G5SY finds things very quiet. G6LL and G5VL have been QSO with U.S.A., but all found the month very poor. G6LL finds a half-wave vertical directly clipped to the anode coil works best, and G5VL has been experimenting with feeders, concluding that over $\frac{1}{4}$ wave are a source of loss. G5LU is through exams and getting busy with a $\frac{1}{2}$ wave aerial and reflectors.

GROUP 1C.

G6VP sends in a fine report that testifies to the keen interest of his group. G5YK found adverse conditions for the tests. A Wx theory of his appears elsewhere. He is trying out two aerials, an inverted "L" with full wave top and a full wave vertical, Zep fed at bottom. (I found both types about equally efficient.—5VL.) A S.G. receiver is waiting better conditions for test. T.H. cured therein by the resistance condenser method across tfr. primary, 50,000 ohms and .001 in this case, combined with potentiometer to grid. G6WN has two ops. and two transmitters. They are troubled by lack of power from P.A. when doubling for 28 M.C. though the set is a DX getter on 14 M.C. Tests are going on with OH2NAP, who is on every hour on Sundays, but no QSO yet. They have logged a few W's and heard WIK and W2XAW up to 20.25 G.M.T. BRS15 has been putting in a lot of time on Rx and is now studying Wx. On March 3 logged 7 W's (in 40 minutes) and a doubtful PA. March 10 gave only W2JN and 2 G's. March 17 was no good. PA.ODU furnishes again a very excellent report with full Wx conditions and graphs. He hopes to come to England shortly and will certainly find many friends here. His list is:—March 3, W's, 2JN, 2NM, 2AYR, VE2AC; March 10, W's, 2JN, 2ACN, 2BVG, 2AYR, 2BHQ, 9DHK, 1RY, 5YG, WDC (a FB log). The remaining Sundays were bad with him as with us. OK2YD is a very welcome

station to report. He uses a TB.04/10 and $\frac{1}{2}$ wave vertical aerial, but has been suffering from severity of winter, aerials blown down, etc. He wonders at efficiency of several aerials on same location (so does the G.C.) No QSO's yet although he is often on 28 mc. He wants skeds and reports from anyone who may have heard him. He sends a list of calls heard between March 13 and 21, which includes:—W's, 2JN, 1XAM, 8DHS, 8AXA, 1CMF, and EI7C. G6VP has been on a lot with negative results. Has had only one QSO (with G5DA) but has a few BRS reports. Was heard by W3ADM on 31st but signals were poor in quality and weak. Calls heard included both ends of a QSO between W2JN and G6LL. Others were:—W's, 2BHQ, 2ARB, 2XAM, 1CMA, 1BHM, and G6DH. G6VP is on most afternoons 15.30 to 16.30.

GROUP 1D.

G.C.EI7C records the loss of GI5MO and GI5MD, who have to drop out. G2AAK is finding some trouble in getting on the band. Anyone know QRG of station PMA? Please drop a card to 2AAK. EI4D had temporary permit for latter end of tests but struck bad conditions. He is doing fone tests with EI7C. QSA5 at 2 miles. EI7C hooked W2JN on first Sunday and found the rest of the month hopeless. From tests on 14 mc., he thinks a full wave aerial with $\frac{1}{4}$ wave feeders may prove useful for 28 mc., and will try this out.

GROUP 1E.

G.C.G2OD has been away, unfortunately not for pleasure, but through illness. We all wish him a quick and complete recovery. There is therefore no report from this group.

GROUP 1F.

G.C.G2CX is finding trouble in getting letters from some of his group. He reports that PA.OCX is putting .2 amps into an aerial 40 metres long. Also trying SG stage to improve signal to static ratio. (The report does not say if the 40 metre aerial is used on Rx.) PA.OVN is getting QSA signals from this station. G5WK is said to have succumbed to DX on 14 mc. (Hope this is only a rumour.) G6HP has fallen for Aussies on Sunday afternoons. A new receiver is giving satisfactory results but a cooked LS5D is weak on emission. BRS25 has a good list of calls but, like the rest of us, finds conditions poor. He is another station with extensive Wx/Dx notes. Let us all see them, OM. G2CX got QSA3 report from WIXV. Otherwise only the hook-up with W2ARY. The last weeks of March and first in April were blank, only HJO being heard. He is taking a portable to Denmark and hopes to report a better log from that country.

GROUP 1G.

G.C. G2YU has been held up by sickness at home but is nearly ready for starting up. G5GU and G5PL are both on the air. 2AUX getting fit with Rx. No report again from G2SG.

GROUP 1H.

No news of this group. How about it, G.C. G6OO? I have heard your call a lot on 14 mc. lately!

GROUP 2A (SKIP).

G.C. G6LN has skip tests going strong with BRS 98 and others. They are testing for directional properties of aerial, before and after sunset. BRS98 is fixing skeds with other members of the group in addition. G2YU is also on skip tests and collating

DX results against aerial characteristics. BRS72 drops out owing to work and G5PL owing to work with 1G.

GROUP 2B.

No report to hand here. Perhaps in the Irish Sea with 1B report.

GROUP 3A (C.C. WORK).

G.C. 2BFA has no reports this month, the budget having been a month beyond time in getting round. However, as he adds that this contained a polariscope, samples of quartz of various cuts and a big bunch of questions, perhaps it is not to be wondered at! G6XB asked: "Why does a crystal lose its oscillating properties after grinding down?" G2QY answers this. "With a given standard of workmanship—say flat and parallel to one ten-thousandth of an inch—a thick crystal is accurate to (say) one part in 500 while a thin one is only perhaps one part in 200. Also, the ratio of thickness to diameter has been materially altered. Nobody appears to have investigated either of these two effects. Undoubtedly the quartz molecules are most regularly arranged (if they are not you get twining) but it is almost impossible to examine a thin specimen for twining."

GROUP 4A (BEST TIMES FOR RECEPTION).

G.C. 2AUH sends in the usual chart printed herewith. His group are collecting new intermediates for the QRA Section. He is another who promises us some Wx observations in the near future.

DX Reception Guide.

MAY 20—JUNE 20.

	7 M.C.	14 M.C.
Australasia	06.00—08.00	15.30—22.00
North W America E	01.30—08.00 scarce 21.00—09.00	03.00—08.00 17.00—08.30
South America ...	20.00 to early morning. Scarce.	21.00—24.00 05.00—07.00
Asia ...	Siberia & Central Asia abt. 23.00	15.00—21.00
Africa— North ... Central ... South ...	All day. Best abt. 19.30 Nil. Nil.	Various. Abt. 21.00 18.00—22.00

GROUP 5A (3500KC FADING).

G.C. G6FY has found conditions too good for fading observations but at the same time demonstrating the excellencies of this band for general communication. The question of licences is however again in the air. If these are forthcoming Danish stations will be participating in tests.

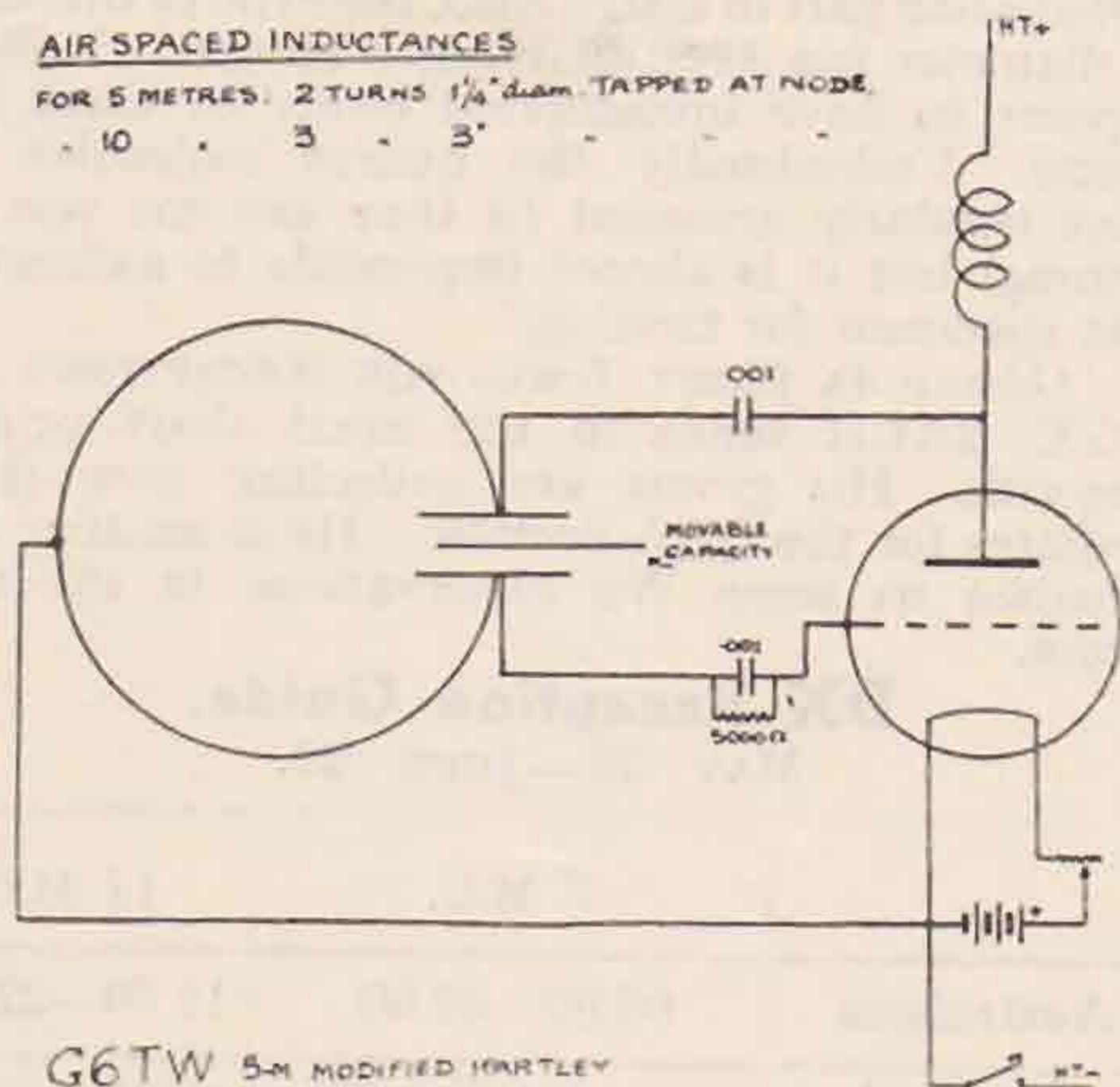
GROUP 6A (SUNRISE EFFECTS).

G.C. G6VO comes in with a new group this month. He finds that signals at 400 miles are fairly certain to come in within the hour after sunrise. Signals at 200 miles vary, skip sometimes not lifting at all, particularly with heavy snow. He concludes that skip, when it occurs, has a lag of approximately one hour both on sunrise and sunset. G2MJ puts it

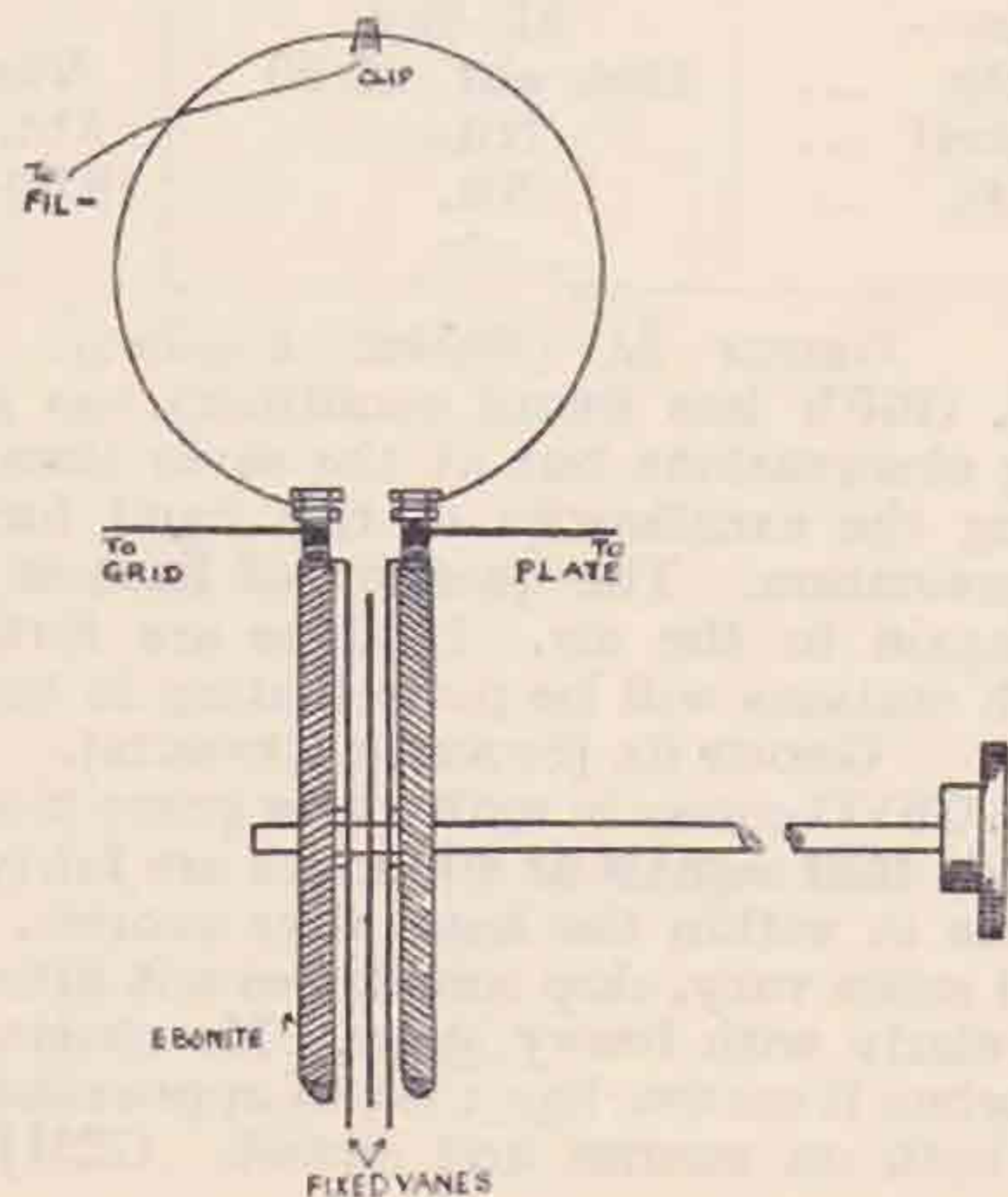
at 40 mins. after sunrise and from 60 to 150 minutes for sunset. G6QA notes a general fade just before the G's are heard and that there is another slight fading period after they begin to come in. He finds clouds affect these conditions. G6AH will be reporting next month.

GROUP 7A (56MC WORK).

G.C. BRS125 sends another first report from a new group. Let the good work go on! He calls himself "a centre for those interested in the ultra high frequencies" and has collected the nucleus of a strong group. His own energies are at work on a Reinartz-Grebe receiver and he adds that both General Electric and Cleartron people will supply baseless power valves for the special asking. (If this is meant to be taken strictly as written, there should be a rush.) G6TW sends details of his



proposed Tx using a Mullard 0/20 valve. He hopes that this circuit will prove eminently satisfactory "as it is a perfect bridge, all being balanced from one centre and the moving part in no way connected with the actual circuit." In addition, he points out the uselessness of H.W. meters for these frequencies and that his aim is to keep out as much metal as possible. He is also trying to evolve a



balanced receiver. G6DH is using his 28 mc. apparatus tuned down and finds his Ultraudion satisfactory on the higher frequency. BRS107 has G6DH receiver ready as p. 174 of February BULLETIN.

Will all 28 mc. groups note that VE2AC will arrange tests, either Tx or Rx, between 13.00-16.00 G.M.T., and also 19.00 to 22.30? VE2AC tests daily on 28 mc. band at 18.30 G.M.T. W4NH is another station wanting skeds and should be of use as he is available for week-days as well as for "the usual Sunday gatherings." I hear that 28 mc. is still going strong in Australia and 3CP is asking for skeds with us. Get in touch with him direct or through 3HR. Our CB group 4A offers to stand by for any series of tests that may be in progress. This, I think, refers to the 14 and 7 mc. bands, chiefly. If you want them, G.C. is 2AUH.

The above notes are of necessity rather sketchy this month. I am afraid that one or two reports are in transit still between GI6YW and myself. They will either go in late this month or be noted next month.

Since starting, I have been struck by the fact that we have no fone group for serious work. I am not proposing any musical (?) additions to the "dog fight," but rather have in mind the President's notes in the Editorial columns of March BULLETIN. Is anyone interested in work on 1770 kc. band? If so, let us get the thing organised and allow others to hear what is being done.

To finish off these rather disjointed remarks, the usual reminder that CB notes rely on you for their matter, so—more next month, please OM's.

Since the above was written a letter has come along from YIILM which I quote. "Like G6LL, I have had considerable difficulty with neutralisation of the P.A. in the M.O.P.A., F.D., 28 mc. set. The fact that my previous experience of M.O.P.A. sets was nil did not improve matters, but eventually I decided that the F.D. might be dispensed with and the P.A. be allowed to do the frequency doubling. Whether this is bad practice I do not know, but with my set, at any rate, it allowed the P.A. to be neutralised sufficiently to prevent self-oscillation over the full condenser range. On 14 mc. the M.O.P.A. set gave stronger signals than the Eccles-Mesny—which may be due to the higher L/C ratio in the former. All 28 mc. signals reported have been from the Eccles-Mesny set, the input to which has been reduced to 100 watts."

EI7C wants an answer to the following:—"If a harmonic of a station working on the 15 mc. band is heard on 28 mc. in DX, would one be correct in assuming that the same aerial would be efficient on 28 mc.? If not, why not?" I think EI7C refers here to a transmitting aerial which is radiating harmonics.

(Continued from next page.)

So far as the 28 M.C. are concerned, the best transmitting work was that of G6LL with two contacts, the best reception work was that of BRS190, whose log was given last month. He appears to have the honour of being the first to receive S. African signals on 28 M.C., and his reception of W signals on a single valve receiver is very fine. The most complete log received was that from VE2AC.

Further Report on 28 M.C. Tests.

By T. P. ALLEN (GI6YW).

I am sorry to have to report that the information from abroad is as scanty as that from home stations. One report has been received from Canada, but none from U.S.A.

VE2AC sends in a report which should be an example to someone. Though he heard no British amateurs he sends a complete log of his watch, including pressure, temperature, wind, weather, QRN, commercials heard, etc. Had conditions been good, and had a good return of reports been made, it is possible that this report might have been invaluable, and VE2AC deserves our thanks. The only signals heard by him were a few U.S. commercials, though a few amateur signals were heard but unidentified. On the 10th, our best day in the bad period, there was a blizzard at VE2AC, 22 degrees of frost and not a single signal heard. Between March 3 and March 25 VE2AC was unable to QSO W stations on 28 M.C.

I am glad to say that BRS190's reception of a S. African station appears to be confirmed by the news that a German 28 M.C. station was QSO the same station on the same day. I sent a request to this German station for details, but these have not yet come to hand.

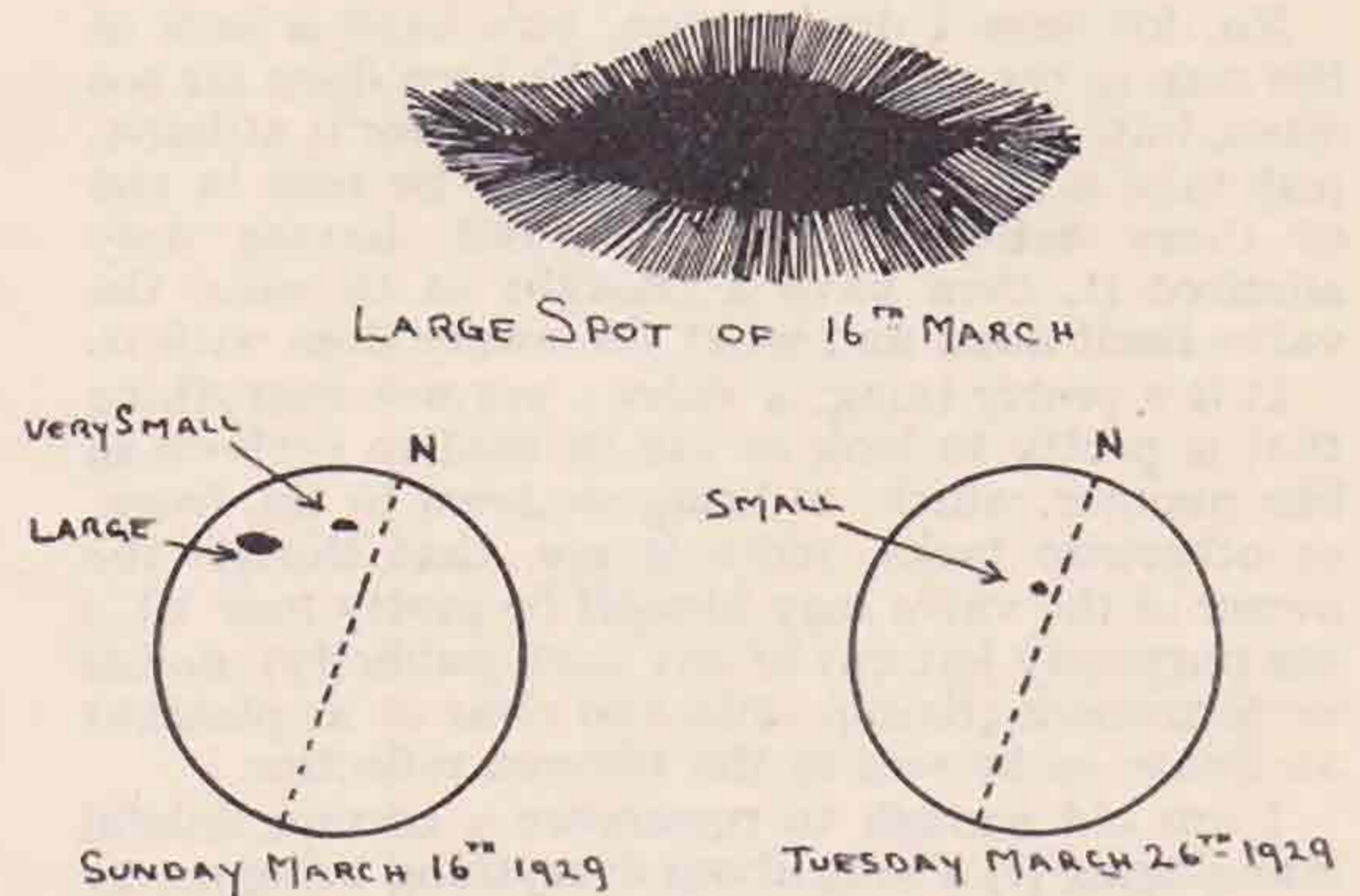
YIILM has a little news about 28 M.C.; though reception results have been disappointing he has had some good results on transmission. VP1MS at Mombassa has been receiving YIILM at R4 four hours before the first American 14 M.C. signals came through to Iraq. At 13.20 G.M.T. on Sunday, March 17, a D station answered YIILM's CQ call on 28 M.C., but he faded from QSA4 to QSA2, and his last letter was missed—it is thought that he was D4AA? He was not heard a second time. This time was good for 14 M.C. reception from Europe. YIILM has received a report from HAF7A (Szombathely, Hungary) saying that YIILM was QSA4 at 14.15 G.M.T. on February 23, 1929. This was during a 14 M.C. QSO with G2NH, and HAF7A was listening to a harmonic. A few commercials are being heard.

2KT (India) has a nil report, but is good enough to send it along just the same. He wants more tests, but I doubt that the results of the recent ones show that organised tests are not wanted by British amateurs who are not prepared to support any such efforts. It is a pity—but there it is.

Mr. Handy, of the A.R.R.L., tells me that K1CM is transmitting on approximately 9.75 metres (30.7 M.C.) and will be listening between 05.30 and 06.00 G.M.T.

G5SY, who was observing conditions of sun and moon during the tests, sends in the following report: No signals heard except WIK, and station is thought to be badly shielded. WX very cloudy at first and barometer steady. First opportunity of viewing the sun was on March 16, and even then the sky was hazy. Using a 3-in. refracting telescope and a projection eyepiece, G5SY found two sunspots. One was quite small, and probably invisible with an ordinary hand telescope. The

other was very large and probably large enough to affect ionic conditions. G5SY calculates that, judging from the position of the large spot, it would appear first about March 10 and disappear about March 24. (The perversity of the inanimate creation!—GI6YW). The course of these spots was followed for several days, but the weather became hazy again, and observation was impossible until March 26, when it was found that they had disappeared, though there was one small spot almost in the centre of the northern hemisphere. From its position it would appear that this spot would have been at the sun's edge about March 19. A diagram of these spots is shown.



The phases of the moon were as follows: Last quarter, March 3; new moon, March 11; first quarter, March 18; full moon, March 25.

G2CX was QSO W2AYR and heard W2ACN, W2JN, W1ZZ, W2AYR, W2ALW, W2BVG, W9DHK. A report was received from W1XV giving details of reception of G2CX.

GI5WD heard FM8RIT, W2ABC, W2JN, W2BHQ, and it is interesting to note that FM8RIT was heard by GI6YW at a later time, and no reports of reception of this station have been received from England.

On March 9, 10, 11 and 12, OK2YD heard nothing, but with the exception of 16th and 23rd the remainder of the test period produced signals from WIK at least. In this period OK2YD heard RGV, WIK, W2JN, W1BW, W1XAM, W8DAS, LSF, DFI, EI7C (?) RWX, W8AXA, W1CMF (?), and those stated seem to be the only eighth district stations heard by listeners on this side.

It would appear that the minimum skip for this frequency was too great for W signals to be heard in Britain during the latter part of the tests, whereas a second skip zone appears to have been effective over OK when signals were coming in here. This suggests that a line of observers from Britain, through Europe, Iraq, India, to China, might prove useful in determining the extent of this skip and how it varied.

Unfortunately, we are handicapped in arranging any such observation on signals from East to West across the Atlantic, but this suggested scheme of observations on West to East signals would probably produce some interesting results, and I think it is worthy of a special Group in the Contact Bureau.

(Continued at foot of previous page.)

"Anti-Bunk."

By "ANONYMOUS."

Our American friends have an anti-bunk party, and they also have an excellent man, who, in "QST" styles himself The Old Man, whose time seems to be devoted to the investigation of things "Rotten."

We in Europe have no Old Man, and yet we could import him quite easily, and once here, the chances are that he would find it so much of a whole-time job as to leave it to the Yanks to find a substitute, so before sending out a distress shout to him, let's have a look at ourselves.

No, for once I don't mean, let's have a look at the man in the next house; that's been done far too often, but, just for a change, if no mirror is at hand, just take a glance at the object to be seen in one of these well-silvered valves, and, having duly admired it, then have a thought as to what the valve itself does, and what the owner does with it.

It is a pretty thing, a valve; yet not everything that is pretty to look at can be said to perform in like manner, which, to bring us down to tin, brass, or otherwise tacks, reminds me, that though the owner of the valve may himself be pretty (our YL's are purposely left out of any such publicity), do his performances (Radio) reflect so clear or as pleasant an image as he sees in the silvered reflection?

I am old enough to remember a certain doleful star singing (?) a song about everything being merry and bright, and every cloud having a silver lining.

Ham radio seems to be like the song, and the hams a bit like the singer just now, but why let's have any clouds at all?

How often have I read: "It's up to you OM's," and then there follows a dreadful silence, as if the OM's in question had fallen into a deep and peaceful sleep, but if such be the case, judging from the number of stations on the air, then the average ham must be an excellent sleep-worker.

Now let's have a shot at driving in the first tack, as the noise of the hammering may wake one ham up, and the noise of his cussing may wake up the next, he in his turn waking the next, and so on, till, when having finished cussing, and being awake, they find themselves sufficiently wakeful to see before their eyes the magic words, "ANTI-BUNK."

Our American friends mean by "anti-bunk," the passing of really truthful reports, *i.e.*, if a signal is weak, or otherwise bad, to tell the fellow at the other end the truth, the whole truth, and nothing but the truth. So far so good, but it may surprise the average ham to know that a European Anti-bunk Party has already been formed, and is not only functioning, but has gone one better than the American translation of the term.

At heart 98 per cent. of hams are anti-bunkites (or should it be anti-bunkers?) but the spirit being QSA1, brings the rabid A-B (that's better, as you can choose your own style) to about 2 per cent., and that's not nearly enough, is it?

Righto, fellows, here are the aims of the A-B party, as formed at the moment.

Membership—free. All those who are at heart and soul HAMS, being eligible for immediate election, provided that they are willing to abide faithfully by the few simple objects of the party.

Our (yes! *our*, not my) objects are as follows:—

1. To keep strictly to the frequencies allotted to us, and being *quite* sure that we are there ourselves, to lend a helping hand by telling others that are not, and putting them in the right place. That's easy, but just search above and below the bands, and see the number that are well off, which, however, are mostly of foreign origin.

2. To do everything in our power to discourage the use of raw A.C., especially in the 7 M.C. band, and to discourage the unnecessary use of CQ calls by foreign amateurs. As this is picking holes in the other fellow, there will be a rush at this job, perhaps, but do it tactfully. One "G" who is one of the A-B gang, was heard telling an F the other day: "G— does not QSO any station using raw A.C.," and then was heard signing off, while another "G" (also A-B party) was heard telling an "I" of the QRM he was causing, and requesting the trial of rect. A.C., or better still, D.C. We "G" stations have every reason to be proud of our notes, as we have the finest show in the world, but it is up to us to do our level best to persuade the users of raw A.C. that "it is not done on the now crowded bands." Once we get going properly, we intend giving a helping hand first, then a warning, and if those are neglected, then of putting a boycott on the stations concerned. Now "boycott" isn't a nice word, but an A-B is an A-B, and as such, he or she will have no pity, once the helping hand has been refused, and once those who persist in band-sawing the air find that they cannot get a QSO with a member of the A-B party . . . well, guess what will happen? The day this comes about, we won't mind our fone merchants buying a record of "Was it a dream?" and pumping it out by the hour, will we?

3. Not to use maximum power to make a QSO to the fellow two miles away, especially on the 7 M.C. band, when he can get you at a tenth of this, just as well as with full power. This requires no explanation.

4. To avoid the using of fone during the "rush hours" of the week-ends, for while we quite realise that many want to use it, and we have no real objection to their doing this, at the same time, we would like them to feel that there are also QRP stations on the air at the same time as they themselves. If you *want* to use fone, then peg away, but if you *need not*, then use C.W. instead.

5. While not making this more than a suggestion, we A-B's who can work all the week, and at any time of it, are trying not to work at all over the week-ends, so as to leave the course clearer for those of our less fortunate brethren. We repeat that this does not imply that we must not, but just that those of us who need not, will try and give the others a chance. (Three of us have already decided to remain closed down all Saturday and Sunday, unless requested to make a schedule or odd QSO.)

6. To see that calibration services are not jammed, and to tell those who do jam them, to mend their ways.

Lastly, we have no President or other officials, as we do not need any, but what we do need is that every ham who reads this, and who in his heart agrees with our objects (which of course *should* mean everyone) no matter his nationality, will at once become an A-B, and having once become it, will stick to our objects, as if his life depended upon it.

The last tack is now going in.

Well, OM, after all is said and done, doesn't your own life, from a radio point of view, and that of your neighbour, just about depend on these objects being carried out faithfully?

We don't know if "the powers that be" will even publish our Party scheme, but let it be known that the founders of the A-B are all ordinary hams, with no official holdings in the destiny of the R.S.G.B. (or any other official body), but as our objects are all practically those which we might call ideal, no doubt in time we shall be strong enough to be a power in the land.

If any of the gang want to go to sleep, the hammering is over, but in their sleep and in their waking moments, let the letters "A-B" stand out QSA5, but if you want to become an A-B, you must come in with us whole-heartedly or not at all.

Now, who's first? As, if we get enough backing, we may ask Headquarters to allow us to become an official Group, or whatever you like to call it, and they may even back us.

"ANTI-BUNKERITE" (That suits either party!).

Fading Tests.

In forthcoming fading tests between G6LN and BRS190 it is hoped to obtain the co-operation of one or two stations who would be prepared to send in weather reports on the days when tests are taking place.

Will any member living in any of the counties named below, and wishing to give us his help, kindly write to G6LN as early as possible. The address is as follows:—

G6LN,
"Meadowcourt,"
Radcliffe-on-Trent,
Notts.

All that we require is a weather report with the barometer and temperature readings, etc., but if any station wishes to send in a report on the tests themselves we shall naturally be very glad of their help.

Weather reports are particularly in request from the following counties:—

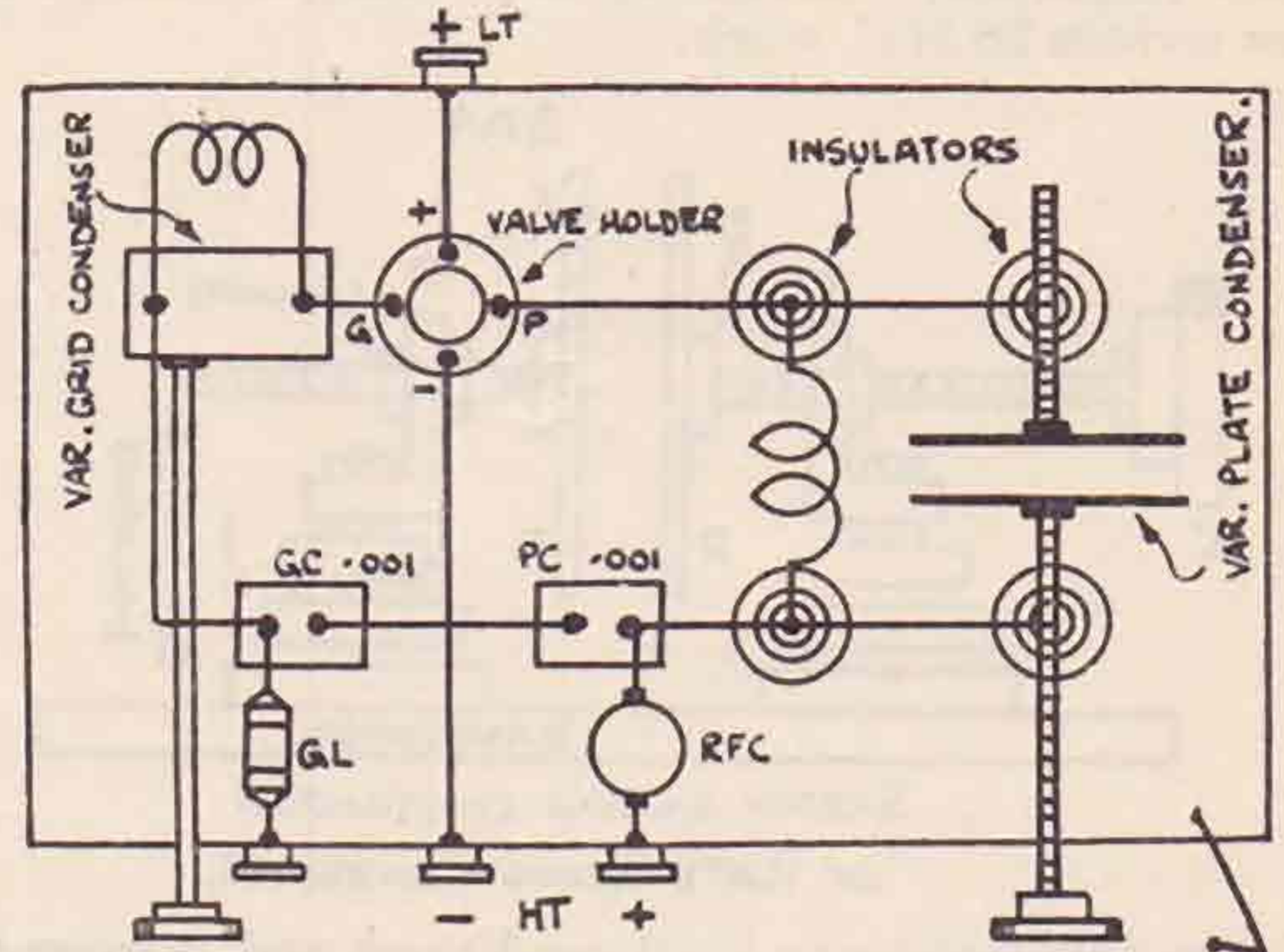
South Notts, Leicestershire, Northants., Bedfordshire, Bucks, Herts, and Middlesex.

28 M.C. Activities at G6CI.

(Continued from page 259.)

dentally this method was described at some length by G6MU in the BULLETIN for August, 1928.

An Osram LS5D is employed as the oscillator valve, the characteristics of which are very similar to those of the DE5B, the main difference being that the grid lead is brought out through the side of the glass bulb, thus lowering its inter-electrode capacity and making it eminently suitable for ultra high-frequency work. In actual operation this valve has given every satisfaction, and for low-power work I think it would be hard to beat.



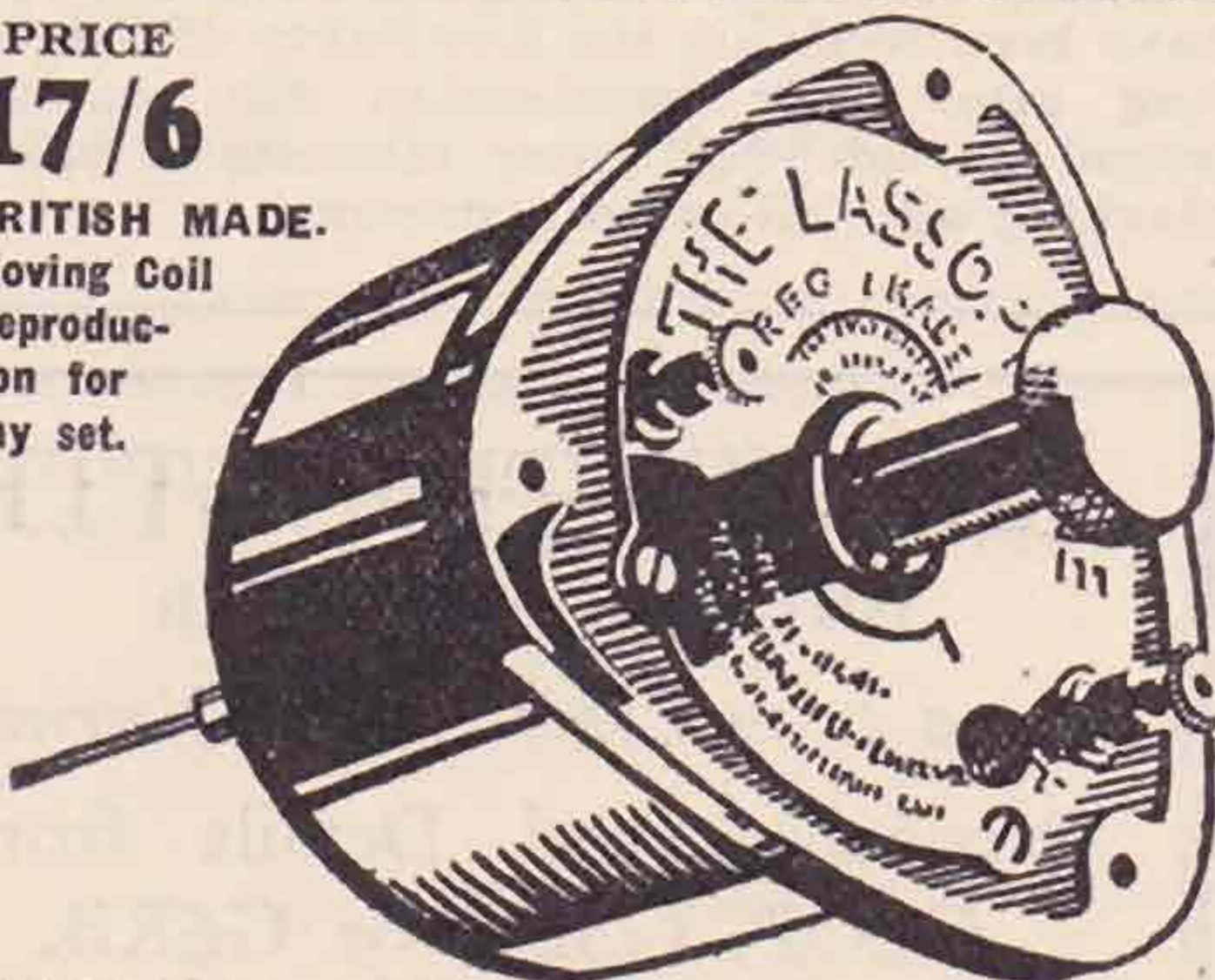
MECHANICAL LAYOUT OF TX.

The aerial used was the standard one in use at this station for work on all frequencies below 28 M.C. This is a Hertz, 21 metres long, voltage fed at one end and erected in the form of an inverted "L." This was tapped direct on to the plate coil, and it appears quite suitable for the radiation of frequencies around 28 M.C. Another very suitable system is a vertical wire half wave long, also energised by tapping on to the plate coil. The latter system is undergoing tests at G5ML and has produced some very fine results. It would seem that a short vertical aerial is more suited to 28 M.C. work, though at the present state of developments it is too early to come to any definite conclusions.

There is nothing novel about the receiver. The circuit is the so-called "Schnell" known to all of us. The grid coil has two turns tuned by a

PRICE
17/6

BRITISH MADE.
Moving Coil
Reproduction for
any set.



The Latest Scientific Discovery in Cone Units

The Lassophone Triangle Double Reed Fork Cone Unit is a triumph of British inventive genius and workmanship. Reproduces all frequencies equal to a Moving Coil Speaker. Guaranteed not to overload on the most powerful set and sensitive enough to work on a two-valve set. If your dealer cannot supply, send P.O. for 17/6 direct and we will forward by return.

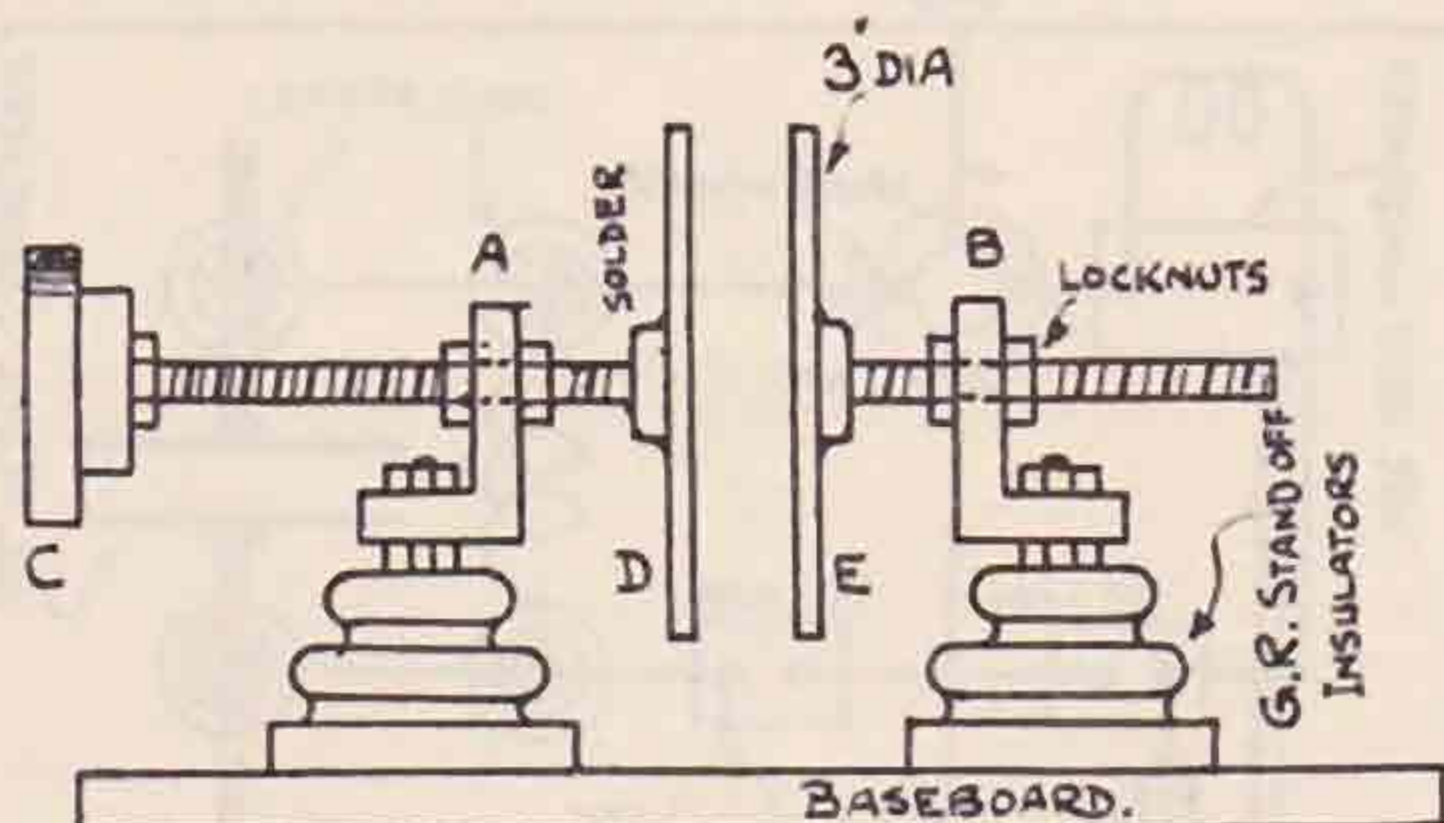
The LASSOPHONE
Triangle Double Reed Cone Unit

Manufactured by:

H. H. LASSMAN (G. 2.P.X.) F. A., M.I.R.
429, Barking Road, East Ham, E.6.

.00015 mfd. condenser. The reaction coil has three turns, while the aperiodic aerial coil consists of six turns. One end of this goes direct to the aerial, while the other is joined to the L.T. end of the grid coil. An earth is attached to this point also.

An Osram DE5B is used as the detector valve, and the 5-megohm grid leak is taken to positive L.T. The L.F. valve is a B.T.H. B4, and the L.F. transformer is an 8/1 ratio Marconi Ideal. An H.T. voltage of 100 is applied to both valves. The reaction control with the above arrangement is very smooth, and a silent background is obtained; two important factors in any receiver designed for serious 28 M.C. work.



SKETCH SHOWING CONSTRUCTION OF PLATE TUNING CONDENSER.

On this frequency local conditions and surroundings around a particular station seem to govern that station's capabilities. It has been proved that, while signals are received well in one locality, nothing at all will be heard in another.

Also, on occasions when no signals have been heard here, the signals going out from this side are received well in the U.S.A.

Thus we see quite clearly that a lot of work has to be undertaken yet in order to develop these high frequencies for practical use, which some day may prove to be of untold worth.

In passing, it should be mentioned that all who are interested in 28 M.C. developments should make a point of reading the excellent article which appeared in QST for January, 1929.

Society Publications.

Headquarters possess a large number of old issues of the BULLETIN—these are brand new. In order to make a clearance we shall be pleased to forward any member copies which he may require to make up his collection at a charge of 4d. per copy or 2s. 6d. per dozen.

Most issues are available for the years 1926, 1927, and 1928, but only very few 1925 numbers are left.

We do not want to destroy these journals, so ask all who want them to write in quickly to H.Q.

Copies of the Society's Articles of Association are available to members and may be obtained on receipt of 2d. for packing and postage.

There are a number of Log Books still unsold. We shall be glad to forward a copy of this handbook complete with supplements to any member on receipt of 1s. postal order.

We shall also be pleased to forward to any non-member a copy on the same terms, providing an application for membership is sent with the request.

We have about a dozen copies of the December, 1928, issue of "The Citizen's Radio Call Book," which will be disposed of at 2s. 3d., post free.

Social Notes.

By J. CLARRICOATS (G6CL).

Thanks to the efforts of our President, a trip to the Rugby Station has been fixed for Saturday, July 21. We are limited to about 30, and as our old friend, Mr. Donald Baker (G2OQ) has already offered to bring a party from the Midlands, applications must be made quickly. Arrangements are in hand to provide cheap railway tickets, and an effort will be made to organise a high tea in Rugby after the visit. Will all intending visitors write to Headquarters stating whether they will require travelling facilities arranged?

We have now definitely decided upon the Convention dates. These will be September 27 and 28, and the venue will be the Institution of Electrical Engineers, London.

The Annual Wireless Exhibition has been arranged this year from Monday, September 22, to Thursday, October 3, so that intending visitors to the Convention may have, if they wish, a day at the Exhibition after the Convention. As in previous years, the London amateurs will do all that is possible to entertain the provincial members. In order to push forward with our arrangements I shall be glad if all provincial members desiring accommodation with London members will write to me as soon as possible stating how long they will be in town.

London members are also requested to advise me whether they will be in a position to entertain visitors.

During the Convention the Annual General Meeting will take place. This arrangement will give every member an opportunity to take part in the business side of the Society.

The social side will be well provided for, and in the next BULLETIN full details of the provisional programme will be published.

One final note, particularly to the London members.

Bring your membership cards to all meetings. Recently we have found that one or two persons have been receiving the hospitality of the Society long after their membership has ceased. We intend to safeguard your interests in future by checking all visitors to a meeting.

CONVENTIONETTE
BRISTOL, May 25th.

Open to members of all Districts
Particulars and Details from
G2OP, G5FS, or G6RB.

Membership.

NEW MEMBERS.

- J. C. WATTS, 49, Hornsey Rise Gardens, N.19.
 LIEUT. J. R. BEETON, Royal Signals Mess, Catterick.
 E. M. B. GHOSH (2CN), 4, Bahawalpur Road, Lahore, India.
 J. WEIR (Associate), Curmacoup Cottage, Douglas, Lanark.
 L. FOCHLER (UOFL), St. Poelton, Austria.
 A. M. RAHIM (AI-5VX), "Rillington," Wellawatte, Colombo, Ceylon.
 A. E. HUGGINS, 52, Pier Avenue, Clacton-on-Sea.
 M. H. C. LEWIS, "Sterre," St. Osyth Main Road, Clacton-on-Sea.
 H. A. DABELL, Department of Posts and Telegraphs, North Borneo.
 G. H. NOBLETT (Associate), Burley Hill House, Westport, Ireland.
 W. LAW, Greystones, Elgin, N.B.
 G. C. ALLEN, 183, Ilderton Road, S.E.16.
 W. LOWN, 53, Willow Street, Belfast.
 G. ROCHESTER, 6, Cranworth House, 25, Cranworth Gardens, S.W.9.
 M. SHAW (G5CL), 11, Ascog Street, Crosshill, Glasgow, S.2.
 F. M. SMITH, 253, Westbourne Avenue, Hull, Yorks.

B.R.S. NUMBERS ISSUED.

- 246.—J. C. WATTS, 49, Hornsey Rise Gardens, N.19.
 247.—LT. J. R. BEETON, Royal Signals Mess, Catterick.
 248.—M. H. C. LEWIS, "Sterre," St. Osyth Main Road, Clacton-on-Sea.
 249.—W. LAW, Greystones, Elgin, N.B.
 250.—G. C. ALLEN, 183, Ilderton Road, S.E.16.
 251.—W. LOWN, 53, Willow Street, Belfast.
 252.—G. ROCHESTER, 6, Cranworth House, 25, Cranworth Gardens, S.W.9.
 253.—F. M. SMITH, 253, Westbourne Avenue, Hull, Yorks.

B.R.S. NUMBERS RELINQUISHED.

- 86 (now G5RG).—A. G. BURGESS, 26, Gunnersbury Park Gardens, W.3.
 144 (now G2SA).—H. A. SAVAGE, 53, Station Road, Burnham-on-Crouch.
 42 (now G5CM).—T. H. STREETER, School House, Alfold, Billingham, Sussex.

Calibration Service.

Calibration waves will be sent from G5YK on May 26 and June 23 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 June 9, commencing at 0900 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.

Activities on 28 M.C.

This month has been one of the worst since last October, the only outstanding feature being the reception of PK4AZ on April 14 by G5YK, who heard him QSA2, working FIIE at 14.45 G.M.T. Just prior to this, at 14.30 G.M.T., G5YK heard VU2KT also working FIIE, although not a sound was heard of the other station. Prolonged calling evoked no reply.

The following week a sked was arranged with PK4AZ, but nothing was heard.

We hear that G5DA has succeeded in working two W stations about the end of March, but no details are available.

BRS190 has logged W2XBI and NKF, but no other DX stations.

BRS25 has logged NKF on March 31, but nothing else, while BRS72 has only heard the harmonics of commercials.

The paucity of the reports this month is due, we presume, to the bad conditions prevailing the whole time.

It would seem that, with the advent of B.S.T., the time has come when we may optimistically arrange skeds with W and other stations during the early evening, and it is hoped that a few stations will make the attempt. G6LL is on nearly every evening, except Saturday and Sunday, at 18.30 G.M.T.

G2CX has worked 1G5DA, which is his best DX for England, 15 miles. Otherwise conditions dud. He says that OZ7T (ex-ed7VA) wants QSO's from England on his 28 M.C. signals, as he has already been received over here.

BRS36 reports completely dud conditions since the first week of the tests.

H.F. Chokes.

BY A. C. GRIMES (2BVR).

Although dozens of H.F. chokes of different shapes and sizes have been tried, it has always been found that somewhere or other there has been a blind spot traceable to the choke. Altering the choke merely shifted this spot to some other frequency. The choke which has been in use for some months is entirely free from this and any other fault, and owing to its very small field can be placed quite close to the tuning coils without any ill effect.

The choke was made as follows:—An ordinary glass gridleak was taken to pieces and the leak element removed, the end caps being replaced securely with a little Chatterton's. The winding consists of a single layer of 47 S.W.G. enamelled wire (from an old L.F. transformer), wound more or less close.

The winding is preferably done by the aid of a hand drilling machine clamped to the bench. If the ex-gridleak is carefully lined up to run true in the chuck and a piece of white paper placed on the bench under the job, no difficulty will be experienced in winding, and a spot of solder will secure the wire to the two metal caps. The finished choke can then be conveniently held in a standard gridleak holder.

QRA Section.

By M. W. PILPEL G6PP.

International Amateur Prefixes, 1929.

CE	Chile	OH	Finland
CM	Cuba	OK	Czecho-Slovakia
CN	Morocco	ON	Belgium
CT	Portugal	OZ	Denmark
CV	Rumania	PA	Holland
CX	Uruguay.	PK	Dutch E. Indies
D	Germany	PY	Brazil
EAR	Spain	RY	Lithuania
EI	Irish Free State	SM	Sweden
ES	Estonia	SP	Poland
F	France	SU	Egypt
FA	Abyssinia	UO	Austria
FI	French Indo-China	VE	Canada
FM	Algeria and Tunis	VK	Australia
FV	Sahara	VO	Newfoundland
G	Great Britain	VQ	Nor. Rhodesia
GI	Northern Ireland	VS1	Straits Settlements
HAF	Hungary	VS3	Hong Kong and Malay States
HB	Switzerland	VT	} India
I	Italy	VU	
J	Japan	W	U.S.A.
K1	Philippine Is'ds.	YI	Iraq
K4	Porto Rico	YL	Latvia
K6	Hawaii	YM	Danzig
K7	Alaska	YS	Salvador
LA	Norway	ZL	New Zealand
LU	Argentine	ZS	} South Africa
OA	Peru	ZT	
		ZU	

I suppose most of you searched last month's "BULL." from cover to cover in a vain attempt to find the list of prefixes mentioned in these notes. Owing to an unfortunate error they were omitted, and the fact was not discovered until it was too late. They appear, therefore, in this issue, and I have taken the opportunity that the extra time afforded to make a few additions to the list. It is still incomplete, however, and if you have heard any prefixes on the air that are not included in this list, please drop me a line and tell me what they are. As the QSL Manager said in his notes last month, there are still some countries which obstinately refuse to conform with the Washington regulations. Foremost among these is Russia, which is sticking to EU and AU, so much so, in fact, that I have heard, unofficially, that the Russian Government has sanctioned the use of these prefixes. In view of the fact that all the U.S.S.R. call-signs were changed to conform with the new regulations, the action seems petty, and we can only hope that in the very near future they will fall into line with other countries, and so avoid the confusion which would otherwise inevitably arise.

QRA's wanted: G5GO, G5SA, G6FJ, G6HC, XG6BMD.

XG6BMD replied to a test "DX" sent by G6CL on 14 M.C., but owing to the bad fading his QRA could not be obtained.

QSL Section.

By A. HINDERLICH, G2QY.

Special Note.

We have pleasure in announcing that, owing to our greatly increased membership, it has been decided to institute a free QSL service for all members sending cards for distribution, both at home and abroad. The fee of 2d. per batch has therefore been rescinded.

The Section is, in future, prepared to distribute all incoming cards addressed to British stations (whether members or non-members) provided that a supply of stamped self-addressed envelopes be kept at Headquarters.

New QRA's.

- G2CT.—C. L. THOMPSON, 111, Highfield Avenue, London, N.W.11.
 G2DS.—E. REDPATH, 66, Iron Mill Lane, Crayford, Dartford, Kent.
 G2KK.—R. H. PARKER, 227, Poplar Avenue, Edgbaston, Birmingham.
 G2OA.—J. DAVIES, 13, Exeter Road, Wallasey, Cheshire.
 G2RC.—A. REID, 171, Reads Avenue, Blackpool, Lancs.
 G2UG.—W. H. BURTON, 39, Northfield Road, Hull.
 G2VS.—J. D. R. HAMMETT, "Tudor Lodge," The Ridgeway, Harold Wood, Romford.
 G2VV.—In the March list this was erroneously printed as G2W.
 G2VW.—E. H. ROBINSON, Derby's Dean, Cookham, Maidenhead.
 G2WL.—A. T. WILSON, c/o Mayfair Enterprises, Ltd., 5-6, Cork Street, Bond Street, London, W.1.
 G5AZ.—H. HAZELDEN, 41, Oakhurst Grove, London, S.E.22.
 G5BJ.—G. BROWN, 62 Ring, South Yardley, Birmingham.
 G5BS.—C. S. Bradley, 8, St. Margaret's Terrace, St. Leonards-on-Sea.
 G5CI.—A. HARGREAVES, 5-7, Ridge Street, Barnoldswick, via Colne, Lancs.
 G5CL.—M. SHAW, JR., 11, Ascog Street, Crosshill, Glasgow, S.2.
 G5CM.—T. H. STREETER, School House, Alfold, near Billingshurst, Sussex.
 G5GY.—T. B. GREGORY, 34, Royston Avenue, Wallasey.
 G5RG.—A. G. BURGESS, 26, Gunnersbury Park Gardens, London, W.3.

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

- G5UX.—G. HUME,
11.
G5UY.—D. B. FRY, 1, Cheerwell Villas, Heathfield,
Sussex.
GI5WD.—W. S. DAVISON, "The Poplars," Lodge
Road, Coleraine, N. Ireland.
G5WS.—Woolwich Radio Society. Hon. Sec.:
P. T. SMITH, 77, Chestnut Road, London, S.E.18.
G6QL.—P. H. BERRY, 2, Ashburnham Gardens,
Harrow, Middlesex.
G6SC.—S. H. CHAPPLE, "Hillfield," Coppetts
Road, London, N.10.
G6XC.—A. CROSS, 3, Eastfield Road, Belgrave
Drive, Hull.
G6XQ.—J. S. OWNER, 135, Springfield Road, Mose-
ley, Birmingham.
G5QF.—S. J. A. BUCKINGHAM, 19, Oakleigh Road
North, N.20.
G6MI.—R. MAYNARD, Seaforth, Loch Promenade,
Douglas, I.O.M.
G5RV (old 2ARV).—R. L. VARNEY, Fairview,
The Avenue, Sunbury-on-Thames.
2AZQ.—R. J. FOX, "De Grey House," Grosvenor
Road, Batley, Yorks.
2AZU.—H. J. STANNARD, 18, Wimpole Mews,
Weymouth Street, London, W.1.
The following are cancelled:—2BBD, 2BOD.

Notes and News from the British Isles.

DISTRICT No. 1.

Representative: J. C. HARRISON, Park Lane, Burnley, Lancs.
I suggested, last month, a bit of a hamfest for the boys, only support seems to be very much lacking. Only three men seem at all interested in the idea, so I think that it had better be dropped for a little while.

From G5WQ I have had two very interesting letters. He is op. on board s.s. "Ixion," sailing between Hong Kong, Yokohama, Vancouver, Seattle Everett, and Tacoma. He has a short wave receiver with him, and says it feels queer to have Yank sixes and sevens for locals. He has visited several West Coast Yank stations, and seems very much impressed with the fine outfits there. From the Yanks there G6YQ is about the most consistent European in the North Pacific, "The Ham's Paradise." Carry on with the reports, OM. They are sure interesting.

G5XD has on 14 M.C. worked most of Europe, also VS and W1 and W2 with 7.7 watts. Conditions have been patchy.

G2QV is now on 14 M.C. with crystal control, and also on the 150 band. He apologises for not having reported for such a long time, but has had nothing to say! Carry on the good work!

BRS244 has built unto himself a new SG short wave outfit, but has some trouble persuading it to perk on 28MC.

G2AJC has trampled his old receiver under foot and is rebuilding. He is one of the few in favour of the hamfest.

BRS170 has succeeded with his application to the P.M.G. and is awaiting with sagging knees his Morse test. Has found conditions amazingly good this month, and is now building a Hartley transmitter.

G2AXN has found conditions on 14 M.C. good, but on 28 M.C. bad. Is waiting for word from the powers that be for a full ticket.

G2AUH has been amusing himself listening to the babel on 7 M.C. Thanks for suggestion, OB; will bear it in mind when the time draws nigh.

G5MS is giving his WE250 a rest whilst building his 1929 transmitter. Have heard rumours of a piece of quartz here. HW?

DISTRICT No. 2.

REPORTS TO HEADQUARTERS.

Angular propagation experiments continue at G6BR, and much useful data is being acquired. An interesting point is that, while good signals are put out to VK, ZL, K and WS, 9, 4, and VE4, signals definitely disappear about 200 miles N. of the Equator in a southerly direction, and no QSO's can be obtained with S.A., although reception here is very good, and other G stations seem to QSO easily enough. This refers to the 14 M.C. band.

G6BR has heard several stations (W, G, and F) on the 14 M.C. band when they were really working on the 28 M.C., and his sigs. have been reported 26 by F8CT on 28 M.C. when he was transmitting on 14 M.C.

DISTRICT No. 3.

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

I am pleased to report that my appeals in the past have not been in vain, and I have now obtained a county representative for Monmouthshire in the person of G2HH. Now, how about the other counties, and Cheshire members, you had better pull yourselves together.

Cheshire.

G2SO.—Now finished his M.O.P.A. set, and he reports that it works OK, but has not yet gone on the air with same.

BRS186.—The usual DX has been done, and he has logged his first VK, also found conditions on 14 M.C. very good.

BRS126 reports exceptionally good reception on the 14 M.C. band, and has logged a number of new countries.

BRS234 reports reception the following countries on 7 M.C., 'phone F, ON, D, PA, and on CW, the following: I, W (1, 2 and 9), K, PY, SU, and on 14 M.C. W (1 and 2).

BRS152.—The countries heard by this station are: YA, YI, RX, HC, TI, CT, Syria, N. Rhodesia, Straits Settlements. A portable has been built.

G6TW.—The usual 7 M.C. phone has been done, also 28 M.C. work has taken place, but there is not much doing on this band as regards my reception. Have joined the 7a Group for 56 M.C. Now using the 56 M.C. transmitter. Please try to receive and let me have a report. A visit has been paid by G5JO.

Monmouthshire.

Representative: HAROLD HARDING (G2HH), Treve Cottage, Ebbw Vale, Mon.

I appeal to transmitters, AA men, BRS men, and members to let 2HH have reports.

BRS239 has endeavoured to receive on 28 M.C., but no signals have yet been received. He is willing to help in any phone tests.

G2HH has been rather QRL, also being associated with BRS237 daily on 3.5 M.C. work, for which a number of members have a special licence, and now pending renewal. He is doing some good work on the 1.75 M.C. band, and on April 14 was in QSO with 6TH, 6ZR, 5UG and 6XH.

G6BF has QRT, but will be on RX until October. Business makes him too QRL for schedules, etc., at the moment.

Now, 6TH, 6MT, and 2BG, how about a report?

Counties: Shropshire, Hereford, and Worcester—No reports.

DISTRICT No. 4.

Area Representative: E. R. MARTIN (G6MN), Castlemount, Worksop.

May I appeal for better support from the members who do not send in reports. These are gradually falling off.

It is now over a year since we had a conventionette in this district, and it has been suggested that we have another gathering. Write and let me know what you think of the idea, so that I may start making arrangements.

BRS225 finds W reception better. Will report and listen for fone stations on schedules.

2AYX found conditions on 14 M.C. good, but heard nothing on 28 M.C. except one commercial. Now using valve base coils and finds them excellent.

G5OD.—Just finished building the "Universal receiver" and finds it far the best so far tried. Hopes to send particulars as an article. Transmitter now functioning well.

G6LN.—Tests going ahead with skip tests for C.B. New rectifier valve blew up first time tried out!

G6MN, owing to illness, nothing to report, except that he has listened on 28 M.C. and heard nothing.

G6WO has got going with C.C., using harmonic control.

G2HD has been heard on C.C. which seems to indicate that he is still active.

DISTRICT No. 5.

Area Representative: D. P. BAKER (20Q), Crescent House, Newbridge Crescent, Wolverhampton.

This month G6CI and G6UZ appear to head the list for best DX.

I must appeal to you all to let your Sub-Area Representative have your reports not later than the 15th of the month, otherwise there is a risk of not getting them published.

Staffordshire.

Representative: F. J. SINGLETON (G5UW).

G2CP.—Two meetings have been held during the past month of the W. & D.R.T.S., the first at 20Q and the second at 6HT. Very enjoyable evenings were spent on both occasions, and a 50 per cent. attendance of members were present. These meetings provide a twofold purpose, because they enable our area manager to gather the opinions of members in his area, and also to convey to them the trend of events in Society matters in London.

G5UW has had more time for radio activity during the past month, and many DX contacts have been made on the 14 M.C. band, which band seems to have been consistently reliable during the past month. 5UW had the pleasure of a visit from 6AT, and a fine RCC was indulged in with 20Q making a third.

G6UZ reports running a schedule with ZS4M, and has QSO'd many Yanks. He complains ND with South America. Has done good telephony work with South Africa, and states that he has got a really nice note with his 14 M.C. outfit. Is also busy getting a 28 M.C. outfit in operation and hopes to break the ice on that band soon.

G2NV reports all efforts to get going on 14 M.C. band have so far proved futile. It is strange, but 2NV seems to be located in an absolute dud spot for 14 M.C. work. 6AT reported the same state of affairs eighteen months ago, when he tried getting results on that waveband in that locality, with almost negative results. We shall have to investigate that phenomenon, 2NV, and see what can be done in the matter.

G2AK is working for D.F. tests with the Slade Radio to be held in the near future. Some preliminary work has been done in Sutton Park. Wave-length is 168 metres.

G2YX has been working telephony on 1,782 K.C. with 20P with excellent results. He has built a new S.W. receiver—screened-grid and pentode. C.C. work on 42 metres is arranged for next month.

G5BJ reports good DX on 20-metre full-wave antenna. QSO with W1, 2, 3, 4, 5, 8, 9 and Egypt, Canada, Argentina.

G8CC has completed 20-metre transmitter, but has been too busy to do any tests yet.

G6XJ is rebuilding his battery room (he uses accumulator H.T.). He and 5BJ are together building two transmitters and two receivers for 40 metres. These are to be used by the Oxford University Exploration Society in British Guiana.

G6XQ has been working on 14 M.C. Has had QSO with W1, 2 and 3 districts, also with two Canadians. He reports that on 13th, between 18.00 and 21.00, conditions were exceptionally good. Also on 17th PY and LU were coming in R8, but could not be raised. This was between 19.00 and 21.00.

G6CI work on 14 M.C. band recommenced last month, after a long rest. The following stations were worked: CE7AA, VU2KW, XPAJA (off Pernambuco, Brazil), Py1ID, K1CM, PY2QA, several North African stations and Europeans. On 7 M.C. the only DX was VE 1BR; 28 M.C. has been dud all the month and no QSO's.

G5ML.—Conditions during the month on 14 M.C. have been remarkably good and all continents were regularly worked. North and South Americans improve, while South Africans are the reverse. DX QSO's include W1, 2, 3, 4, 5, 6, 8, 9, VE, VQ, Jamaica, Porto Rico, India, New Zealand, Australia, Tasmania, South Africa, Northern Rhodesia, Chili, Brazil, Uruguay, Singapore, China, Java, etc. Conditions poor on 28 M.C. A 50-watt crystal-controlled transmitter is in operation.

DISTRICT No. 6.

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

G2XV has been active on both 7,000 and 14,000 K.C. bands, and using choke control phone on the former, has covered England well. On 14,000 K.C., Australia appears to have been trying to collect much wallpaper from G2XV. Telephony on this band has been successfully received by OH2NAP, QSA 3 with good modulation.

G5YK received PK4AZ on 28,000 K.C. on April 14, working FIIE; VU2KT had been previously heard working FIIE; no 28,000 K.C. at all during the month. Busy otherwise experimenting with frequency meters.

G5YX has a good bag of Australians and Asians to his credit. G6CR has now worked all continents with an aerial that you have to be told is there. Has obtained some very excellent reports out of South America.

G6DG is a low-power man and bewails the low-power man's lot on 7,000 K.C. He has tried 14,000 K.C. and covered all Europe with it during the day, but the band has not proved itself to be the goldmine expected.

2AAK has been listening on 28,000 K.C., but has heard nothing beyond a few harmonics.

I have to record the pleasure of a visit from G5RT, whose activities at the moment are to be heard on the 1,750 K.C. band. He hopes to be transmitting shortly on higher frequencies.

Essex.

Representative: R. C. HORSNELL (2ABK), "Hepani," Wickford. BRS144 has been granted his full ticket and is now G2SA and is busy collecting gear for 7 M.C. Still running skip sked with G2YU.

G5QV has been doing much DX on 14 M.C. Has been very busy on aerial experiments. Good sigs. were heard from ZS, CE, PY, and LU stations during March, and CE 3AC was received R9 for an hour at 23.00 on 23rd. Nothing startling on 28 M.C. yet.

2BVR sends his first report and seems very active. All gear has been rebuilt recently and 60 M.C. experiments are in progress. Wants to know of a cheap 10 watt transmitting valve of low capacity for this frequency. A 60 M.C. receiver is also under way.

BRS233 has got his receiver going and has logged quite a bag of stations. Work curtailed owing to illness during month.

BRS191 has been busy with receiver on all frequencies, but no startling sigs. heard; also has helped build G5QK with 2ABK.

2ABK has rebuilt G5QK in anticipation of summer outings and is awaiting a suitable valve before testing out a 600 v. "Mangle" on same. 28 M.C. has been "dud" except for logging G6LL (25 miles).

DISTRICT No. 7.

Area Representative: H. C. PAGE (G6PA), Newgardens Farm, Teynham, Kent.

There is little of note to report this month. G6LK is the star station this month again.

Surrey.

By G2VV.

G5CM is old BRS42. We welcome him to our ranks and wish him the best of success. He is using a T.P.T.G. set with an input of 2.5 watts. Has worked F, ON, D, GI and PA. 'Phone is now being tried.

G6GS has burnt out his new A.C. outfit, so he is off the air at present. He talks of giving up radio, but we hope he will get over that.

G6LK is still doing great DX on the 14 M.C. band. Has already worked 38 countries, including, ZL, SU, ZS, OH and LU. He has also worked 'phone to PY, and received a report of R5! He was R7 in ZS, and ZS4M nearly passed him over as a local station! He kept the talk up for an hour and a half.

G2VV still keeps 'phone skeds on the 7 M.C. band at week-ends. He has been having very little luck with DX work so far. The best report has been RK, with nine watts, R4. He is troubled with a chirpy note. He hopes to start rebuilding in a few weeks' time, and a T.P.T.G. set for work on both 7 and 14 M.C. is to be built. A new aerial is now in use.

Sussex.

By G5UY.

BRS125 is very busy with his C.B. 56 M.C. band group. He has a special receiver working on this band. He is using a baseless D.E.5 valve as detector, but cannot yet make up his mind whether he is on 56 M.C. or somewhere higher in the frequency scale!

G5AQ is still in hospital, but hopes to be on the air again shortly. G5UY has not been having very much luck. He cannot get his aerial to work properly. He is using a "Zepp" aerial.

Kent.

G2MI has had a spell of feverish energy. He has got his D.C. mains in now and is very pleased about it. Has blown his DET1. He has been working on 14 M.C. and has been very successful. Has also been working on 7 M.C., and has been doing some duplex on the 2 M.C. band.

G2AFG has not had much time for radio, but has hopes for the future.

G6PA has worked most of Europe on the 7 and 14 M.C. bands. Has also worked the usual local "W" stations on the 14 M.C. band. Has worked VE and a W ninth district station. Egypt and Syria have been worked, a report of R7 being had from Egypt. Is now trying 'phone on 14 M.C., but no contacts as yet. Has continued work on the 2 M.C. band, but finds it very slow, owing to the few stations about.

DISTRICT No. 9.

Representative: G. COURTENAY PRICE (2OP), 2, St. Annes Villas, Hewlett Road, Cheltenham.

Conventionette.

A second Conventionette will be held at Bristol on May 25, and with your support I hope it will be as successful as the one last year. The preliminary notice in the April "BULL." has brought forward several names, including some of the Council and Committee, but I want many more. Will those who have not replied please do so as soon as they read this. All particulars from 2OP, 5FS or 6RB.

It is a pleasure to send these notes forward, owing to the larger number of reports. Keep it up, OM's! There is just one point—some people think that the reports should reach me by the 12th, or some date before the publication of the "BULL." This is not so. I want your reports by 23rd, so please write them as soon as you receive your "BULL." each month.

Conditions have been moderate during March, with some good patches on 14 M.C. (BRS242 says 06.30 to 07.45, but it is too early for many of us).

G2BI is on 1.7 M.C. and open for QSO's.
G2YX is also on 1.7 M.C. on Sunday mornings.
G5FS has a most excellent new S.G. receiver and is now building a new C.C. outfit.

G5BK is on speech on 1.7 M.C.
G6UG is on speech on 1.7 M.C.
G6RB is building a new S.G. receiver a la 5FS. DX worked includes PY1CR, PY3AH, CX1NA, CE7AA, AI5VX.

G6VZ sends no report, but is coming to Conventionette.
G6PT has not got going since the new regulations.
G2OZ has turned "pro."
G5VL is now the Contact Bureau.

G6WT sends no report, but is coming to the Conventionette.
G6XB is now C.C. on 14 M.C. and worked six W stations at a sitting.

2ABA has taken up television and is now in U.S.A. on this subject.
2AOK is working in conjunction with 2YX, 6UG, 5BK and 2OP on 1.7 M.C.

BRS122 new QRA, 49, Bath Road, Exeter, has not been going for some time, but is now ready again. (My sympathy in bereavement.—Area Manager.)

BRS212 has logged 30 different countries during the month. Reports logging all continents within 9½ minutes on March 30.

BRS242 is a new member but reports 18 countries after only two months' Morse reading. Hears PK, KI and V's best during afternoons.

Who now dares to say "Drop the Area Notes." Keep the pot boiling, OM's! I was depressed after my 'flu, but the above has done me more good than a tonic.

DISTRICT No. 10.

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

G5QF has again done very good work on 14 M.C., having worked Sumatra and Australia, using 9 watts to a D.F.A.6. His aerial tuning arrangements consist of a full-wave aerial connected to a 24-turn coil coupled to the plate and grid coils. He has changed his address to 19, Oakleigh Road North, N.20.

G6XN sends his first report. He has raised innumerable Australasians and Americans on 14 M.C., and puts his success down to the fact that recently he added 18 inches to his aerial length. He has now "cleaned up" his note considerably and anticipates even better results in future.

G6UN has also migrated to the "April DX" band and when using 9 watts raised Egypt, Mosul, and America on his first few calls. He is chasing an illusive chirp!

G2AX is following up his 1928 springtime results with innumerable North American contacts on 14 M.C. and has at last W.A.C. His contact being with Australia at 07.45 G.M.T. He continues to use the Cleartron 25X.

G5VY has experimented on the 1.7 M.C. band, but has carried out few tests.

G6CL finished the month by working VK3LP, using 6.5 watts to a Cleartron. Tunis was also worked with a 2-watt input and regular schedules kept with SM4ZF, who is due in London during May. A full wave 21-metre VF aerial has now been put up.

G6PP was on 14 M.C. most of the month. He has had a report from Egypt, but no contacts outside Europe. He is rebuilding his receiver.

G5HJ has been inactive, but hopes to get busy soon. He promises to report to CB next month.

G6SC has done little, but hopes to get a 50-watt C.C. outfit going soon. He thinks that more attention should be paid to making measurements on transmitters, and thinks Captain Hartridge's recent article very useful. He criticises the methods adopted by most stations in giving percentage modulation.

DISTRICT No. 11.

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

One or two more or less regular reporters seem to have dropped out this month; doubtless they will turn up too late. Please remember that these notes are sent off by first post on the 21st, and anything not here by then won't go in.

Now regarding the Area Competition. Apparently the last met with approval, and I hope we shall have a large entry list. For this month I suggest the following: A small bouquet to go to the station which establishes two-way QSO with the greatest number of stations outside Europe (geographically—never mind the prefixes) with 5 watts or under. No sworn affidavit required as to power, but honesty preferred! This should give the low-power experts a good chance. Dates from May 18 to June 18, and please report immediately the month is over.

G2CB has worked all continents with his hand generator. His best work being ZL4AO, four Australians, four Brazilians, one Chilean, and two Uruguians, and W 1, 2 3, and 8. All work has been on the 14 M.C. band.

BRS190 is now receiving on one valve only, and says he has no use for amplification in future. He has logged lots of W's and a VE on 28 M.C. with this arrangement; also everything going on the other bands. FB O.M. Wish I could do it!

BRS240 has had no luck at all with 28 M.C., but lots of DX on 14 M.C. He thinks phone on the latter band should be abolished.

G2AI reports some interesting work from new QRA with aerial 15 ft. high and 44 ft. long, capacity coupled. Hand-generator and 2-volt valve in use; worked AU, EU, OH, LA, EAR.

G2CX reports from Copenhagen, where he is having a regular "hamish" holiday. He has done little in the way of DX and is very disappointed with 28 M.C., which seems to have let us down badly.

G5RM has worked W1 and CE on 14 M.C. and FR and CV on 7 M.C., otherwise little doing.

G5WK seems very popular in Australia, from which he never receives reports of less than R5 and sometimes reaches R8! He has also raised W5, and is reported R6 by ZU6D. Also worked XPA0JA at Buenos Aires with his lead-in in the gutter!

G6HP has raised the Australian 6th District for the first time, also K7MN (Alaska) and VE5AW (Yukon). He has spent most of the month tearing his hair over a "jumping" note that he cannot cure with the assistance of the A.R., and all the active hams for miles! Any suggestions welcomed!

G6NT has been on 14 M.C., and has worked FK, W and VE, but has spent most of his time on alterations and improvements.

G6QB has found 14 M.C. conditions quite abnormal for the whole month. Best QSO's K7MN, VE5AW, LU3DH (R8) and the usual W's, with occasional bursts of Antipodes.

G6QC has been on 7 M.C. all the month testing harmonic C.C. in a T.P.-T.G. circuit with 4 watts. He finds time-lag troublesome when keying. Best QSO R5 in North Finland.

BRS25 is also very disappointed in 28 M.C., but has logged everything going on 14 M.C. He does not appreciate the 7 M.C. dogfight, although he logged VK6HE up there, the latter saying that it was his first report from this country.

DISTRICT No. 12.

Representative: L. J. FULLER (G6LB), 13, Seagry Road, Wanstead, E.11.

Reports from this district are very meagre, only one having been received direct.

G2ZN has got his "end on Hertz" going well on 7 M.C. and has raised OH and EU on 1 watt, QRK R4 in each case. He asks for co-operation on the 17.50 K.C. band.

G6FY has done little radio, but has constructed a frequency meter with an oscillator and absorption "puller," complete with a crystal resonator.

G6UT has done a lot of work on 14 M.C., but cannot raise U.S.A. He has not worked a W station for several months, despite working several VK's.

G6LL is turning his attention to 56 M.C. and hopes to have C.C. going on that band soon. He is running a sked with VE2AC on 28 M.C. and hopes to have some results for the next BULLETIN.

G6LB has made his long-promised return to the air after 12 months' silence. No QSO's have been made, but a good deal of test work has been done. Other work on hand includes a totally screened receiver and a very accurate frequency meter.

DISTRICT No. 13.

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

Judging by reports received, the 14 M.C. band has been made full use of by the active stations, and conditions on this wave have been very good.

I am sorry I am not getting any reports from the Harrow district as I know full well there are several transmitters there, and at least some of them are active.

I should like all reports by the 20th of the month, please, as my business sometimes does not give me much time to write them up and get them in by the 25th if they do not arrive until after that date.

G6WN has been on 14 M.C. all the month and has W.A.C. Most of Europe was worked and the DX includes VK, CX, YL for the first time. U.S.A. has at last been raised on 14 M.C., also SU has been worked several times. A sked has been kept with G6VP on 28 M.C. each Sunday morning, but no QSO, but a card has been received from BRS72 reporting reception of signals from the 10-watt C.C. set. No DX has been heard on this latter wave.

G5RV (ex 2ARV) has received full permit—(Congrats., OM!)—and using crystal control with chemical rectified A.C. on 7 M.C. Raised EAR16 twice the first day he put the set in operation. He was reported T9 QSA5 with three watts input.

G6VP found 14 M.C. good all round the first half of the month, but they dropped off a bit towards the end. He has W.A.C. several times and worked one ZL, nine VK, one AI, eight ZS, eight PY, six CX, three LU, YI, FM, SU, AR and nearly all U.S.A. and Canada. WIAQD reported him as loudest DX signal ever heard. He worked and got a card from CE7AA (G6QB please note!). Has also spent some time on 28 M.C. working G5DA and getting another report from U.S.A.

G6CO raised his first W, having worked WICMX on 14 M.C., who gave R3/2 with five watts input from Lissen dry batteries. His mast fell down, but with G6JY's help it is up again. Found 7 M.C. very bad with QRM. He thinks a Star 14 M.C. ham ought to pay this wave a visit and write an article for the "BULL." on it. Hopes to rebuild station shortly.

BRS72 rebuilt his receiver and has been able to spend more time on radio of late. He says conditions have been bad on 28 M.C., no U.S.A. stations being heard. Has joined G2OD's 28 M.C. group, and is running skip tests with G6LN.

BRS15 found high-speed fading bad on 7 M.C., 14 M.C. fair and contrary to other reports from this area has found 28 M.C. very good, having logged several new countries. He is expecting QRM from G5RV only 100 yards away.

DISTRICT No. 14.

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

These notes are of necessity brief on this occasion, and why so? Need you ask? The sum total of the reports received this month from the whole area amount to FIVE, and only one of these from outside of "A" District. It is the old story of "bricks without straw," and I can surely promise you that if the raw material is not forthcoming, "There ain't going to be no bricks—no, not any!"

Seriously, your neglect in this connection is not in the least complimentary to me, in view of the amount of time and work I put in on your behalf, and you may take it from me that unless some of you fellows "come alive," you will require to look for a new Area Manager at election time.

I have pleasure in welcoming two new members to our area, G5CL (Mr. Matthew Shaw, Jun., 11, Ascog Street, Crosshill, Glasgow, S.2) and BRS248 (Mr. William Law, 87, High Street,

Elgin). I shall have met 5CL before these notes reach the printer, and I hope BRS248 will look me up first time he is in Glasgow.

I am pleased to be able to offer the area's congratulations to friend G6KO, who has this month achieved his WAC with a hand generator.

I would also like to accord our appreciation of 2AUH's monthly DX chart, which has proved extremely useful, and has made WAC possible for 6KO and myself.

I am pleased to be able to state that G2MA has agreed to take over "A" District, thus succeeding G2WL, who is now in London.

I am asked by G5GK to state that OZ7HW is carrying out fone tests on the 7 M.C. band nightly at 23.00 G.M.T., and desires Scottish reports.

Well, for the reports, such as they are:—

"A" District.

District Representative: DAVID D. MARSHALL (G2MA), 41, Kelvin-side Gardens, Glasgow, N.W.

G2MA has entirely rebuilt his station for work on 14 M.C., and is so pleased with this band that he means to eschew the 7 M.C. band for good. Four W districts have been worked, and he is beginning to look around for his WAC.

G5CL has just received his licence and expects to be on the air shortly with a MOPA TX.

G5YG.—Activities at this station were confined to the 14 M.C. band, and all continents were worked in March. Some trouble has been encountered in the nature of "frequency flick," but this has now been got over.

G5XQ has not been working owing to a temporary change of QRA.

G6NX, working on the 14 M.C. band, is making many South American contacts. He is having some difficulty with "chirp" which is proving stubborn to get rid of.

G6WL has put in a lot of 28 M.C. work. He has found reception very patchy. The TX is an Ultraudion, and the aerial system is that in use on 14 M.C. So far no QSO has been made. Work has also been done on 14 M.C., and with an input of 6½ watts, PY, LU, W and VU have been worked.

G6WZ has not yet found time to get a start made with a TX.

"C" District.

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

G6KO has also succeeded in obtaining his WAC this month, having "raked in" his missing continent at last. This has all been accomplished by means of the hand generator.

DISTRICT No. 16.

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

Conditions have improved greatly here during the month, judging by the reports received. There are several more GI stations now working in the 14,000 K.C. band, and all of them have done good work during the month, especially—

GI5WD, who has worked PY and Australia, which now qualifies him for his WAC certificate, and he is the first low-power GI who has worked all continents. His power has been derived from a hand generator, and he uses a voltage-fed Zepp aerial.

GI5OT has nothing to report, not having any time for wireless at present.

GI6HI is one of the newcomers to 14,000 K.C. and has worked W1 for the first time.

GI5HN is also going strong on 14,000 K.C., and in addition to working several W stations, he has managed to work PY1CM. This is his first South American QSO.

GI6WG is still working at week-ends on 14,000 K.C. and has been QSO several W stations.

GI6YW had a month's test on 14,000 K.C. with 4 watts input to a C.T.25 valve, which resulted in QSO with 23 countries, including W1, 2, 3, 8, VE1, Morocco, Egypt and 19 European countries. QRK in VE and W averaged R5. He worked HA at 23.00 G.M.T. on 14,000 K.C.

GI5MO has nothing to report having been away from home most of the month.

I am pleased to record a visit by 5YG to 6WG in Coleraine, and I regret not having been able to see him while he was there.

Notes and News from British Dominions.

Irish Free State.

By COL. DENNIS (EI2B).

Things are still rather quiet over here and there is not a great deal to report. Conditions on the 7 M.C. are still reported poor for DX, but better on the 14 M.C. band. Getting through to U.S.A. on the former band appears to be largely a matter of luck for 10 watt stations, and those of us who worked scores of W stations last season on the old 45 m. band could probably count our contacts on 7 M.C. this season on the fingers of one hand. On the 28 M.C. band conditions during the tests were very poor, and the only contact reported was by EI8B, who worked W2JN. Details will no doubt appear in C.B. Notes.

Reports have been received from the following stations, viz.:— 8B, 5C, 6C, 7C, 8C, 2D, and 4D, the majority of which report only European DX, the exceptions being, as usual, 8B and 7C. On 7 M.C. 8B has worked NX1XL, 7C one W station, and 2BAU7AA at Baku, whilst on 14 M.C. 8B has worked several W stations, districts 1, 2 and 8, CE7AA, SU8RS, and FK5CR, and 7C has worked VE1BR, YI1LM, YI2GQ, YI1MDZ, and FK5CR. 4D also reports working OH on this band.

Straits Settlements.

The Straits Settlements at the present possess but two active amateurs, though from Mr. Randall, VS3AB, we learn that the Malayan authorities are prepared to grant a few amateur transmitting licences to bona-fide British residents. Though sparsely populated with amateur transmitters, this part of the Empire has made itself heard in practically every country in the world, through the medium of VS1AB and VS3AB. Short wave reception there appears to suffer from mush from Java, but this arc station is shortly to be replaced with a modern valve transmitter. G5SW is received spasmodically. (Cannot somebody out there let us have some news every month concerning the activities in Malaya and other out of the way parts of Asia?—Ed.).

Notes and News from Europe.

Germany.

By E. REIFFEN.

On the whole DX conditions were good during the past month. On 7 M.C. W's came through mostly at good strength. It is peculiar that on several occasions Americans were heard at R8 in QSO with each other, but did not call "CQ DX," and it was also impossible to reach them.

On 14 M.C. DX conditions were very satisfactory. In the afternoons it was easy to work South Africa and Dutch East Indies. A large number of VK and ZL stations are also to be found on this band. In the early hours of the morning communication with these stations is easily and regularly established.

On 28 M.C. we are able to report the first successes of German hams. Our old DX man, D4UAH, connected with ZS5C, using 25 watts input. FB, OM! Besides that, he has been heard at R6 in W2, and hopes to QSO U.S.A. shortly. D4YT has also been on 28 M.C. for some time and hopes to work the States, too.

Recently various German DX hams have QSY'd to 14 M.C. and have had a number of DX QSO's with all continents.

The German annual Convention takes place at Frankfurt Main on May 18 to 20. We offer a hearty invitation to our foreign friends, and hope to be able to greet a large number of them at Frankfurt.

Denmark.

By H. PETERSEN.

Conditions have been fairly good during the last few weeks.

On the 3.5 M.C. band we have heard no foreign amateurs, but connections with Danish amateurs could be established during the whole day and night. Best time for such QSO's seems to be from 21.00 to 00.00 G.M.T. QRN and QSB have been rather annoying.

On the 7 M.C. band conditions have been good, but QRN was sometimes bad. For DX work this band is not good, as QRM makes every QSO impossible. DX stations on 7 M.C. have been heard AG, FM, and W (1 and 2).

The 14 M.C. band has been excellent during the last month, and the best working hours seem to be from about 12 G.M.T. to 00 G.M.T. During the day most Europe was heard with good strength and during the afternoon some U.S.A. districts. Later in the afternoon was heard Australia, Dutch India, Asiatic countries, North Africa, South Africa, and Virginia Islands. From 01.00 G.M.T. strengths decreased, although VK and ZL were heard several times QSA 2-3. QRM is increasing on this band and highest at about 15 G.M.T. Very often the band seems to be quite "dead."

On the 28 M.C. band nothing has been heard at all, although many receiving stations have listened. Only harmonics from commercial stations were heard, and it seems that Denmark is very badly placed for U.S.A. on this band.

We have had the pleasure to see G2CX, Mr. Chisholm, for some few days lately. He has given us much information about the 28 M.C. band, on which he seems to be an expert. We had the pleasure of showing Mr. Chisholm some Danish amateur stations and hope to have made clear to G2CX that "ham spirit" is more than a phrase in this country. We hope to have the pleasure of seeing many other British hams in Denmark during the coming summer.

Holland.

By J. H. KOEN, M.Sc.

The month of March brought us a very short period in which real DX could be noticed. The chief event was the celebration by PA0YY and PA0VN of the first Dutch amateur two-way contacts with our colonies in the East. At the other end PK1JR and PK4AZ of Java and Sumatra were the lucky ones. Powers used by our two oversea comrades are unknown at the time when these lines are written. PA0YY used 35 watts input and PA0VN used 70 watts, both on 14 M.C. The 7 M.C. band still suffered from bad skip and very bad QRM, although the notes are improving. QRM from wobbly and bad fone is still at its worst. Some of us were busy on 28 M.C., but so far no reports are at hand about the DX worked.

CALLS HEARD.

On Sunday, March 3, by F. J. Barnett, 15, Central Workshops, Sentul, Selangor, Federated Malay States:—G5ml, pure d.c., r8, 10.25 p.m.; g5yx, pure d.c., r5, 11.25 p.m.; g5wk, pure d.c., r7, 11.30 p.m. (Singapore time); receiver, Det., R.C.C. transformer.

Calls heard by VK7CH on 14,000 K.C. band, January 1 to February 20, 1929:—

AI5VX, ARSUFM, F8WB, F8EO, F8RLT, F8PRO, G5BZ, G5WK, G5BY, G6HP, G5ML, G6QB, G5UX, G6CR, OH2NM, OK1FM, OKAA2, PK4AZ, SC1AH, SC1AI, VS3AB, YIILM, SUSAN.

QRA: VK7CH, C. Harrisson, Rokeby Road, Bellerive, Tasmania.

Correspondence

The Editor does not hold himself responsible for opinions expressed by correspondents. All correspondence must be accompanied by the writer's name and address, though not necessarily for publication.

To the Editor of T. & R. BULLETIN.

DEAR OM,—Whilst I was working with SP3KX this evening he informed me that he is now working on 14 and 28 M.C. most days. He is wanting co-operation in tests, so I thought a mention of this in the BULL. might bring forth someone from one of the numerous groups studying 28 M.C. work, who would like to arrange schedules with him.

His QRA is Posen, in Poland, and I imagine that the best way to reach him is *via* the Polish QSL Bureau. Possibly 6PP knows his full address.

SP3KX's frequency when I worked him was 7 M.C., and if his other transmissions are up to the standard of this one, it will certainly be a pleasure to work with him.

Hoping this will be of use to readers,

Sincerely yours,

E. PHILIP ALLEN (G6LN).

"Meadowcourt,"

Radcliffe-on-Trent, Notts.

April 11, 1929.

To the Editor of T. & R. BULLETIN.

DEAR SIR,—I have been informed that a station, evidently in the London district, is using the call-sign of my station (G6FD), and I would be glad to have any information that will lead to the location of same. The "Pirate" is transmitting speech and music on about 200 metres, but does not reply when called by another station. Will members please pass along any information that may be of assistance in tracking the offender?

Yours faithfully,

F. E. DOMINEY (G6FD).

19, Shooters Hill,

Cowes, I.O.W.

March 27, 1929.

To the Editor of T. & R. BULLETIN.

A.C.

DEAR SIR,—Before starting a boycott of A.C. stations would it not be well to see that our own house is in order? My experience is that jamming on the 7 M.C. band by A.C. is a mere trifle as compared with that caused by telephony, both British and Continental, with indifferent, bad, and only sometimes good carriers and using power out of all proportion to the necessities of the case. It is not so much the use as the abuse of telephony that I refer to, as it is nothing uncommon for one of these stations to work continuously for 15 minutes or more on speech, which may be useful, or on music which is certainly not useful. I note that at the February London meeting the argument was advanced that tele-

phony on 7 M.C. was necessary for tests to overcome needle scratch in gramophone reproduction! I may be very ignorant, but I fail to see any connection between the two, nor does it seem that this is one of the purposes for which transmitting licences are granted. Even if telephony transmission were necessary for the purpose, it could be carried out on only sufficient power to be heard in the experimenter's own receiver in the next room.

Most of us will, I think, admit that jamming by A.C. stations is in reality most effective on the signals from other A.C. stations and that a good D.C. note can usually be read through any but the strongest A.C. It seems, therefore, probable that A.C. stations will eventually come to realise this and will make the change to a better note in their own interests where practicable. This, however, may not always be as easy in remote situations as might seem to us. Instead, therefore, of boycotting these stations, I think that a much better policy would be to make a point of calling them up and, if they are causing serious interference by spreading, etc., telling them so, and I, personally, always do this where possible.

If the whole amateur world were to refuse to work A.C. stations, which seems impossible of realisation, such action might have some effect in reducing the number of these stations; but until unanimity of action in this direction can be ensured we must be careful not to exaggerate our own importance in the amateur world by suggesting that the refusal of British stations to work A.C. stations would be of any serious import to them.

I have no wish to be taken as either approving of A.C. or disapproving of the *reasonable* use of telephony, but in the conditions at present obtaining on the 7 M.C. band I do think that the boycotting proposal is, to say the least of it, pharasaical.

M. J. C. DENNIS (EI2B).

To the Editor of T. & R. BULLETIN.

DEAR SIR,—Perhaps the following may be of some interest to your readers, more especially those interested in DX reception.

On March 31 last, between 20.25 and 20.34 G.M.T., I logged amateur signals from all six continents in the nine minutes. The stations logged were VK2LJ, CV5AF, AU1AR, LU2CA, ZS4M, W1ALB, thus making up all six continents!

If any BRS or other station can beat this record, I should be very pleased to hear from them.

In conclusion, let me add that in my opinion it would be a great pity for the area notes to be cut out, as they are, I consider, one of the leading features of the BULLETIN.

Best wishes for the success of the BULLETIN, and *vy* 73.

Yours truly,

H. K. BOURNE (BRS212).

To the Editor of T. & R. BULLETIN.

DEAR SIR,—Referring to strange things that happen on the 7 M.C. wave band, a few weeks ago I was listening to a contact between EI7C and XW7EFF, the American ship, which was then about a hundred miles east of Gibraltar. I heard EI7C go over to the ship, and I duly listened to the latter; but when the American said GA, I could hear nothing of the Irish station, and his audibility previously had been QSA4 R8, with a beautiful steady note; and yet the ship continued to answer, so that he cannot have found any change. I made quite certain it was not a receiver fault. I know that this is not a very strange phenomenon, but I should like to know what the "Heavyside Layer experts" think about it.

A strange thing that interested me greatly towards the end of last year was the fact that G5DC was the only British station that could be heard here after dusk. Mr. Aked's phone signals came through here R8-9, with the clarity that always seems characteristic of his transmissions, and yet I could hear no other G station until about 11 p.m., when CW would come in quite well.

I wonder how many amateurs have noticed the change that takes place in the notes of stations as conditions alter. I few days ago I was listening to a Continental CQ call, and his note changed from D.C. to nearly R.A.C. as dusk thickened. I think that this point demonstrates the fact that an amateur cannot know the true tone of his transmitter unless he has had reports under several conditions.

Has anybody had the strange experience of hearing absolutely nil on 7 M.C.? In the last few months I have several times switched on my receiver and heard nothing at all except distorted I.C.W. from our "ever transmitting friend DHE."

I am extremely interested in the various effects that cause fading on the 7 M.C. band, and BRS240 would welcome schedules with any other amateur likewise attracted to this very peculiar phenomenon.

Yours faithfully,

E. M. UGLOW (BRS240).

London, S.W.11.

To the Editor of T. & R. BULLETIN.

DEAR SIR,—If the positions of the battery and galvanometer are interchanged in the Meter Bridge given on page 229 of the April (1929) BULLETIN, the battery circuit will be broken when the variable contact C is removed. This obviates the necessity for a battery switch without interfering with the function of the instrument.

Yours faithfully,

B. COSTIN (BRS233).

To the Editor of T. & R. BULLETIN.

DEAR SIR,—I attended the March meeting of the R.S.G.B., when Mr. Aughtie delivered a most interesting lecture. My object in writing this letter is to protest against the conduct of a young member who sat next but three to me, immediately in front of the lecturer, and within twenty feet of him. From 6.15 to 7 o'clock, *i.e.*, during the whole of the lecture, this man poured into the ear of his neighbour an almost continuous monologue. Considering the proximity to the lecturer, it would have been bad manners to have whispered once; but the drone-like sound which I heard, and which must also have annoyed several other members, was really maddening, as in common with all persons in the room except the delinquent I wished to follow the lecture with undivided attention. A man who could be guilty of such imbecility is not likely to feel ashamed when he sees himself pilloried in the BULLETIN, but this may prevent him from offending in like manner in the future.

Yours faithfully,
W. H. SLOUGH (2AZD).

Finchley, N.3.
March 28, 1929.

The following letters are a selection at random from a number we have received on the subject.

To the Editor of T. & R. BULLETIN.

DEAR SIR,—With reference to Mr. Secretan's egotistic letter in last month's BULLETIN, perhaps I may be allowed to give the considered opinions of several transmitters on the subject.

In the first place, I should like to endorse his remarks regarding the QSA signal, but Mr. Secretan seems to be alone with his lack of interest in his signal strength. Admittedly, one wishes one's signals to be as near 100 per cent. readable as possible, but, at the same time, everyone, with the exception of this gentleman, wishes his signals to be as strong as possible.

It would also seem from his remarks that Mr. Secretan endeavours to run his station on lines as near commercial as possible. This attitude on the part of an amateur is deplorable.

His remarks on the subject of the 7,000 K.C. band also seem to point to this fact. Captain Fraser explained last year in his presidential address that, as a body, radio was only our hobby, so I think, therefore, no reasonable person should expect perfect operating in these circumstances.

Admittedly a large amount of the matter transmitted is irrelevant, but without this and the accompanying OB and 73, etc., amateur radio would cease to exist, and we should become a collection of formal, semi-commercial stations.

It would seem, from conversations I have had with various people, that Mr. Secretan stands alone in this matter.

Yours faithfully,
J. W. MATHEWS (G6LL).

Clapton.

To the Editor T. & R. BULLETIN.

DEAR SIR,—I should like to take the liberty to say a few words in reply to the Kenyon Secretan.

I entirely agree with him in respect to the horrible mutilation of the "Q" code; but I do not agree with him when he states that it is immaterial to him whether his signals be R1 or R9, so long as they are 100 per cent. readable at the other end. Most amateurs feel pleased to get a report of R7 or R8, and certainly would not appear to be pleased if QSA5 was given. This QSA business, to my mind, is sensible, but only from the commercial point of view; looking at it from the amateur standpoint, I see no reason why both QSA strength and old R scale should not be given together in the report. This denotes the readability of the signal as well as its strength.

The argument that the R scale is no good because of various types of receivers used, to my mind, has no foundation, because every amateur forms in his own mind what represents R1 and R9 by using his own receiver. W1K may be audible all over the house on A's receiver, but on B's receiver it is just loud 'phone strength, but both A and B would call it R9.

I also agree with Mr. Secretan that repeating words twice should be definitely abolished, unless one is particularly asked to. Remember QSQ, not many "Hams" seem to have got hold of this yet!

Now we come to where I disagree entirely with G5LF. He points out that all typical ham abbreviations should be dropped entirely. Does he want us to become stereotyped commercials? After all, we are all friends on the air, and if we can't wish each other good morning, and wish each other kind regards, and call each other "Old Man," then all I can say is that ham radio will become rather strained. It certainly doesn't take much time to say all this when it is boiled down to about five two-letter abbreviations.

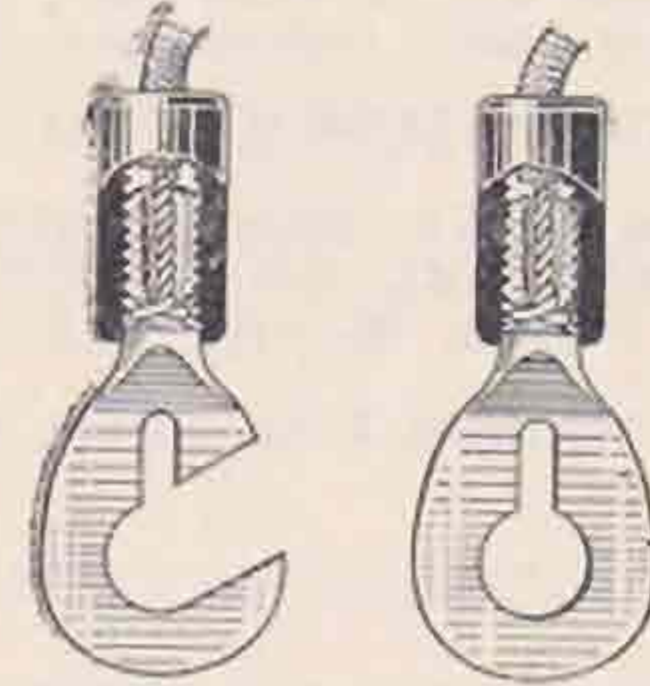
Has Mr. Secretan ever been greeted with "Hello, ole sock" from an American Ham? Perhaps he disagrees with that also!

Yours sincerely,
H. A. MAXWELL WHYTE (G6WY).

"Burtleigh," Church Road,
Forest Hill, S.E.23.
April 11, 1929.

Trade Notice.

From Messrs. Lectro Linx, Ltd., we have received samples of the latest additions to the Clix range. They are the Clix Ring Terminal and Clix Hook Terminal, illustrations of which are reproduced herewith. They both sell at 2d. each, retail price. Clix are now using an alternative wiring device on the well-known Spade Terminal, and also on the above terminals; by this means provision is made for obtaining a firm contact grip on both thick and thin wires. These two terminals can be supplied either nickel-plated or lead coated to suit various requirements.



Stray.

Mr. Megaw regrets that it will not be possible for him to continue his series of articles on "The Valve as an Oscillator and Amplifier" at present.

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OPTICAL DEMONSTRATION LANTERN by Bausch & Lomb. Fitted focussing tilting arc lamp, double lens, tubes, etc. New condition. Overall dimensions, 3 ft. by 2 ft. Bargain, £8.

GROZIER-WHEELER Armature Testing Set. Moving Coil Meter with drop test spikes and current controls. Quite new, £4 10s. Worth £20.

LARGE SPARK COIL, Cox 12" with 50,000-volt spark, 16 volts primary. 3-ft. 6-in. Vacuum Tube X-Ray Tube and fluorescent screen. £12 10s. the set. Coil only, £10.

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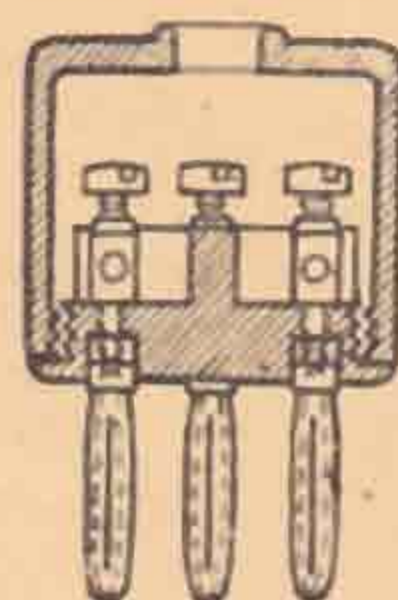
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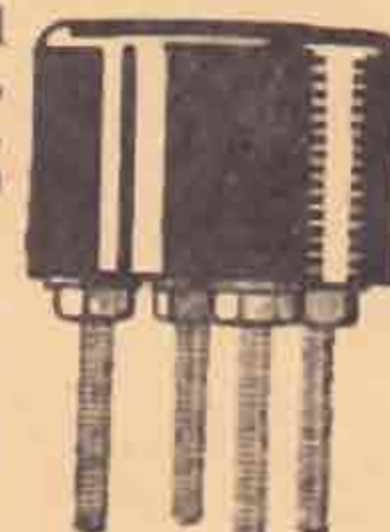
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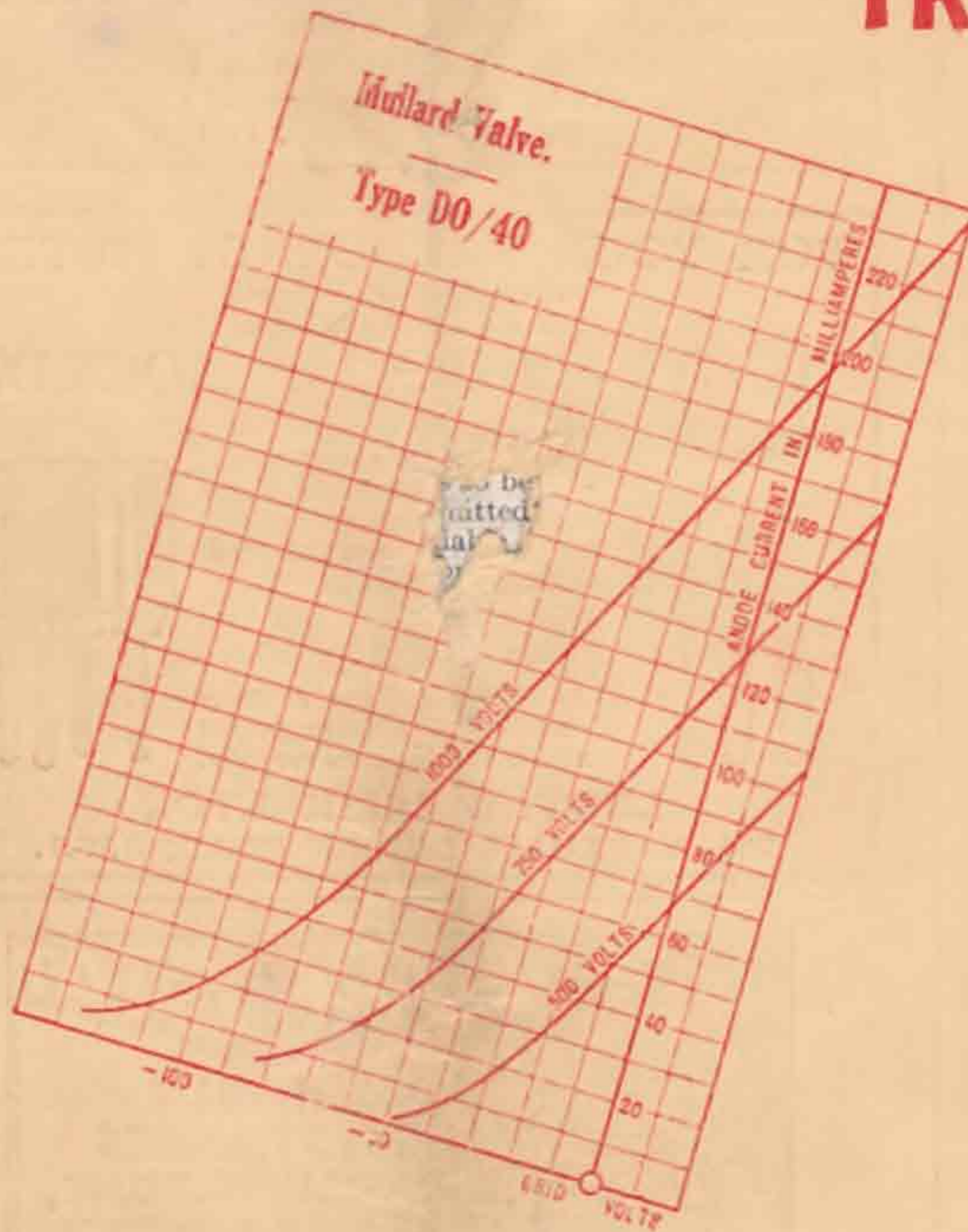
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