T&R BULLETIN

RSGB

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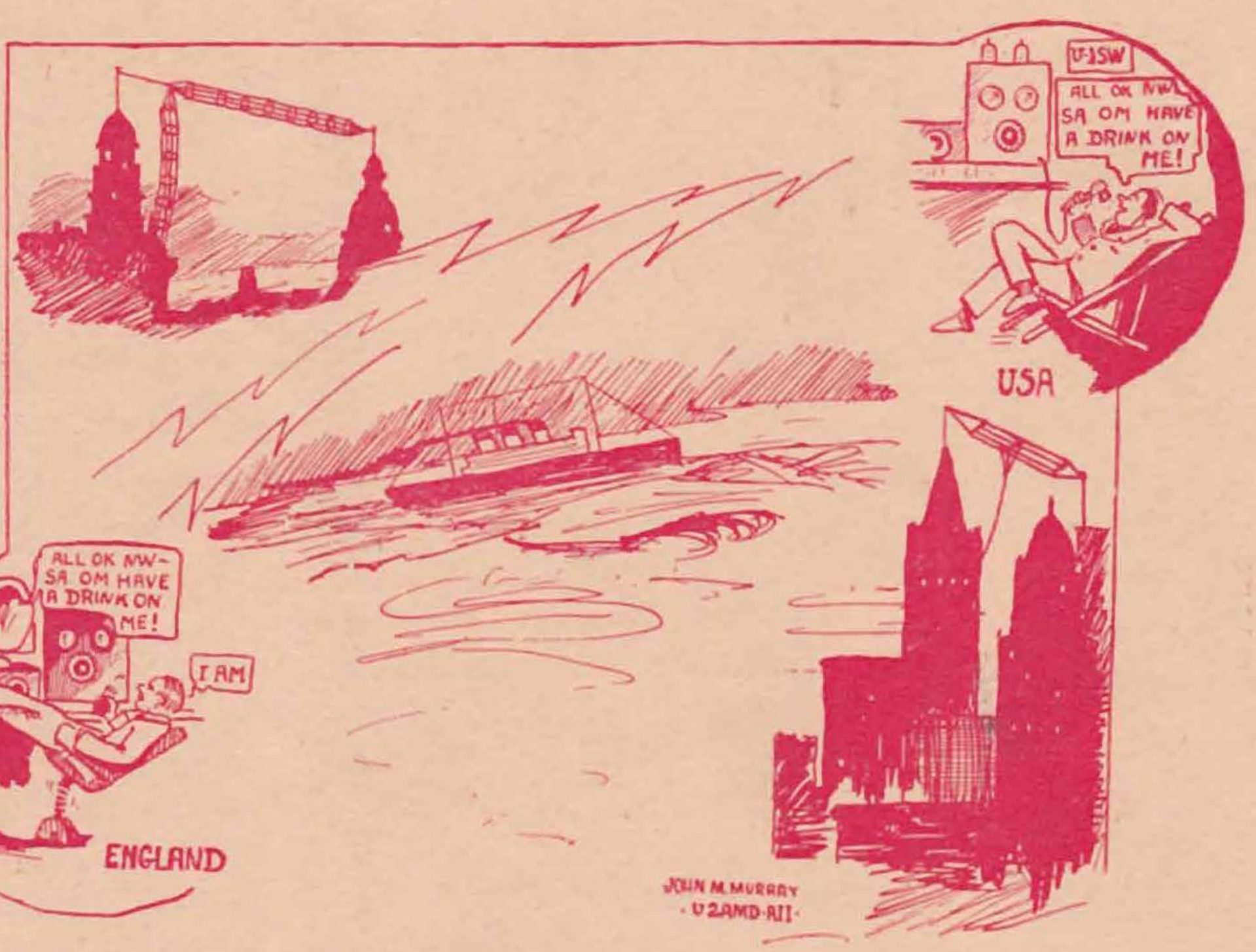
Low Power Test Number.



As an American Sees It.

CAN YOU GET OTHERS TO JOIN THE GAME?

T. & R. Bulletin

Devoted to the Interests of the Transmitting Amateur

— The Official Organ of —

THE TRANSMITTER AND RELAY SECTION

of

THE RADIO SOCIETY OF GREAT BRITAIN,

53, Victoria Street, S.W.1

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T&R BULLETIN.

The only British Wireless Journal Written and Published by Amateurs

OCTOBER, 1926. Vol. 2. No. 4.

EDITORIAL

Convention.

We think that the Convention was a great success, despite the fact that it was to us a very strenuous time. The faith which we placed in the enthusiasm of members was not misplaced, and the percentage of members who attended was far in excess of what we expected, and certainly greater than any other Convention of which we have heard. Members came from all corners of the British Isles; England, Scotland and Ireland were all represented, and, in addition, we had Bell from Australia and another representative from the same country. Messages of goodwill were received from many members who were, unfortunately, unable to attend, and we think that the meeting was such as to augur well for the coming season.

The opportunity afforded by the Convention to put our house in order was made use of to the greatest possible extent, and it was this that made the meetings an arduous task to those responsible for the conducting of affairs generally. The rules, which were knocked into shape, took up a great deal of time, but AT OUR NEXT CONVENTION we shall not have to tie ourselves down to such stern business. A lesson which we learned was that we shall have to prepare for the next Convention very much earlier than we have done this year, and the culminating point of our work of the year will, in future, be a meeting such as this. Let us, therefore, look forward to an even better Convention next year and work with that end in view.

Our thanks are due to Mr. Kirk, of the B.B.C., and to Dr. Eccles, F.R.S., for their kind attendance and the interesting talks and lectures given by them. Without their assistance, the Convention would not have been the success that it was, and their kindly help is very much appreciated. The talk given by Mr. Kirk was a very interesting one, and the subject was very timely, seeing that the use of Master Oscillators is undoubtedly the only satisfactory solution to the problem of high-power short-wave transmission.

Dr. Eccles predicted, *inter alia*, that the time might come when the activities of the parent society from an experimental point of view will be largely in the direction of transmission work, and he outlined a scheme for the equipping of the Dominions with short-wave apparatus for experimental purposes. He further suggested that the society was prepared to help by giving technical advice, etc., to stations installing such gear.

The discussions at the meetings on the subject of membership and traffic rules showed that the members present took a lively interest in the domestic affairs of the Section, and although this considerably delayed the programme, we all felt that it was proper that such discussions should take place. The only fly in the ointment was that the time available was far too short for the business in hand.

We must not forget to add that the attendance of Captain Eckersley on the first night was a pleasant surprise to us. His interesting and typical talk on technical difficulties with Master Oscillators was extremely interesting, and we felt that we had, indeed, had a profitable night at the close of the proceedings. An outline of the proceedings as seen by our special correspondent will be found on other pages. We close with the hope that we shall have the pleasure of again meeting all Conventionists next year.

The Exhibition.

Great activity was apparent at the stand of the Radio Society of Great Britain at the Exhibition. T. & R. members put a great deal of time into recruiting on this fruitful field, and the net result was a gain of membership to this Section alone of about eighty new members. Wesley, Jamblin, Secretan and Bland Flagg, and, not least, our Chairman, were very much in evidence the whole time, and the latter has earned the "Woufhung" which was presented to him by 6TW at the Convention. Had it not been for the untiring energy displayed by him, the recent events would not have been the success they were. There is no doubt but what the financial expenditure which was incurred in taking over the stand was fully justified, for it is only by constantly keeping the activities of the Section before the public eye that the Movement can prosper in the way that we all wish.

Not a Brasspounding Society.

It has been suggested in some quarters that the Section has for its primary object the assisting of Brasspounders. This suggestion is incorrect, for we number among our members many who experi-

ment with nothing else but telephony. We have experienced considerable difficulty, however, in finding telephony experimenters who will, or are able to, contribute articles on this aspect of radio work, and we desire it to be known that it is not the intention of the Committee to ignore this branch of the work. Any articles which are submitted for publication in the BULLETIN which bear on this subject will receive the utmost consideration, and whenever possible they will be given early publicity. The development of short-wave telephony affords much scope for the activities of our members, and we wish to encourage such work so far as possible.

Committee Additions.

As a direct result of the passing of the new rules by the Convention on September 19 there are vacancies for two new members on the Committee. The members selected must reside in the area of Southern Ireland and the western half of the southern area of England. Applications for the seats will be considered.

Transmitter Interference on Broadcast Waves.

By SUB-LIEUT. D. GROVE-WHITE, R.N. (G5GW).

AS the B.C.L.'s frequently complain of interference by amateur ransmitters, experiments were carried out to determine the extent of this interference. The transmitting installation is a tuned anode circuit directly coupled to a Hertz aerial for 23 or 45 metres. For longer waves the Hertz is used as a T aerial, and is directly coupled to a reversed feed back circuit. The power used was 10 watts, which is the maximum power of the station. The receiver was an ordinary type of broadcast receiver, being a I-V-O set with tuned anode coupling. It is of a well-known make, and has no specially selective properties. It was directly coupled to a receiving aerial, 100 ft. inverted L, in the same horizontal plane as the transmitting aerial, and distant from it 10 feet at one end, 50 feet at the other. Two methods of keying were used: (1) keying in the H.T.lead, (2) keying by shorting a couple of grid coil turns, thus producing a space wave.

The receiver was first tuned to Daventry 5XX, which came in R6. Using keying method (1) on 23 and 45 metres, key clicks were received strength R4; on 120 metres, key clicks were R5; and on 200 metres they were R6. Using method (2) on 23, 45, and 200 metres no interference was observed, but on 120 metres signals faded to R5. The next test was on Bournemouth, 6BM, strength R7. On 23 and 45 metres no interference was experienced by either method of keying. By method (1) on 120 metres, key clicks were received R6, on 200 metres they were R7. By method (2) on 120 metres, signals faded to R6 and key clicks were R3; on 200 metres signals faded to R5, with no key click. The receiver was then tuned to Cardiff 5WA, strength 3-4 (daylight). On 23 and 45 metres there was no interference at all by either keying method. By method (1) on 120 metres, signals faded to R2, with key clicks R4. The same happened on 200 metres. By method (2) on 120 metres, signals faded to R2, with no key clicks; on 200 metres they faded to R2, with key clicks R2.

It will be noticed that the aerials were much closer together than the average ham's aerial is to the nearest B.C.L.'s, so that the interference caused by amateur transmitters must always be much less than this. Phone was not tried, as 5GW is not fitted for phone work. The power supply is 210 volts Fuller Block H.T. accumulators, which ensure a pure D.C. note being radiated. It is possible that had there been a ripple, interference would have been much greater on all waves, and interference would have been caused on 45 metres, where none was observed in the experiments. The remedy for this is to smooth the ripple. These experiments show that the 23 and 45 metres ham need not fear jamming the B.C.L. and that 45 metre work may be carried out during broadcast hours without interfering with broadcast reception.

DX and WX.

By 6YW.

Some transmitters look for a wild stormy night to give them good DX, and some look for a crisp, frosty night, but at 6YW I have, as yet, not been able to decide which type of night is the better. It seems from my results that good DX may occur on either type of night, and I do not think that local (at the station) conditions matter very much, except, perhaps, in the case of thunder.

During the past winter a large number of experimental transmissions have been made by 6YW, and, later, some little time was spent in studying the record of these low-power 45-metre transformers.

It was found that in most cases the good DX conditions were reversible, i.e., if 6YW was QSA in Finland, then Finnish stations were QSA at 6YW. That is a point on which, I think, most transmitters will agree with me, and yet many experimenters watch their barometers and rely on local conditions as a guide in determining a good DX night.

As the good conditions were reversible, the next logical thing to do was to study the weather conditions between the stations. Some forty of my best QSO's were referred to synoptic charts published every day by the Air Ministry, but as the charts are limited in range, the QSO's had to be chosen accordingly. It immediately became evident that, in a large majority of cases, the local conditions did not affect *range*, but only *direction*.

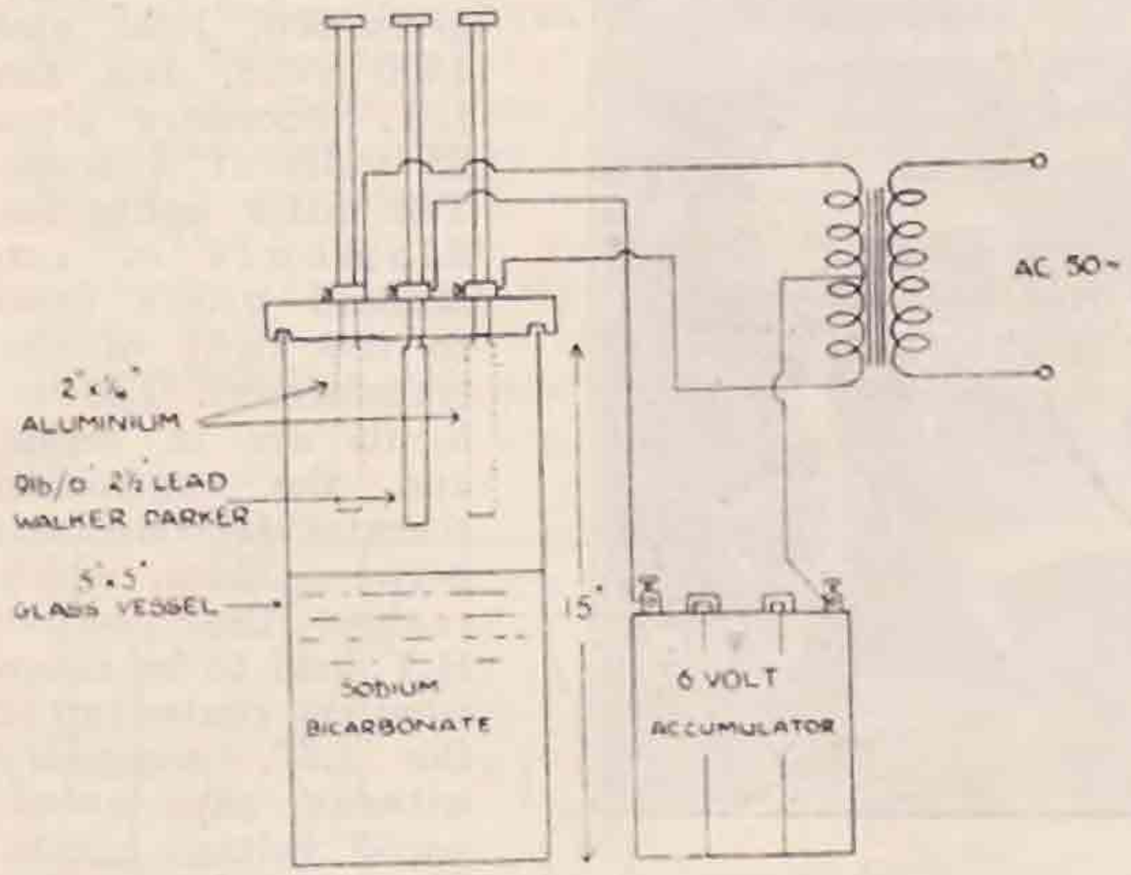
It did not matter whether I was hammering the key in the middle of a depression or an anticyclone, but my signals were received best in a direction at right-angles to the isobars. That is to say, the best path of the signals was that in which the isobars made right-angles with the direction of the path. This was confirmed by consulting my "reception" log for the same dates, and by receiving the weather bulletins (B.B.C.) and deciding in advance which stations "would be QSA to-night."

As this was not the main purpose of my research, I was unable to spend as much time to this section as I should have wished, but I pass on this, what I hope is a discovery, for the consideration of T. & R. members.

On Electrolytic Rectifiers.

By H. M. Hodgson (2MY).

IT is understood that chemical rectifiers give the smoothest D.C. for H.T. feed for transmitting telephony, also a very suitable method for charging accumulators for wireless. Electrolytic rectifiers require no more attention than an ordinary accumulator. Full-wave rectification is obtained either by Nodon valve arrangement or a mid tapping on the transformer. For the electrolyte I use refined sodium bicarbonate ; it is very much cheaper than ammonium phosphate, costs about 1-20th the price. With bicarb there is no disagreeable smell given off. The electrolyte remains clear, and the electrodes can be seen, the bicarb rectifier does not heat up anything like so quickly as the ammonium phosphate. I use cold water that has been boiled.



Raising the electrodes when not in use stops the "snowing-up" of the cell. If the electrodes are left in, the action between the film and the electrolyte is going on at all times, whether the cell is in action or not. Charging accumulator with ammonium phosphate rectifier takes 30 volts to give 2 amps., whilst the bicarb rectifier takes 20 volts to give 2 amps when charging 18-volt accumulator. With ammonium phosphate it takes 30 volts before the cell commences to rectify. With bicarb it takes only 2 volts more than the back E.M.F. Even if one renews the bicarb electrolyte more often it is well worth the trouble considering the great difference in cost. The chemical rectifier has a higher efficiency than small motor generators, nor is it as fragile as the valve rectifier. The efficiency of an ordinary electrolytic rectifier is about 60 per cent. The electrolytic rectifier using sodium bicarbonate for the electrolyte is by far the most economical.

A Few Words to Q.R.O. Stations.

By J. Wyllie (5YG).

While, owing to the nature of the experiments carried out at "QRO" stations, a report from anything under 1,000 miles is not of much value, I would remind you that there are other things to be got in this island or its near vicinity apart from QRK and QSB reports.

Quite recently it fell to the lot of one of the Scottish area transmitters (a "QRO" man, by the way) to pass on to certain well-known stations messages which had originated not less than 5,000 miles away. Indeed, the QRB of one of the stations from which the messages emanated was approximately 12,000 miles.

Imagine the utter disgust of the man in question when not one of the stations to which the messages were addressed could be "raised," and the fearful anti-climax which ensued when the aforesaid messages had to travel the last 300 miles of their journey by LETTER POST.

This is not an isolated case, as the writer had a similar experience a little while back. A Far-Eastern station was heard to call a well-known British station who obviously did not hear him, as he (the "G" station) kept sending spasmodic "DX tests." I called the "G" station on 45 metres, but could I "raise" him? Not on your life!

Doubtless, had I tuned my transmitter to 35 metres, I should have "contacted" at once; but as it was, the information had to be passed on by post, and thus a valuable test was lost to the high-power station.

The foregoing are merely two instances of many which might be quoted, but will suffice for illustration purposes.

To remedy this sort of thing, might I, in all humility, make a suggestion. Is there anything to prevent "QRO" stations from "standing by" for one half-hour each day, or on such days as may be selected by them, for the purpose of taking "G" messages, if any? Each station might fix his own time, and have same published in the Bulletin in order that other "G" stations might know when the "QRO" station desired may be called. Things would be helped still further, if, at the beginning of the selected half-hour, the "QRO" station sent something like the following: "TEST de G2EF—break—nw stdg bi for 'G' traffic till GMT.....AR K."

After all, OMS, you stand to lose nothing, and gain everything. I might say that by "QRO" stations I mean all stations using 20 watts or more.

Appreciation from an Advertiser.

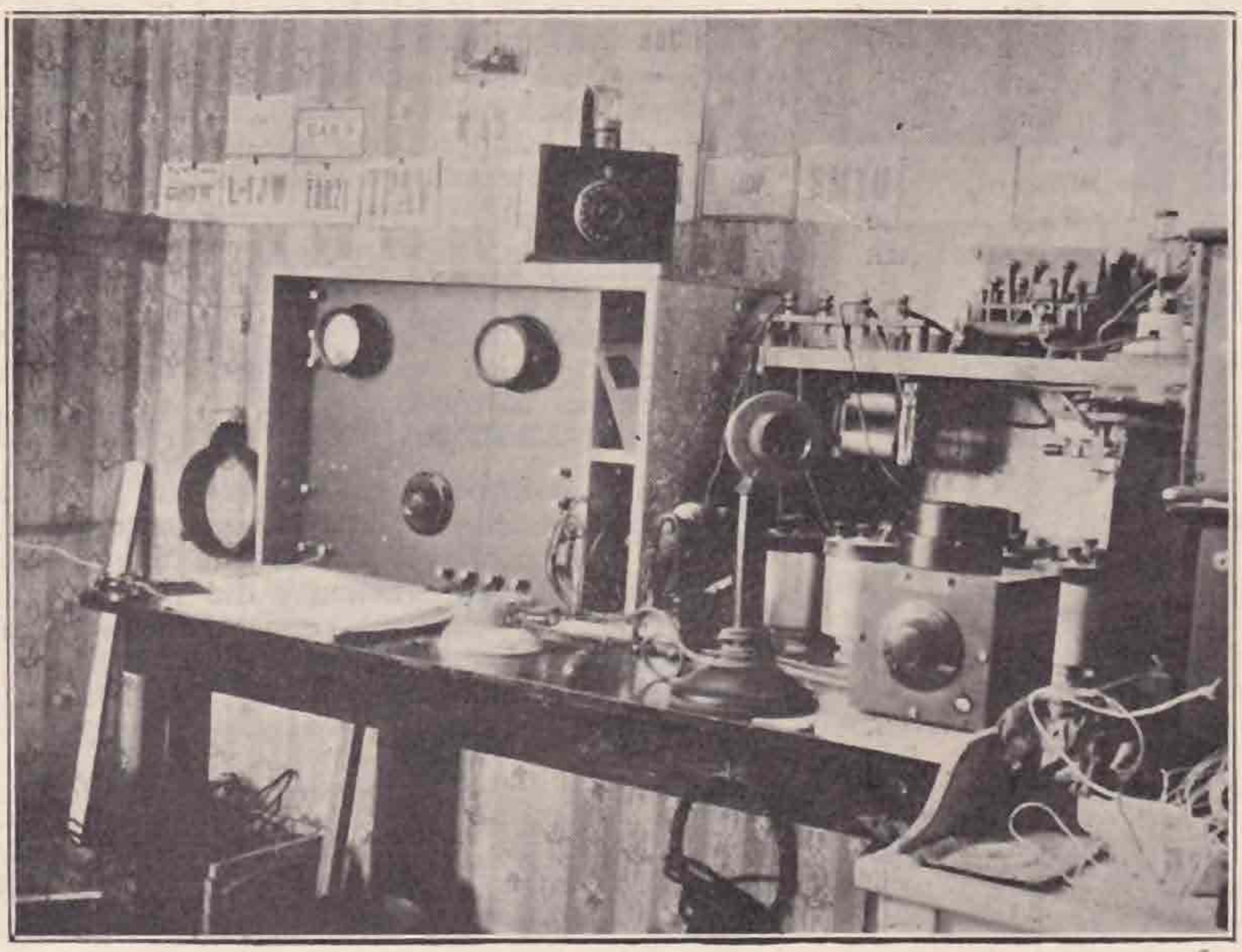
The Editor, T. & R. BULLETIN,

"....you will be pleased to hear that my clients have had a number of profitable enquiries through their advertisement. Please repeat the insertion for six months."

G2VJ.

By Bernard J. Axten, A.M.I.R.E., A.M.J.I.E.

G2VJ was first established about four years ago, in the days of 440 metres, and has descended in wavelength by successive stages, to 45 metres.



The transmitter is seen on the left in the photograph. Owing to absence from home last winter, Messrs. Secretan and Mallett, Ltd., constructed the transmitter to requirements, and designed a very attractive set. As will be seen, it is built into a strong portable wooden case with carrying strap, the top, back and front being hinged to allow free access to the interior.

The front has been temporarily removed to show the panel clearly. At the top of the latter are seen two Burndept-Jewell meters—that on the left is a thermo-couple ammeter, reading up to one amp. of aerial current. The right-hand meter reads up to 75 milliamps. and is in the plate circuit.

Towards the bottom of the panel is the grid-tuning condenser—a Burndept .0003, and to the right of the panel are two small compartments; the lower one houses a 3-volt dry battery for the microphone circuit, whilst the upper one serves to carry spare valves, etc.

The circuit of the transmitter is shown in Fig. 1. Keying is done in the earth lead, the arm of the key being connected to earth. This system has been found to given an absolutely steady note.

The method has been found quite satisfactory up to powers of 50 watts, and would possibly be good for higher powers. The normal input is 22-26 watts. The key is seen at the left-hand corner of the table. Above it, on the wall, can be seen the aerial send/receive switch. This is an Amrad (American) lightning switch and consists of a very heavy copper knife switch mounted on two porcelain pillars on a plate screwed to the wall. A similar switch is used for earthing the aerial, but is not visible in the photo. These switches are very suitable for short-wave work.

On the left of the transmitter, a helix is seen hanging against the wall; this is not used. To the right of the transmitter is the power supply unit, and on the top of the horizontal panel is a Burndept transformer, working off 240-volt, 50-cycle mains. This has two secondaries, both with centre taps. The H.T. secondary gives 600, 1000, and 1500 volts, and the L.T. secondary gives 25 volts at 3 amps. The latter lights the filaments of two Mullard u/30's (seen to the right of the transformer). The filaments are in series, and the controlling rheostat is connected between them, which enables the positive H.T. lead to be taken from the centre tap of the L.T. secondary without any unbalanced voltage effects. Fig. 2 shows the connections of the H.T. supply system.

Beneath the panel is a double iron-core choke, 1½ henries each, winding with a two-pole, three-way knife switch for obtaining 600, 1000, or 1500 volts, rectified current.

On the table, below the H.T. supply panel, are eight "Mershen" electrolytic condensers. These have a capacity of 30 mfds. each, and a working potential of 400 volts each. They are wired up as in Fig. 2, to obtain two banks of 7½ mfds., for a safe working potential of 1600 volts. As the metal

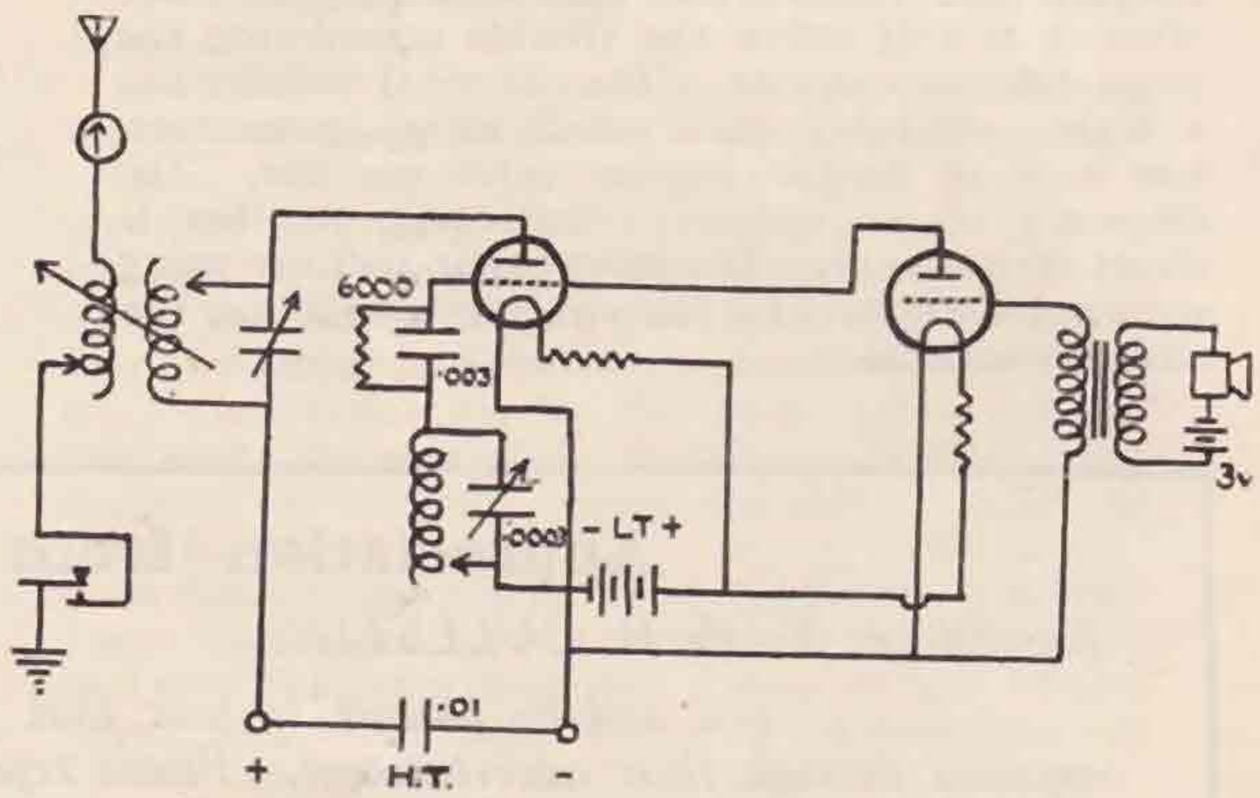


Fig 1 CIRCUIT OF TRANSMITTER AT 2VJ.

containers are "alive," they stand upon porcelain insulators.

For some reason or other, these condensers seem to smooth better than equivalent capacity mica condensers.

The "Mershen" condensers are polarised, and care has to be taken not to reverse the polarity or to use them on A.C., or the film on the electrodes will be destroyed. Overloading produces the same effect.

The U/30 rectifiers have since been removed, and S-tubes used. In front of the smoothing condensers can be seen an Amrad lamp wavemeter, and on top of this, two Burndept short-wave coils, used in the receiver.

To the left of these is the solid-back microphone, and to the left and rear of this is another Amrad switch. This switches the filament and power leads to both receiver and transmitter, and may also be used to change-over the aerial. Thus, one flick of the switch turns on the transmitter and throws the receiver out of operation, or *vice versa*.

On the right of the Burndept coil-ashtray is a screwdriver—always kept handy to discharge the H.T. condensers!

On the top of the transmitter is a Southend Radio Co. neon-bute wavemeter. This has been found to be quite accurate and is always used on the transmitter and receiver.

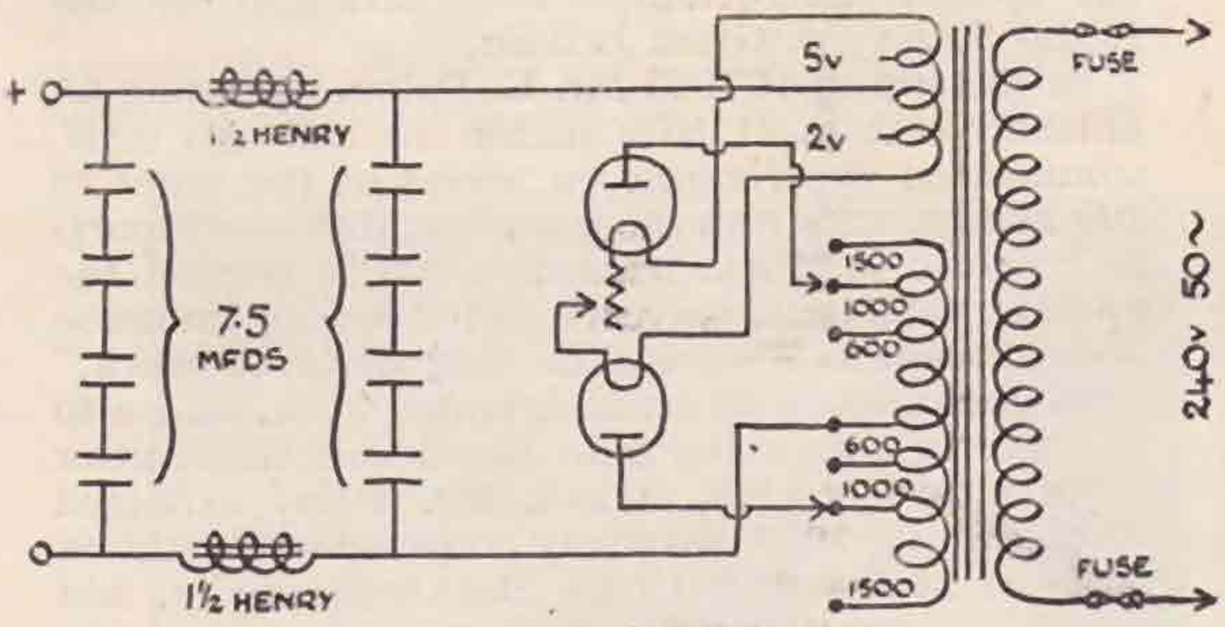


Fig 2. H.T. POWER SUPPLY UNIT

No H.F. chokes are used in the transmitter. They have been tried in various parts of the circuit, but no improvement resulted.

The oscillator valve is normally an L.S.5. With 400 volts on the plate, the valve passes about 50 milliamps, when oscillating with the key open. When the latter is closed the plate milliamps increase to about 60.

The fixed condensers used throughout are Dubilier type 577.

As a modulating valve, a Burndept L.525 has been found to give extremely good results.

Owing to the low impedance of the oscillator valve, the best results are obtained with a fairly large capacity in the plate circuit, and a few turns of the inductance coil—5 turns being used on 45 metres.

As the set is likely to oscillate at the frequency of that circuit which has the greatest capacity, the grid tuning condenser is kept lower in value, and more inductance is used. On 45 metres, 6½ turns, and about .0001 mfds. are used. The writer always prefers to let the plate circuit determine the wave-length, and to use the grid condenser to bring the grid circuit into approximate resonance, this method serving to control the intensity of the oscillations, and of the modulation. For 23 metres, the plate circuit condenser is disconnected.

Exide H.T. accumulators supply the plate current for the short-wave receiver, and are very silent in working. They are charged off the 24-volt A.C. mains, through a Baytheon tube and a 240 volt 60-watt lamp.

A Balkite and a M.W. synchronous rectifier are used to charge L.T. accumulators.

Baytheon tube H.T. battery eliminators are now being installed, for supplying H.T. to the various receivers. The latter could not be photographed owing to their position in the room.

They consist of a Weagant circuit det. + 1 l.f. short-wave set, with a two-valve power-amplifier operating a loud-speaker, and a King-Cardwell 5-valve neutrodyne for general broadcast reception.

The latter set is used in conjunction with a tone control board. An Ethophone V receiver, working off an indoor aerial downstairs, receives London and Daventry on Ethovex loud-speakers in various rooms, with great clarity.

The aerial at 2VJ consists of a single-wire. The horizontal span is 70 feet long, and 35 feet high with a 15-foot down-lead. The earth lead runs down the side of the house for about 20 feet, and is connected to a main water-pipe. No counterpoise is used. Aerial and earth consist of 7/20 copper wire. The earth lead is bare.

As to results, 2VJ is QSO nearly every country in Europe, and has also been received by U IADP. This cord is visible in the photograph amongst the others. The phone record is the reception of 2VJ's speech by EAR21, Bilbao, who received the carrier wave R8 on two valves, and reported modulation and speech very good.

2VJ has recently been QSO 1 CW Tripoli, F2 Belgian Congo and is in nightly communication with BZ-1AD, all on 19 watts.

2VJ is always ready, and pleased, to arrange special tests with any station, and to assist any amateurs in any possible way.

The Current in a Hertz.

By S. J. Tyrrell (K-i8).

THE article in the November issue of The Bulletin first prompted me to experiment with a Hertz aerial. I had heard of them before, but the description gave just the required impetus to discard the existing and try the new.

From the first I decided that the aerial should oscillate as a Hertz and not as a misformed "T," and, therefore, isolated the complete sender, except the feeder, with HF chokes. The latter were adjusted to have a natural wavelength, without shunted capacity, of 45 metres, and the two in the filament leads accounted for a wastage of about four watts. The anode supply at the time consisted of a number of old HT cells giving at the beginning of a QSO about 20 watts, but this was quite sufficient to burn out the indicator lamp at the nodal point in the aerial. The lamp was then shunted until finally the bulb was simply connected across 6 cms. of the aerial wire, and under this condition just glowed. When, later, the power was increased

to 45 watts by a motor generator, the bulb glowed brilliantly over a wave-band of four metres.

There was a considerable discussion here as to the aerial current, and having regard for the ratio of resistances of the lamp and the aerial wire it compassed, opinions varied between two and eight amps. —although both gave a ridiculously low combined aerial resistance. The matter was left over for the time being. Some considerable while later, experiments were made with a seven-metre transmitter using a 3½-metre copper tube as simple oscillator and an input of 60 watts. A bulb, shunted across a portion of the middle of the tube, lighted brilliantly, but a thermo-couple only indicated a current of 0.7 amp. The couple was re-checked with 5,000 cycle AC, and was found in order. This again raised the question of the aerial current in the Hertz, and it was decided to measure it. Various ways of arranging a thermo-couple at the node and of bringing down the leads to the galvanometer were suggested, but none considered satisfactory. Finally a good specimen of ammeter with " straight through " hot-wire was secured, and inserted in the aerial. A flashlamp bulb was shunted across the wire on one side of the meter. Examined through a telescope, the ammeter indicated 0.51 amp., thereby causing the writer to lose his five-mark bet that over an amp. was passing. Maximum lamp brilliancy coincided with maximum ammeter reading. The result is particularly interesting, as the lamp required 0.3 amp., and so left only 0.21 to flow through the aerial wire it shunted ! Unfortunately, my colleague, having won his five marks, was not interested in the determination of the aerial resistance by the insertion of known resistances, and this has accordingly been left over to some future time.

THE CRD 5DA SENDS TO HAMS WID YL's !!

XYZ de ZYX - n.d n.d om QST? - - ore ZYX clq u -
QRK? - - poe ur QRH eo QRJ ?? - -
QRL - QRM - QRN - QRO - QRS ??? - ve ve -
QSO eo QRW wid YL ?? **OW** QSP YL eo QSR?
QRC eo QRD? Ri! QRY? ur sigs QRZZ - wl QRX -
QSV (private)? - QSU !!! - - QRT (?) not yet !!!
QSB ?! Ri! well om ore QRV - - QTG ? mi
QRA OK? QTC? - - QSJ YL !?! Ri! Ri! - ore now
QRT QSD 0333 GMT poe QSL om eo KKK
73's, 99's eo GL !!!

5DA BEGS TO APOLOGIZE TO ALL YL's!

I would be very interested in the aerial currents of other users of the Hertz, and in the method of measurement, as that adopted, although reasonably accurate, was not convenient.

It may be added that K-i8 has been in regular communication with New Zealand on Sunday mornings, and the half-amp. in the aerial would, therefore, appear to be usefully employed.

S. J. Tyrrell, who has operated K-i8 for the past eighteen months, has now returned to his home QRA in Middlesex. He wishes to thank the many " G " stations, and in particular, G-6VP, for their useful co-operation in his experiments, and trusts to have the pleasure of " seeing " them again under a " G " prefix.

History of the Work of the Amateur Transmitter on Short Waves.

By E. J. Simmonds, M.I.R.E., F.R.S.A. (20D).

IT is my intention, in the short space at my disposal, to consider briefly the progress of amateur developments during the last few years, in the art of world-wide two-way wireless communication, with small powers, and especially to refer to the short wave work, both with telegraphy and telephony, which has been engaging the attention of private experimenters for some considerable period.

Previous to 1923 many organised attempts had been made by amateurs, under the auspices of the Radio Society of Great Britain, to establish two-way trans-Atlantic radio communication using waves of the order of 200 metres, and while none of these tests were successful in this respect, many amateur stations from both sides of the Atlantic were successful in bridging the ocean. The special station erected by the Radio Society of Great Britain at Wandsworth, operating under the call-sign 5WS, was the first British station on 200 metres to be definitely heard in U.S.A., and code word verified.

This took place in the latter part of 1922 during the special trans-Atlantic tests arranged by the Radio Society of Great Britain.

In the spring of 1923 Mr. L. Deloy, operating an amateur station at Nice under the call-sign 8AB, commenced experiments on waves of the order of 100 metres, and from the good long distance reports he received on these transmissions he formed the opinion that such waves could " render immense and unsuspected service in long distance work." As a preliminary to trans-Atlantic work, and also in order to obtain the most favourable transmitter adjustments on 100 metres, Mr. Deloy arranged tests during 1923 with my experimental station situated at Gerrards Cross, Buckinghamshire, and we spent many weeks testing various circuits, aerials, etc. These tests gave such favourable results that in the middle of November, 1923, Mr. Deloy decided to make arrangements with the American Amateur Radio League to listen for his signals on 100 metres. This course was entirely successful, and telegraphic signals from Mr. Deloy's station were strongly received in Hartford, U.S.A., on November 27 and 28, 1923. Two-way 100 metre trans-Atlantic communication was established the next night between American IMO situated at Hartford, and Mr. Deloy's station.

Next after Mr. Deloy's great achievement came the report from Mr. J. A. Partridge, of Merton, London, in reference to two-way working on 100 metres with American IMO. Mr. Partridge's station call-sign 2KF first got into touch with the American station on the morning of December 8, 1923, and was thus the first British station to effect direct communication with the United States on 100 metres.

There is every reason to believe that these tests were the first of their kind, and that it is from their publication that widespread attention was directed to the immense value of short waves ; certainly from that date the development of these waves has proceeded with great rapidity.

These experiments first took place with American stations situated comparatively close to the Atlantic seaboard, but gradually the ranges were extended, until by March, 1924, British amateur stations using less than 250 watts input had been received on the Pacific Coast of America, nearly 6,000 miles away.

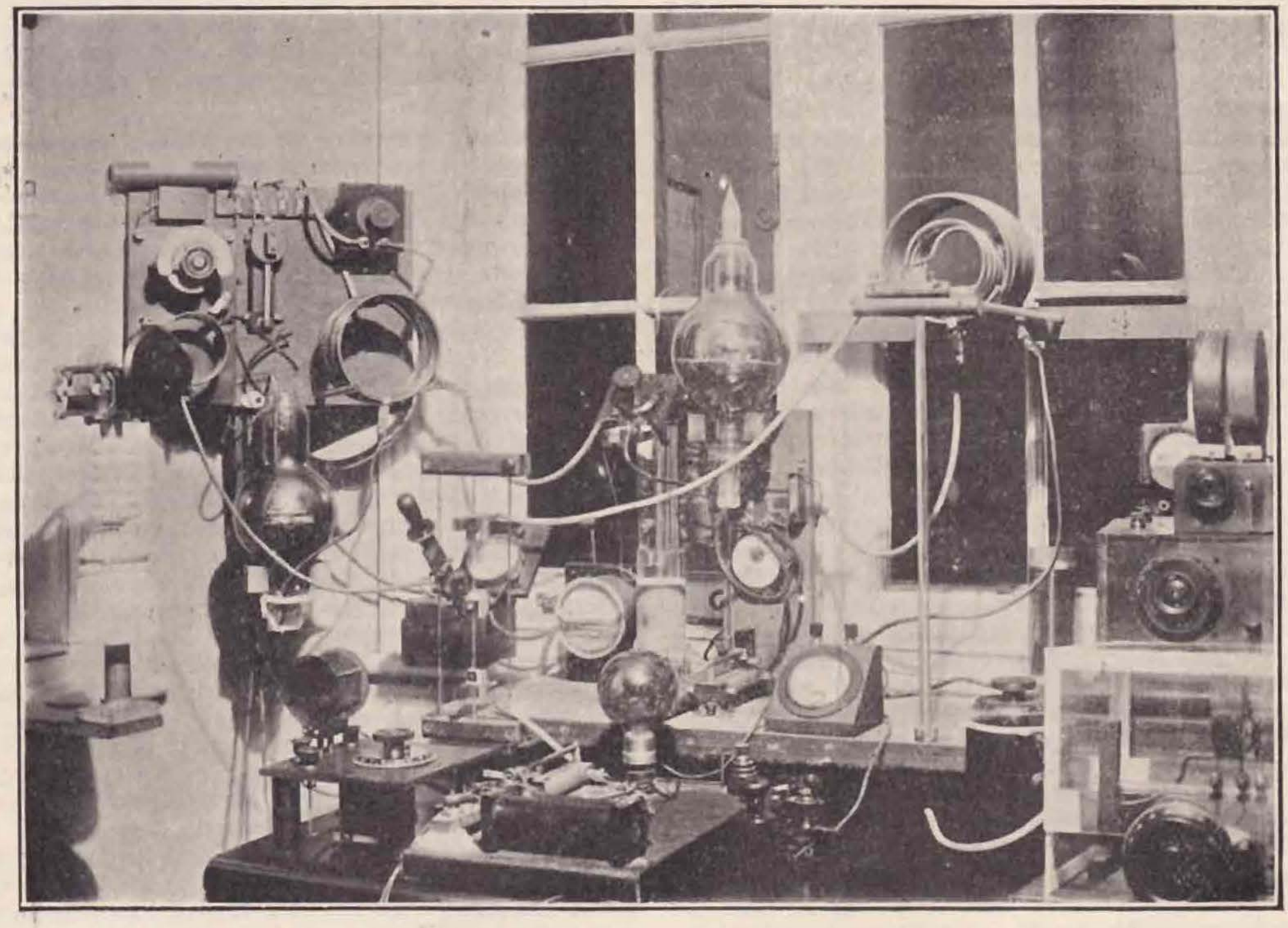
In amateur circles October, 1924, will long be remembered as marking the culminating achievement in amateur long-distance working, when two-way short wave communication was established with New Zealand for the first time in history. It may be of interest to detail the circumstances which surrounded this important development. There is a difference in time of practically 12 hours between Great Britain and New Zealand, and this and other factors seemed to indicate the possibility of a concentration of radio energy at the Antipodes, from short wave transmissions from Great Britain, and it also seemed reasonable to suppose that the received signal strength would rise to peak values during the sunrise and sunset periods. It had therefore been the practice of several British experimental stations to transmit daily during the sunrise period on approximately 95 metres, using a code word for identification purposes, which was changed daily. These experiments were entirely successful, and a cable was received on October 18, 1924, from Mr. Bell, operating radio station 4AA at Waehemo, New Zealand, reporting the reception of strong signals from British station 2OD, and verifying the code word which had been sent out from that station at 6 a.m. the previous day, October 17, 1924. Two-way communication between many New Zealand and British stations followed in the course of a few days, all taking place on wavelengths below 100 metres and with powers of under 250 watts. This was undoubtedly an event of outstanding importance which astonished the scientific world, and provided valuable data and evidence of the efficiency of short wave transmissions which necessitated modifications of the existing theories relating to short wave propagation.

Two-way direct communication quickly followed with Australia on November 13, 1925, when messages were taken for H.M. the King from the Wireless Institute of Australia.

Another development of great interest was the first direct two-way communication on 20 metres between Great Britain and Australia, which took place on May 2, 1925.

Information on the properties and behaviour of 20 metre waves had been accumulated in consequence of the very useful tests which had taken place between NKF, the United States Naval Research Station at Anacosta, U.S.A., working on 20.8 metres, and several amateur stations in this country. In view of the results of these tests, there appeared the possibility of establishing direct two-way communication with Australia with low power using the 20 metre band, at certain hours during the day. As experimental proof of this assumption special arrangements were made for a well-known experimenter in Australia (Mr.

(*Concluded on page* 16)



AMATEUR STATION G20D SITUATED AT GERRARDS CROSS.

AND BUY BRITISH.

A Short-wave Superheterodyne.

By H. J. B. Hampson (G6JV).

IV.—USING THE SET—AND SOME CONCLUSIONS.

IT is thought that a few hints concerning the use of the arrangement which has been described may be of interest.

Little need be said regarding the O-V-1 set. It will be noticed that separate earth and counterpoise terminals have been provided in order that the set may be accommodated to local conditions. The writer has A.C. in his house, and in his own case finds that earth and counterpoise are best joined together and connected to counterpoise. The use of an earth produces serious hum from mains, which is absent when connected as described. Experiments should, therefore, be made to determine the best method of connection.

The super is not used for searching, partly because this is not so easy as with the simple O-V-1, unless the autodyne superheterodyne is used (of which more later), and partly because it is thought that the presence of a powerful local oscillator is liable to cause unnecessary interference.

The procedure adopted is therefore to search on the O-V-1, and to use this exclusively so long as its sensitivity is adequate. When, however, a signal is tuned whose strength is poor the super is brought to bear.

On page 5 of the Bulletin for February, 1926, G5CB has explained that the *f* of the I.F. amplifier should correspond to a wave which is not too long, and the writer considers that he can add nothing useful to what has been said in this matter. In tuning the amplifier described, if the .0005 tuning condensers are set at about 20°, and finally adjusted on a fairly weak signal, operation will be found to be satisfactory. As a matter of fact, the same amplifier is occasionally used for B.C.L. purposes when the condensers are set at about 150°, thus tuning to a considerably longer wave. The tuning is, however, almost too sharp for good quality music (unless regeneration is used with discretion), and such condenser-tuned air core stages are not advised for this purpose owing to their tendency to cut side bands. While a still higher I.F. frequency might be even better, so far as proximity of tuning of oscillator and tuner is concerned (with consequent tendency towards interaction between the two circuits when coupling is at all tight), it must be remembered that amplification falls off as the I.F. frequency is increased. As is so often necessary, a compromise must be made here.

Assuming, then, that a signal has been tuned on the O-V-1, and that it is desired to bring the same in to the super, the procedure is as follows :—

(1) Leave O-V-1 adjusted on the signal.
(2) Switch on oscillator and swing its condenser. This will give a beat note and will show that oscillator is O.K.
(3) Couple up oscillator feed coupling, so that feed coil is 1½" to 2" from filament end of secondary.
(4) Switch on I.F. amplifier and put change-over switch on tuner to the left.
(5) Adjust potentiometer on amplifier so that this is just oscillating.
(6) Swing oscillator condenser, when a beat note will be produced between oscillator and first detector (which will still be oscillating).
(7) Reduce regeneration on tuner until first detector goes out of oscillation.
(8) Slight adjustment of oscillator and tuner controls will now bring in desired signals, and these may be brought up to great strength by increasing regeneration on tuner up to the point preceding oscillation, at the same time compensating for the effect which increased regeneration will have upon tuning by means of the Vernier handle on tuner.

These adjustments will be found to be decidedly critical, and must be made deliberately and slowly if the desired signal is not to be overshot. A little practice will be needed before the capabilities of the instrument are grasped.

It will soon be found that the "build-up" of signals which can be attained by skilful manipulation is quite surprising, and in the writer's experience far and away superior to the usual super in which no provision for the use of regeneration has been provided.

It is hardly necessary to say that, if the signals being received are from a telephone station, the potentiometer on the I.F. amplifier must be moved until the amplifier ceases to oscillate. It will be found, however, that the easiest method of locating a telephone signal is to pick up the carrier with the amplifier oscillating.

If the oscillator is switched off, and the first detector is allowed to oscillate, the instrument may be used as an autodyne superheterodyne. Only one control will then be used, and the simplicity of searching is, indeed, great. However, although signals will naturally be stronger than when using O-V-1, the extraordinary "build-up" procurable with the arrangement previously described is lacking, and results are apt to seem disappointing. In the writer's experience this is a common fault with the autodyne method. It is thus seen that each method has its pros and its cons, and with the set described either may be employed as desired. It may further be remarked that whereas when employing the separate oscillator, signals are so steady that short of placing the hands upon the oscillator, or pick-up coils, body capacity is entirely absent, such is not the case when using the autodyne method. The reason is not far to seek, for it is obvious that any swinging of the aerial and the like, which would tend to affect the note with an O-V-1, will likewise have some effect upon the beat note when an autodyne superheterodyne is in use. The writer believes

that the slogan, " One valve for one job," is safer than " Several jobs for one valve."

Comparisons of Signal Strength.

Although this is never an easy matter, and frequently liable to exaggeration, the writer thinks that he will not be misleading anyone by making the following remarks :—

A C.W. or I.C.W. signal, which is R3 to R4 on O-V-1, becomes good R9+ on super, while an R4 to R5 signal on O-V-1 is readable 20 to 30 feet from the phones when the super is employed.

The writer has not yet come across a case of a C.W. signal being received on the super which is altogether inaudible on O-V-1, and it remains for him to be convinced that this is possible. It should, however, be emphasised that searching is done almost invariably on O-V-1, and that such a case may yet be encountered.

Speech.

It is here above all that the super shows up to full advantage, and the writer has no hesitation in saying that speech which is altogether too weak to follow on O-V-1 can be brought up to good audibility on the super. This has been definitely proved. When WGY's short wave fone has been too weak to follow on O-V-1 the voice of the announcer has been heard 15 feet from the phones when the super was brought in. This is not the same thing as saying that every word could be understood at this distance, but it is believed that the meaning of the statement will be understood.

It must, of course, be appreciated that the great magnification available cannot be focused upon speech to the exclusion of X's, etc., and the writer is of opinion that when the ratio signal strength to X's is in favour of X's on O-V-1, little advantage will be found in using the super. Indeed, under extreme cases of atmospherics the writer knows of nothing more suitable than a single valve on an indoor aerial.

Valves.

A valve of the DE5 type is advised for first detector and for oscillator, while any general purpose type will serve for the L.F. stage. D.E.3 type are used throughout the I.F. amplifier and have given every satisfaction. Compared with DE5B type the difference in performance was less marked than might have been anticipated. However, where cost and upkeep are not of great importance valves of high M values are advised.

Tubular valves of special low capacity have been tried as short wave detectors, but have been disappointing owing to their universal failure to oscillate so readily on really high frequencies as the small power type. When may we hope to see low capacity power valves ? Here is a chance for the valve makers ! ! It seems that the high impedance of such low capacity types as exist is against them for use on very high frequencies (though the writer is always open to correction).

Conclusions.

(1) The autodyne superheterodyne is unequalled for rapidity of search, but disappointing in signal strength, having regard to the number of valves employed.

(2) The superheterodyne with separate oscillator is unquestionably superior for speech, and in this direction lies its principal utility.

(3) When X's are troublesome the super is apt to be too noisy for practical use.

(4) The super will give great magnification of C.W. and I.C.W. signals.

(5) The writer is not yet convinced that signals which are too weak to be audible on O-V-1 can be heard on a super, though the possibility of this is not actually denied.

(6) A super in which provision is not made for regeneration in the first detector circuits is sacrificing more than 50 per cent. of the sensitivity of which the system is capable.

(7) Strong local oscillations loosely coupled to tuner are far better than relatively weak oscillations tightly coupled, since in the latter case there is danger of the tuner " pulling the oscillator out of oscillation "—to say nothing of the undesirable damping imposed on tuner circuits by proximity of feed coil.

(8) The simple O-V-1 set, when carefully designed, still requires a lot of beating for general work—particularly when used for the reception of C.W. signals. Until body capacity has been eliminated and an effective slow motion, free from backlash, has been provided, the best results cannot be obtained.

In conclusion, the writer hopes that his remarks may have been of some interest, and he would like to make it clear that what has been written, so far from being the last word on the subject, is only the introduction. The experiments carried out, and the conclusions reached, have been his attempt to answer the old question, " Is the super worth while for short wave work, and do results justify the cost and trouble ? " Few experimenters seem to have tackled this query at all seriously, and it is admitted that the time and labour involved have of necessity limited DX transmission achievements at G6JV.

On the other hand, mere " DX pot-hunting " does not appear to the writer to be the sole justification for a transmitting permit, and he hopes that his own investigations of the supersonic method of reception as applied to short waves may be regarded as a pebble in the great edifice which is being erected by amateur investigators.

Still Another Use For Neon Lamps.

By 6LU.

Perhaps some of the gang have not thought of just holding a neon lamp in close proximity to helix, terminals or any point at high H.F. potential. It is much better than the " half-inch blister " method. One can see if valve is oscillating, almost pick out nodes, and, at any rate, see where things are happening. If you haven't a bulb over the closed circuit ammeter, hold it close and you can reach the " clock " (Hi !).

This useful parlour trick is guaranteed, also, to inculcate respect for you in the OW or YL.

Stray.

G2XV wants schedules with A., N.Z., Pi B2 or R. stations on either 44.5 or 32.5 metres on Saturday, Sunday or Monday mornings from 5 a.m. to 8 a.m. G.M.T. Fix schedules by letter or " Ham " radio.—G2XV.

Low Power Tests, November 1-7, 1926, inclusive.

The T. & R. Section are endeavouring to organise an international low-power test, and as this is the first time such a thing has been attempted, it is earnestly requested that all readers of this magazine and their friends will assist us in this organisation, by the following methods :—

Refraining from using any other supply than 200/220 D.C. or smoothed A.C. main supplies or dry batteries on the wave lengths 44/46 during the hours of 23.00 06.00 weekdays, and Sundays 19.00/20.00 and 22.30 and 06.00 G.M.T., Nov. 1-7, inclusive.

A suitable letter is being drafted to every country in the world where hams exist, asking for their earnest co-operation, and providing that we all co-operate in these tests, success is sure to ensue.

Low Power Tests: General Arrangements

Power to be used not exceeding 5 watts input to anode of valve. Voltage not to exceed 200/220. Source of current to be either dry cells or D.C. mains only. No generators or A.C. supply permissible. Rectified and smoothed A.C. permitted, provided voltage not above 220.

Each station participating in tests must use a five-letter code word for each transmission and, if possible, two-way contact established with stations assisting in tests to enable confirmation to be obtained. Reports of reception will also be taken into consideration if these check with competitor's log and code words. Code words to be changed daily.

Prizes will be given to members showing best number of contacts, or other records, taking into consideration distance in miles from transmitting station and reports of reception from other sources ; decision of T. & R. Committee final.

Persons other than those who are T. & R. members can compete, providing they can show sufficient reasons why they have not joined the Section and, if possible, contribute a sum of 5s. towards the expenses of the Section in undertaking the arrangement of the tests. This sum will be deducted from the subscription due if membership is taken up within the current year.

Trans-Oceanic Permits, October, 1926, to March, 1927.

All trans-oceanic permits will have to be reviewed now, and members are requested to send in their applications without delay to Hon. Secretary, so that the necessary arrangements can be made with the Postmaster-General.

Members will during the next few days receive a communication from the Postmaster-General concerning the renewal of their present licences, and they are asked to forward these to the Hon. Secretary, T. & R. Section, with their wishes as to renewal written on the back. The matter will then be dealt with by headquarters direct with the Post Office.

G. Marcuse,
Hon. Secretary, T. & R. Section.

Low Power Tests.

"Coombe Dingle,"
Queen's Park,
Caterham, Surrey.

September 28, 1926.

The T. & R. Section has organised Low-Power Short-Wave Tests on 44-46 metres, using inputs to plate of oscillator valve up to 5 watts maximum D.C., supply, 220 volts, or dry batteries, or smoothed alternating current.

In order that these tests may be completely successful, it is absolutely essential that all amateur transmitters using these wavelengths, whether participating in these tests or not, should co-operate by refraining from using higher power than 5 watts, or raw alternating current as a source of supply to the valves. Loose-coupled circuits should be used, and on no account should marking and spacing waves be used.

We specially request our colleagues in France, Holland, and Italy to observe this request during the time of these tests, viz., November 1-7 inclusive, from 2300-0600 G.M.T. on weekdays, and 1900-2000 and 2230-2600 on Sundays.

The entire Ham World is co-operating in these tests, and most valuable data will be accumulated, and, with the co-operation of all, the objects of these tests will be assured.

All reports and correspondence should be sent to the undersigned.

Thanks, OM, and good luck.

Gerald Marcuse,
Hon. Sec., T. & R. Section, R.S.G.B., Vice-President, I.A.R.U.

First British Amateur Convention—(*Continued from page* 14.)

correct, a concerted raid was made on Woolworth's, where a large number of QRM instruments were purchased. Too late was it discovered that these were all tuned dead to 45, so that the noise in the entrance hall of the Institute had to be heard to be believed !

After order had been regained somewhat, we settled down to discuss the Traffic Rules with a humorous interlude by the photographer, who appeared to have difficulty in adjusting his spark gap —still if these people *will* use spark——

After the Traffic Rules had been disposed of, a presentation of a typewriter was made to our hard-working Editor, who followed with a *resumé* of the Bulletin's activities. Then came our good friend Jamblin with a happy little speech on the equally hard-worked QSL Section, and lastly 6JV, of S-W super-het fame, gave us some sound suggestions on co-operation between the Provinces and London. Concluding with our Chairman's speech on the Section as a whole, the First Convention broke up about 6 p.m., with the hope uppermost in everyone's mind that this was the forerunner of a regular institution for the future.

IS YOUR SUBSCRIPTION DUE?

The Low Power Tests.

ELSEWHERE in this issue you will find particulars of the schedules for the QRP tests to be held from the 1st to the 7th of November. Meanwhile, here are just a few remarks, explanations, and also an entreaty.

Firstly, we will deal with the object of them. They are not being held "just for the fun of it," neither are they a chance for the stuntist to shine. They are being held with a purely scientific object, namely, to ascertain the limit of range possible for satisfactory communication on the 45-metre waveband with a small input, given satisfactory conditions and absence of QRM. They are also an opportunity to test the efficiency of various generating circuits in use, together with the external radiating system. At the conclusion of the tests, we should have some valuable data on all the above points. In addition to this, it is an opportunity for the low power man to get in some real DX, which he has been unable to do before owing to conditions hitherto existing. Regarding the limitation of the power input to 5 watts, this has been done to accommodate the low power man, who usually uses this input because of his restricted H.T. supply.

Besides, 10 watts is sufficient under some conditions for world-wide DX. The fixing of the voltage to 200-220 has also been done partly for the above reason, and mainly to avoid the temptation to "pump a bit more in," and this is responsible also for the banning of generators and A.C. supply to a great extent, and as a further point, to avoid all undue QRM due to badly filtered generators and rectified A.C. For this reason, too, it is requested that A.C. shall not be used for filament supply. All stations taking part using D.C. mains are also requested to ensure elimination of any supply hum from their QSB, as neglect of this may lead to them being dropped on unduly for possible contravention of the rules; some D.C. mains sound like A.C. improperly filtered. It is also up to all members to ensure a sharply tuned wave as a point of consideration for the other fellow, and it should be unnecessary to point out that the terms of his licence be adhered to, and to keep on his proper wave. Attention to these points will not only help all the others, it will most probably result in more satisfactory contacts for the station concerned. See also that you are familiar with the schedules, and a perfect log is kept. A report not checking with the station log is valueless.

In fact, do all you can to assist the tests, and not spoil them by deliberately breaking the rules. As a last request, it is earnestly pleaded that on no account should you attempt to exceed the stipulated input. It's results on 5 watts we want, not six. From experience, I know that you can do wonders with a little patience and 5 watts, and a glance at past reports on low power DX will show you it can be done. As was said at the Convention, if you hear the man in the next street working a "U" ham on his five watts, *please don't turn on the juice* to get that one too, keep pegging away, and it's the odds on you that you QSO a Zedder before he does.

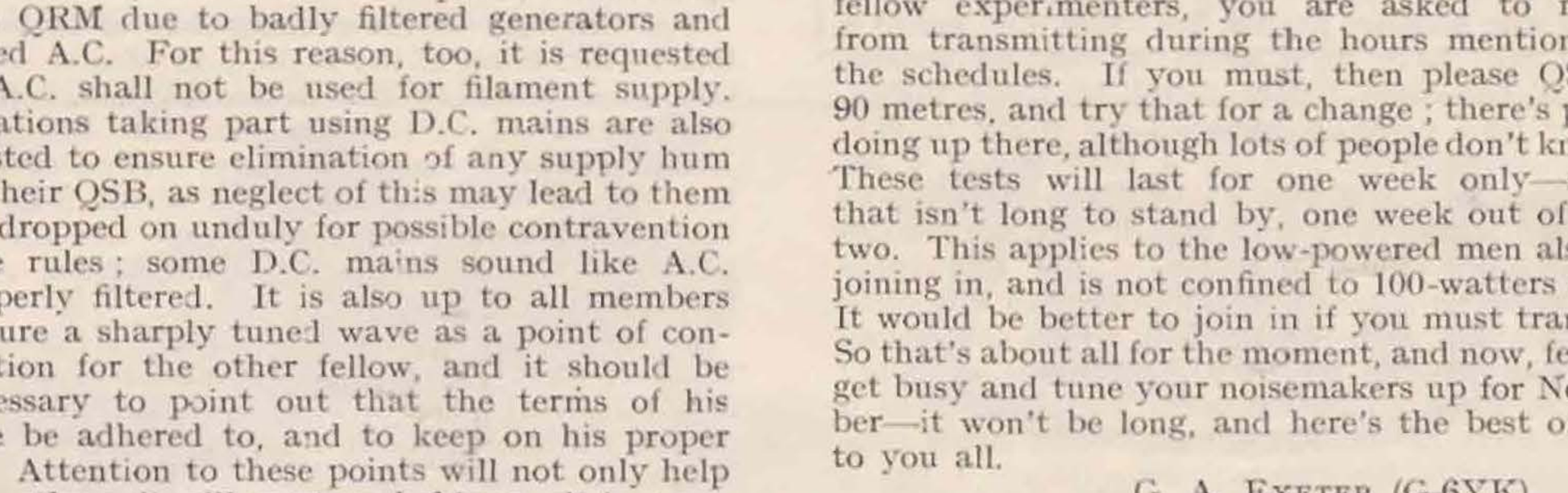
The tests are being watched by special means, and any report on a station overstepping the mark will be promptly dealt with, and if it's you, you'll probably hear someone knocking at your door before you've signed off.

All stations taking part are open to inspection by the Committee during working hours, and the exact operating conditions must be shown, also your meters are open to calibration at *your expense*, and naturally any meter found inaccurate spoils your chances, so it's up to you to see they are O.K.

Finally, a word to all those stations not taking part, both in this country and abroad.

If you won't join in with the rest of the gang, then as a matter of courtesy and consideration for your fellow experimenters, you are asked to refrain from transmitting during the hours mentioned in the schedules. If you must, then please QSY to 90 metres, and try that for a change; there's plenty doing up there, although lots of people don't know it. These tests will last for one week only—surely that isn't long to stand by, one week out of fifty-two. This applies to the low-powered men also not joining in, and is not confined to 100-watters alone. It would be better to join in if you must transmit. So that's about all for the moment, and now, fellows, get busy and tune your noisemakers up for November—it won't be long, and here's the best of luck to you all.

G. A. EXETER (G-6YK),
Hon. Assist. Organiser, QRP Tests.



Apropos the article on page 8.

YOU WOULD HAVE A BIGGER "BULLETIN."

Quoth the Raven—

A monthly causerie from the pen of a well-known writer which we believe will be appreciated by all readers.

CONVENTIONS AND CONVENTIONS.

The Editor asked me to go to the Convention so that I might in my ignorance write upon things as they seem and things as they really are. My first night was like unto the dream which we used to have when we were in that delightful position of having to spend much time and dispose of much midnight oil in an attempt to perform mighty feats of valour in large and stuffy examination halls. The learned gentleman who lectured upon master oscillators and who discoursed with such sangfroid upon the harmonics and temperature co-efficient of tuning forks and further confused me with references to the control of transmitters of wireless messages by their aid, played havoc with my smattering of radio knowledge so much so that I was driven in desperation to reach high into the shelves of my library when I returned to my den after the ordeal. Now, however, I am primed with useful knowledge of the subject, and if he should again confront me with a promise to answer questions, I will smite him hip and thigh with weighty knowledge concerning the uses of harmonics, extras, phonic motors, phases, skip distances, wanderings of trust signals and the like. I fear, however, that the opportunity will never again present itself, and should it do so, my library and its useful knowledge will no longer be of use to me, for the strange pranks to which my mind is subject will have once again led me to wonder where I had once before heard of these things. For the time being, however, I am ready to deal with these matters, and for a brief period I am learned in these subjects. Would that the opportunity afford itself to avail myself of opportunities to make some practical use of the knowledge attained, but the limits of my purse will not allow of my playing with tuning forks which cost something like twenty to forty large coins of gold; therefore I am unable to select harmonics from a host of forty or so others, and I must needs take this knowledge for granted, nevertheless I feel a better man for the possessing of it.

The second day of the Convention was a study in the conventions of Conventionists. It was a revelation to me and sundry others that the amateur should display such intelligent interest in the uses and abuses of the ether. Further, the ready manner in which the assembly obeyed the behest of the Chairman to refrain from making too much noise persuaded me that the ether was in safe keeping with the amateur, for were not the Conventionists young and healthy animals who took a delight in their hobby and the usefulness which they attained by being radio enthusiasts? After all, an Amateur Radio Convention affords excellent opportunities for a rag, and it was very evident that many of the persons present had been, or are, students in one of the Universities which abound in London, and their thirst for fun was great. The presentation of a huge cudgel to the Chairman at the beginning of the proceedings was an omen of what might follow, but nothing untoward occurred, although argument waxed warm on more than one

(*Concluded at foo of ne.t column.*)

occasion. At the close of the proceedings, I felt that I had once again had a glimpse of the greatness of Britain, even though I had attended what was in reality a scientific gathering. The Conventionist obeys the conventions of the Britisher and he has a great future.

The First British Convention, 1926.

DURING Thursday evening, September 16, strange, sleepy-eyed fellows adorned with the little black and gold badge, and often with their call-sign pinned to their coats, could be seen at most of the railway termini in London.

A long distance train would come in, whereupon there would be a careful scrutiny of the disembarking passengers, followed by a waving of BULLETINS —this seemed to be a favourite method of making one's self known—and a QSO would take place in the flesh among those who had previously known each other only on the key.

To anyone listening on the 45 band that night, quite a few strange fists could be heard at some of the London stations, showing that the gang had got together and were making the best of their time.

Friday saw the fellows congregating at the R.S.G.B. stand at the B.C.L. show, followed by a general exodus to the Institute, where over a hundred made short work of the tea kindly given by 2OD. Here one was glad to see fellows from Northern Ireland and the Free State, and even Australia.

After tea the proceedings were officially opened by our Chairman, to whom more than usual thanks are due, since all through the Convention he was far from well. Telegrams and letters were read from our American and Continental friends, and from those of our own members who were unable to get up to town.

The star turn of the evening was, of course, the talk by Mr. Kirk, of the B.B.C., on Master Oscillators. One was very glad to see Capt. Eckersley—who opened the discussion—and Mr. Bishop, the B.B.C.'s Superintendent Engineer. The lecture and the official business being over about 8.15 p.m., the gang stayed yarning until—no, not the early hours—but until we were politely herded out by the Institute caretaker.

By 10.30 the next morning most of us, except those who were "QRM'd" by business, were again at the Institute, and at 11 o'clock the real business of the day commenced after an address by Dr. Eccles, who more than hinted at a much wider future in store for us. Owing to 2SZ's absence, the presentation of the Rotab Cup was held over, and we went straight in to discuss the new T. & R. Rules. As had been expected, these caused a lengthy, but good-humoured amount of criticism, so that an adjournment was made for lunch. It was rumoured that the Committee lunched at the Cecil, but in any case, thanks to the hospitality of 5LF and 2GO, a party of eighteen went over to the Strand Palace, where various attempts on the part of the general public were made to determine who exactly we were. A fairly general impression appeared to gain ground that we were Bolton Wanderers—why, nobody seemed to know!

Lunch being over and the party all present and

(*Concluded on page* 12).

Radio Rifts.

6LL. How are the neighbours ?

* * *

Will 2PX oblige with some more choke coil tests ?

* * *

6TX, badly canted with a stiff neck, has decided to part with his bincculars.

* * *

Is 2KT aware that his 2-watt Boudoir radio was much clearer and more QSA than his Sunday service on 40 watts ?

* * *

What is the Journal des 8 doing about the pile of 1 franc coupons sent over with three addressed envelopes respectively by a number of G hams ?

Describe the feelings of 6LB when, after losing several nights repose in the tall timbers, he found the key had been carefully shorted all the time. The wallpaper appears to be badly blistered.

* * *

5DT may build a new receiver at "any" moment. He will then be pleased to reply to some of the innumerable calls from Kent and East Anglia. His fone is FB over 100 miles, but never a QSO. Two long years we have waited.

* * *

Canadian 4GT comes in with a thump in N.Z., yet he has only been able to work C1's and C3's on rare occasions and has never worked a C2. He reports: "The only European sigs of sufficient strength to work are from G2SZ." O's find a

Concluded on next page.

similar difficulty in working A's. Why? Guard, turn out!

* * *

Try this combination if you have the space, for 45 metres DX and 180 miles fone. It crosses the T in aerial current, the ammeter fairly jumps to it on both frequencies. Aerial: Single 12 105 feet. Counterpoise: Single 14 enamelled 105 feet, both total length from ATI. Fundamental W/L is approx. 135 metres, the third harmonie of 45. Variable condenser in counterpoise will bring it to resonance if loose coupling is used. For 180 metre working add earth tuned with a condenser in oil and omit condenser from counterpoise. Above measurements are conducive to great efficiency. One eloquent station described it as the "gubbins."

"ETHERCOMBER."

We noticed an interesting QSL card from Holland recently. It was from N-OWF to G5LU, and was the Dutchman's 100th QSO, the card being suitably decorated to mark the event. F.B. OWF!

History of the Work of the Amateur Transmitter on Short Waves—(*Concluded from page* 9).

Maclurcan, of Sydney) to construct a 20 metre transmitter and receiver, and commence 20 metre tests at definite times with my station. These experiments were crowned with success, and two-way communication was effected at 6 a.m. on May 2, 1925, when greetings and congratulations were passed to mark the important event. It should be noted that the success of these experiments was assured not because of chance contact between the two stations, but because the time and wave length were chosen only after careful consideration of the many factors which had become apparent in consequence of the NKF 20.8 metres trans-Atlantic transmissions before mentioned.

During recent months the development of apparatus for the transmission and reception of telephony on wave lengths between 20 and 100 metres has received attention from many amateur workers with the necessary facilities, and much research has been directed to the difficult problems associated with speech distortion and fading so apparent on the reception of short wave telephony. It has now been definitely established that most of this distortion and fading is occasioned by change of frequency at the transmitter during the process of modulation, and the application of quartz crystal control to the drive of the transmitter, to stabilise the frequency and thus minimise the distortion, has been most successfully applied to several American short wave broadcasting stations.

Many amateur workers are devoting much time to this fascinating problem of quartz crystal control, especially with a view to the successful use of the harmonics of crystals of comparatively long wave lengths, for the efficient control of short wave sets.

Certain British amateur stations working on the 45 metre band have also been regularly relaying, on 45 metres, parts of the musical programme from 2LO with great success, and many reports are to hand of the good reception of these relays in many distant parts of the world.

Time does not permit of going iuto further detail, but it is hoped that this short summary may be sufficient to indicate some of the contributions of the amateur worker to the vast developments of radio communication in the past.

Committee Elections, 1926.

IN accordance with the rules which were passed at the Convention, members are asked to fill in the nomination form given below, and forward to their Area Headquarters without delay. Alternatively, it is suggested that members should copy out the nomination form *verbatim*, in order to avoid destroying this page of THE BULLETIN.

Now is the time to place your man on the Committee, so avail yourself of the opportunity—and do it at once.

FORM "A" SCHEDULE.

Radio Society of Great Britain.

T. & R. SECTION.

NOMINATION FORM

To be posted on completion to Area H.Q. of member's own Area by October 10 of current year.

I,.....

Address .....

.....

Call Sign (if any).....

Do hereby nominate for election as Area Representative and Member of Committee for.....Area.

Name.....

.....

.....

.....

I am in a position to state that..... is willing to undertake the necessary duties if elected.

Signature.....

Date.....

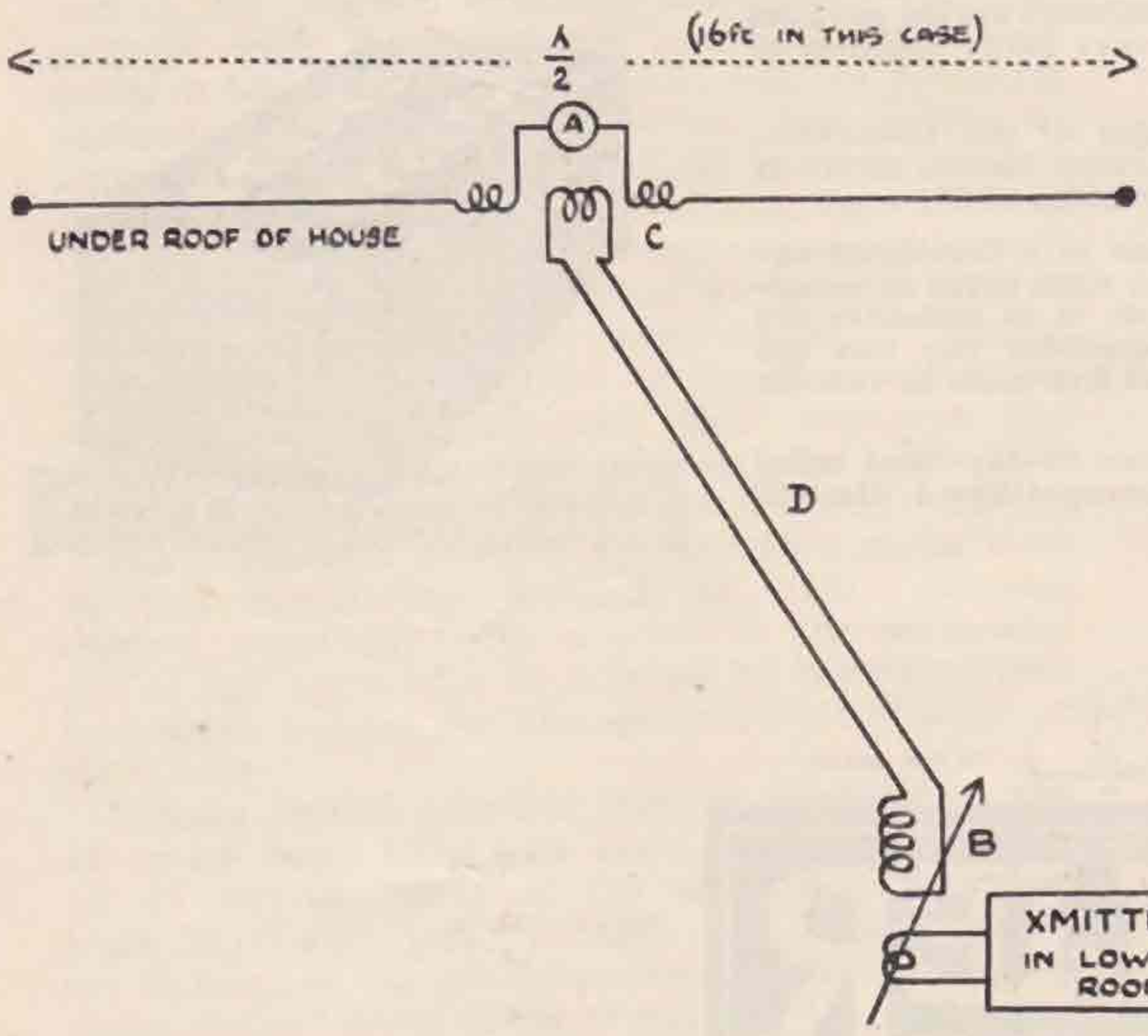
Note:—Owing to "high pressure" caused by the Convention the date given for the depositing of the nomination form is extended in this instance to 18th October.

Tea Fund.

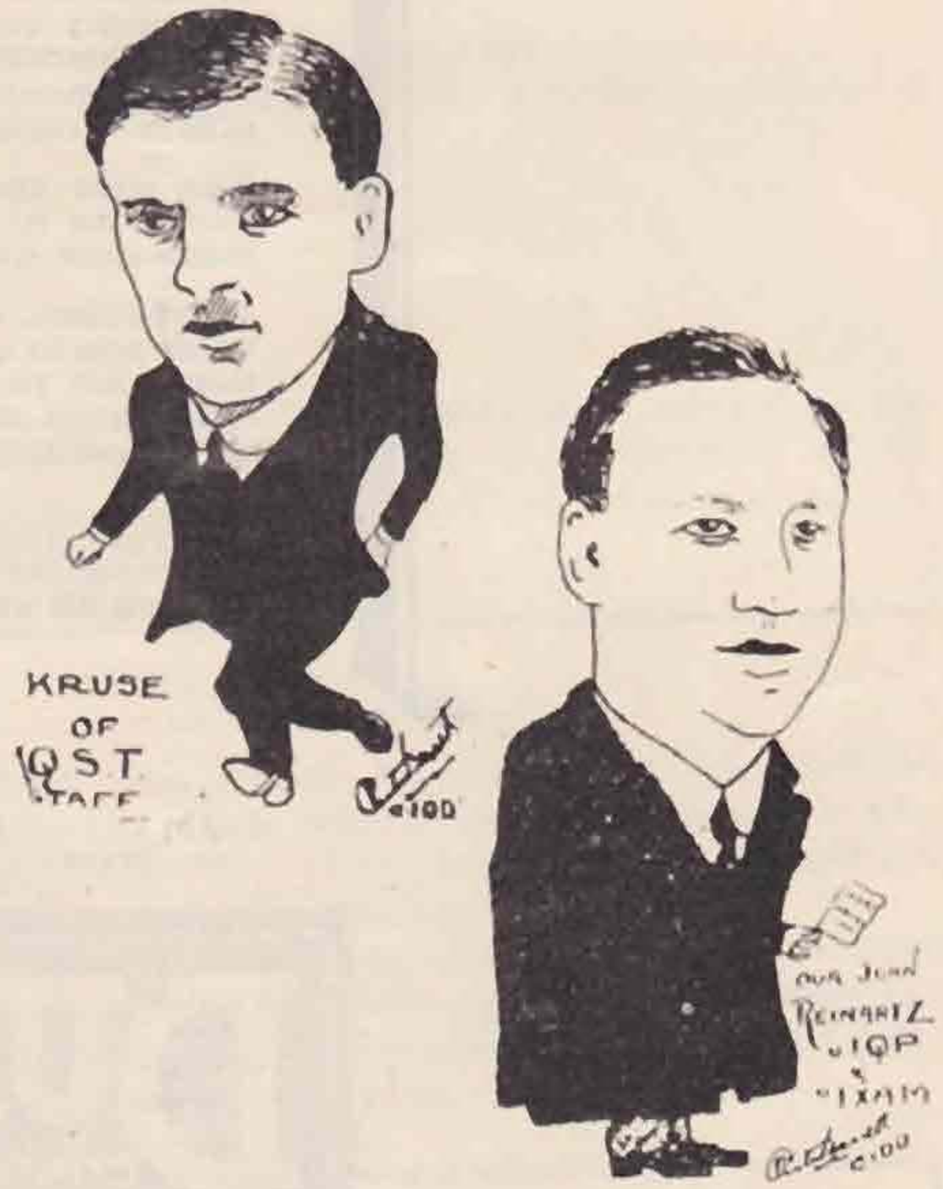
Members are asked to volunteer to provide funds for the teas which generally precede the meetings held at the Institute of Electrical Engineers during the session.

We thank the following donors for the amounts named hereunder: Mr. Pollock, £1; Mr. Reeves, £1. Mr. A. de Villiers has also kindly promised to provide a tea for one meeting.

We want your Article!



It is regretted that through an oversight the above diagram was omitted from the article on **Short Wave Indoor Antenna,** by G2OD in our last issue (page 12).



More Celebrities.

Traffic Notes.

Indian Notes.

Prepared by Y-DCR.

ON the whole, things are very quiet these days; conditions, however, are rapidly improving, and as the Monsoon, which brings along the "father" of all X's, leaves us, we hope to get down to some real DX.

Y2JY reports very little doing in the DX line, he is still on 5 watts, and although he has been reported at good strength all over India. has not succeeded in raising a G, at present he is just recovering from a real "amateur's nightmare"; after staying up the whole of one night trying to persuade his receiver to behave, he strolled out into the compound for a breath of air, and, to his amazement, saw no less than six healthy specimens of flying fox calmly sleeping, hanging from his aerial (of course, their sleep was soon ended).

Y2PM, who has much DX in the reception line to his credit, hopes to be on the air in November, he reports reception very poor just at present.

Y2BG is very quiet these days, but we hope to hear him soon, and expect great things from him this winter.

Y-DCR has reconstructed his transmitter, and is on the air again with 10 and 60 watts, he has been QSO with SS2SE (Singapore) on 10 watts, and has been QSO with G2QB and OHL (Austria). Y-DCR is transmitting on 36 metres regularly on Wednesdays and Saturdays from 2130 to 0001 hrs. G.M.T.; he also reports reception of G2CC, G2NM, G2KF strongly and fairly regularly, and that the spacing wave of 2NM is very bad QRM on 45 metres.

Lieut. F. Rodman, of Meerut, is doing good work on the reception side, and hopes to start transmitting as soon as he is settled.

SS 2SE of Singapore is also on the air again, and is getting some good DX, but has yet to hook up with a G. (Now, then, G's, what about it?) He can be heard on 35 metres during the week-ends, and is on the look-out for a hook-up with G stns.

Two newcomers in the East are BN-SK1 and BN-SK2, both are located at Sarawak, Borneo. BN-SK2, I believe, has already been QSO with G; both stations have a very good QSB, and are working regularly on 35-40 metres.

QRM.—All stations report an increase of Commercial stations on the lower wave-band, especially around 36-41 metres, QRM is very bad from U.S. naval stations on 36-38 in the East. All European amateurs are rather scarce these days, very few G stations, but as those that are getting over are of good strength, the lack is put down to "Summeritis."

Mid-Britain Notes.

Prepared by G6JV.

FOLLOWING last month's vacancy in Stafford comes the news that E. J. Erith is returning to London, and, therefore, resigning Warwick and Worcester. Bad business, vy, for BRS22 has worked hard, and he will be sadly missed. We must busy ourselves at once and fill the vacancies.

While we are about it, suppose we hold elections in *all* the Sub-Areas. Here is the scheme:—

Let us have some abbreviations to save space. In future:—

GHQ is General Head Quarters—Victoria Street.

AHQ is Area Head Quarters—Norwich (or elsewhere)!

CHQ is County (or Sub-Area) Head Quarters.

Will *every* Mid-Briton send a p.c. to AHQ by October 10 (latest) as follows:—

"I nominate (give name and QRA) as Ganger for.....
Sub-Area. I have obtained his undertaking to serve if elected.
Signature and QRA."

These nominations will appear by Areas in the November BULLETIN. Every member will select one name from the list of his own area, and will again post card AHQ by November 10 thus:—

"I record my vote in favour of (Name and QRA) as Ganger for.....Sub-Area.
Signature, etc."

The result of the elections will appear in December BULLETIN, and the new Gangers will take over by January 1.

Here are some suggested rules (any objections?):—

1. Area elections shall be held annually.
2. In the event of a tie between two or more candidates, AHQ may give a casting vote.
3. Any query resulting from the elections may be submitted to AHQ, whose decision shall be upheld.
4. In the event of a vacancy in any CHQ, a temporary appointment may be made by AHQ, but such appointment shall lapse at the annual elections.
5. Any rule may be amended by a majority vote.

Now, fellows, it's all in your own hands, and it's up to each of you to choose wisely and well. Above all, don't "leave the business to someone else." I shall be bitterly disappointed if this scheme does not meet with whole-hearted response.

And now the reports:—

Shropshire.

5SI is about again, and has worked U.S.A. once more on low power before leaving for his holiday. 6TD has had a birthday (says he was 99), and got a Vibroplex for a birthday present. Whether that has anything to do with it is not known, but he has worked 6BZ's, 2 R's, 11 Q's, 7 A's, 40 Yanks (only 6th and 7th districts missing), WNP, one Uruguay, and one French Congo. This little score accounted for one 0/150 and one 0/50, and we wonder whether the ducks went hungry last month? During a test with Z3AR the filament battery went down from 9 to 5 volts, and 3AR reported no difference. There must be something about that birthday.

Cambridgeshire (by 2XV).

Gang, I am very disappointed at your lack of support this month, suppose you are all QRW holidays—let's hope you return with new energy and a flexible right wrist.

5YK reports little doing owing to his pet bottle going on strike, so he is now QRP with a "borrowed" LS5; however, he has been QSO with GX6MU when 220 miles east of Newfoundland, and reported R5. 5YK is conducting some experiments with a Zeppelin type of aerial, and has promised some "dope" on the results at a later date.

2XV has managed to maintain a good month's DX again, and has been QSO New Zealand 4AM, 2AC, 4AA, and Australia 2NO (ex G6XG) (A2NO sends his best wishes to all his old T. & R. pals); G2XV has also been QSO American 1CMX, 5ZAZ, 1CI, 2BNZ, 8ZAE, 2QU, 2BYG, 3RF, 1DI—so feels quite satisfied with his month's work. A wave of 32.5 is now being used consistently for a period of about six weeks to get comparative dope as to results on 45 as compared to 32.5.

Stations who have *not* reported this month are 2HK, 2DB, 5JO, 5RT . . . . ? ? ? ! !

Warwickshire (by BRS22).

Activities have dwindled rather this month, but nevertheless, reports were sent in even by those who had ND. 6YU (Coventry) has not been on at all, owing to ill-health. Bad luck, OM, we wish you a speedy recovery. He will be on again soon, but may transfer to Leeds. If he does, it will be a big loss to us, and also to the C.T.A. 2BPI (Coventry) hopes to send in a better report next month, as autumn approaches. 2BMW says radio is dull in Leamington, but shows signs of bucking up soon. BRS3 (Saltley) sends in a fine report, reporting FC8FLO (Shanghai) and Peru OAF, also several 20-metre stations. He would like to know of any information concerning DU4, AZ4, AP4, and YN all on 34.5 metres, and LP1 on 38. He knows of two more prospective members. FB, OM! 5SK (Coventry) reports holidays only. BRS22 (Erdington) has been very busy listening and heard 100 U's at a sitting recently.

BRS22 regrets to say he will be back in London by the time this is in print, so please report to 6N until further notice. He wishes to thank all Warwick hams for fine help and kind letters when he left them. Good luck to you all.

6YD (Small Heath) has been experimenting with a new master-oscillator of his own design, which will probably put in some good DX.

BRS2 (Moseley) sent in his first report last month, and has been doing some good reception.

Worcestershire.

6MW reports being under reconstruction, and hopes to be on again shortly.

Stafford.

2WN reports working 26 Continental stations in a fortnight on less than 10 watts. The rest of the Stafford gang have failed to report.

Next time please report to 5UW, who has kindly agreed to act as ganger until the elections. Now, Staffs, send those reports along, and don't let 5UW down, will you? 5UW's QRA is: Wellington Place, Penn Fields, Wolverhampton.

YOU WOULD HAVE A BIGGER "BULLETIN,"

Wolverhampton (by 5UW).

2OQ.—2OQ was QSO with BZ on first attempt with his new transmitter, but shortly afterwards blew one of his pet bottles, since then he has been R5 with BZ, using 440 mains on the anodes of receiving valves (F.B. OM.)

5UW.—This has been a great DX month for 5UW, the total "bag" being two BZ, five U8's, Africa, and N.Z. 4AM. 5UW welcomes "rag chews" with fellow T. & R. members. Only Asia missing for WAC.

5LK.—Nothing doing this month, and most probably for some months to come, as he is very QRW with business.

6HT.—6HT blew his 50-watter and now using a 40-watt war veteran at least eight years old. "Some tube," Hi. He is QSO Europe, and hopes to QSO across various PONDS when biz QRM, bed QRM (es 5UW QRM Hi) permits.

6PB and 2RR are chatting away merrily on 150 metres band, and would welcome reports.

2AZD has been informed by authorities that his open aerial licence will be through as soon as he has taken the Morse test. This will shortly be another "live" station for Wolverhampton very soon.

2AAD, 2AWJ, 5AF, 6MZ are silent both in the air and on paper. Why? ? ? ? OM's.

Norfolk.

6ZJ is busy rebuilding, and is off the air meanwhile.

2BJP is taking his Morse test this month, and hopes to be on the air by end of September.

2BWB says he has nothing but woes to report, such as aerial casualties and the like.

6JV has been testing with two LS5 valves in parallel, and has had fairly good results. He is at present testing aerials and comparing second and third harmonic excitation with voltage and current fed Hertz.

Durrant, of Mosul fame, paid a surprise visit, and some interesting schedules have been fixed with GFR. Contrary to expectation, reliable QSO has been carried out on 45 metres as late as midnight, the QRK being then R.5 with 40 watts input, in spite of the fact that QSS of European stations appears to set in about 2100. Further schedules using a novel method of connecting valves in parallel are being arranged, and the promise of some dope for the BULL. from Durrant's pen upon this subject has been gleefully secured. Incidentally, a copy of the BULL. (with membership form included, of course!) has been handed to the O. I/C. GFR, and it is expected that the bait will shortly lead to a "safe landing"! (This is a joke—Durrant is in the R.A.F.)

Northern Notes.

Collected by 2DR.

MANY of my correspondents this month comment on the absence of Australian signals on the air, although New Zealand stations appear to be getting over well, signals reaching a peak value about 07.00 B.S.T. Brazilians have again been to the fore, and many have been worked.

I have had a host of favourable comments on the proposed low-power tests, and if this project is put into practice, I am sure some exceedingly interesting results will be obtained.

Quite a number of hams appear to have been on holiday or rebuilding during the last month, and not a great amount of work has been done. Here are the individual reports.

Yorkshire (2DR).

6BR has had quite an exciting time of late, as first he worked U-1AKM under very adverse conditions with an input of 7.7 watts, and this was followed by the receipt of a card from Melbourne reporting reception of his sigs there in July, when the input was a mere 9.2 watts. This is really FB, and 6BR is duly added to the Northern Section of low-power DX men. 6IG has done less DX with his increased power, but this must be attributed to circumstances, for his sigs have been distinctly louder at 2DR than formerly. Stations worked include a Swedish steamer off Stockholm. 2X7 has the palm this month, however, with three Z's, one BZ, one PR, and four U's, and the usual Europeans. He has been busy finally removing all traces of ripple from his QSB, which was very good to commence with, but is real DC now. His sigs have been R7 in New Zealand and R8 in Brazil and U.S.A. A special low-power transmitter is in readiness here for the proposed tests.

6YR is busy with 6LU on conductivity of air tests. However, quite useful phone work has been done on 1.6 watts. He finds H.T. batteries good if the heavy duty type are used, and used with reasonable care to prevent serious overloading. His have been well used for twelve months, and still show over 55 volts apiece, while their original voltage was 60.

2DR has been rarely seen in his shack during this month. A YL has arrived in his household, and holidays have also prevented a great deal of work being done. A QRP transmitter is being prepared for the tests here.

Lancashire (5XY).

5JW has been on the move lately, and after getting a decent DC note from his chemical rectifier, calmly moved his QRA to a place with D.C. mains! At present he is using 4 watts and on this power worked GX6MU then 300 miles east of Newfoundland, and who gave him R6. He states that the end of August was excellent for U's any night after 23.00 B.S.T.

5XY has worked Australia, Brazil and some U's this month, and had reports from South Africa and Tasmania. I think a QRP transmitter is ready here too.

Cheshire (6TW).

2SO has been trying out receivers this month, and seems to have been circling the globe satisfactorily almost every night.

One night at the end of August a goodly lane of Europeans, BZ, PR and BRC1 were worked on an input of 15 watts (230w. D.C. mains and L.S.5 valve). He reports hearing BZ's between 22.00 and 23.00 B.S.T., and U's and A's earlier still, and also between 06.00 and 08.30 B.S.T. 6TW has been on holiday (but it must have been a busman's, for he spent a hectic night at 2DR) and has been rebuilding. He has a T cage aerial, and runs a small inverted L *inside* one portion of the cage. He finds this works admirably, and has good reports, but it certainly is a peculiar type.

SOS de 6IG.

Will the station (D.C. QSB) on 35 metres who answered a test call from 6IG at 23.30 B.S.T. on August 2 please QSL. The station is believed to be a Brazilian.

SOS de 2DR.

Reports urgently required from all districts in the Northern Area. Are all you hams QRT, or is it a case of glass arms? Please QSL each month before the 10th.

Scottish Area Notes.

IT was thought that the month of July would see radio work in Scotland at its very lowest ebb. This expectation has been proved to be decidedly in error, for August has still less to show in the nature of interesting results. Nearly two-thirds of the Scottish stations plead "holiday QRM," and the natural result is that these notes are once again somewhat meagre.

During the early part of August the writer had the privilege of paying a visit to the stations of 2VX and 6IZ, and would wish to place on record his appreciation of the cordial welcome he received from both gentlemen. I am glad to note that quite a few inter-station visits have taken place during the month, particularly between members of No. 2 and 3 districts. That is the spirit, OM's! Let these visits be as frequent as possible, and very shortly there will be less of the "lone-hand" stuff, which has in the past proved no small stumbling-block in the path of radio transmission in Scotland.

While on this subject, I hope I need hardly say that any member of the Scottish Area who finds himself in Glasgow will be warmly welcomed at 5YG.

I have pleasure in acknowledging a first report from 5NW, who has just joined the Section, although he is an old hand at "the game." I have no doubt his telephony is well known to most of us, and by its excellence in quality, gave many to wonder if the B.B.C. had "broken out" on the higher frequencies. Let's have a word or two via BRS6 regularly OM.

It is with regret that I have to announce the withdrawal of 6YT from the Scottish Area. Mr. Boyle sails for N.Z. on September 28, and on his arrival there intends to "start in" again with transmission at the earliest possible date. He expresses the wish that he may soon have the privilege of "two-way" working with one of the Scottish stations. On behalf of the Area I would say "Au revoir" to ex-6YT, and wish him every success in his new sphere. —5YG.

No. 1 District (by 5YG).

2FV.—Reports very little doing owing to press of business. He hopes, however, to be in a position to resume transmission by the end of September. A good deal of construction work has been carried out, also the accurate calibration of wavemeters by the laborious "Lescher wire" method.

6NX.—Begins to wonder what use aerials are to a transmitter. Recently he has been carrying out tests with his aerial completely disconnected, and the lead-in kept well away from the transmitter. The results have been very surprising indeed, and recently, while working without an aerial and using about 6 watts, he succeeded in getting an R7 report from GX6MU, when the latter was about 500 miles off the Irish coast. In addition to this, 6YC has been frequently worked, and has on occasion reported R 7-8. The sans-aerial tests have proved so interesting that a number of tests on similar lines are to be carried out shortly with the co-operation of 5YG. Of these, more anon.

Mr. McDade has applied for permission to "work" foreign stations.

5YG.—QRT owing to holidays.

The following stations did not report: 2MG, 2TT, 5YQ, 6OW.

No. 2 District (by 5JD).

6IZ.—Has been rebuilding, and has worked the usual "Continentals." Some fine work has also been accomplished. He complains of terrific QRM and QRN. One night 6KO paid him a visit, and together they pumped 10 watts into the set, but never a reply until 6KO left, then several. Mr. Ingram expresses himself strongly in favour of the QRP tests, as advocated in the BULLETIN.

6VO.—Has nothing to report, having been very busy of late. I have to acknowledge receipt of his new QSL card, which is a great improvement on the old one.

5JD.—Has almost completed the rebuilding of his 45-metre transmitter, and hopes to break into action shortly. The casting of H.T. accumulator plates and subsequent "pasting" and charging has proved a great success—beyond all expectations. The 170

metre transmitter has also been redesigned, and the best telephony accomplished so far on this wave has been R4 in London. This set is on the choke control system.

The following stations did not report: 2JZ, 2VX, and 6GQ.

No. 3 District (by BRS6).

2BB.—Reports holiday QRM.

5NW.—Has not been much "on the air" recently owing to business QRM. He is applying for a 1 kw. licence, and hopes to be heard shortly via a crystal-controlled transmitter. Transmission will take place at convenient times, and occasionally simultaneously on the 44-46 band, and on a wavelength of about 200 metres. Reports on these transmissions will be welcomed. He indicates that a visit from any of the Scottish transmitters will be very welcome, and that he is willing to co-operate in every respect with Scottish Area matters. (Glad to have you, OM—5YG.)

5WT.—Has also been QRT owing to holidays, and pending the reconstruction of his transmitter.

6GY.—Having now received a permit to use 45 and 23 metres is, at the time of writing, very QRW erecting a new aerial.

6KO.—6KO's hand generator is beginning to feel a bit "superior" as a result of all the reports he has received from England and Ireland, not to mention a QSO with BZ. Although only R3 at BZ, the sigs "got there" in spite of the very bad QRN reported by BZ1BI. A card from GX6MU reports that 6KO's sigs were heard R2 strength by him while at Montreal. He is also informed by 6UV that U1CMF was calling him after a recent "test." Unfortunately the "U" station's call was missed, although 1CMF has been heard frequently of mornings.

BRS6.—Has been putting in some excellent reception work, and has more or less been all over the globe, "etherically" speaking, in August. He includes a list of "calls heard." (This has been forwarded to the Ed. OM—5YG.) You all know my QRA, OM's, so roll these reports along by the 5th of the month.—BRS6.

No. 4 District (by 5DA).

2BFQ.—Has been on holiday at North Berwick, and has had a portable receiver with him. He finds that an old barbed wire entanglement makes an FB "earth" connection for his set. He is still QRW with his "curtain rod" aerials ONE METRE LONG!!

5BA.—Business QRM has now subsided somewhat, but he has confined himself to receiving, just to get the "feel" of things again.

5DA.—Who is fortunate enough to have his QRA in a coast town pleads "fine weather and deep-sea bathing QRM," and states he is storing up ultra-violet rays for the coming DX season. (Violet rays constitute the worst form of QRN, OM, and if you intend to emit these, we will have to arrange to have you "eliminated." Hi!!—5YG.) Mr. Gore is now QSO South Africa A4L, and intends to apply for the Section "WAC" certificate forthwith.

The 100-watt crystal control transmitter is slowly but surely materialising, as is also a super-het., and both are expected to be in operation by the end of September.

Irish Notes.

By 5NJ.

SEVERAL notable things have happened in Ireland during the past few weeks, and while no one seems to have done any wonderful DX work, yet it is easily seen that we are all keener than ever on the coming season, and, further, we are being drawn closer together almost every week by the happening of some event or another. This increasing friendship between all Irish amateurs is bound to re-act for our mutual benefit, and long may it continue.

Before going on with the work done, mention must be made of a delightful little event which has just taken place, viz., the holding of a "hamfest" in Belfast to welcome 6MU home from his trans-atlantic trip. At the meeting 6MU was presented with what has been called a "QRM Eliminator"—this being nothing less than a shillelah! This was put up for competition by one of the keenest G1 stations, and will be awarded each year for the best achievement during the twelve months. Unfortunately, the donor prefers to remain anonymous, but he has our best thanks, and 6MU thoroughly deserves the honour of being the first holder—his work during his recent voyage speaks for itself.

At this meeting also the opportunity was taken to form the Radio Transmitters' Union of Northern Ireland, to bind us all closer together, and generally look after the ether in the North. One of the rules of this new body is that all its members must be members of the T. & R., so I think its success is assured. We shall have more to say about it next month, when it is properly under way.

As regards the work done, there is nothing very outstanding to report. Many stations have been QRT for either rebuilding or holidays, but next month should see renewed activity. Taking the Northern men first, 2IT has been rebuilding, and will shortly be on with a crystal controlled set. Preliminary tests have just commenced, and show signs of splendid results being obtained in due course.

6MU will not be ready for about a month, as it will take some time to get his gear assembled again after his trip.

6YW is now QRT for a time, but rumour has it that he is building a special low power set for the tests in November. He is walking around with a serene smile on his face, so no doubt means business. Before he QRT, he worked Arabia, Canada, and the Faroe Islands, being the first Irish station to QSO the latter, so had a good finish up. This was on 6-8 watts.

5GH is making special observations on weather and DX, and would welcome the help of any other experimenters interested. Please write him if you can undertake any tests. He has been QSO most of Europe lately, also GX-6MU during the latter part of the voyage.

6SQ hopes to be on regularly soon, but we hear some talk of there being an "O.W." at the transmitter in a few months time—best of luck, OM.

5MV and 2WK are getting out well on fone, and 6TB has rebuilt his set for running off the mains—both transmitter and receiver. 6QP, 6YM have not reported.

We welcome 6WG to Ireland from Scotland. He has just got started on low power, and is R6 in many parts of England. He complains that English stations do not bother answering test calls on the 45-metre band, so please call him when you hear him on the air.

5NJ has now got everything in order for the winter, but will only be heard during week-ends on account of a final exam.

In the South, reports this month are few, probably on account of holidays. 18B has just returned, and is putting out a strong signal—we expect big things from him very shortly. 19B is on holiday at present, but will be on 23 for test work, and will welcome co-operation from others interested in this wave. He has been QSO Y7WW, and sundry Europeans. 11B is working the usual bunch of Continentals, and will be in more regular operation as winter advances.

15B is still QRW, and has apparently not had much time this month for many QSO's.

13C is active on low power, but has not reported. Please let me have full reports from the Free State each month—not only DX, but any interesting news.

Just before going to press very interesting news has arrived from GI2IT. During one night's working recently, he set out to see just what he could do. The result was that between midnight and 7 a.m. the next morning, he worked Arabia, sixteen U.S.A. stations, four Brazilians, and two Zedders. This is certainly a splendid "bag" for one evening!

Southern Notes.

Prepared by G-2LZ.

BY the end of this month, the real DX winter season will have commenced. Already there is a marked increase in the number of long distance stations being worked, and a marked decrease in the amount of static interference. Several new stations are coming through, especially from a Western direction. These stations can be worked quite early in the evening. BN-SK2, comes through well on about 35 metres, his QRA is Sarawak, Borneo. The New Zealand and Australian stations are exceptionally strong between 7 and 9 a.m. B.S.T., and can be worked on quite low power. U.S.A. stations are very poor, and can only be worked during the night.

2SZ is away on holiday, but did some low power work with U.S.A. before he went. His sigs were received on 1½ watts only. Crystal control. He has had reports from DX stations at very unusual times. These include 1 a.m. G.M.T. by Z2XA, 11 p.m. by Z4AK, and 5 p.m. by Borneo SK2.

2VJ has been heard in Australia and South Africa, and has worked several BZ's.

6CL reports 136 QSO's in three months on a few watts from dry batteries.

6VP has now had 12 months on DX work, and reports over 1,000 QSO's. These include practically all over the world. The best results have been obtained on a horizontal Hertz aerial. He says he is much indebted to assistance from K-18, and old Yiewsley chum now in Germany for loan of instruments and advice.

5TZ has worked 576 stations since January 1, which include Z's, A's, BZ's and D-7JO in the Faroe Islands. Hertz aerial has given best results, and experiments with an indoor aerial stretched across the room have been very successful.

6UV is now on the air again, after a long absence with 100 watts on 45 metres. He has offered to collect DX reports from Hertfordshire, Bedfordshire, and Buckinghamshire. Will transmitters in these counties please note, and send their reports to 6UV instead of to me.

5WV continues to treadle the Newton alternator, and is still doing good DX work with BZ's, etc. A "sync" rectifier has been added, which gives a marked improvement in QSA reports.

2MI says the men of Kent are not responding to the call yet, but he hopes to wake them up next month. He hopes to get working on 45 soon, but remarks that there is plenty of room now on 90 metres.

Channel Isles (by 5GW).

2ZC has nothing startling to report. He has just rigged up a Hertz aerial which is giving good results. He has done a certain amount of work on the 200 metre band.

6HZ has installed a generator. Reports give his QSB as anything between DC and RAC, and he is trying to smooth it. He has worked all Europe but finds not much DX doing.

6PU has been working with hand generator all last month. He

has worked Canadian 1ED and all Europe with this, but also finds that DX conditions are bad. QRN is very heavy in Jersey now.

5GW is still working with 210 volts H.T. accumulators, which give a very steady DC note. He has worked BZ and all Europe on 9½ watts, but has failed to work U.S.A. so far this leave. He would be glad if anyone can tell him a method of keying a DE5 valve without chirp, and without using spacing wave. 5GW closed down from September 16 until December.

QRA and QSL Section.

THERE is much work to be done, and many enquiries outstanding, owing to QRM from Exhibition and Convention activities, and we do not propose therefore to make a long report for this section this month, but to get on straight away with the Section's recurring features.

In the list of intermediates last month we omitted TJ—Trans-Jordania.

The address of Mr. W. G. Fisk, our member acting as distributing agent in **CHINA** is :—

G. W. Fisk,
303, Victoria Road,
Tientsin,
N. China.

and envelopes should be marked "Via Siberia."

AUSTRALIA.—The new address of "Radio" is now 51, Castlereagh Street, Sydney, and they ask us to make it known to our members that they welcome, for publication in their Amateur Section, lists of Australian and New Zealand calls heard here.

N-OWB is afraid he has omitted, accidentally, to QSL certain tests carried out with "G's," and if any of our readers are without confirmation of these, will they please inform this Section.

We have a letter here, from Australia, for G6ZM, but so far we are unable to trace his QRA.

QSL's WAITING.

The following have not less than three cards each waiting to be claimed.

Will they please forward stamped addressed envelopes to **this Section ?**

2APU	2VS	5MY
2BAZ	2WM	5PD
2BD	2WW	5PM
2BDY	2WX	5RZ
2BK	2WY	5SO
2BMO	2ZA	5SW
2BOW	2ZF	5TD
2BQ	5AR	5VL
2CA	5BV	5XO
2CH	5DA	6CI
2DA	5DH	6DA
2DF	5DK	6DO
2DX	5DS	6JU
2DY	5GF	6MU
2FM	5GQ	6MX
2FO	5GU	6QH
2GO	5HA	6RO
2HQ	5HG	6TG
2LF	5IG	6TJ
2LW	5IR	6TM
2NC	5JW	6US
2OG	5LS	6YQ
2OJ	5LX	6YS
2RL	5MF	6YX
2VQ	5MU	6ZC

QRA's FOUND.

OCRB.—Rinck, Meteo Aviation, Rabat, Morocco. (Inf. K. B. Davis, T. & R.)

U-2ARM.—M. Apstein, 2168 77th Street, Brooklyn, N.Y. (Inf. Wireless World).

A-2LK.—D. B. Knock, 102, Cremorne Road, Cremorne, Sydney, N.S.W. (Inf. 5NJ).

CB-F2.—Radio F2, Kinshasa, Belgian Congo. (Inf. 2VJ).

K-12.—W. Doering, Zachringerstri 114, Karlsruhe. (Inf. 6BR).

TP-ACH.—Ing. Zborowski, Modlin, Poland.

P-1AY.—M. Bontes, Jr., Albufeira, Algarve, Portugal.

R-2WP.—W. N. Paramonow, 14, Neglinney pr., Moscow, Russia.

Y-2JY.—C. S. J. Crooks, c/o. A. Herbert (India) Ltd., 13, British Indian Street, Calcutta.

BZ-1BI.—L. C. Ayres, Caisca Postal 152, Rio de Janeiro.

2ABL.—R. Doble, Jr., 1, Pickwick Road, Dulwich Village, S.E.21.

2ADI.—H. J. Blandon, 10, Woodfield Road, Braintree, Essex.

2AZS.—O. B. Kellett, 11, Allerton Road, Southport, Lancs.

2BMW.—A. M. Keeling, 28, Warwick Road, Leamington Spa.

2BTL.—A. J. Goodwin, Scotswood, Hall Lane, Mill Hill, N.W.7.

2BWH.—H. V. Peacock, 24A, Stapleton Road, Upper Tooting, S.W.17.

2HP.—C. R. Waterer, 123, Upper Brockley Road, S.E.4.

2NC.—J. Goodwin, Crown Street, Driffield, E. Yorks.

5AD.—F. E. King, 166, Kentish Town Road, N.W.5.

5WH.—W. D. Horniman, Virginia Water Cottage, Sunninghill, Berks.

6AP.—A. C. Porter, 1A, Manor Road, Brockley, S.E.4.

6NG.—N. E. Haigh, 16, Fairfield Road, Bridlington, Yorks.

6QW.—W. B. Wever, 2, Balmoral Road, St. Andrews, Bristol.

CHANGE OF QRA.

6OT.—Now 50, Roseberry Gardens, Harringay, N.4.

5TD.—Now 12, Whitmore Road, Harrow.

5SZ.—Now "West Point," St. John's Park, Menston, Yorks.

5DY.—Now Newhaven, Rainsford Lane, Chelmsford.

2UV.—Now "Woodlands," Rugby Avenue, Sudbury, Middlesex.

CHANGE OF CALL SIGN.

2BOC now 6AP.

QRA's WANTED.

2BL	2PA	2RL	2WX	
5DK	5DX	5GL	5LX	5SG
5SJ	5UR	5WB	5WL	
6AM	6CZ	6FM	6NY	6ZM
LIT-1B	XAN	LOR	KTC	
C-2ZC	P4K	LA-1SE	SAD	
PI-1AW	J-3XP			

Will our overseas members note that they can help this Section by forwarding, for our use, copies of any new call books issued in their country.? They will be gratefully received and acknowledged by return of post.

BRS numbers are only issued on request, as they are only intended for identification purposes where members are sending out reports of reception and expecting acknowledgments in return. They are now issued by Headquarters, as well as by the Section.

Will members introducing new applicants for membership kindly carry out the instructions on the form, and send, completed, to Headquarters (preferably accompanied by subscription) and not to this Section.

G6BT.
QRA and QSL Section,
T. & R. RSGB,
Bury,
Suffolk.

Calls Heard.

U—4af, 4ft, 4gw, 4jk, 4ll, 4qb, 4rm, 4tn, 5wi, 9baz, 9bdt, 9bfb, 9bpb, 9bqq, 9bvr, 9cye, 9czw, 9dt, 9edb, 9egh, 9ejg, 9kvr, 9sa, 9ze, 9za, ab1, dx8, pr4ja, pr4sa. C—1ed, 8rg, 9cd. M—1j, In, 5c, jh, yy. R—ba1, db2, de3. Y—1cd, 1cg, 2ak. Ch—2ld, A—2bb, 2ij, 2yi, 3kb, 3wm. Xa—7aa, 7cs, 7cw. Z—2ae, 2xa, 3ai, 3aj, 3ar, 4aa, 4am. BZ—1ad, 1af, 1ai, 1aj, 1ao, 1ak, 1ar, 1av, 1aw, 1bd, 1be, 1bg, 1bh, 1bi, 1c, 1qa, 2af, 2aj, sqlx, ptq, sni. Peru—OAF, Shanghai—Fc8flo. Miscellaneous—Wnp, kgbb, voq, ocrb, lp1, c6d, yn, c2z. Heard on 20 metres—u1cmx, 2bqh, 9ze, d7zg, wik, wll, wiz, fw, gbm, bz, 1ac. Heard on Reinartz—+1lf.—August 17—September 3, by B. AND F. SMITH [BRS3], 101, Highfield Road, Saltley, Birmingham.

G1—2it. G—2od, 5dk, 5hx, 5ow, 6nf, 6yd.—G. H. REIFENSTEIN, T. & R. ARRL, 1701, James Street, Syracuse, New York, U.S.A.

British—G2hq, 2jb, 2oq, 2og, 2qb, 2qv, 2xo, 5ar, 5fj, 5hw, 5po, 5qq, 5qv, 5sk, 5us, 5wc, 6ah, 6at, 6hy, 6ia, 6iy, 6kj, 6nj, 6ou. French—F8bu, bw, gsm, diy, gx, hfd, imr, jcf, srt, kv, lgd, lj, lz, lmm, nox, ok, phi, qw, qra, tis, vo, vvd, ww, ya, ocmv. Belgium—B-E9, wi, z2, k6, rz. Dutch—N-pb2, oam, obp, oga, oly, opx, opm, 2pz, N-apqa. German—K-ky, w3, i2, w2, w7. kpl, kcz1, 4rw. Spanish—ear23, ear 26. Norwegian—la1e, la1z. Poland—tpag, tpaw, tpav. Italian—1lau, 1ph, 1dj. Denmark—d7mt, 7xu. Portugal—p1ay, 3fz. Sweden—smtt. Finland—s2ncg. Americans—u1aao, aaq, aay, ac1, akz, awe, bbj, bez, bjk, bhs, byx, cmf, cmx, du, fr, kms, se, tn, 2aes, agq, aqw, arm, ayj, bur, crb, np, rv, pv, uo, 3afq, agw, bqz, cd, az, cjd, mv, nr, xb, zd, zn, 4cj, cvi, ft, jk, kj, oy, pu, wj, 5amd, kc, 8ceo, bnr, ceo, cug, cuq, cxi, dmz, dne, jbr, jg, kf, jz, pl. 9bax, bpd, cdq, cpq, cxc, dvr, ek, gp, ln. Brazil—1bg. Porto Rico—4jr. New Zealand—3ar, 4aa. Please QSL to G6CL, 107, Friern Barnet Road, London, N.11, England. All cards answered with details of reception.

U.S.A.—1qv, 1byx, 1akm, 1bxh, 1zk, 1xv, 1asf, 1aao, 1cmx, 1bms, 1caw, 1ci, 1il, 1zk, 1ab, 1oi, 2avg, 2tr, 2aiu, 2cjd, 2anx, 2wc, 2apv, 2aah, 2kg, 2wh, 2bxj, 2avb, 2bxr, 2cyg, 2uo, 2bnz, 2cuq, 2awq, 2qu, 2apd, 2byg, 3sq, 3abc, 3sb, 3pl, 3cdv, 3rf, 4pf, 4bk, 4er, 4bx, 4aao, 4aah, 4ni, 4sb, 4ag, 4gw, 4jk, 5ql, 5zaz, 5kc, 7aa, 8bbe, 8jq, 8adm, 8ayv, 8zae, 8kf, 9atv. Brazil—1bi, 2aj, 2ab, 1ac, 1ak, 1qa, 1aw. French—8vvd, 8fcr, 8ww, 8gm, 8tvi, 8flt. Sweden—smyg, smus, smuv. German—czi, i2, ayy. New Zealand—4aa, 3ai, 2ac, 1ao, 3aj, 1aj, 4am. 1ax, 4ac, 3ar, 3xb, 2gc. Australia—5kn, 2bb, 2yi, 2cs, 3bd, 2no, 2bk. Various—fi8gr, piaw, iirw. ciar, udx9, pr4jr, mij, eari, iiax, laie, fm8ra, cvyg, wnp, fm8st. min, ch2ab, m9a. Received on O-V-2 by G2XV. Plenty wall space ere, OM's!!!

U.S.—1akm, 1azk, 1bzc, 1co, 1vw, 1sw, 1sz, 1xv, 1zd, 2akm, 2awz, 2ax, 2bnz, 2cje, 2cxl, 2mu, 2nz, 2uo, 2za, 2zv, 3blc, 3wf, 3wi, 4an, 4bu, 4cv, 4dt, 4fj, 4hs, 4hu, 4mv, 4si, 5ado, 5adz, 5aka, 5amd, 5ame, 5apm, 5aqt, 5arl, 5arn, 5dq, 5fh, 5gk, 5gw, 5rz, 5sw, 5uk, 5ux, 5za, 5zai, 6app, 6apw, 6aqg, 6aqp, 6asd, 6ase, 6auf, 6avj, 6aws, 6awt, 6bad, 6baw, 6bav, 6bcs, 6bfe, 6bgc, 6bgo, 6bgv, 6bha, 6bhz, 6bis, 6bjd, 6bjv, 6bjx, 6bmw, 6bol, 6bon, 6bpg, 6bpn, 6buc,

6bvi, 6cco, 6csx, 6ct, 6cuk, 6cur, 6dam, 6dax, 6db, 6dh, 6dl, 6dn, 6eb, 6ec, 6ew, 6fz, 6qg, 6qu, 6rh, 6rj, 6rm, 6rn, 6sb, 6sz.kb, 6xaf, 6xao, 6zac, 7ab, 7av, 7co, 7do, 7ek, 7en, 7eo, 7ex, 7gb, 7ge, 7it, 7jf, 7mp, 7no, 7nx, 7ob, 7os, 7ox, 7pi, 7pt, 7ri, 7ut, 7vr, 7wu, 8aj, 8ajm, 8amd, 8anb, 8aod, 8atx, 8ab, 8cil, 8csv, 8ded, 8rh, 9aca, 9adn, 9ads, 9akf, 9am, 9ara, 9atg, 9atq, 9bmd, 9bpw, 9brc, 9bvh, 9bwb, 9bzi, 9cad, 9caw, 9cde, 9che, 9ck, 9clj, 9cxc, 9dav, 9deg, 9dfy, 9dgm, 9dkm, 9dpj, 9mb, 9no, 9oo, 9sd, 9xa, a2cg, a2cm, a2cs, a2bk, a2ss, a2tm, a2yi, a3kb, a3my, a3ta, a3tm, a3ya, a4rb, a5bo, a7cs, a7dx, c4gt, c5ad, c5am, c5bn, hu6axw, hu6dfg, hu6dcf, hu6nb, hu6boa, hu6tq, huc3n, mlk, mga, xam, pilcw, bi3aa, pr4rd, zlax, z2as, z2ak, z2bx, z4aw, z4am, z4av. Miscellaneous—is, onem, fb2, kel, koa, kego, nkf, npm, ntt, wis, wnp, wvc, smaa, sp, tuk, tulsa, wva.—RALPH H. PARKER, Radio House, Smethwick, G2KK.

Argentine—db2. Austria—gp. Belgium—b7, h5, j9, ch2. Brazil—1ad, 1an, 1ap, 1aq, 1av, 1aw, 1bb, 1bg, 1bi, 1qa, 1xq, 2ab, 2am, 2ws. Denmark—7js. Finland—2nm, 2nl. France—8bm, 8il, 8kn, 8rf, 8ut, 8wt, 8xm, 8xu, 8zb. Germany—12.01, 4m, 4mfl, 4ya. Holland—oga, ogp, oly, opm, ous, pb2, pck4. India—2ak. Latvia—z4. Morocco—8rdi, 8st. Porto Rica—4sa. Straits Settlements—2co. Sweden—smvg, smwt. Russia—2r. U.S.A.—1ccz, 1aao, 1afn, 2amj, 2apv, 2gk, 3kr, 2cxl. Yugo-Slavia—7kk. Miscellaneous—gly, kws, lpi, lpz, npg, ntt, npo, sab, sad, sgt, soq, suc, zpt. September 9 to 12 inclusive. Reinartz O-V-1. All below 50 ms. and before midnight, G.M.T.—G. L. MORROW, G-6UV, Penolver, Berkhamsted, Herts.

I.—1co, 1au, 1ax. S.—smuv, smxv. D.—7xu, 7zg. P.—1ae, 1ay. EA.—ear20, ear26, ear28. TP.—av, aw. U.—1kk, 1afw, 1ch, 1cc, 1apv, 1cmf, 1bez, 1nv, 1aap, 1awp, 1amu, 1cjc, 1zn, 1cjh, 1adl, 1ckp, 1ccz, 1aid, 2md, 2gv, 2cxl, 2tp, 2cdv, 2cvj, 2tb, 2crb, 2uo, 2gy, 2ak, 2apv, 2aib, 2ait, 2czr, 2cth, 3cdk, 3cjn, 4hx, 4mv, 4wb, 4aha, 4jk, 4it, 4iz, 8don, 8aj, 8dme, 8aul. Y.—2ak, BZ.—1bd, 2ab. FM.—8st. K.C.—z0. Various—ntt, spc, vyg. 25 to 50 m. August 3 to September 2. Pse QSL OMS.—G2BZC, 39, Tottenham Court Road, London, W.1.

South Africa—o-a3b, a4z, a6n. Malta—byy. Egypt—not (at Alexandria). Palestine—pe-6zk. Tripoli—da-1cw. Arbaia—tj-crj. Russia—r-1fl, 2nd. Poland—tpai, tpau, tpav, tpaw, tpax. Various—and, cyy, geft, kegk, kgbb, mmc, nidk, ntt, rdmw, voq. All QSL'd; pse QSL. Pse who are cyy, kgbb, and mmc? O-V-1 Reinartz.—K. B. DAVIS (BRS2), 140, College Road, Moseley, Birmingham.

Calls heard in Montreal by GX-6MU: G.—2kz, 2it, 2nm, 2sz, 2xy, 5jw, 6ko, 6nf, 6yd. F.—8cs, 8hu, 8tby, 8ct. H.—9xd. I.—1ay. Various—2cnp, ys7xx, b4zz, n-owc. Pse QSL to E. MEGAW, 3, Fortwilliam Drive, Belfast, Ireland.

Calls heard by Eric Megaw (GX-6MU) on board Steamers "Lord Antrim" and "Carrigan Head" during trip from Belfast to Montreal and back. Receiver O-V-1 Modified Reinartz. G.—2go, 2og, 2qb, 2sz, 2lz, 2kf, 2nm, 2kz, 2xy, 2nh, 2vq, 2vg, 2nt, 5tz, 5by, 5uw, 5kz, 5jw, 5sz, 5ms, 5qv, 5hx, 5ad, 5mq, 5xy, 6yc, 6qb, 6oo, 6ty, 6cl, 6td, 6oh, 6fa, 6ut, 6ko, 6yd, 6nf, 6lj, 6ia, 6nx, 5dh, bvj, gfr, gbm, glq. GI.—2it, 5gh, 5nj, 6yw, 6wg. GW.—18b, 19b. F.—8ww, 8fcr, 8vvd, 8jn, 8bn, 8tis, 8ut, 8cax, 8ct, 8cs, 8hu, 8tby, 8jf, 8vo, 8wnm, 8ag, 8cl, 8jrt, 8ba, 8prd, 8ca, 8ai, 8kv, 8xh, 8kk, 7vx, fw, ocdj. B.—b7, e9, g33, o2, b1, m8, v33, 4zz. N.—opm, opx. owc, 2pz, pb3. D.—7zm, 7bx, 7xu, 7mt. I.—1gn, 1ax, 1ba, 1ay, 1au, 1bd, 1cr, 1rm, 1do, SM.—smzn. E.—ear26. P.—1ae, H.—9xd. YS.—7xx. Faroes—7jo, oxua. FM.—2cnp, 8mb. U.—1ch, 1xv, 1awg, 1bhs, 1mv, 1ag, 1axx, 1gb, 1bie, 1zk, 1bvx, 1bms, 1bjk, 1big, 1aay, 1zd, 1gz, 1ccx, 1bvl, 1cmp, 1adm, 1cye. 1ahc, 1ams, 1cre, 1cnz, 1va, 1aza, 1adl, 1yc, 1xf, 1cys, 1ccz, 1akm, 1bke, 1akz, 1ka, 1aya, 2cxl, 2apy, 2rv, 2wc, 2cyq, 2anx, 2api, 2akv, 2apt, 2bvg, 2bcb, 2ayj, 2agi, 2qu, 2bur, 2awq, 2pv, 3acb, 3abx, 3aha, 3cdk, 3bva, 4iz, 5afs, 5ql, 5ask, 5akl, 8bbe, 8bf, 8dfr, 8rh, 8brc, 8bpl, 8kf, 8aj, 8drj, 8dbb, 8dis, 8pl, 8doe, 8zac, 9atq, 9kd, 9bht, 9ek, 9bxg, 9adk, kdka, 2xaf, 2xg, not, neu, niss, wnp. C.—1am, 1ed, 1rm, 2be, 2bh, 2hv, 3bt, 3by, 3jw, 3ur, 4bt, 8ar, 8azs. BZ.—1ao, 1aw, 1bd, 2ab, 9qa. M.—1n. Y.—2ak. A.—3bd, 3cb. Z.—1ax, 4aa, 4am. Various—sgl, sgc, sme, fl, da, b82, bm-jh, uh-bw, pcll, pcmm, perr, ptf, agc, glky, 9sa, mfl. B.—2ssk, 4qq, 4scm, h5. BZ.—1bi. D.—7bd, 7xf. EAR.—26, 28. F.—8ct, 8fj, 8ix, 8jy, 8kk, 8nox, 8oam, 8oo, 8pr, 8prd, 8rf, 8rrf, 8udi, 8xuv, f1, octn. FM.—ocrb. G.—2bz, 2po, 2xv, 5dh, 5io, 5is, 5xa, 5za, 6br, 6fa, 6nx, 6og, 6oh. GI.—5gh, 6wg. GW.—18b. GX.—6mu. H.—9pz. I.—1au, 1bb, 1ce, 1cn, 1cw, 1dc, 1gw, 1ma, 1rm. K.—i2, 4bk, 4ha, 4sm. LA.—1b. N.—0ag, 0co, 0fp, 0ga, 0gt, 0ly, 0pl, 0pm, 0ro, 0us, 0vn, 0wc, pb2, pb3, pck4, pcjj, pcrr. OE.—oegp, oehl. S.—2nl, 2nm. SM.—smua, smuk, smvg, smwr. TE.—a4ee. U.—1adl, 1ckp, 1cmf, 1cmx, 1di, 1er, 1kl, 1wr, 2apv, 2tp, 2xaf, 4iz, 8avq, 8jq. Miscellaneous—s6, glq, kas.—A. CROSS (BRS6), The Manse, Muthill, Perthshire, August 30 to September 7.

English Calls heard by F8RRF (Dinon, C.d.N., France).—August 13 to September 2. G.—2cc (zc5), (20g), (5ad), 5da, 5gw, 5ku, 5nj, 5po, 5pu, 5td, 5ul, 5uv, 5vp, 5xy, 6br (6cl), 6hz, 6np, 6oh, 6ou, 6pu, 6xg (6za).

A.—2bb, 2bk, 2cm, 2no, 3bd. B.—e1, e9, h5, k44, 2ssk. BZ.—1ai, 1ak, 1ar, 1av, 1aw, 1bi, 1bd, 1bg, 1bh, 1bl, 1ib, 1qa, 2ab, 2ad, 2az, 5ab. C.—1am, 1ar, 1cx, 1dd. CH.—nad. D.—7mt, 7zg, F.—8bw, 8co, 8cs, 8ez, 8gi, 8jn, 8rz, 8ut, 8xm, 8gsm, 8ncx, 8nor, 8nox, 8pax, 8prd, 8rbp, 8sis, 8tkr. FM.—8ma. I.—1au, 1ax, 1ba, 1ce, 1co, 1gw, 1rm. K.—i2, lo, w7. K.C.—z4. M.—9a, 1k. N.—pb2, pb3, pck4, oag, obp, oco, oga, ohb, oly, opm, ouc, owc, OE.—fa, hl, ke. P.—1ay. PR.—4ja, 4sa. R.—crl. S.—2co, 2ns. SM.—uf, ui, uk, uv, vh, wr. TJ.—crj. T.P.—a1. U.—1ch, 1di, 1lw, 1mv, 1pe, 1aci, 1adl, 1air, 1alr, 1amp, 1ams, 1avl, 1bcr, 1bhs, 1bke, 1bvx, 1bzp, 1cib, 1cjh, 1ckp, 1cmx, 1cnp, 1ctp, 2pm, 2py, 2rv, 2tp, 2wc, 2xg (cw & fone), 2zv, 2afn, 2ait, 2amj, 2apv, 2aqw, 2awq, 2crb, 2cuq, 2cvj, 3bva, 3cdk, 3cdt, 3cdv, 3ceb, 3cin, 4ri, 4qy. Y.—1bu, 1cd, 2ak. Z.—2ae, 3aj, 4aa, 4am. Miscellaneous.—wnp, glky, ocyg, ocrb, ocdj, pcll, pcrr, b52, b82, gbm, glq, bxy, agc, anf, naw, nba, ntt, wiz, sgl, sgt, lor, lp1, irt, 2xaf, crvfu, rrp, sab, pcpp, voq. Heard between August 10 and September 12. All below 50 mtrs. Receiver O-V-1 (Reinartz).—T. A. ISERBYT, (BRS25), "Lynmouth," 18, Broughton Road Thornton Heath, Surrey.

G.—Calls heard during July by L. J. SIMMONS, Colombo Road Belgrave, Victoria, Australia.

Str.	Str.	Approx. QRH	
2IT	3/4	44	Fone abt R2. Some words clear, modulation vgd.
2OB	2	44½	Sigs weak, is hard to copy.
2OD	5	33	Fone gd, modulation vgd.
2LZ	4	33	Gd stdi sigs slight ripple in QSB.
2SZ	4/6	33	OSB vgd one evening was gd R6.
2SR (?)	2	43	Doubtful abt breaksign, either G or O if G shorten last dot OM.
2KF	4/5	33	Piercing DC QSB vy stdi.
2NM	6/7	33½	Some punch OM but QSB rac insted of usual DC.
5HS	4	44	Gd stdi rac QSB.
5DH	6	33-45	Stdi DC QSB but has habit of getting on top of someone else.
5TZ	4	44	Chirpy de QSB.
5XY	4	44	Gd rac QSB stdi.
5NJ	3	33-44	Ripply de QSB.
5AK	2	44	Sigs weak es hrd to read.
6YD	2	43	Sigs weak but stdi es easy to read.
6BG	3	45	Gd stdi sigs.
6OG	4	44	Ditto.
6BR	3	43	Weak but gd sigs.

I now give an up-to-date list of various distributing agents for QSL cards throughout the world. It should be noted that in many cases this work is undertaken by amateurs, and to "lighten their load," cards should always be sent direct when QRA's are known.

ARGENTINE.—c/o Radio Revista, Lavelle 1268, Buenos Aires.
AUSTRALIA.—c/o Radio, 12-16, Regent Street, Sydney.
AUSTRIA.—Mr. G. E. Roth, c/o Radiowelt, Rudengasse II., Vienna III.; Mr. Th. Mossig, Am Hof 13, Vienna I.
BELGIUM.—c/o Reseau Belge, 11, Rue du Congres, Brussels.
BERMUDA.—Mr. W. F. Horsington, Paget West, Hamilton.
BRAZIL.—Mr. Alvaro S. Freire, 46, Oswalds Cruz Road, Ecarahy-Nichteroy, Estado do Rio; Mr. Vasco Abreu, Pare Roval, 87, Rua Riachuelo C/4, Rio de Janeiro.
CZECHO-SLOVAKIA.—Mr. M. Schaferling, Praha XII., Sumavska 12.
CHILI.—Mr. Luis M. Desmaras, Casilla 50D, Santiago.
CHINA.—Mr. W. G. Fisk, c/o QRA and QSL Section.
DENMARK.—Mr. J. Steffesen, 8, Ecklersvej, Hellerup.
FINLAND.—Mr. K. S. Sainio, 3a, Merikatu, Helsinki 10 (Suomi).
FRANCE.—c/o Journal des Emetteurs, 53, Rue Péaumur, Paris 2e.
GERMANY.—Mr. Rolf Formis, Alexanderstrasse 31, Stuttgart.
HOLLAND.—Mr. R. Tappenbeck, Hoogduin, Noordwijk aan Zee.
INDIA.—Mr. R. J. Drudge-Coates, Cambridge Barracks, Rawalpindi.
ITALY.—Mr. F. Pugliese, Borgonuovo 21, Milan 2.
LATVIA.—Dr. Walter Brivibasiela 107, Riga.
LUXEMBOURG.—Mr. J. Wolff, 67, Avenue du Bois, Luxembourg.
MALAY.—Mr. I. P. C. Bell, F.M.S. Railways, Kuala Lumpur.
NEW ZEALAND.—Mr. F. D. Bell, Waihemo, Palmerston, Otago.
NORWAY.—Mr. Leif Salicath, 88, Pilestraedet, Oslo; Mr. Diesen, Moen-i-Maalselv, near Tromsoe; c/o Norske Amator Sender Union, Oslo.
PALESTINE.—c/o Radio 6ZK, Signals, Raf-Ramleh.
PHILLIPINE ISLANDS.—Lieutenant Roberts, Fort McKinley, Rizal.
POLAND.—c/o Radiofon Polski, ul Wilcza 30, Warsaw.
PORTO RICO.—Mr. J. Agustv, Box 868, San Juan.
PORTUGAL.—Mr. Eugenio de Avillery, Costa de Castelo 13, Lisbon; c/o TSF em Portugal, Rua Jardim, Regedor 29—12, Lisbon.
RUSSIA.—Mr. Wladimir Petroff, Nichni-Novgorod Radio-laboratory, Soviet Republic.
SOUTH AFRICA.—Mr. Heywood, 91, Berea Park Road, Durban, Natal.
SOUTH AFRICA (No. 6 District).—Mr. A. E. Stevens, 7, Ruth Street, North Perth, West Australia.
SPAIN.—Mr. Miguel Mova, Megia Lequerica 4, Madrid.
SWEDEN.—Mr. Bruno Rolf, Hamngatan 1A, Stockholm.
SWITZERLAND.—Dr. W. Merz, Berne-Bumplitz.
U.S.A.—c/o ARRL, 1,045, Main Street, Hartford, Connecticut.
YUGO-SLAVIA.—Mr. Torbarina, Dubrovnik 2.

Some Queries from G6JV.

Who Will Write an Article Answering the Points Raised?

The primary of a transmitter is tuned to 45 metres and coupled to an aerial/ctpse system. It is then adjusted to the point of highest radiation efficiency.

Two aerial ctpse systems are set up, in which the dimensions of aerial and ctpse are symmetrical, and the fundamental of each system is likewise 45 metres, determined by the dimensions of the aerial-ctpse system plus the constants of the coupling coil.

Aerial A is x feet long, and its coupling coil consists of 15 turns.

Aerial B is $x+y$ feet long, and its coupling coil consists of 5 turns.

Presuming that each system is coupled in turn to the same primary—and that each system is individually adjusted to compensate for mutual inductance due to coupling—and tuned to 45 metres λ :—

1. What considerations of oscillation transformer design determine which aerial will prove to be the more effective radiator. (No, *no* changing the valve: isn't allowed !)
2. What modification of the above considerations are involved when the aforesaid primary is tuned to the higher frequencies (23 watts, etc.) when using :—
   - (A) Large aerial-counterpoise system with harmonic excitation.
   - (B) Half-wave Hertz aerial system, with—
     - (1) Voltage feed.
     - (2) Current feed.

* * *

An input of 100 watts to different transmitting valves can be (1) 10,000 volts at 10 m.a. ; (2) 500 volts at 200 m.a.

Presuming that each valve was correctly designed :—

(3) Which of the two would provide the most effective aerial excitation ? (Are watts just "watts," *however they are composed ?*)

4. What differences would be involved in oscillation transformer design between the two ?
5. Would such necessary modification in transformer design involve alteration in the dimensions of the aerial system if each valve were required to excite the aerial at the same frequency ? In other words, does the change from a high to a low impedance valve require, upon theoretical grounds, modification in the physical dimensions of the radiating system where that system is required to operate at the same frequency ?

N.B.—It is thought that if others would take their courage in both hands and thus expose their ignorance, some highly valuable information might be placed at the disposal of readers from the pens of those who may be expert in a particular subject. What about following suit ?—H. J. B. H.

IS YOUR SUBSCRIPTION DUE?

I.A.R.U. Notes.

Another expedition using 40 and 80 metres is depending on amateurs for handling contact messages and news despatches to outside world. The Field Museum "Chicago Daily News" Expedition to Abyssinia will be on the air early in October, probably signing WCDN. Co-operation of I.A.R.U. members in African, European and Mediterranean countries is requested in handling traffic for "Chicago Daily News" offices, 25, Piazza Mignanelli, Rome, Italy, or 10, Boulevard des Capucines, Place de Opera, Paris, France, or direct to Chicago, Ill., U.S.A. Most traffic will be sent in early evening hours. Further details will follow in I.A.R.U. broadcasts and bulletins. Please tell every foreign amateur you work about WCDN, requesting co-operation

From Communications Manager, I.A.R.U., Hartford Conn., U.S.A., via G2LZ, British Secretary.

Particulars concerning I.A.R.U. membership can be obtained from G2LZ.

EXCHANGE & MART.

ZENITH H.T. TRANSFORMER, secondary, 4,000 volts, in four sections of 1,000 volts each, output 550 watts ; brand new and perfect. "Amrad" "S" Tube, 100 watt type, with socket and base, £2 10s. Mullard VU/7 Rectifying Valve (250 watts), brand new and perfect. Zenith fil. Transformer, 12 -volts, 8 amperes, special for rectifying circuits, another 15 volts, 12 amperes, all arranged for 200 volts, 50 volts input and *perfect*. Three Zenith Tubular Sliding Resistances, all bench mounting and perfect. Twelve-inch Desk Fan, two small A.C. Motors, pile of other ham gear.—G2XY, "Esholt," Wedgewood Drive, Roundhay, Leeds.

D.C. MOTOR (¼ h.p.) CONVERTER, input 110 volts, output 20 volts, for filament lighting or accumulator charging, £5 10s. Voltmeter A.C., 20 volts, £1 10s. Ammeter A.C., 10 amps., £1 10s. G.P.O. Relay-platinum contacts, £1 5s. Plenty of transmitting junk. State wants. —Radio 2JJ, 370, Old Kent Road, London, S.E.1.

FOR SALE.—Marconi 525-watt Alternator, 75 volts, 7 amperes, self-exciting ; Transformer designed for same, made to order by "Zenith's," tapped 1,000, 1,500, 2,000, 2,500, 3,000 volts ; Voltmeter, 0-120 ; Newton 200-watt Alternator, 500 cycles, B.T.H. Transformer, 0-5,000 volts ; 0-20 Voltmeter, 0.20 Ammeter ; two "Amrad" "S" Tubes with holders. Offers.—5XY, Park Lane, Burnley.

FOR SALE.—One 1½ k.w. H.T. Transformer in oil tank by Marconi, 2,500-0-2,500 or 5,000-0-5,000 with regulating transformer for 100 volt 50 cycle, £10. One 1 k.w. B.T.H. 50-volt 50-cycle 2,500-0-2,500 for 100-volt 100-cycle to 5,000-0-5,000, £5. One Synchronous H.T. Rectifier, 100-volt, 50-cycle, or 200-volt, 50-cycle, £5. One ½ h.p. Motor, 100-volt or 200-volt, 50-cycle, double pulley-driving by wittle belt or bed plate, 20-volt 10-ampere dynamo. Room on bed for H.T. generator. £10. All subject to offer.—Apply G2BZ.

FOR SALE.—Zenith Transformer. Input 200 volts, 50 cycles. Three secondaries, 900-0-900, 5.4-0-5.4 and 5.4-0-5.4 volts. £5.—Gregory, 77, Khedive Road, E.7.

Correspondence.

QUARTZ CRYSTALS.

To the Editor of T. & R. BULLETIN.

In my copy of the September BULLETIN, the diagrams in Mr. Clayton's Note on Quartz Crystals were not clear. As he may not have time to correct them in this issue, I will venture to do so. Firstly, in all the diagrams, the crystal faces are at 120° to one another. This rule applies however much the crystal may depart from the hexagon form. Fig. 1 should have shown the cut at right-

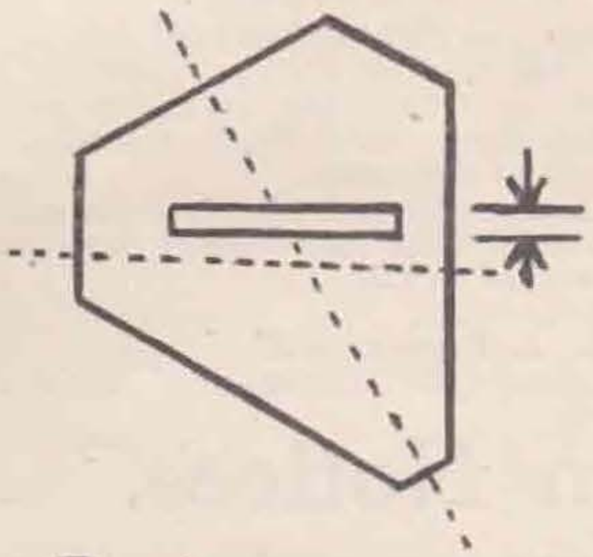


Fig 1

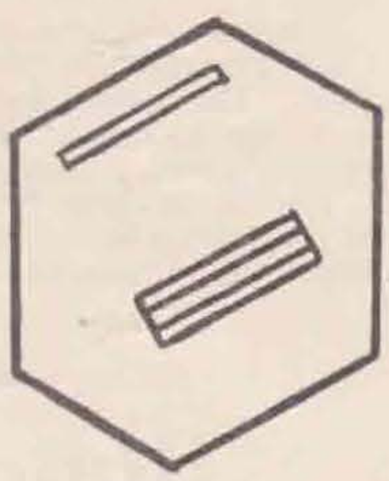


Fig 2

angles to any two opposite faces, while Fig. 2 shows the cut parallel to one of the faces. There is a possibility of forgetting that the Fig. 1 cut is also at 30° to one axis, while being parallel to another, but that the thickness of the plate on Fig. 1 is measured across the axis.

In addition to hundreds of specimens giving values of 105 or 150 metres per millimetre, I now have two giving a value of 180.

Yours faithfully,
A. HINDERLICH.

To the Editor of T. & R. BULLETIN.

Tell the G's to pay a little more attention to the Aussie hams, who lose valuable hours of sleep, only to hear the G's come back at NZ every time. Why NZ? What's the matter with the Aussie? NZ is easier to work—it's a ham's paradise—good mains, good air, good WX, etc. Aussie is harder to QSO, so why don't G's keep more QRV for us? No use saying ND because the F's come in here (Sydney) like locals.

I thought the above might be of interest for the BULL.

73's. Yours,
R. BLOXHAM (5LS).

NEW ZEALAND ASSOCIATION OF RADIO XMITTERS.

The following ms was received here from Z-1AO, who asked that it be sent to you for your information and also have some of the gang there QSR to G-2NM.

Auckland, N.Z.
September 5, 1926.

Nr 2 fm Z-1AO.
To Gerald Marcuse, G-2NM.
Secretary, Radio Society of Great Britain.

The New Zealand Association of Radio Transmitters was formed on August 16, 1926. There has been the need for an association for some time past and matters have now come to a head. You will be posted with news and a report of meeting will be sent by next mail for information of the BULLETIN. Officers temporarily appointed:—Mr. E. A. Shrimpton, Sr., Z-2XA, President; Vice-President, Jorbell, Z-1AX; G. Salt, Z-1X1; W. Browne, 3CG; Miss B. Bell, 4AA; W. Crockett, 4AM; and Secretary and Treasurer, R. V. Roberts, 1AE. A provisional committee has been appointed to extend the Association throughout NZ. A convention at end of six months will decide the question of making the Association a branch of the I.A.R.U. You will be posted with news and a report of the first meeting will be sent by the next mail for information of the R.S.G.B. 73's.

Sig. R. V. ROBERTS, Secy., N.Z.A.R.T.,
Box 779 Auckland, N.Z. 11.05 p.m.
Recd. at 5AUZ 4.30 a.m., September 5.

To the Editor of T & R. BULLETIN.

DEAR SIR,—I have received a letter from N. O. SS. Mr. Schneider, of The Hague, Holland. He desires me to inform British amateurs that his original call sign was N.O.II., but it was changed after the police raid on March 15. He also says that it is still dangerous to send cards to Holland without cover, and would be pleased if British amateurs would always send same enclosed. I would be pleased if you would inform members of the T. & R. R.S.G.B. via the BULLETIN.—Yours,

LAWRENCE L. PARRY (BRS29).

To the Editor of T. & R. BULLETIN.

DEAR SIR,—That OM 2VJ in September T. & R. is at least a fortnite slow. My log for July 19 ses I wkd him at Belgian Congo at 23.00 B.S.T., and 2VJ ses he was first on August 2. Hw?—73's,

F. TOWNSEND (2TO).

To the Editor of T. & R. BULLETIN.

DEAR SIR,—Would you kindly let the following G's know I have heard their sigs:—G2KZ, G6TM, G6RM, G2AB, G2AO, G6FH, G2SH, G6LJ, G2DR, G2DX, G2IT. Have now heard over 50 G's since August, 1925. Sorry have not heard u OM. Hope to hear u one day. Mani tks for trouble. 73's.—Yours faithfully,

T. H. HARRIS.

To the Editor of T. & R. BULLETIN.

DEAR SIR,—I have rebuilt my transmitter and am working on 45 metres (Hertz aerial), about 18 watts rectified A.C., and would be glad to have reports.

A. L. MEGSON (G2GZ).

To the Editor of T. & R. BULLETIN.

DEAR SIR,—I regret an error has appeared in my article on "Tuning Transmitters" in the September issue of the BULLETIN.

All talk about tuning the tank circuit for minimum input applies only to low impedance tubes, such as the LS5 and 0/40. In the case of high impedance tubes such as the T50 or 0/30A) the set is in tune when the input is near a maximum. A better method of tuning the tank circuit, and one that will apply to all tubes, is to use a tank circuit ammeter (hot-wire) which will, of course, be a maximum when the oscillations are strongest. This circuit should, therefore, be tuned for maximum amps. and not for minimum input. Aerial load will now decrease these amps. instead of increasing input.

Will someone please explain why the high impedance tubes differ in this way from the low impedance tubes?—Yours faithfully,

G. W. THOMAS (G5YK).

To the Editor of T. & R. BULLETIN.

DEAR SIR,—Will you please publish the fact that my address is now altered to that given below.

In this connection, I would mention that I am in difficulties regarding my installation, the property in which I am now living is shop property and the owners will not sanction the erection of an outside aerial of any kind, and I would very much appreciate any information which members can give me with regard to either frame aerial work or inside aerial work, though there are serious difficulties in the way of erecting any kind of single-wire inside aerial, owing to the lay-out of partition walls inside the top floor of this building.

It seems to me that the only way I can do it is to use some kind of large frame, say, six or seven feet square, and if you can help me in any way I shall be obliged to you.—Yours faithfully,

H. HILEY (G21H).

12, Cavendish Street, Keighley.

To the Editor of T. & R. BULLETIN.

DEAR SIR,—Whilst calibrating a new S.W. receiver during the last few days, I have been rather struck by the number of G stations who are working off their allotted band. I am referring now to the 44-46 metre band.

I am quite sure that in each case the operators of such stations are in ignorance of the fact that they are off their licensed wave, and this is probably due to inaccurately calibrated wavemeters, but the fact remains that with the number of stations operating on S.W. increasing almost daily, it becomes even more a necessity to keep strictly within our proper limits, to say nothing of possible explanations being required by the Post Office authorities.

A S.W. transmitting wavemeter should, preferably, incorporate some form of measuring instrument if the requisite degree of accuracy is to be obtained, and as such instruments are somewhat costly, it would appear desirable for the Section to make arrangements to transmit a series of calibration waves over a reasonable period. I would suggest that calibration waves of 44, 44.5, 45, 45.5 and 46 metres might be transmitted, say, one night a week for four weeks, and it would seem that this work could be carried out from the Parent Society's experimental station. If such a scheme should be found possible it would give all members of the Section an excellent opportunity accurately to calibrate their wavemeters at least between 44 and 46 metres, and if people did not avail themselves of this service, then they would only have themselves to blame in the event of possible trouble with the authorities.

With our special permits coming up for revision in October, and with the desire which all of us have of making the Section a "power in the land," such a service of calibration waves should

be of the greatest use in enabling members—especially the newcomers—to adhere rigidly to the terms of their permits.—Yours faithfully,

G. L. MORROW (G6UV).

To the Editor of T. & R. BULLETIN.

SIR,—May I very warmly second 6UV's "plea for more scientific work," and may I be allowed to propose that Mr. Morrow be asked to organise a Research Section? Who is better fitted to undertake this? Clearly a trained radio engineer is the fit and proper person—one who knows just what has been done and what problems are the pressing ones to solve next.

I would suggest that Mr. Morrow be invited to organise this and that he should choose the necessary helpers from among those of the T. & R. who are known to be "Hot Dogs."

May I conclude with one word of warning. Whatever may be done let the new Section keep clear of too much "cos sin 0" and other higher mathematical jargon, which is not understood by the generality of mankind. The majority of our gang are *amateurs* and not trained radio mathematicians. We want to learn the theory, of course—but treat us gently and teach us the mysteries of radio mathematics with consideration.

I am certain that the success of a Research Section run upon the lines of apportioning to each worker those problems which he is individually best qualified to investigate, would go far towards compensating for any disability which we as amateurs suffer in comparison with the trained technician. But a competent hand *must* guide its activities.—Yours faithfully,

HUGH J. B. HAMPSON (G6JV).

To the Editor of T. & R. BULLETIN.

DEAR SIR,—I have pleasure in informing you that I have been often in QSO with A2NO ex-G6XG now living at 102, Cremorne Road, Cremorne, Sydney, Australia, and he has asked me to inform you of his new call sign and QRA.

A2NO is working on about 34.5 metres gud RAC, but he informed me yesterday that in about a week he hopes to be QRV with his crystal-controlled set, then, of course, using a pure D.C. He is anxious to get in QSO with G's, but says they are QRZ on 45 metres, and is wondering why so few are to be heard on 30-32 metres, which gives QSA sigs in Australia!! About the station, he said:—

"This stn is the combined efforts of Mr. Knock 2NO, Mr. Connor 2LK es Mr. Turner, brother of 2TM. Mr. Turner es myself are alws here, but Mr. Connor is a commercial operator es is away at sea—2NO es 2LK are never on the air together—2LK was originally this QRA but nw both call-signs are licensed from this QRA. At present 2LK is on voyage to U.S.A. He does not actually live here when ashore, but at another QRA.

I have now regular QSO A2NO every nite at 20.00 G.M.T., and shall have great pleasure in QSP'ing G's. 2NO is always vy QSA here R6 to R8!!—Best 73's to G's, from

F. O. BERVEN (LA1X).

To the Editor of T. & R. BULLETIN.

DEAR SIR,—I shall be greatly obliged if you will find space in your esteemed Journal for the following announcement respecting the activities of the Institute:—

Meetings of the Institute of Wireless Technology will take place on Wednesday, October 6, and Wednesday, November 10, 1926. The first meeting will be held at the Engineers' Club, Coventry Street, W., at 7 o'clock p.m., and will take the form of a debate, subject: "That it is Impossible to Obtain Absolute Purity of Tone with a Valve Detector."

The debate will be opened by Mr. Y. W. P. Evans, M.I.B.E., in support of the motion, and Dr. F. T. Fawcett, M.A., Ph.D., D.Sc., against.

Further information respecting the November meeting will be forwarded in due course. Thanking you in anticipation.—Yours faithfully,

HARRIE J. KING,
Hon. Assistant Secretary.

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Hon. Assistant Secretary.

To the Editor of T. & R. BULLETIN.

DEAR SIR,—With reference to your remarks, and to correspondence, on the subject of unlicensed transmitters, I should like to mention the fact that someone has appropriated my call-sign, and I am continually receiving QSL's referring to transmissions which did not originate from my station.

I am more concerned by the information received on the cards, which makes it clear that these transmissions often take place well outside the A bands allotted to amateurs in this country, thus placing one in rather an awkward position, should the Post Office authorities notice such breaches of regulations.—Yours sincerely,

KENNETH RILEY, G-6SZ.

(Member T. & R.)

To the Editor of T. & R. BULLETIN.

DEAR SIR,—I wish to inform you that the inaugural meeting of QRP Transmitters' Society was held on Friday, September 10, 1926. The Society has as its object the study and furtherance of Low Power Transmission and Short Wave Work generally. A special feature is made of work on 150 metres.

The Society hope that this item may interest you to the extent of publication in the BULLETIN, in which case a report of the fortnightly meetings will be forwarded to you.

Yours faithfully,
L. J. FELLER, 6LB.
Hon. Sec., QRP Transmitters' Society.

Bulletin Notices.

All the editorial work in connection with the BULLETIN is done in an honorary capacity, and members are asked to keep letters as brief and pointed as possible.

Letters intended for publication should be so marked, and those to which a written reply is required should be accompanied by a stamped addressed envelope.

"*Calls Heard*" intended for publication should be set out in accordance with the general scheme of lay-out as published, and the name and address of the sender should be at the head of the list; otherwise the list may not be published.

Articles intended for publication should be written as clearly as possible on one side of the paper only, and sketches should be drawn on separate sheets of paper, each sheet having the name and address of the sender on the top left-hand corner.

Reports intended to be inserted under "Traffic Notes" should be forwarded to Area Organisers only, and not direct to headquarters.

Area Organisers will see that the matter contained in their reports is of general interest so far as possible.

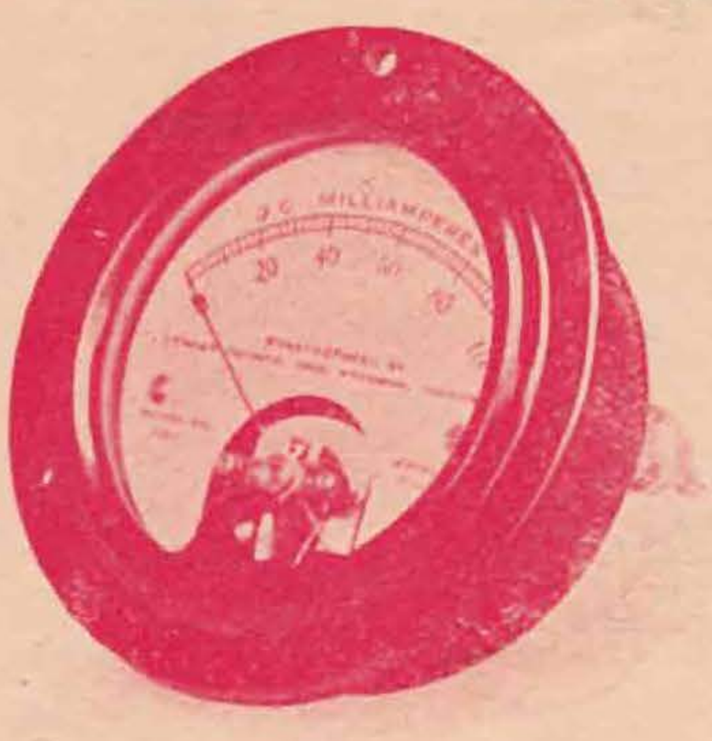
Matters dealing with the administration of the Section are dealt with by a separate Department, and correspondence dealing with such matters should be addressed to the Honorary Secretary, "T. & R. Section," and not to the Editor.

Applications for admission to the Section and fees must not be addressed to the Editor, or to individuals other than the Hon. Secretary, "T. & R. Section." Exception is made to this rule when an applicant is being introduced by an Area Organiser or a member of Committee.

The Editor is at all times pleased to consider articles within the scope of the BULLETIN, but photographs of stations are not of interest unless accompanied by a short description and other details of the station depicted.

All correspondence should be clearly marked on the outside of the cover as to the nature of the contents—whether Advertising, Editorial, Technical Advice Department or Personal.

WE ALWAYS NEED ARTICLES!



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Depth under flange	-	1⅛ in
Length of scale - -	-	2⅓ in.
Approx. weight	-	6½ oz.

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Volts. 0/1 to 0/50	**£2 11s. 8d.**	each
M/A. 0/1.5	**£3 11s. 8d.**	,,
,, 0/2.0	**£3 5s. 0d.**	,,
,, 0/5 to 0/25	**£3 1s. 8d.**	,,
0/50 to 0/750	**£2 11s. 8d.**	,,

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with brass covers.

5/- less per instrument than above prices.

THESE instruments are used in large quantities by the British Air Ministry and other Government Departments, British Broadcasting Co., Railways and other large concerns.

They are manufactured throughout at High Wycombe, Bucks, England, of best British material by British labour, and are equal or in advance of any other high-grade instruments, British or foreign.

ALL INSTRUMENTS GUARANTEED FOR 12 MONTHS AGAINST FAIR WEAR & TEAR.

Write for fullest particulars.

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