



T. & R. Bulletin

THE JOURNAL OF

The Inc. Radio Society of Great Britain

AND THE

British Empire Radio Union



Vol. 6. No. 4. OCTOBER, 1930 (Copyright)

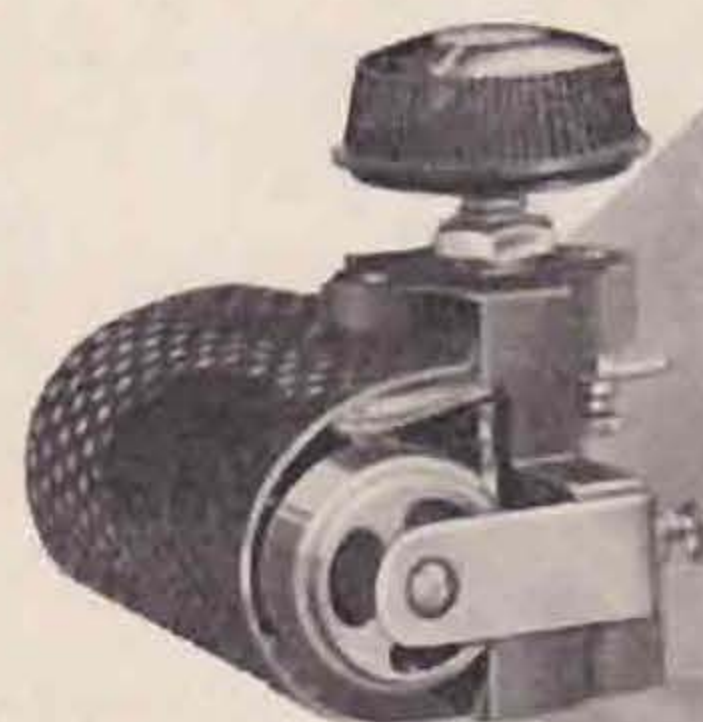
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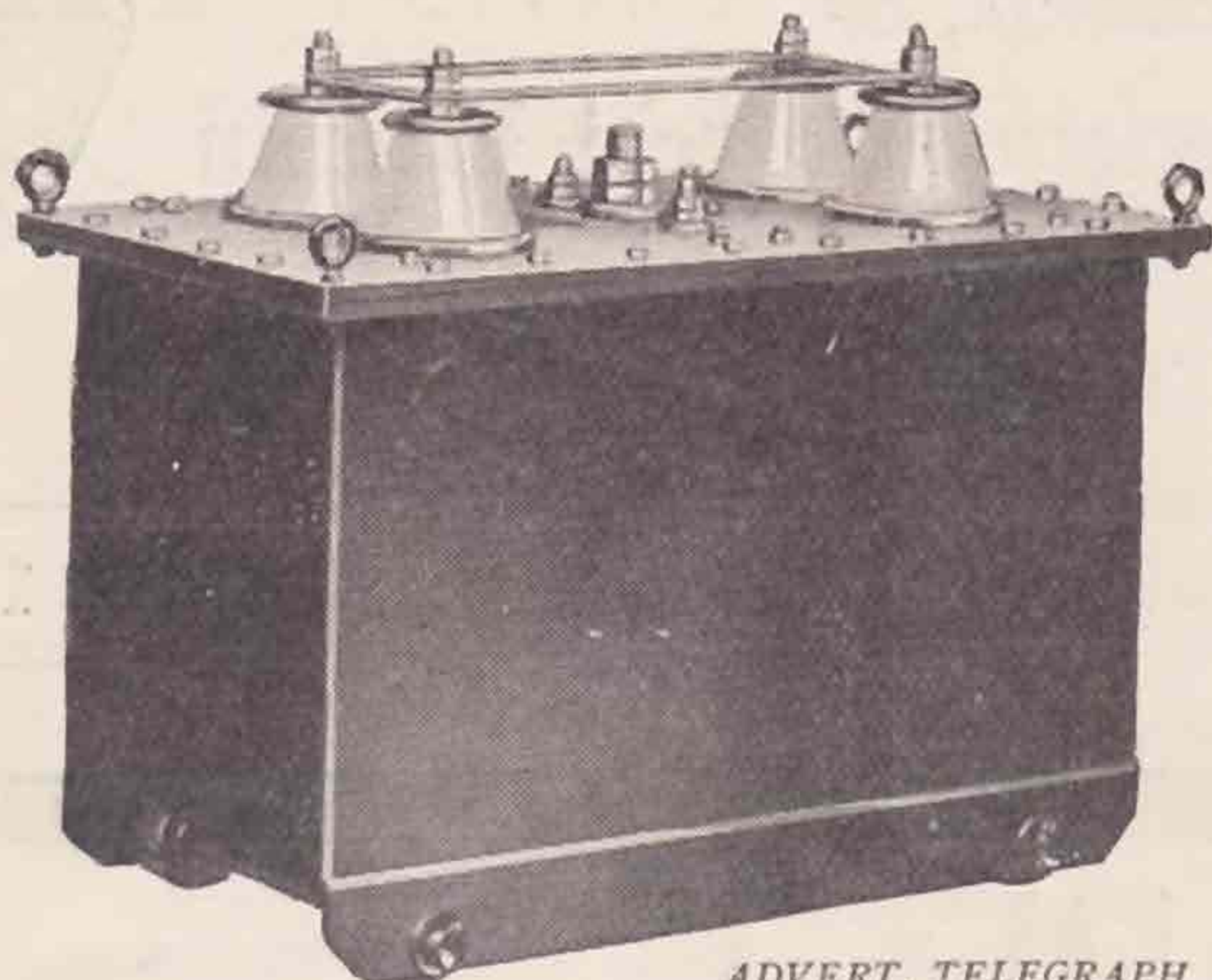
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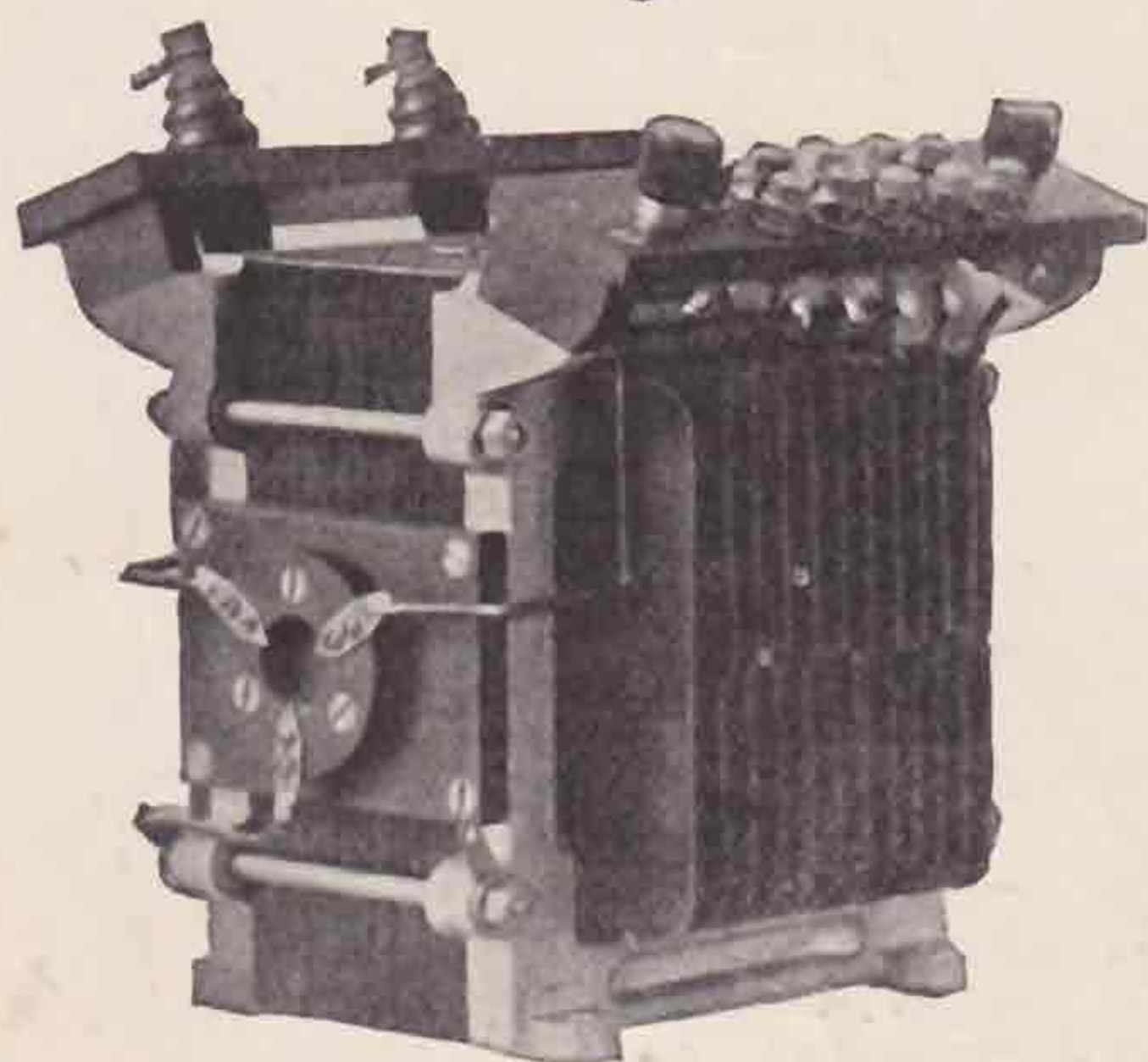
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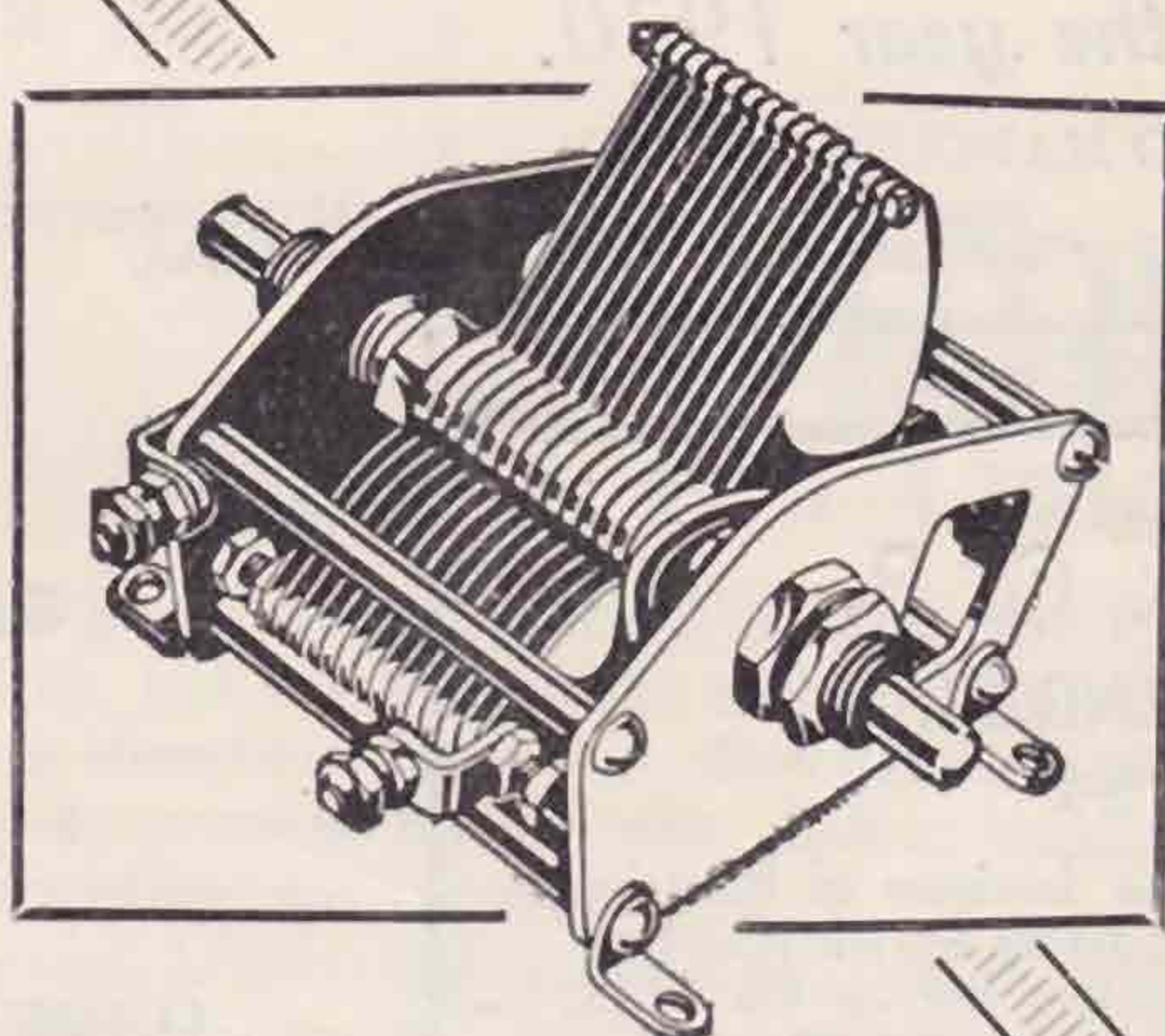
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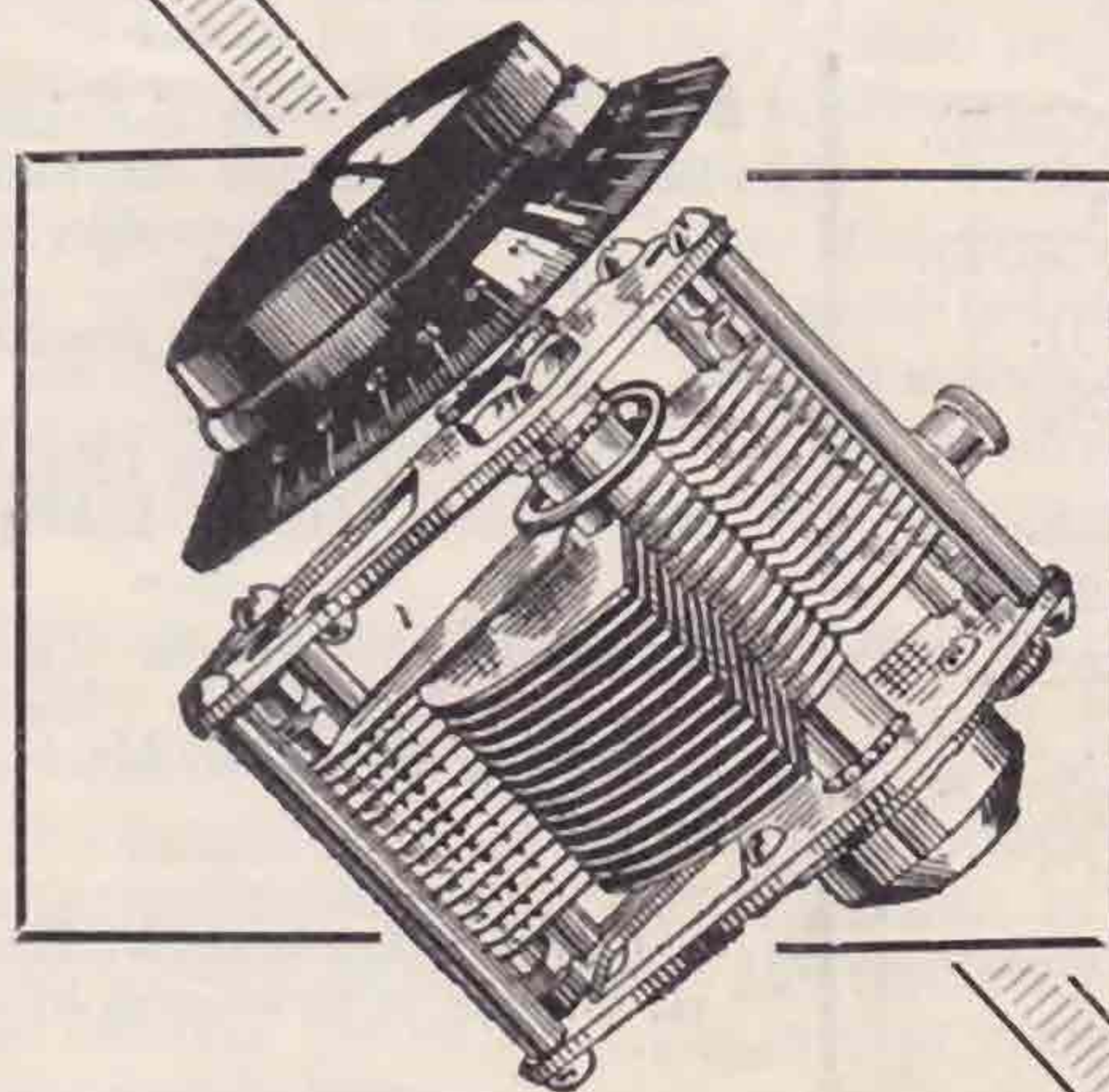
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October 24.—At the Institute of Electrical Engineers, W.C.2: Lecture by Mr. Goldrup, of the Mullard Wireless Service Co., Ltd. Commence at 6.15 p.m., tea at 5.30 p.m.

November 14.—At the Lensbury Radio Society Headquarters, 16, Finsbury Circus, E.C.2: Discussion opened by Mr. A. D. Gay, (G5NF), on "Rectifiers." Commence at 6.15 p.m.; refreshments provided.

November 21.—At the I.E.E.: Lecture by Mr. Woodhall, of the M.-L. Magneto Co., Ltd.

December 5.—At the Lensbury Radio Society Headquarters: "Historical Survey of Amateur Radio," by Mr. H. Bevan Swift, (G2TI).

December 19.—At the I.E.E.: Annual General Meeting, to be followed by a Lecture.

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Bulletin

The only British Wireless Journal Published by Amateur Radio Experimenters

OCTOBER, 1930.

Vol. 6. No. 4.

EDITORIAL.

Smarter and Quicker Operating.

MANY a good word has been said of the British amateur and of his general operating ability, but we would like to hear him still further praised. We know there are a few black sheep but, as a rule, they are so much in the minority and in the background that they are largely ignored by the rest, and at length they realise the evil of their ways and pull themselves together with a jerk.

If we review briefly the changes that have occurred during the last year or so, the immense popularity of crystal control looms to the front. This method of frequency stabilisation, when applied satisfactorily, may truly be said to be a cure for most of the ills that beset an amateur transmitter. Many problems, of course, have to be solved, but the resultant clean-cut, steady signal is a source of satisfaction to the owner and should be a joy to read. At the receiving end the qualities of a transmitting station may be judged in two ways—the first concerning the method, from a technical point of view, by which the signals are transmitted, and the second concerning the human element that enters into the transmission. Having satisfactorily disposed of the technicalities of transmitting, and assuming that all stations are emitting a signal as clean cut and perfect as the individual resources at the station will permit, we wish to consider the personal element behind the key.

The ability to send and receive at 20 w.p.m. is not necessarily a point in favour of good operating; nor is the habit of conducting every contact at a speed of 12 w.p.m. sending double. There is nothing so annoying as having to receive a message being sent at a similar, or even slower, speed, with every word sent twice and figures three times, when the station has already been reported QSA5, or “your signals are perfectly readable.” It is difficult to know in what mental category to place such a transmitter. Either he must judge the receiving capabilities of other amateurs by his own, or he must be entirely ignorant of the interpretation of the QSA scale. Considering that this scale, and other codes, have appeared in these pages and those of our contemporaries, and are also to be found in official publications and other books advertised to the amateurs, no excuse remains for amateurs to be in ignorance of the meaning of the scale.

We do not believe that the British amateur is conspicuous in this slovenly practice though he is by no means free of it, and if his prestige is to remain high in the minds of his fellow amateurs he must not fall into the careless ways that are much in evidence in other countries.

It may be said that, as far as we amateurs are concerned, it does not matter much whether we send single or double. There are, however, many reasons against the habit of double sending. In the first place it produces an unnecessary amount of interference by causing each contact to take twice as long as it need. Although we are amateurs we must all feel in our minds that we could, if the occasion ever arose, be of service in an emergency as a means of national or

(Continued on page 103).

The Progress of 28 M.C. Transmission and Reception.

A discussion opened by MESSRS. J. W. MATHEWS (G6LL) and G. W. THOMAS (G5YK) at the Fifth Annual Convention held at the Institution of Electrical Engineers, London, on September 26, 1930.

IN opening a discussion on 28 M.C. transmission and reception problems, we have found it advisable to divide the subject into five sections, viz., (1) a brief resumé of the history of 28 M.C. work; (2) the receiver; (3) the transmitter; (4) aerials, and (5) conditions.

Although many members present have been actively engaged on 28 M.C. work, there are probably a few who have not taken any part in the early work, on that band. Further, it is just as well to refresh your memories of some of the pioneers of the preliminary work. The first 28 M.C. signals from a distance were heard in January, 1928, when W2JN was received by G5YK and G2NH. Nothing further of a DX nature was heard until September of the same year, when W2JN was again received. In the meantime, however, permits for the use of this frequency had been issued by the P.M.G. and stations in this country had not been inactive. In May G2NH received signals from G6LL at a distance of 20 miles, signal strength being R7-8, this being the first occasion when signals of this frequency were successfully transmitted across London. The next development was in August, when G2FN—our old friend Rodman, of India, but then in London—astonished us by having heard a C.C. station tuning up one evening. This was definitely identified as being the signals from the last F.D. of the first C.C. set for 28 M.C. being constructed at G6LL. On the next night tests were arranged which resulted in a contact, signals being of good strength and perfectly constant. Removing and earthing the aerial at G6LL gave a drop in signal strength at the receiving end of about 2 R strengths.

The next important event occurred on October 21 at 14.30 G.M.T., when the first transatlantic contact took place, G6LL working W2JN for nearly two hours. This was immediately followed by GW17C and G2OD working across the Atlantic. On October 28, G2FN connected with the 6th district of America, by working W6UF with an input of 8 watts. Subsequently, contact was effected between Great Britain and Canada, G6LL working VE2AC in March of the next year. It may be interesting to note that on October 21 G6LL's signals were heard in Johannesburg; and in March, BRS190 received signals from ZS5C, these being the first two cases on record of 28 M.C. signals being received in South Africa from Great Britain, and vice versa. The next outstanding event took place on February 10, 1929, when, as a result of a schedule arranged prior to his departure for India, VT2KT, once again friend Rodman, worked G5YK, this being the first contact between Europe and Asia on 28 M.C. The summer proved to be a blank period with only two interesting points, (1) the reception by G5YK of PK4AZ, of Sumatra, working FIIE on April 14, no sound being heard of the latter station, and (2) the first contact between Great Britain and Germany when G5YK worked D4UE on June 23.

During this period VT2KT did some extraordinarily good work with his low power. In March, 1929, he established contact with VK5HG, and later with PK4AZ, FIIE, and J1TX. More recently we have the excellent two-way contact between this country and South Africa on December 22, 1929, when G5WK exchanged signals with ZS5C. Consistent contact with South Africa was maintained during the winter by many G stations. January 19, 1930, showed a flock of OH stations and many contacts took place, and during the month G6NF obtained a contact with OZ7Y, the first between England and Denmark. During February G6HP worked SU8RS and G5VB worked FM8RIT, these being two new countries. We think other countries were also worked during the spring of this year, but we are unable to find the records in the BULLETIN. It appears that contacts up to 1,000 or 1,200 miles may be regarded as "freaks" and cannot be relied upon, and possibly all the European countries will one day have been worked on 28 M.C.

We should like to place on record our appreciation of the excellent work done by Mr. Powditch—G5VL—in arranging the March tests, and, as you have undoubtedly seen from the BULLETIN, these tests were an unqualified success, due chiefly to the immense publicity given to them.

* * * *

Passing to a more practical side, let us consider the receiver. It is quite obvious that a discussion on receivers will be divided into two classes, (1) those using a detector followed by optional amplification, and (2) a receiver employing S.G., H.F. amplification preceding the detector. Strictly speaking, two other classes of receivers should be discussed, viz., the super-heterodyne and the super-regenerative types. Although we are not prepared to say anything of the two latter types from lack of experience, we do look forward to their mention in the discussion which we hope will follow. Little can be said regarding the choice of a circuit and the oft-used phrase that the "circuit you are most familiar with will be the best in your case," is only too true. It should be obvious that low-loss design plays an important part in the construction of such a receiver, and a tuning condenser, considerably smaller than that used for reception on the lower frequency bands, should be used. It is useless to dictate any hard and fast rule for receiver design as everyone has his own pet ideas.

Mr. Somerset (G2DT) is firmly convinced of the necessity on 56 M.C. receivers of arranging the tuning capacity so that certainly no more than half the band can be covered by one complete swing of the tuning condenser, and in certain publications dealing with 56 M.C. reception the authors advise tuning capacities of much smaller value. We do not propose to argue the point here, but prefer to state that, in our opinion, a condenser fitted with a first-class slow motion dial should be of such a size that it will only just cover the band, which, as

you are probably aware, is 2,000 K.C. wide. [Having had experience of the use of the new type of short wave condenser now being placed on the British market, by one of our own manufacturers, we feel we should like to draw attention to the benefits obtained from its use. Although the present type on the market is a little large for S.W. work, it can easily be cut down or modified, though we believe a newer and smaller type is shortly to be produced. We refer, of course, to the form of condenser with two variable capacities, one for a rough adjustment of the band to be covered, and the other for ordinary tuning purposes.

At a lecture before the Society a year or so ago, Mr. Ward, during the ensuing discussion, drew attention to the beneficial results obtained from a coil wound with about 10 lengths of wire, wound side by side and paralleled. From the amateur point of view, it would appear that a coil made of $\frac{1}{4}$ in. strip and suitably spaced would be easier to make and probably be as efficient, certainly the self capacity is kept very low by the use of this strip.

Considering the very vague description, low-loss, as applied to a circuit, it is interesting to see in what ways losses can be reduced. We might consider three different classes of losses, viz., H.F. resistance; eddy current; dielectric. The first, H.F. resistance losses, will occur in variable condensers and coils where bad contacts exist or where the metallic conductors are dirty. Sharp bends in wires will also introduce losses here. Eddy current losses are, we think, too well known to mention in much detail here, and are usually caused by attempting to keep the connections too short. Dielectric losses may occur wherever an insulating material exists in an electric field, the valve base and valve holder probably contributing their full quota in this class. Where fixed capacity is required, the best mica condensers only should be used, or better still, air spaced condensers.

We have diverged somewhat here from 28 M.C. receivers to generalisations, so we return to our subject.

So much has been said regarding the use, beneficial or otherwise, of a screened grid H.F. amplifier for any frequency above 14 M.C. that we expect a lively discussion on it. It must be realised by everyone who has used a S.G. receiver that, assuming no reduction in readability takes place due to excessive background noise, the receiver will be easier to operate owing to the buffer effects introduced by the screened valve, cancelling the effect of all aerial movement and dead spots and considerably reducing any hand capacity effect. We do admit, however, that a badly designed S.G. amplifier suffering from considerable interlocking between the aerial and detector circuits gives rise to much annoyance and creates the idea that the use of a S.G. amplifier is detrimental. It has been our experience that with careful design and construction, an appreciable signal amplification can be obtained, though the readability amplification will only be slight. Bearing in mind our previous remarks, this we claim to be a decided advantage over the first type of receiver mentioned.

We think this point of *readability* amplification as distinct from *audibility* amplification is worth considering a moment. Whatever can be done to increase the readability of a receiver is not waste of

time. Add 6 tuned L.F. stages if your signals are more readable with than without them. We know the signals will be stronger, but that is not the point. Similarly we know that S.G. stages do amplify on 28 M.C. and are controllable, but unless the readability of the signal is increased, or remains the same, the stage is not worth while. The only thing that can reduce the readability of the signals, having previously admitted amplification is being obtained, is the introduction of background noise in the S.G. stage. Hence especial care should be taken in the choice of apparatus and the construction of such a set. Assuming that an amplification of 3 approximates to a signal increase of one R strength, an amplification of 10 (audibility) has been obtained from a S.G. stage on 28 M.C., that is an increase of a little over 2 R strengths, measured by the ear. Such an amplification, we believe, will give a definite readability increase, and hence the stage is worth while.

The use of tuned or peaked L.F. stages is worthy of experiment. Mush exists all over the range of audible low frequencies and the tuned stage will, of course, amplify the mush which is coming into the L.F. amplifier at the same frequency as the signal. Mush of other frequencies will not, however, be amplified. We should like to record our disappointment that "peaked" L.F. transformers are not yet available in this country, because we believe the "flivver" coil and condenser as a tuned choke is not really satisfactory.

In concluding this section we should like to draw attention to the indirectly heated cathode valves and to their extraordinarily high efficiency. In particular we should like to mention the Mazda A.C. H.L. as a detector and the Mullard S4VA S.G. amplifier.

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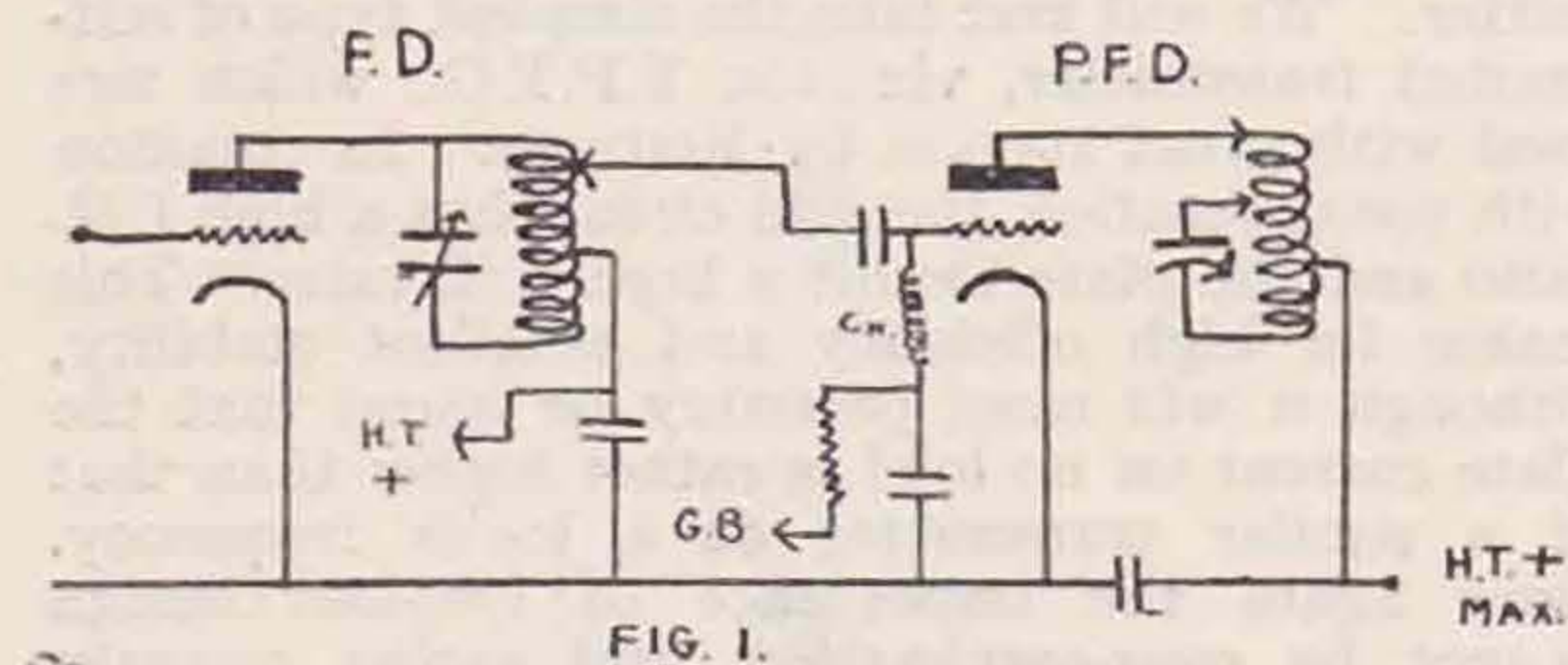
The third section on Transmitters may again be divided into two classes: viz., the self-excited transmitter and the frequency stabilised transmitter. We will first take the simplest type of self-excited transmitter, viz., the T.P.T.G., which was used with great success by Rodman. In common with usual practice, the grid circuit has a high C/L ratio and the plate circuit a high L/C ratio. This makes for high efficiency and excellent stability, although it will most probably be found that the plate current on no load is rather higher than that of a similar transmitter at a lower frequency. Once again the importance of low-loss design cannot be over-emphasised, and earlier remarks apply here. Although we have taken the T.P.T.G. as an example of simplicity, it is obvious that the man better acquainted with other circuits, such as the Colpitt's, Hartley, Ultraudion will obtain equally good results with them.

Components should, of course, be only of the best make, and the type of valve and value of grid leak will naturally be decided by the power input required, and probably by apparatus available in the shack. After all, a 28 M.C. transmitter is merely a 14 M.C. set built a little more carefully with capacities and inductances each a little smaller.

In our opinion the greatest disadvantage of a self-oscillator is instability and roughness of note, and the necessity for an accurately calibrated wave-meter, though we will be the first to admit that some self-oscillators are turning out a pretty signal. Our thoughts naturally turn, then, to some form of

frequency stabilisation, for example, crystal control. It is not proposed to deal with the construction or operation of the preliminary stages of a C.C. transmitter as time does not permit it, but rather, we intend commencing at the part of the circuit which is producing 14 M.C. energy. Between that point and the aerial it will be necessary to double the frequency and, in the majority of cases, to provide a considerable amplification. We think that this has often proved of considerable difficulty to many experimenters. There are many methods of providing this frequency doubling and amplification, though we do not necessarily mean in one stage. The most obvious method of attaining this end is to couple to the output of the F.D. valve delivering 14 M.C. energy a further frequency doubler with its plate circuit tuned to 28 M.C., the H.T. on the anode of this valve being the maximum obtainable at the station, having due regard to the type of valve in use (see Fig. 1). For frequency doubling it is usual to employ a valve of high magnification and high impedance used with a fairly high negative grid bias. Owing to the natural losses of a circuit at this frequency, and the comparatively low mutual conductance of available valves, the harmonic output will probably be found disappointingly small. To overcome this it is necessary to increase the drive and two ways suggest themselves: (1) by the use of a greater H.T. supply to the driving valve, or (2) by the use of a sub-amplifier between the two F.D.'s. This sub-amplifier will, of course, require to be neutralised, a perfectly simple matter at 14 M.C. This has been found in practice to help considerably in giving a strong harmonic output from the final plate circuit. For want of a better term we will refer to this system as Power F.D.

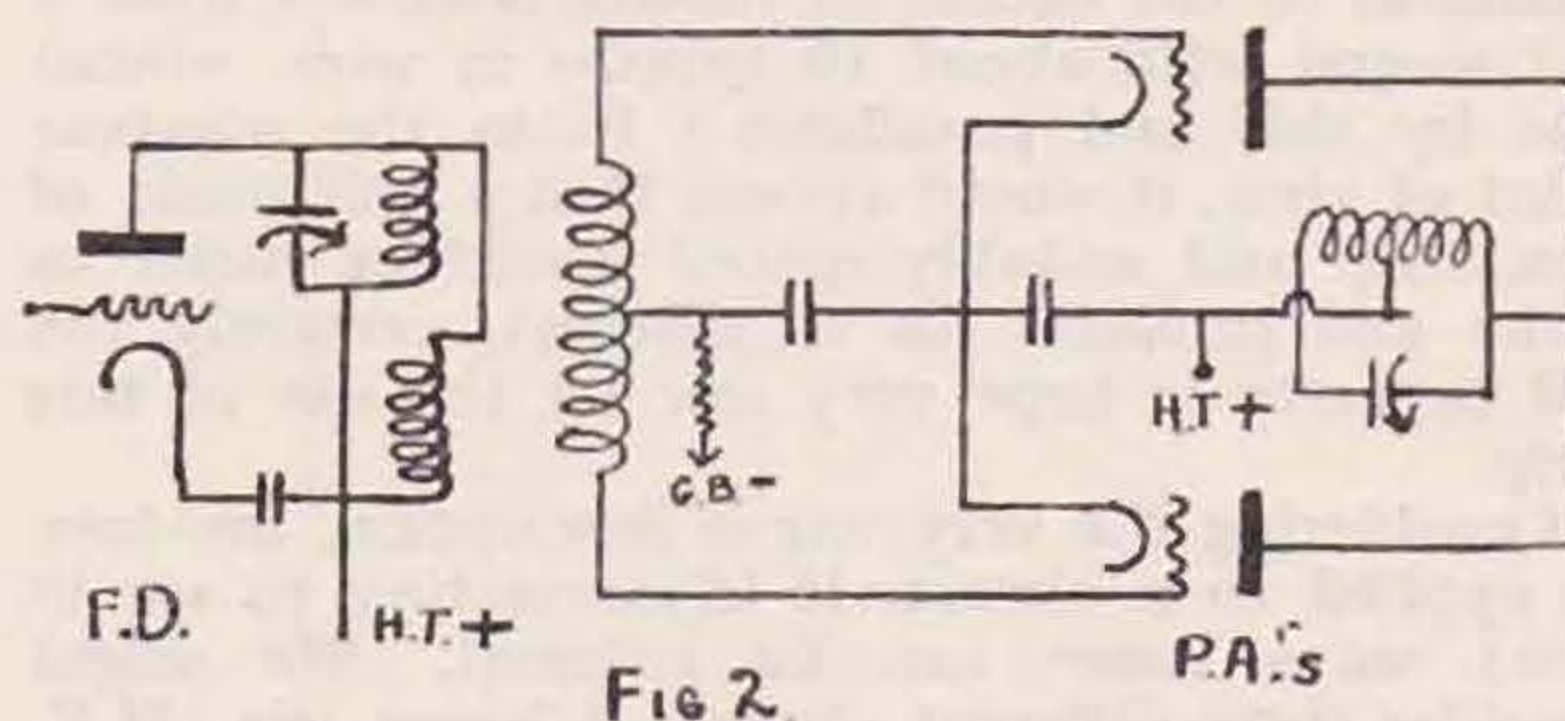
Another type of power frequency doubling that has been tried with indifferent success by ourselves, is that known as push-pull F.D. This system deserves special mention here as it is a form



of push-pull amplifier, which type is receiving more and more attention by present-day experimenters. The arrangement of the apparatus in brief is as follows: A pair of similar P.A. valves (Fig. 2) are driven with their grids connected in push-pull fashion from a source of supply whose frequency is half the required output frequency. The plates of the two valves are locked together and are connected with the conventional anode circuit. It is essential that the grid input circuit of these valves, if excited from a single preceding valve, should be of the correct push-pull type, that is to say, by the use of a transformer consisting of two paralleled primary windings and one centre-tapped secondary winding. Without employing wave form distortion in any way, this arrangement of valves produces an oscillating current in the anode circuit of twice the

frequency of the drive. We are, unfortunately, unable so say that our experiments on these lines have been successful, and look forward to further comments.

We come now to the P.A. systems, locked, semi-locked and neutralised. The locked system relies for its stability on the fact that two oscillators when coupled together tend to remain in step. There are various methods of coupling the oscillator to the stable source and a number of methods at once come to mind: (1) inductive coupling, crude and effective; (2) a system employing a short R.F. feeder line between one circuit and the other; and (3) the capacitive. This latter is, in our opinion, by far the most efficient system for coupling locked

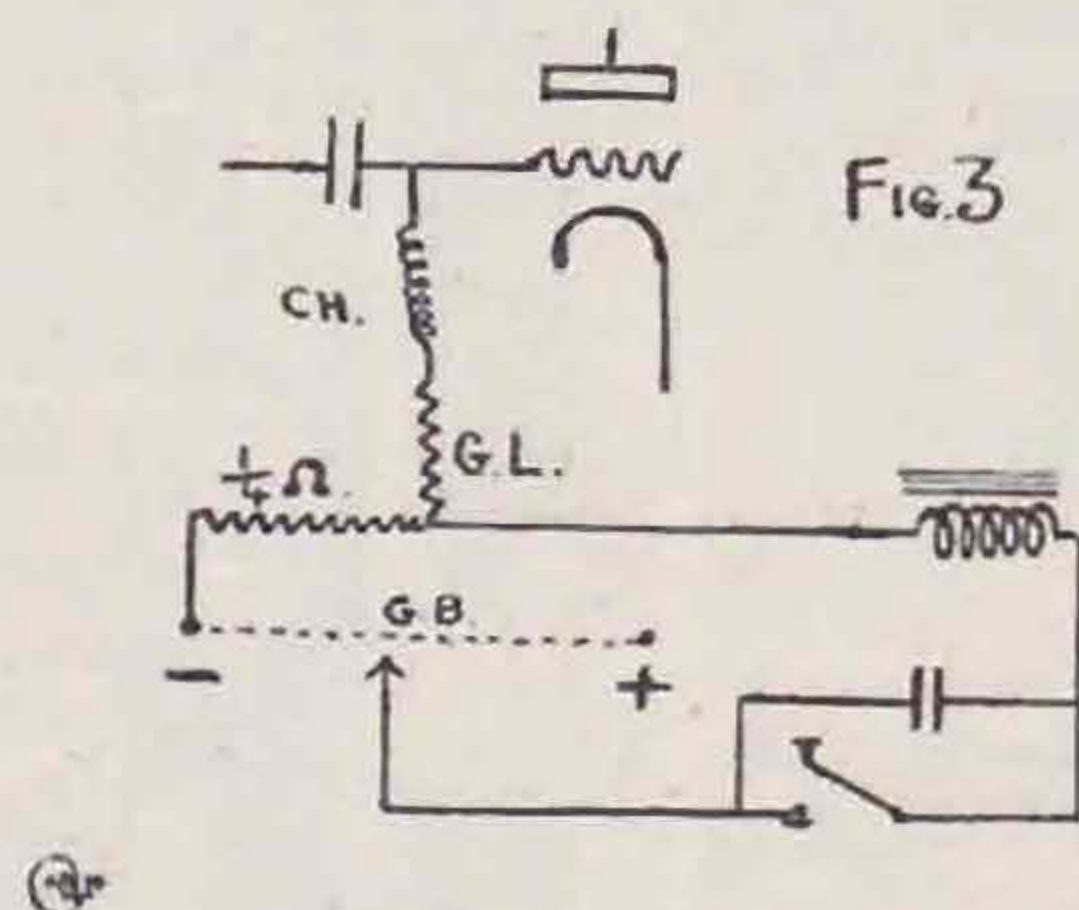


amplifiers. All locked oscillator systems have the very distinct drawback that should the amplifier go out of lock the result would be a flood of unstable harmonics and spacing waves. This is, of course, assuming that in common with most transmitters the owner does not possess a very large driving source. The construction of such an oscillator will follow exactly on the conventional lines. It is obvious that a system of this sort is tricky to adjust, due to the fact that there are two tuning controls on the oscillator both dependent on each other. Stray high frequency currents at this frequency often find their way into parts of the circuit where they are not wanted, thus causing instability and difficulty in adjustment. To the person, therefore, who has not previously used any form of locked oscillator, we would like to warn him that he may spend many hours before he finally masters the intricacies of this system.

The perfectly neutralised amplifier for 28 M.C. transmissions has been found wanting, insomuch as it is extremely difficult to obtain satisfactory neutralising, and the low amplification obtained. It is, however, quite possible to employ a semi-neutralised power amplifier. This should be so biased that when undriven only a few milliamps are passing. Providing this arrangement is properly adjusted, unwanted spacing waves and harmonics will not be troublesome. A further development of this consists in building an amplifier with no neutralising capacity, whose self-excitation is so low that when no drive is applied oscillations are non-existent; the use of bias or leak on the grid is optional, and the system has been found to work in both cases.

It will have been observed that in all cases the anode circuits are shown with the H.T. feed to the centre of the tuned portion of the anode coil, and that a certain amount of anode tap has been allowed. This materially increases the efficiency of these circuits and can with advantage be used on

any type of transmitter, and also for all the anode circuits and crystal oscillators and frequency doublers. It will also be seen that series feed has been used in every case, thus doing away with the necessity of H.F. chokes at these points. The plate coil is, of course, at H.T. potential, and this is regarded by some as a distinct drawback. As, however, no H.F. choke can possibly be as efficient as a tuned circuit, it should at once be evident that something is to be gained and not lost by the use of series-fed circuits. It is very important in H.F. amplifiers that the centre points, or voltage nodes, on all tuned circuits should be by-passed to filaments (which should always be maintained at earth potential) through a large condenser. Further, that common earth points between two successive stages should be similarly connected, and that although the wires connecting these earth points together do not *appear* to be carrying high frequency currents, the points should, nevertheless, be decently connected with solid wire. For efficient power ratios these points cannot be too strongly emphasised.



It will also be remarked that in all cases a mixture of bias and leak is used on the grids of all the valves; about 10,000 ohms leak will usually be quite sufficient and must be shunted by a condenser, otherwise H.F. currents will frequently burn out a wire-wound leak. By this means the bottom of the H.F. choke is maintained at earth potential. The importance of low loss circuits should not be overlooked, and all circuits carrying high frequency current should be wired up with heavy gauge wire and taken direct from point to point. In high power transmitters the use of copper tube coils is advantageous, but only if the conductors between these coils and the tuning condensers are of corresponding size. The use of 16 gauge conductors in this position with $\frac{1}{4}$ inch copper tube coils is ludicrous. Further, it should be remembered that the variable condensers themselves have to pass a heavy current, and that the coils, connections and condensers should all be chosen with equal care.

Many keying difficulties arise when using locked oscillators. One excellent system mentioned at a Society meeting by G6OT consists in over-biasing one of the F.D. by the system shown (Fig. 3). When possible, the system of keying the primary side of the H.T. transformer delivering power to the amplifier may be usefully employed. In any case, keying a set of one of the types described calls for much thought if the spacing waves and key clicks are to be non-existent.

(To be continued.)

Further Coils for the R.S.G.B. 1931 Short Wave Three.

Coils for further wave bands for use in conjunction with the above receiver may be constructed as follows: For 10 to 18 metres the aerial coil has 3 turns, 2" diameter, spaced 8 turns per inch with the tapping at the first turn from the low potential end. The transformer coil is wound to a diameter of $1\frac{1}{2}$ ", the primary containing 2 turns, the secondary 3 turns, and the reaction 1 turn. The primary and secondary windings are both wound 8 turns per inch, interwound; the wire gauges are the same as those used for the higher wave coils mentioned in last month's issue. Both coils for this band must be very carefully constructed, and celluloid strips may be conveniently used to support the turns. The coil when made may be mounted on a base for plugging into the set, but the connections from the coils to the base pins must be as short as possible. With the comparatively large tuning capacities, etc., little amplification may be expected from the S.G. stage below 15 metres.

For 50 to 95 metres an aerial coil may consist of 18 turns of 22 D.C.C. wire wound close on a $2\frac{1}{2}$ " diameter former with the tapping at the 6th turn. The transformer consists of: primary, 14 turns 32 D.W.S.; secondary, 18 turns 22 D.C.C.; reaction, 7 turns D.W.S. The secondary is wound close and the primary is wound on separators immediately above corresponding secondary turns. The diameter of this coil is also $2\frac{1}{2}$ ".

In the circuit diagram given on page 50 of the September issue it is regretted that no connection was shown from the heater centre tap to the cathodes. The negative grid bias for the S.G. valve is, of course, connected to the left side of the condenser C3.

Quality Transmission Without Choke Control.

By EDWARD PETHERS (G6QC).

As it is thought that the results of experiments with speech and musical transmission on 2 M.C. may be of interest to some of our members, no apology is made for the following notes:—

The circuit consists of C.O.-P.A., the oscillator being capacity-coupled to the P.A. in the usual manner, with a loose-coupled aerial circuit. The pick-up is connected to a two-valve speech-amplifier (resistance-coupled), the output being connected *via* a 1-1 ratio output-transformer, the secondary of which is connected in series with the grid-bias lead to power-amplifier valve. For speech an electro-magnetic type of microphone was used, this also being connected direct to grid and grid-bias of first valve in speech-amplifier on a change-over switch. With this arrangement all reports received have indicated really first-class quality music and speech transmission with adequate modulation. It is suggested by the writer that the fine results achieved by this method are largely due to the crystal-control of frequency preventing "Frequency-modulation" which is so disastrous to good telephony when using any form of grid-control modulation. The input to the power-amplifier during the tests was 10 watts.

CONVENTION, 1930.

Our fifth Annual Convention was held, as in previous years, during the last week-end in September, and as time progresses we notice more than anything else that the Society, as represented by the provincials, is becoming more stabilised and satisfied with the work done in London on their behalf.

We can well remember the earlier gatherings when stormy petrels seemed set on criticising everything and everyone, but maybe, as a result of these episodes, a newer, bigger and better organised Society has come into being.

The friendly spirit of Convention was seen im-

pushing forward at a rate hitherto unknown. He paid tribute to the work of Mr. Ostermeyer, the Honorary Treasurer, and explained that through his efforts the finances of the Society were now in a thoroughly sound state.

He then proceeded to announce the election of the new District Representatives, omitting No. 15, as this position had still to be filled.

Mr. G. W. Thomas and Mr. J. W. Mathews then delivered their lecture on "The Progress of 28 M.C.'s Transmission and Reception." A full report and a summary of the ensuing discussion is published in another page.



mediately on entering the Institution of Electrical Engineers on Friday evening, September 26; all around we in London saw once again old friends who had eluded us for a whole year, in some cases two and even three; we saw, too, countless new faces, many from distant parts of the country, but for each and all our President had a word of welcome as they entered the lecture theatre.

Well over one hundred members were seated when Mr. Gerald Marcuse rose to deliver his address of welcome. In this he emphasised the value of the annual gathering and impressed on all the necessity for co-operation at a time when the Society was

Following the opening meeting charabanc parties were formed and proceeded to visit the stations owned by Mr. J. W. Mathews and Mr. J. Clarricoats. Some fifty provincial members availed themselves of the opportunity of visiting these two contrasting stations, and it will be of value to us in London to know whether the experiment was generally successful. The visits certainly gave the members an excellent opportunity for discussion, and saved the troubles encountered in previous years of discovering suitable rendezvous for informal gossips!

Saturday morning was left free except for the

GET THAT "BULLETIN" FEELING AND TELL US ABOUT IT

Delegates' Meeting. This later important gathering was fixed for 10 o'clock, and when Mr. Bevan Swift opened the proceedings he was supported by many members of Council and representatives from all districts except Nos. 6 and 11. Wales, North Ireland, and Scotland were not represented, but Mr. Harding was asked by Mr. Marcuse to attend as the Monmouth County representative.

The business was opened by each D.R. giving a brief report.

District Reports.

A summary of these is given for the benefit of our provincials who were unable to attend and also to place on record the position in 1930.

DISTRICT 1.—Mr. Browne reported that the social side had improved considerably. He had arranged for the continuation of the letter budget which was started six months earlier by Mr. Beattie. The 1·7 M.C. band was being used extensively by the members in his district, but little progress had been made with 28 and 56 M.C. work. He had arranged for the next Conventionette to be held during October, in Manchester, and wished to place on record the thanks of all No. 1 District members to Mr. Old for his work as Provincial D.R.

DISTRICT 2.—Mr. Woodcock reported that his district was running smoothly. He intended arranging a Conventionette in Leeds during October and also recorded a migration to 1·7 M.C. Little interest was being shown on the higher frequencies, due primarily to an excess of man-made static.

The Chairman suggested that endeavours should be made to hold regular meetings and lectures in Leeds, and other important centres.

DISTRICT 3.—Mr. Noden pointed out that the North Cheshire amateurs really constituted the main proportion of his district and consequently the holding of representative Conventionettes presented some difficulty. He mentioned that a number of small meetings were held in Altrincham and district every year.

He mentioned one minor matter which had been put up to him by Mr. Cawley; this referred to the cutting of non-technical articles. Mr. G. W. Thomas explained that he used the utmost discretion in "cutting" articles, but felt that in the cases mentioned he had attempted to please the majority of the members; he did not consider lengthy descriptions of overseas visits were of general interest.

DISTRICT 4.—Mr. Lees reported considerable activity in his area and had no criticisms to offer. A local Conventionette would be held to report on the Convention, and he hoped to make this a monthly feature.

DISTRICT 5.—Mr. Miles reported that his district was running satisfactorily and that a local gathering would be arranged as early as possible. Interest was being shown on 28 M.C. Mr. Swift asked whether Birmingham and Wolverhampton would be used as centres for meetings. Mr. Miles explained that these would be chosen as the majority of his members were centred around those towns. He mentioned that the Coventry Transmitters' Society had ceased to exist but that its late members were mostly R.S.G.B. members.

DISTRICT 6 was not represented, Mr. Horsnell apologising by letter for his unavoidable absence.

DISTRICTS 7 and 8 were represented by Mr. H. C. Page (D.R. for No. 7). He explained that his original scheme for a letter budget had proved a

great success, and said that he was glad to note its introduction in other districts. He reported that a Conventionette had been held at Tunbridge Wells, but was sorry to find that in general the members of 7 and 8 were inclined to be apathetic. He had no complaints to put forward.

DISTRICT 9.—Capt. Courtenay Price said that except for two isolated cases his district was progressing well. The two persons mentioned were consistent critics of the Society and did not in any way carry influence with other members. He reported that one of these persons persisted in playing innumerable gramophone records each week-end and that he was also using his station to boost his business as a wireless dealer. Mr. Swift, supported by many delegates, suggested that Capt. Price should forward an official complaint to Council so that action could be taken.

He was glad to note that at least four E.L.S. were situated in his district and that one of the Society trophies had also gone to one of his members (BRS310).

He mentioned that Mr. Bartlett had agreed to act as Bristol sub-representative.

DISTRICT 10.—Mr. Buckingham stated that he hoped to commence a letter budget, and expressed the hope that he would have support from the district for any scheme he can devise for keeping them in touch.

DISTRICT 11 was not represented.

DISTRICT 12.—Mr. St. Johnston recorded the success of his monthly meetings and congratulated Mr. G. W. Thomas on the excellence of the BULLETIN. He also thanked Mr. Old for his work on the Council and suggested that every effort should be made next year to provide a more spacious stand at Olympia.

DISTRICT 13.—Mr. H. Wilkins reported that his district had supported him excellently. This was shown particularly by the number of reports received for the BULLETIN. Many inter-station visits had been made and these had undoubtedly assisted him in his work. A letter budget had been running successfully for some months and considerable interest was being shown by many members on the 56 M.C. band.

He suggested that a technical service section be formed, but Mr. Swift pointed out the difficulty of obtaining the gratuitous services of experts. H.Q. were always ready to assist on general technical matters when possible. He wished to suggest that every endeavour should be made to clear up local dissent through the agency of the D.R. before the matter was referred to Council.

Mr. Swift stated that he sincerely hoped this would always be done, and asked all D.R.'s to use their influence whenever possible when minor local difficulties arose.

DISTRICT 14 was not represented.

DISTRICT 15.—The Honorary Secretary explained that considerable difficulty had arisen in filling the position of D.R., but as a result of correspondence and discussions with many persons qualified to know the feelings in Wales and Monmouth, he felt it desirable that the latter county should be considered as a separate District. He therefore proposed that Mr. H. Harding (G2HH) be elected D.R. for Monmouth and that this District be known as No. 14 under the new regulations. He further proposed that Mr. Phillips (G5PH) be elected D.R.

for Wales. Both propositions were seconded and unanimously approved.

Mr. Harding thanked the Delegates for their decision and assured them that he would do everything possible to increase interest in his area. (A report of the Monmouth Transmitters' Society is on another page.)

The Hon. Secretary was supported in his propositions by Mr. Old, who agreed that owing to the geographical situation of Monmouth it was an advantage to give them separate representation.

DISTRICT 16 was not represented.

Official Station.

An official station was discussed but it was agreed that for the present such a project is impractical. The chief objections being cost and location. The Hon. Secretary in explaining present objections, stated that it was the idea of all in-

was over 1,300. He viewed with concern the turn-over each September and stated that he believed the loss in home members this year would be much lower than any previous year at the same period.

He felt that D.R.'s should be asked to assist in the work of reviving flagging interest and suggested that at the end of the three months' grace period, the D.R.'s should be advised of any members who had not renewed their subscriptions.

He believed that a personal approach by the D.R. would in many cases prove more successful than the present method of official notices.

He agreed also to provide each D.R. with a confidential list of all licensed persons in his district. This will enable the representatives to watch carefully changes. These lists would be marked up to show those who were members of R.S.G.B.

The Chairman supported the suggestions made



terested Council members that a Club House should eventually be obtained in London. The cost of such a project would, he suggested, require an initial capital of several hundreds of pounds, but he was hopeful that with a rapidly growing membership both at home and abroad the fulfilment of this ambition would be possible within a few years.

The question was raised by Mr. Browne (No. 1 D.R.), regarding the use of, say, a D.R. station, for the issuing of bulletins regarding Society work in the area. Mr. Swift stated that providing such transmissions were confined to matters of experimental interest no official objections would be raised.

Membership.

The Hon. Secretary proceeded to explain the present position as regards membership and stated that at the end of August the total membership

and asked the Hon. Secretary to make the necessary arrangements.

District Notes.

The question of the continuance or otherwise of District Notes in the BULLETIN was discussed at considerable length, almost every delegate giving his opinion or that of his members. Finally it was proposed by Captain C. Price and seconded by Mr. H. C. Page, that "In future District Notes be omitted from the BULLETIN, but that a space should be reserved for the publication of items of general interest. Such items to be supplied by the District Representatives. The letter budget should be extended to all districts."

This proposition was carried, Mr. Browne only dissenting. The Hon. Secretary agreed to submit the decision to the Business Meeting.

Calibration Services.

In order to assist H.Q. it was decided to obtain the delegates' opinions regarding the calibration services. It was unanimously agreed that the present 40 metre services had proved of great value but with the increase of interest on the 80-metre band, it was felt that an additional service should be given on that band. Mr. G. W. Thomas agreed to discuss the matter with Mr. Brownson, with a view to recommending to Council that a bi-weekly service on 80 metres be commenced.

Captain Price, on behalf of all D.R.'s proposed a vote of sincere thanks to Messrs. Thomas and Brownson for their services in the past.

Other Business.

Mr. Harding asked what arrangements were to be made for representation at Madrid and Copenhagen. The Hon. Secretary explained that the matter had been discussed by Council, but at present (owing to lack of official Government information) no action could be recommended. He emphasised that it would be futile to send an R.S.G.B. delegate unless he were a distinguished person and one capable of receiving full recognition from the Government.

The Hon. Secretary read correspondence which had passed between Mr. Beattie (late No. 1 D.R.) and himself, in which Mr. Beattie had inferred that the members in Nos. 1, 2, 3 and 4 Districts required a Northern Convention. In his correspondence he had repeatedly emphasised that the meetings held at Manchester in October of each year, were Conventions and not District Conventionettes. He further intimated that he had written to 150 members to support the 1930 meeting. The Hon. Secretary pointed out that he did not believe the Northern members desired a Convention on National lines and furthermore, he did not consider it fair for one D.R. to write to members outside his District, without first consulting his neighbouring D.R.'s. Mr. Browne agreed that 150 was an exaggerated figure but failed to see that it was an unfair proposition. The delegates, however, supported the H.Q. action and felt that the various meetings held in the districts should in general be confined to the members of the district concerned, but whenever possible members of other districts should be invited through their D.R. Mr. Browne was asked to move a proposition that a Northern Convention be held, but he declined.

This concluded the Delegates' meeting except for very minor matters.

An informal lunch at the Tricity Restaurant followed and at 1.50 p.m. some 150 members were present for the official photograph.

BUSINESS MEETING.

The main business meeting followed, presided over by Mr. Marcuse.

The presentation of the Society trophies evoked considerable interest and each winner in turn was greeted with acclamation. The Wortley-Talbot trophy will be presented to Mr. C. E. Runeckles on December 19, after his return from Cairo.

The trophy to Miss Dunn was presented later in the day.

The Hon. Secretary presented a summary of the decisions passed at the Delegates' meeting and asked for the formal approval of all propositions as outlined. He then presented a new set of Society regulations which was unanimously approved.

These are set out on a separate page for general reference. The Delegates' proposition regarding the District Notes was formally proposed, seconded and duly approved.

Mr. Arthur Watts then submitted several new designs for a Society badge. He explained that owing to our increasing Empire interest it was thought desirable to include in some way the letters "B.E.R.U." and at the same time remove the obsolete letters referring to the old T. & R. Section. Suggestion after suggestion followed, but no uniformity of agreement was reached. Mr. H. Ryan then proposed that the new badge should contain the letters R.S.G.B. and B.E.R.U. in the condenser space and that the letters T. & R. be removed. Mr. J. W. Mathews moved an amendment that the letters T. & R. be included in Mr. Ryan's design. The amendment was lost. (In view of the wide diversity of opinion expressed in this matter, Council have decided to review the whole matter again before finally agreeing to strike a new badge.—J.C.).

The question of removing the letters T. & R. from all correspondence except the BULLETIN, was discussed, and after several contributions to the general expression of opinion, it was decided that this should be done. It was explained that the change-over would occur gradually as far as official correspondence, etc., is concerned. Mr. Watts suggested that members' correspondence paper should have two hemispheres linked by the letters B.E.R.U. substituted in place of the present T. & R. designation.

Mr. Watts then outlined his plans for extending the work of the Empire Link stations and asked for the formal approval of some 16 stations who will form the British end of the Link system. This approval was given. He mentioned certain general rules which he considered as being necessary. These and other particulars will be detailed in the BULLETIN as soon as final arrangements have been made for the co-operation of B.E.R.U. stations.

The Hon. Secretary read a letter from the New Zealand Transmitters' Association, in which they suggested the inauguration of an Empire Radio Day. It was considered desirable that in order to allow a maximum number of members to take part in this scheme, it would be preferable to allow a period of one week. It was therefore proposed by Mr. Shrimpton (ZL4AO) and seconded by Mr. Drudge-Coates, that an "Empire Radio Week be inaugurated and that this be held during the period 0000 G.M.T. Sunday, February 22 to 2400 Saturday, February 28." This proposition was unanimously carried and it was agreed that the Publicity Section should prepare a detailed plan for circulation amongst Colonial members.

Other minor matters were discussed under "Other Business," the meeting finally closing for tea at 4.30 p.m.

THE DINNER.

Two surprises greeted the 116 members and guests who attended the Annual Dinner at Pinoli's. First, the arrival (by seaplane from Jersey) of Miss Dunn (G6YL), and secondly, the special item introduced by the Hon. Secretary. Miss Dunn's arrival just as the dinner commenced was the signal for a very sincere welcome, as this was the first occasion the members, as a body, had been given

the opportunity of meeting our only active lady transmitter.

Later in the evening she was presented with the "1930 Committee" Cup, which she had won in connection with the recent 1.7 M.C. tests. In a charming little speech, she thanked everyone present, and said that she was very glad to meet so many of her radio friends in person.

The Hon. Secretary, with the President's permission, proceeded to give an explanation of the large array of radio apparatus on a table set apart for the purpose. He mentioned that through the extreme kindness of a number of well-known radio manufacturers he had been presented with upwards of 25 gifts which he proposed to raffle amongst the members present. The following is a complete list of the firms who responded to his invitation:

M.L. Converter, Ltd.
Mullards;
Edison Bell;
Pertrix;
Ever-Ready;
Claude Lyons;
Wingrove & Rogers;
Wilkins & Wright;
Redfern's;
Benjamin Electric Co.;
Varleys;
Lectro Linx;
Quartz Crystal Co.;
Cossors;
Dubiliers;
T.C.C.;
Strattons;
B. & J. Wireless;
Chester Bros.;
Belling & Lee;
Burne-Jones;
Exide.

Considerable excitement prevailed during the drawing for the prizes. It was pleasing to note that our B.E.R.U. members succeeded in "pulling off" some of the highest valued prizes, whilst the provincial members collected a goodly proportion of the gifts.

In concluding the presentations, the Hon. Secretary intimated that he proposed sending a letter of

appreciation to all who had assisted him in providing the unique surprise, a decision which was received with applause.

The toasts of the evening were rendered by the following gentlemen:

"The Society at Home," proposed by Mr. Drudge-Coates; response by Mr. John Clarricoats.

"The Society Overseas," proposed by Mr. Arthur Watts; responses by Mr. Le Cheminant, and Mr. H. N. Shrimpton.

"Our Guests," proposed by Mr. Harold Old; response by Mr. Gibbs (*Daily Mail*).

"The Chairman," proposed by Mr. H. Bevan Swift.

During Mr. Swift's toast, he presented a large batch of QSL cards to Mr. Marcuse. Upon each card was written the words "Thank you," and were intended to mark our appreciation for the work carried out by our President on behalf of the Society.

The musical programme was in the capable hands of Mr. Clemence Bradley, who was assisted by Miss Betty Wood, and Messrs. James, Leslie and Hoskins.

Before concluding the dinner, Mr. H. Bevan Swift proposed a toast to the Honorary Secretary, who responded and thanked everyone for their support.

The record of this Convention will not be complete unless a word of thanks is accorded to those who carried out Exhibition stand duty during Friday and Saturday, thus depriving

themselves of part of the Convention meetings.

Especial thanks are due to Mr. H. V. Wilkins and Mr. S. Cutler, who gave up their holiday in order to attend at Olympia during the week, whilst Messrs. Ostermeyer, Gay, G. W. Thomas and Page carried on during the Convention itself.

Dear OMs,

The Convention is now over and I am sure one and all would like me to voice our thanks to our Hon. Secretary, Mr. J. Clarricoats, and to all those who contributed so generously to such a successful event. The Dinner was a great success, and our Hon. Secretary provided an unexpected thrill by way of his draw, and many Members went home heavier but more delighted.

Personally, I think, however, that the greatest thrill was the attendance at the dinner of G6YL; this was an unexpected pleasure, and I am sure we were all glad to see her.

I should like to take this opportunity of thanking all those Members who so kindly sent me their QSL cards showing their appreciation for the small efforts I have made on their behalf. I must ask them to accept my thanks, as the cards are too numerous for me to acknowledge personally.

The motto of the R.S.G.B. must always be PROGRESS, and with this object in view I am anxious to institute a birthday party on the 80-metre waveband. This will commence on Saturday, November 1, and, provided I can obtain the necessary official sanction, I hope we shall be able to continue during the whole of November each evening from 8 o'clock onwards. I do not propose any definite schedules, and I want each member who is interested and enthusiastic enough to join in to send me his name and address, so that a record can be kept; it is my intention to offer a prize, and I hope one or two other prizes will be forthcoming for this birthday party. I want articles of not more than 200 words sent in, giving power, nature of apparatus and aerial used, describing each individual member's experience during the month's transmissions, and on this I propose to award a prize in the shape of some apparatus which is most useful to the winner. The other prizes which I am endeavouring to obtain will be announced later.

Wishing you all good luck,

*Yours sincerely,
GERALD MARCUSE.*

Strays.

GI200 has recently closed down, as Capt. Wilmot sails this month for Nigeria, where he hopes to open up with the call FN2C. Skeds with G stations on 7 M or 14 M.C. will be welcome.

G2KB will greatly appreciate reports on his transmissions on the 7 M.C. band.

BRS309 suggests that the map shown in the February BULLETIN (for the purpose of W.B.E. certificates) would be useful if mounted and hung on the wall of the shack, the British Dominions, Protectorates, etc., being outlined in red with a fine pen.

We understand that VP3SR, Mr. R. A. Hill, P.O. Box 122, Salisbury, is active on 28 M.C., and hopes to make early QSO'S with Great Britain.

Some Points in Favour of the M.O.P.A.

By C. G. PHILLIPS (G5PJ).

SOME time ago it was decided that the T.P.T.G. transmitter which had supplied the needs of G5PJ for the first year on the air, was inadequate and that an improvement was necessary.

The following points were required of the new transmitter:—

- (1) Constant frequency.
- (2) Pure D.C. note when required.
- (3) "Break-in" working possible.
- (4) High power provided for.
- (5) Anode current limited to about 100 ma.

The matter finally resolved itself into a choice between crystal control and the M.O.P.A. circuit. Crystal control, though desirable from the point of view of stability and purity of note, was ruled out on account of (3), as very elaborate arrangements would be necessary to make break-in possible. Crystal control was undesirable on account of the extra milliamps required for the frequency doublers.

The alternative, the M.O.P.A., seemed to fulfil all the conditions, so a M.O.P.A. was built accordingly and, after the usual preliminary jugglings, was persuaded to give a very fine performance.

On the 7 M.C. band, the note is usually reported as T9, and it is possible to touch the aerial (with rather painful results) without altering the frequency. Keying is by relay between the filament centre taps and the H.T. negative, and it is thus possible to listen through the spaces, a separate receiving aerial being used. Further, a slight change of frequency can immediately be made, and is therefore preferable to C.C., which necessitates a change of crystal. Signal strength is very good all over Europe, and is definitely better than for-

merly obtained with the same input to the T.P.T.G. as now used to the P.A., being reported R7 by SU8WY, and R6 by VOQH in Greenland.

The first day's testing on 14 M.C. raised VS3AB and CE3CR, conditions not being very good. The note on 14 M.C. is not quite as pure as on 7 M.C., but can be made T8 at will.

At present both M.O. and P.A. circuits are tuned to the same frequency, thus saving the expense of two extra valves for frequency doubling, using C.C. on 14 M.C., but a single frequency doubler would perhaps improve the note slightly on 14 M.C.

The amount of ripple in the note can be very accurately controlled by adjusting the P.A. neutralising condenser, a change of about five degrees from the exactly neutralised setting giving a very pleasant note to copy.

Arrangements for higher powers can easily be made by introducing an intermediate P.A. stage, but for all amateur purposes a single stage is ample. Grid bias arrangements are very simple, a leak from the grid of the amplifier being taken to filament centre tap. This seems perfectly satisfactory in practice, giving a very small no load feed.

Nowadays, when C.C. seems so popular, it appears that few people use the M.O.P.A., but it is certainly much simpler, less costly to rig up, and, in my opinion, gives a much better signal than the average woolly C.C. transmission, with its eternal spacer. The output from the M.O.P.A. is very satisfactory, and if a high capacity tank be used in the oscillator stage, the stability compares very favourably with that obtained from a quartz oscillator.

In conclusion, I should advise anyone intending to try something more ambitious than a self-excited transmitter to try the M.O.P.A., as very little more apparatus is required than for a simple T.P.T.G. set.

Australian Short-Wave Conditions.

By W. G. SONES (Publicity Officer, W.I.A.).

Poor receiving conditions continued to hold out in Australia during July through which comparatively few international stations could be heard. This month in mid-winter in the Southern hemisphere, and even on good receiving days, foreign signals do not seem to get through except accompanied by a high noise level. The theory propounded by the Federal Technical Director, Mr. M. Howden (VK3BQ), for this phenomenon is that during our winter the Northern hemisphere stations are experiencing summer conditions and that there are fewer of them at work. In addition, what stations we hear are affected by static and other summer interference, to which is added any local interference from power leaks, etc., which may be caused by our wintry conditions.

In spite of the poor conditions the men working on 28 M.C. continue to get results and the number of stations using crystal control at this frequency is growing weekly. Several of them are employing telephone modulation occasionally.

The majority of the Divisions of the W.I.A. have lately held annual meetings, election of office-bearers and the finalising of accounts for the year. All reports show an excellent year of service in the interests of the amateur game, increased member-

ship and continued enthusiasm. Full reports are not yet to hand from Divisions other than Western Australia and Victoria, but as the remainder come along interesting extracts should be available for the information of foreign friends.

Western Australian Division reports a membership of 139 with an average attendance of 50 members at each meeting (many have to travel considerable distances to be in attendance because of the scattered nature of the membership), 24 of which were held during the twelve months under review.

Other interesting notes from the report are, the obtaining of a permanent headquarters for VK6WI, the official station. Educational activity through local broadcasting stations for assisting and gaining the interest of B.C.L. listeners; operating and Morse classes for beginners; field days; social activities and excursions to places of interest such as radio stations, power houses and telegraph stations, etc.; the equipment of a comprehensive library, and a successful amateur exhibition held during the year.

Victorian Division report is very similar. The total membership is 166 and new members are enrolled at each meeting. During the year the Division has been able to install a reference library of text-books for the use of members; a lending

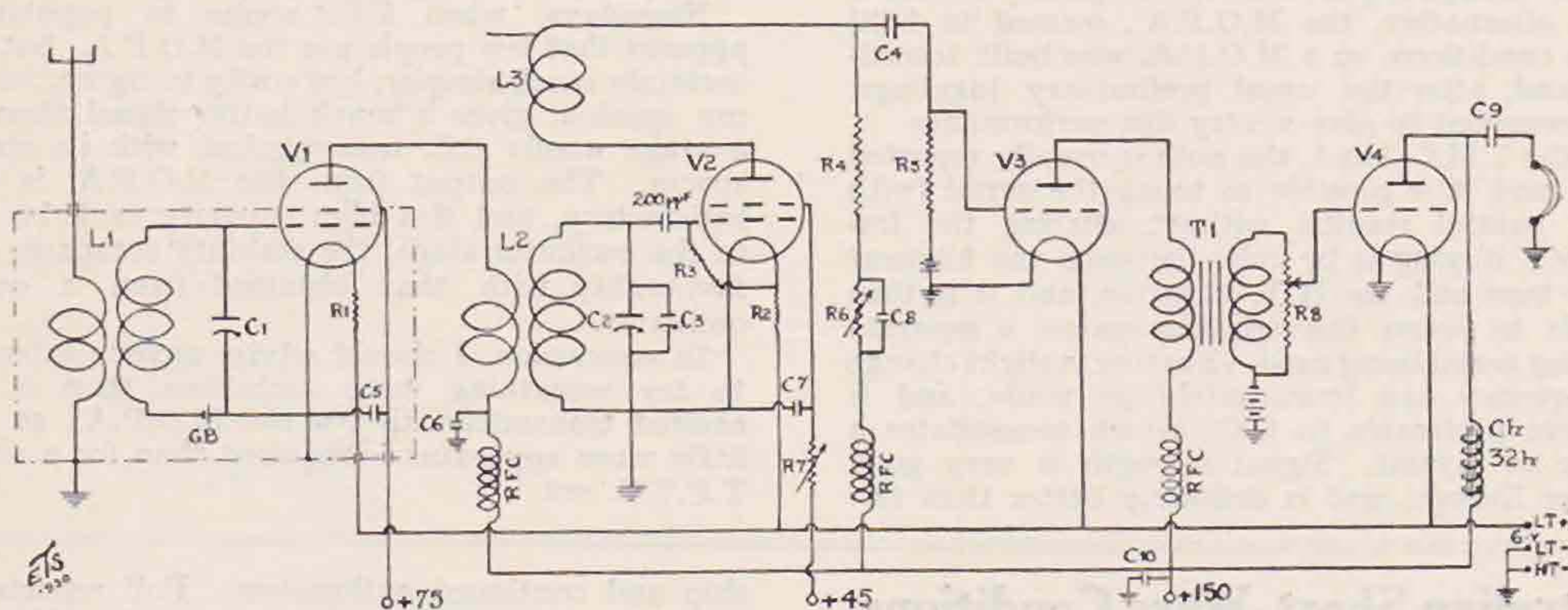
(Continued on page 102.)

A Modern Battery Operated Receiver.

By E. T. SOMERSET (G2DT). A.M.I.R.E.

NEARLY a year ago G6PA was kind enough to collaborate with me in trying out the screen-grid valve as a detector, and the receiver about to be described is the outcome of our combined efforts. The use of this valve is, of course, not confined to radio frequency amplification, but it must be remembered that the voltage amplification depends almost entirely upon the load impedance, hence the over-all frequency characteristic of valve and load is very different from what would be obtained with the triode having low anode resistance. One way of explaining this difference between the screen-grid valve and the ordinary triode is to say that in the triode valve circuit, where the load impedance is usually higher than the anode resistance, the current through the load is determined more by the load

of the resistance already in the anode supply I should have imagined that resistance control of regeneration would not be successful, but this is not the case. Should this variable resistance prove to be noisy it can generally be silenced by shunting 2.0 mfd. across it, but should this not effect a cure, try shunting 4.0 mfd., when all noisiness will disappear entirely. It will be observed that a variable resistance (R7) is placed in the screening grid lead, and the reason for this is that the applied voltage to the screening grid is extremely critical between 25 and 40 volts, according to wave-length and the specimen of valve used. The correct value of this voltage determines the delightfulness or otherwise of the receiver. When correct it will be found that oscillation begins so quietly that it is quite difficult to hear, and the advantage of a 0 to



G2DT RECEIVER.

impedance than by the anode resistance. In the screen-grid valve the anode resistance is almost invariably higher than the load impedance, and the current is determined mostly by the anode resistance instead of the load impedance. The maximum output from the screen-grid valve used as a detector is obtained when the load resistance is equal to the anode resistance of the valve; hence, when properly employed, it appeared to us to possess decided advantages over the triode due to its large amplification factor and low grid-filament capacity. I have just said that the maximum output is obtained when the load resistance is equal to the anode resistance: this is hardly possible to attain, as I presume that in the circuit shown the anode resistance is in the neighbourhood of 1.0 megohm, therefore to get maximum output the anode circuit coupling resistance should be equal to that value, but such a high resistance is impracticable owing to the enormous voltage drop that would ensue. As a compromise I have found that the best value for this resistance (R4) is 0.1 megohm, but G6PA says that he prefers 0.025 megohm, in spite of the drop in amplification entailed by its use. Because

1.5 milliammeter in the anode lead is quite obvious. It may be found that, in spite of such a control, the detector shows signs of a fringe howl or the reaction control has a hang-over; in such a case the inclusion of a 400-ohm potentiometer will cure the trouble. I have not found this necessary, but G6PA has, in spite of us both using the same make of valve, so, in view of this, it may be advantageous to incorporate the potentiometer when making up such a receiver. It is well worth while using a wire-wound resistance at R4, as the vacuum type may show "jumpiness" of control at R6.

Transformer coupling has been used, and I have not experienced any pull when the R.F. stage is brought into tune, such as I did when using auto coupling. A ratio of 4:6 for primary and secondary windings proves extremely satisfactory, but I should here mention that my windings are of 27/42 D.S.C. Litzendraht, whereas G6PA used ordinary wire and found a higher ratio worked better. (Perhaps someone will kindly explain the theory of this?) Both G6PA and the writer have found a complete dead spot where reaction cannot be obtained: in the former's case at 180 metres

and in the latter's at 25 metres, but neither of us have, as yet, tracked down the trouble. The six-pin former used for L1, L2 and L3 is an R.E.L. skeleton of 1½-in. mean diameter, but I have persuaded a British firm (H. & B. Radio Co.) to manufacture such a former, but of somewhat better design. Unfortunately, these are not yet available at the time of writing, so I can only give winding data for the R.E.L. formers, in spite of my frenzied requests for same, so that I can work out the correct data for their products.

The magnification given by this receiver is astounding, and it may be wondered why a transformer-coupled audio stage has been included. The only answer to be given is that it is extremely useful on very weak signals, as the signal to noise level of this type of receiver can be given full marks. I have tried using a screen-grid valve as audio amplifier, and, whilst finding it to be extremely satisfactory, I really do not think such a step is really warranted. If any reader would care to try it he will find that a variable resistance inserted in series with the grid bias battery supplying this valve will make a most excellent volume control. I have tried using the screen-grid valve as a space-charge detector, but do not find it worth while. Should any reader be the user of 2-volt valves exclusively, then resistances R1, R2 are, of course, unnecessary. In conclusion, G6PA and the writer have said "Good-bye" to triodes as detectors, so what further recommendation can we give this receiver?

Chair Warmers' Club.

By A. M. HOUSTON FERGUS (G2ZC).

A club, known as the Chair Warmers' Club, has been formed among hams, the members of which are all crippled, or are otherwise physically disabled, with the object of bringing radio to those whose activities are restricted.

The club originated in the United States, but a British Section has been formed, and up to date six members of the R.S.G.B. have been elected, and the object of this short article is to bring to the attention of the members of the R.S.G.B. the fact that such a club exists, with the hope that it may bring in still further membership to the C.W.C. of British hams who may be eligible, yet who do not know of the existence of the club. A small magazine is issued every month, very much like a miniature of the T. & R. BULLETIN, in which news of the doings of members is recorded, as well as small items of lighter reading.

The subscription is the modest one of a dollar (4s. 2d.) a year, and membership is divided into "Seniors," who own transmitting licences, and "Juniors," who might be termed our B.R.S. members.

The American Section is affiliated to the A.R.R.L., but the hope is to form a world-wide club of those who, being unable to enjoy the activity of the majority of hams, may yet be able to get into communication with each other and draw an amount of pleasure and happiness out of radio.

The British Section is a newly-formed one, and we want all the members we can get, so will any British ham, who is either eligible himself or knows

(Continued on page 115.)

Report of the Monmouthshire "Hamfest," September 11, 1930.

The above "Hamfest" was first thought of when G6FO made a station visit to G2HH, and G6FO kindly offered to see to the social arrangements, which undoubtedly could not have been better.

The "Hamfest" was held at G6FO's station in Newport and the following were present:—

G-6fo, 6pf, 5tj, 2pa, 2bg, 2qi, 5fj, 2hh, 2awt, 2awx; BRS—355, 239, 237, 359, Mr. Ted Williams, better known to the gang as T. W., and Mr. Jackson, brother of G5FJ. Messages were received from the following regretting their inability to attend: 6mt, 6zr, 2ip, and 5as.

The meeting started at 7.30 p.m., and after a rag-chew in G6FO's shack a photograph was taken on the lawn. 6FO then took the party in groups to explain the *modus operandi* of his station, which was voted a real "Ham" station. After "eats" we got down to business with 2HH (as Manager for Monmouthshire) in the chair. Appreciation was voiced by all for the splendid way in which G6FO had entertained us.

It was the opinion of all present that as there was such an excellent number of enthusiastic members of the R.S.G.B. in Monmouthshire that we should keep together more than in the past, and in order to carry this out G2QI proposed that we form a society. This proposition was seconded by G2BG and carried. 6FO proposed that the name of the society be "The Monmouthshire Transmitters' Society." This was seconded by G2PA and carried.

The objects of the Society were to be:—

To keep the R.S.G.B. members of Monmouthshire together.

To further the work of the R.S.G.B. in this district.

To hold monthly meetings on the Thursday following the publication of the BULLETIN, when current topics in the BULLETIN would be discussed and a paper be read by one of the members. These meetings to be held alternately at Newport, Ebbw Vale, and Abertillery. The next meeting to be at Ebbw Vale in October.

Membership of the M.T.S. to be confined to members of the R.S.G.B., and any members of the R.S.G.B. not living in Monmouthshire who wish to join.

It was proposed and seconded that a committee be formed from members living in the three main towns concerned, and the following were appointed: G6FO, (Chairman); G2HH, (Secretary); G5TJ, G2QI, and G2BG.

G6FO then took the chair for the night.

Any announcements for the members of the Society will be transmitted on the 2 M.C. band on the Sunday morning prior to the monthly meeting, at 11.30, from the following stations:—

Newport	...	G2QI.
Merthyr	...	G5TJ.
Abertillery	...	G2BG.
Ebbw Vale	...	G2HH.

Minor details for the working of the Society were then dealt with and everything points to the M.T.S. prospering.

(Continued on page 97.)

Adapting the L.F. Amplifier to the Job.

G6OT.

IT is surprising how few amateurs give any serious attention to the design of the low-frequency amplifiers in the receivers which they use for the reception of amateur stations. Any conglomeration of valves, transformers, resistances, etc., which can be made to magnify one or two odd frequencies in the audio-scale is generally considered sufficient. It is the object of this little article to show how the design of the low-frequency end of the set should be modified for the particular job in hand.

There are three main classes of sets to be considered:—

- (a) Receivers for high-quality speech and music.
- (b) Receivers for general speech reception in which articulation and intelligibility are the sole requirements.
- (c) Receivers designed for morse reception.

In class (a) the general requirements as regards audio-frequency response are constancy of output at all frequencies, for a constant transmitter modulation, between extreme frequencies of, say, 30-7,000 cycles per second. Class (b) demands similar conditions, except that the range necessary is now only about 300-2,500 cycles; the frequencies outside this range can very advantageously be eliminated.

Both of these types require very considerable, although interesting, discussion to be anywhere near comprehensive, and hence only class (c) will be dealt with at the moment.

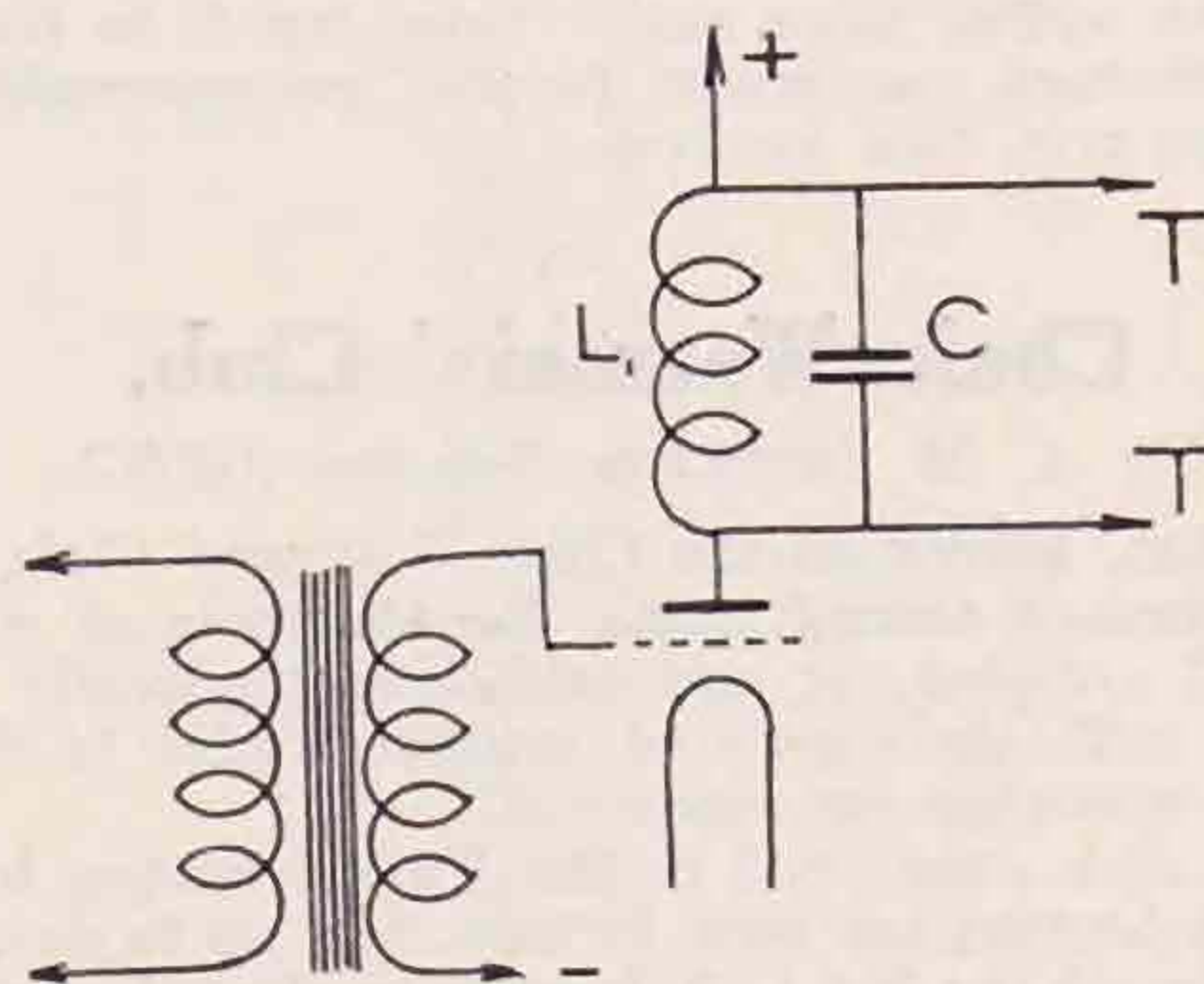
I shall assume that we require to receive signals of the type generally described as pure or nearly pure "D.C." and "crystal-controlled" signals; that is, the type of signal which when rectified and heterodyned gives a note consisting of a single predominating frequency which can be controlled by the heterodyning arrangements in the set. For maximum ratio of signal to interference it is required to remove all frequencies in the audio-output, except that of the heterodyned signal. To do this a system known as tuned note magnification has been in use for some years. There are several methods of obtaining the above conditions, more or less complicated.

The usual and obvious thing to do is to include a tuned circuit somewhere in the amplifier. This is commonly done in the low-frequency coupling transformer. Now an L.F. transformer usually has two resonances. There is a capacity across its secondary terminals consisting of two capacities effectively in parallel. One of these is the ordinary self-capacity of the winding and the other is that capacity which appears across the grid and filament terminals of a valve due to the inter-electrode capacity and the anode load, generally known as the "Miller" effect. The total capacity so formed resonates firstly with the main secondary inductance, producing a very flat resonance round about the 300-cycle region. There is, however, always a leakage inductance in a transformer, as made in practice, with which the capacity mentioned above also resonates. This inductance, however, must necessarily be smaller than the main inductance, and hence this resonance is at a higher frequency,

generally in the order of 3,000-9,000 cycles, depending upon the particular constants of the transformer. The nature of the capacity to inductance ratio and the damping present are such as to cause this resonance to be sharper than the first resonance.

By artificially increasing the capacity by adding a condenser across either primary or secondary this resonance may be reduced to the neighbourhood of 1,000 cycles. The ear is more sensitive in this region, and by careful adjustment the peak can be made to coincide with a resonance of the telephones.

In this manner we can cause frequencies of a given value to be reproduced more efficiently than any others. By heterodyning the signal to this frequency the ratio of signal to interference can be increased. The gain to be obtained in this simple manner is, however, not very great. It must be remembered that very considerable gain in actual electrical power must be obtained to be apparent by ear. Even a two to one increase is not very strikingly louder. Some other method of L.F. selection was therefore sought.



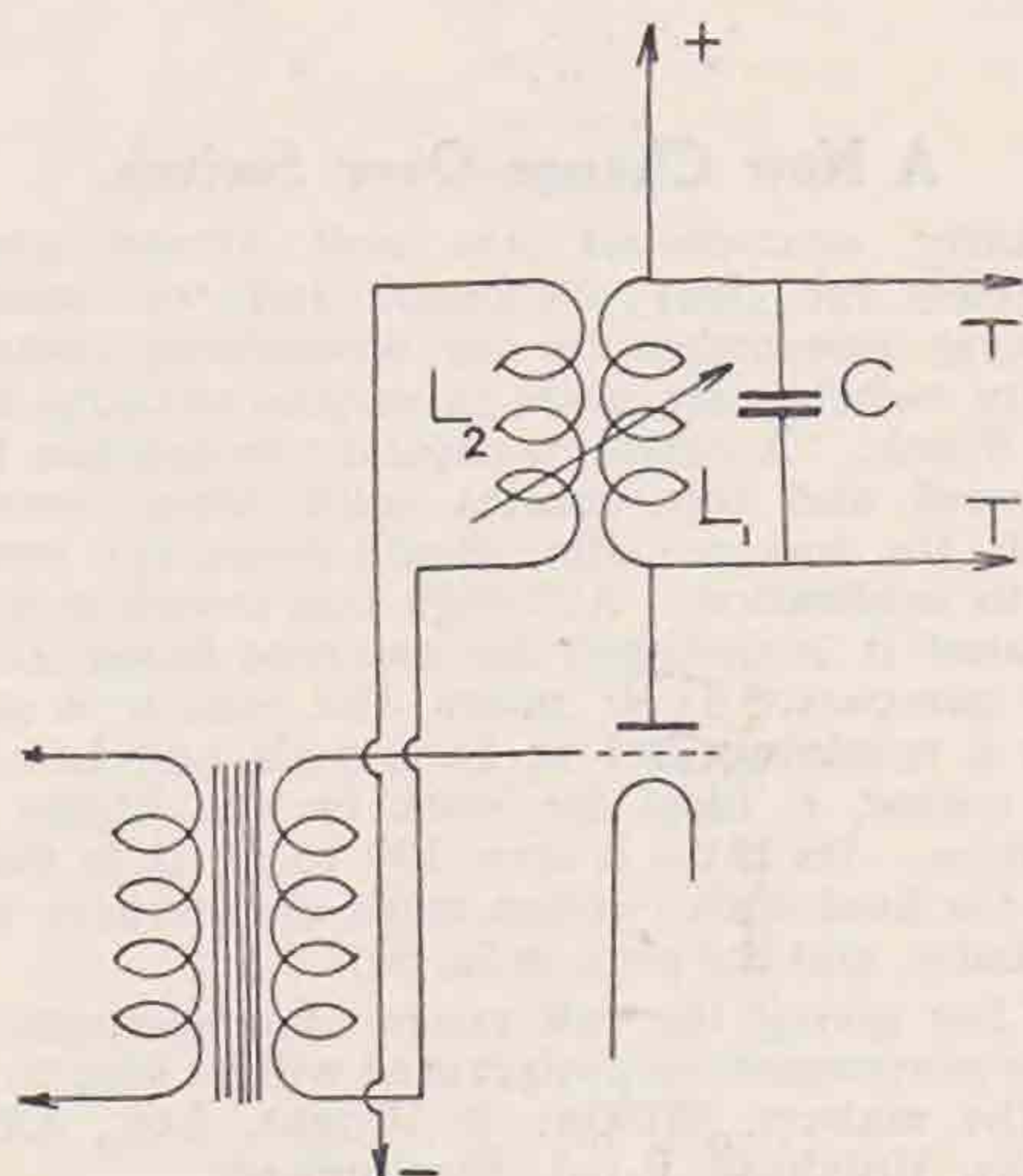
The next obvious method is to put a condenser and inductance in parallel with the telephones as shown in Fig. 1. The impedance of this combination is high at its resonant frequency, and the audio-output flows through the telephones unhampered. At lower frequencies, however, the inductance has a low reactance and shunts the 'phones. At high frequencies the condenser reactance falls and again reduces the current in the telephones. The efficacy of the arrangement depends upon producing an efficient resonant circuit so that the impedance is high enough at resonance to cause no shunting, falling very rapidly indeed on each side of resonance. Now the production of a coil of sufficiently low resistance and yet enough inductance is difficult without resource to special coils beyond the amateur's resources.

A kind and sympathetic friend produced a very simple scheme, however, which is illustrated in Fig. 2, in which reaction of the second valve is utilised to reduce the effective resistance of the coil L. To do this another coil L_2 is put in series with the secondary of the L.F. coupling trans-

former. The condenser C is arranged to resonate L_1 to some convenient value; about 700 cycles per second are favoured by the writer. The two coils are arranged with some convenient coupling device.

If the receiver is made to heterodyne a continuous carrier, the pitch being varied slowly, a frequency will be found where the signal is louder than at any other frequency. A general "deadness" of the set will be apparent since on most frequencies in the audio spectrum practically no energy is being delivered to the telephones.

At the resonant frequency of L_1 and C , however, normal strength is obtained. Very little practice enables the signal to be brought to this pitch. By increasing the coupling between L and L_2 the sharpness of the arrangement will be increased. When the coupling is very tight the output valve will probably oscillate. (This gives the pitch of the resonant frequency with good approximation.) The coupling should be so arranged that the valve is not oscillating, but would do so with a very slightly increased coupling. Care should be taken not to go so near to the oscillating condition that a very loud signal will send it into oscillation.



A peculiar effect will now make itself apparent. Any atmospherics arriving will have the pitch of the resonant frequency of L_1 and C . It may thus seem that no advantage has been gained from the point of view of reducing the interference from the static and mush etc. This, however, is not so for the following reasons. All interference such as "mush" and atmospherics have their energy distributed throughout the frequency spectrum. That is to say, that when such a "signal" reaches the receiver the telephones are actuated by very many frequencies at once. If the set and 'phones responded perfectly, every conceivable frequency would be present. Now let us suppose that we have a good amplifier and a good pair of 'phones. We get the static coming through on all frequencies between, say, 50 and 5,000 cycles. We are also trying to read a 700-cycle C.W. note through it. Now suppose we use some such device as that described above. If the resonance is arranged at

700 cycles the received signal will not be altered in strength at all. The 700-cycle portion of the static will also remain unaltered, but all the energy belonging to the latter at other frequencies will be unable to excite the telephones to any appreciable extent. The result will be two-fold. Firstly, the static will have the peculiar appearance of being of a definite musical pitch (i.e., 700 cycles), and secondly, the total energy received from static will be considerably reduced. Since the effect on the signal energy has been negligible, the ratio of signal strength to interference has been considerably increased.

Now the above arrangement has several disadvantages. In the first place it requires adjustment with every change of valve, and also requires a certain amount of modification to the standard arrangement of the receiver. Secondly, in order to make the signal selection at all appreciable the resonant circuit must be made very sharp. The difficulty which then arises is that, if the pitch of the signal shifts, either due to a change in transmitter frequency or to a change in the heterodyne frequency, the signal strength will fall off very considerably and cause accurate copying to be very difficult. Against these disadvantages must be set the simplicity and cheapness of the device. It occurred to the writer that something might be done by tuning L_2 to the same frequency as L_1 and C by the aid of another condenser and arrange the coupling to be such that a "double hump" occurred. This would be suitably damped by the telephone load and an approximation to a band-pass filter so arrived at. It is doubtful whether the reaction conditions could be arranged properly, however, and the adjustment of such a circuit would undoubtedly be somewhat tricky. It would be interesting to try, however, and I should be glad to hear from anyone who had any luck with this arrangement.

The most satisfactory way to get the required amplifier characteristic for morse reception is undoubtedly by the use of true band-pass filters in the low-frequency end of the set. The Editor's scissors are already heaving in sight, however, so that we shall have to leave the subject of filters for some future occasion. In any case it would seem advisable for anyone who intends to follow the general ideas indicated for receiving C.W. to try out the schemes described above as a preliminary to further and more elaborate arrangements.

Monmouthshire "Hamfest"—(Cont. from page 95).

Business over the meeting split up into groups, discussing all those interesting things that amateur transmitters and those interested in radio can always find to talk about.

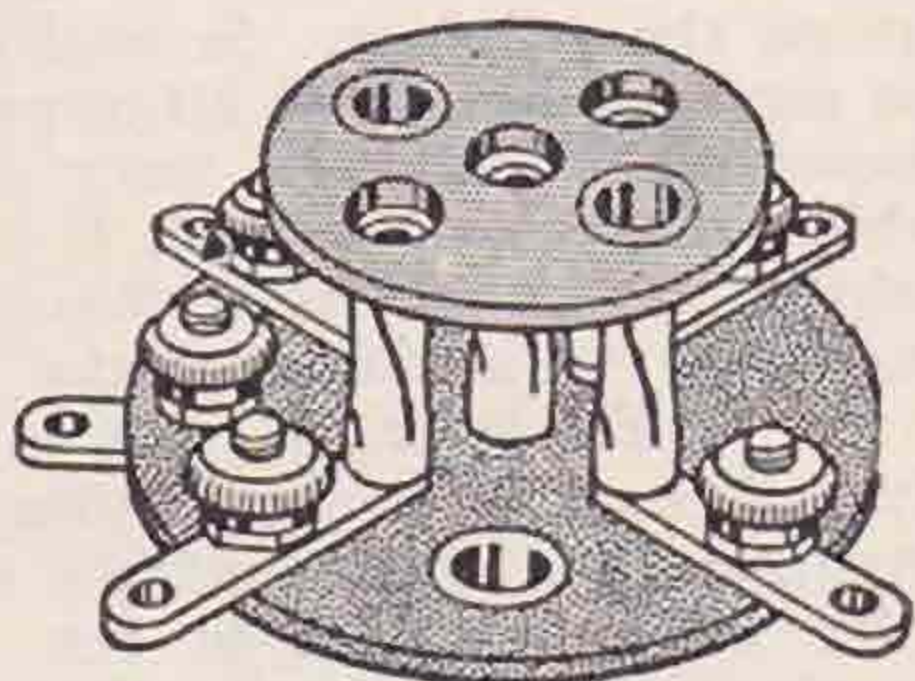
The meeting broke up about 23.00 and we went our several ways.

There are possibly some members of the R.S.G.B. living in Monmouthshire or the surrounding districts who would like to join with us, so if you do, please drop a card to G2HH, Hon. Secretary of the Monmouthshire Transmitters' Society, Ebbw Vale, Mon., and you will have full details.

Trade Notices.

A New Valve Holder.

WE have recently had the opportunity of testing a new valve holder made by Lectro Linx, Ltd. Taking everything into consideration, we have no hesitation in saying that for the short wave receiver it is the best on the market. It is as nearly air supported as possible and the base is made of thin paxolin of good quality, the insulation between plate and grid sockets being further ensured by a semi-circular slot being in the base near the sockets. It is of the rigid type, no



springing being provided. An excellent feature of the holder is to be found in the new CLIX slotted sockets, thereby giving a positive contact to either split or solid valve pins; further, the diagonal slots in the sockets constitute a sharp cutting edge which will effectively remove any oxidised coating from the pins. It is of the five-pin type, and a small paxolin disc, fixed to the top of the filament pins *only*, will prevent a valve being put in the wrong way. The price is only 10d. (8d. without screw terminals).

* * *

Transmitting Grid Leaks.

Messrs. Burne-Jones, Ltd., are now making a very useful volume control which incorporates a rocking disc pressed into contact with the resistance element by a rotary arm. With this movement there is no wear and consequent variation in value of the resistance. It is totally enclosed and fitted with a Bakelite knob. Two values are supplied—.5 and 2 megohms, price 7s. 6d. A wire-wound potentiometer is also made with the same movement, 5,000, 10,000, and 25,000 ohms to carry 10 m.a., and 50,000 ohms to carry 5 m.a. at the same price as the volume control. Both these components are one-hole fixing and may be fitted to a metal panel without bushing.

Where a cheap resistance is required this firm turns out a novelty called the "Spaghetti Wire-Wound Anode Resistance." These are encased in short lengths of insulating material and the ends of the wire are connected to tags. They are made in the following values: 1,000 to 40,000 ohms to carry 10 m.a., 50,000 ohms to carry 5 m.a., price 1s. 6d. On test these resistances were found to function well when passing 20 m.a.'s. and a certain amount of R.F. energy was also allowed to enter: the casing became warm though no harm resulted. A cheap grid leak, surely!

Eliminators.

Those who are tired of high tension battery troubles will be interested to hear that we have tried out an Ekco H.T. eliminator No. 1V20 A.C. This unit has tapings for S.G., 0-120 volts variable, and 120/150 volts, and gives a maximum current of 20 milliamps. It was tested on a S.G. Detector and 1 L.F. receiver, using battery-heated valves, and the hum was hardly noticeable with phones, provided that the detector voltage was kept reasonably low. Half-wave dry rectification is the method employed, and the resulting 50 cycle note is low enough not to interfere with the audibility of the more common audio-frequencies. The Ekco range of apparatus includes several different types of eliminators for L.T. and H.T. suitable for both D.C. and A.C. mains. The cost of the model tested is £4 12s. 6d. A postcard to the makers, E. K. Cole, Ltd., Ekco Works, Southend-on-Sea, will bring a catalogue of all types.

* * *

A New Change-Over Switch.

Utility components are well known among amateurs for their excellence and we welcome them as newcomers to our advertising columns. Utility switches are made in various patterns from 1 to 6 pole. A new anti-capacity switch has been produced and incorporates solid silver contacts which, the makers claim, should avoid any trouble due to oxidation. Although this switch is lever-operated it is designed for one-hole fixing and is very compact. Their micro dial, which is made with a revolving dial or fixed scale and hair line and cursor, is ideal for work on the higher frequencies. Its ratio is now 100 to 1; it is silent; and the final scale pattern reads clockwise or anti-clockwise, and the price is 7s. 6d.

A list giving the full range of condensers and other components manufactured will be sent to you by the makers, Wilkins & Wright, Ltd., Utility Works, Holyhead Road, Birmingham.

* * *

Mullard Valves.

We have just received two booklets for review from the Mullard Wireless Service Co., Ltd. No. G1 is devoted to a description of the two-volt valves manufactured by the company, while No. G2 gives full details of the A.C. mains valves and rectifiers. Both these booklets give a clear description of the valves therein, and should prove of considerable use to members.

* * *

It is natural that our advertisers like to know that they are getting value for money when they advertise with us. You can help them to realise that they are, if you mention the BULLETIN whenever you write. If you have any difficulty in obtaining advertisers' goods write to them or us, and it will be put right with all possible speed.

Contact Bureau Notes.

By H. J. POWDITCH (G5VL).

I SCARCELY know what to say this month. There are quite a lot of odd items, but nothing of great moment. Perhaps a growl at the Post Office will do for a start. Out of about 120 circulars to various CB members (asking their wishes regarding work for this winter) only about 40 replies have got through to me. So, it must be that the remainder have been lost in transit.

The circular referred to has, however, brought in details of one or two stations who want work. G6RB would like to see another 3.5 M.C. group; you will have seen his letter in a recent "BULL." Three stations would form a nucleus for another skip and fading group; two stations are keen on aerial development and investigation; one each on C.C. and 2 M.C. work, and so on.

G6WT would like data from anyone using super-het. for high frequencies.

Especially, I would ask anyone who will do so to take on the skip and aerial work to complete groups for these subjects. The points for 3.5 M.C. have already been put forward strongly by G6RB.

Another suggestion is to deal with BCL interference elimination. I would like to have details of the methods found best and publish any such schemes so that the method most applicable could be tried by anyone troubled in this way. Will you send in your pet idea?

This month we start what appears to be one of

the best sections of CB yet formed. G6FY is taking each month from foreign ham magazines a selection of the contents and publishing a summary of these. I would draw attention to the request for linguistic assistance at the end of his article.

Via G6YL comes a request for reports on 26 M.C. sigs. from CN8RUX, Casablanca, who works on Thursdays and Saturdays on the band.

I mentioned a report of 28 M.C. signals from YI heard in VK in March on 14 M.C. G5VB puts paid to any further surmises as, after hearing the same strange happenings, he queried the matter with YIILM, and was told that the latter had been "trying the second harmonic of this set against proper 10 metre set"—"this set" being the 14 M.C. one.

The first batch of hints on 28 M.C. receivers from group members is contained in Group 1B's report. I hope it will be of use to all. In any case tks vy, 1B for your information.

These notes are written a few days earlier than usual, in view of Convention, and the writer's hope to get there. If any late material gets left out, the reason is above.

January, 1931. 28 M.C. Tests.

Group Reports.

28 M.C. Work.

Group 1B.—Reports on 28 M.C. receivers. G6LL uses D. and 2 RC. coupled L.F. stages. Valves, Mazda AC/HL with AC/P in last stage. He finds A.C. valves definitely superior to directly heated. An air-spaced grid condenser is used with a 5 meg. leak connected to cathode. With AC valves, anode bend rectification is found just as good and with less background. Schnell standard circuit is used with a self-supporting grid coil of six turns, 18 DCC, reaction six turns of 22 DCC, well spaced from grid coil. Condensers are a GEC for grid coil, treble spaced with three plates, and 0001 for reaction. The grid coil *must* be mounted in a different plane from condenser in order to keep up I/C ratio, and spacing is considered more important than short leads. The receiver is shielded to keep out dust, B.C., and car QRM, etc., so far as possible.

Some notes are given also on what constitutes a good 28 M.C. receiver: A S.G. valve before detector as amplification can be obtained and the stage assists in keeping tuning steady in detector circuit. S.G. valve as detector. The Ultraudion circuit is recommended, but valve base coils are *not*. H.F. chokes should be arranged to resonate at about 12 metres. On the L.F. side, two peaked stages using S.G. valves with fairly low HT to reduce background. Peaking, obviously, must not be too sharp, so as to allow for the reception of 50 cycle

AC! Valves recommended are Mullard S4VA or Mazda AC/SG.

G5ML says he uses the receiver on 7, 14 and 28 M.C. It is D. 2LF with Schnell circuit. Trouble with a blind spot in 28 M.C. band was cured by making the receiving aerial 73 ft. long and so throwing it off tune. Coupling to receiver is by a six turn coil. Many valves have been tried, but Osram HL610 seem best. A earthed metal panel is used and H.F. choke is a Bulgin.

BRS250 finds O-V-1 best for elimination of background. He get to 6 metres but finds extension handles for tuning an advantage.

G5LU had bad TH on a new receiver. H.T. accumulators running low were found to be part cause. A different H.F. choke effected a cure for 14 M.C. and 7 M.C., and a change from Mazda L210 to P220 and the fitting of a resistance across primary of first L.F. transformer completed the cure. Aluminium panel is used and extension handles not advised with this. Like G5ML, signal strength is found better when harmonic of aerial is tuned just outside the band. Car QRM causes trouble.

G5SY. The G.C. has used 2-volt valves, because of old charging difficulties which do not now exist. PM1HF, PM4DX and Triotron SD2 have been found quite good detectors. The last named was a fine valve for the job, although the inter-electrode capacity was highest. T.H. is always stopped by a slight increase of grid bias to first LF

Circuit is Schnell with .0001 grid condenser stripped to two moving and three fixed plates and double spaced. Coils and condensers are at back with 7-in. extension handles operated by Ormond 40/1 dials. The two L.F. stages are situated between the handles. The arrangement is recommended as all HF parts are well away, the signals, as it were, coming towards the phones. Room is no greater with the extension handles when this lay-out is used. H.F. chokes are used in phone leads and hand capacity is non-existent. One LF is enough to read any signal worth reading, but two are used owing to outside noise from trains and motors. Grid condenser (blocking) a .0001 McMichael with 5 meg. leak to potentiometer (used full neg.). Aerial is coupled to grid end of coil through a Lissen variable neutralising condenser. Coils 2 ins. diameter, grid six turns of No. 10, self supporting and reaction six turns.

G6WY. A standard Reinartz 2-valve set with HL610 and PT625 (power pentode). The set is the one used for all waves below 100 metres. Grid coil has $2\frac{1}{2}$ turns. No chokes are used and TH non-existent. On an old aerial QSX was experienced with aerial swing as this ran parallel to roof. Aerial at new QRA is clear and QSX cured. All moving vanes are recommended to be at neg. potential and metal panel used.

Group 1F.—G.C. BRS25 has been stirring up his group. G6HP got down the transmitter straight away, but decides to rebuild before starting to "make a big noise—even if he blows up in the attempt." Only 14 M.C. harmonics have been heard during the summer. G2DZ is now engaged on the "ship to shore" phone service in R.M.S. "Majestic." This will mean only one week-end in three available, but a SW receiver on board should give some interesting data during winter. A C.C. transmitter for home use is nearly ready. BRS25 has now got aerial up at new QRA. He finds that 14 M.C. signals from Africa are better, and wonders if W's will be as good as the new aerial is at right angles to old. The same receiver will be used with one condenser plate removed to spread the band and give better L/C ratio.

Group 1H.—G.C. G600 finds that the group is not enthusiastic regarding 28 M.C., and is starting a group at the other end of the spectrum, 2 M.C. He will himself still be on the beam experiments with 28 M.C.

Fading, Blanketing and Blindspotting.

Group 2B.—G2ZC writes as follows:—

The actual budget sent out this month is the largest yet circulated. The group have drawn up a list of headings, and these are to be discussed until each heading has been fully gone into by the group, and the final findings will be submitted to the members of C.B. We shall be glad to receive from them any notes they may have to add, or remarks to make.

The subject under present discussion is the Heavy-side Layer, and this has been sub-divided into six subjects.

In this month's budget, G2ZN gives us some very interesting facts, as well as theory, together with solar charts for the month. CTIBK, as well as a report, sends a Brazilian paper, "Antenna," with a full translation of the article showing the variation of signal strength, the result of experiments carried out by the Telefunken Co. The budget is too long

and too varied to give a sum up in any way representing the views of the members, but it is a healthy sign to note that 2B are now pulling as a team and not as separate individuals. While we may not all hold the same views, the differences make for discussion. If it may be put another way, we are no longer "ghost chasing," and I for one am sufficiently optimistic to feel that the group is at last getting down to rock bottom.

Group 7A.—G.C. G2DT reports:—

G6TW reports that he has received his own 5-metre signals up to 25 miles away—SW operating transmitter. FB SW! He says that in reception an important point is that an aerial *must* be used, even if only one mile away. If a 5-metre aerial is used and the signal is QRK R5, one must not be surprised to find that signal strength has dropped to QRK R1 when the aerial has been disconnected. He goes on to mention that if the aerial is over 5 metres long, and a vernier variable capacity is used, reception is simple with two valves at 20 miles and strength about R5.

G.C. G2DT and G6TW will be running skeds as from October 12, and on every Sunday on a frequency of 58,000-KC P/S between 11.00 and 11.30 G.M.T. and 14.00 and 14.30 G.M.T. The A.R.R.L. and S.A.R.R.L. have been advised, and it is hoped that 1930 will not go out without some DX to report.

G6XN has rebuilt the entire station "with detrimental results." The station is only 20 ft. above sea level, and this has definitely bad results upon 56 M.C. signals. A Colpitts transmitter has been rebuilt. It is found that plate and grid coils must be very tightly coupled and balance adjusted for best efficiency. The blocking condenser does not require to be at earth potential as is usually the case.

Group 7B.—G.C. G2OL writes:—

Nothing very startling has been carried out this month, but it is proposed to carry out at least one field night on the maximum distance and contour line of the ground wave by night. From the one or two reports obtained to date, signal strength seems just a shade weaker by night than by day. G2OW has moved to Marconi's at Chelmsford and will be rather QRL. He has been listening for G2OL each evening, but beyond harmonic of 5SW on 5.1 metres, ND. Harmonic of 5SW at one mile is R7. Incidentally, while on the subject of harmonics, no harmonics of either Brookman's Park station, QRB about 14 miles, are audible here in London. It is scarcely to be expected, but may be worthy of note.

G6CO and G2BY have both been away, and thus no report from the former station. G2BY is building a new "Super" transmitter and about to apply much juice to it, so something ought to move.

G6WN is waiting to get Convention and Olympia over, and then will really get his 50 watts going. He questions the effect of a large expanse of water on 56 M.C. sigs, and thinks the range on sea, of the ground wave, to be about 50 miles. (On ship level, I should rather think it to be somewhere about 35 miles, OM. G.C.)

BRS310 sends in a long and very interesting account. He has also changed his QRA. He says a knowledge of astronomy might be very useful for DX observations and calculations on 56 M.C., comparing it with the frequency of light. In the light of present information, it is almost an accepted

fact, within the group anyhow, that 56 M.C. behaves almost indently in the same way as light, and the behaviour of the sun's rays may be taken as an example of what happens to 56 M.C. He thinks that during the months March to September the sun's rays are almost perpendicular to the earth, and therefore may act as a barrier, but throughout the other months the rays are at an angle to the earth and the sun, being a greater distance away, they may act as reflectors or directors to 56 M.C.

BRS327 bewails the bad conditions on all bands, and thinks that, until they improve, 56 M.C. will be as bad as the rest. (This might bear out BRS310's theory in a way. G.C.). Is going to carry out beam experiments in conjunction with G2OL in the near future. QRB 60 miles, rather far, but hopes are high.

G2OL thinks that nothing short of a very low angle of radiation ever gets reflected at this frequency. Anything higher than about 15° or possibly 20° penetrates the layer, and goes whither? It is not too fantastic to think that it might be Mars or some such planet or star, especially if the light theory holds. He finds that almost any way of coupling the aerial will work after a fashion. From coupling it to foil round the valve to coupling it to foil round the RF choke, all work and give neon indications in the aerial itself.

Group 8A.—G.C. G5RV sends in his first report. He states his group is busy getting in form to retain the "Blank" trophy for a second year. He is holiday making, but intends to get going CC afterwards. Conditions on 7 and 14 M.C. found very bad for QRO and QRP. Zep versus AOG tests are contemplated. G6LF has reached Southern Red Sea with $2\frac{1}{2}$ watts. He sends comparative R values for his signals in various countries using (first figure) 8 watts and (second figure) 2.8 watts. They are: OH, R6/7 and R5. SM, R6 and R4. I, R6 and R5. F, R6 and R4. Greater fading was noticed on low power, but he thinks there should be a greater difference of QRK than is noted. BRS317 seems to have heard DX on 14 M.C. during the bad period. Between 18.00 and 19.30 he logs VU, VQ, VS7, SU, W. From 22.00 on he finds W and all the South American countries good. G2WP has been active on 2 M.C. Three stations on 3 watts in one morning. On higher frequencies, bad conditions have been experienced. He regards 1,000 miles as the limit for 3 watts reliable QRP, and wants skeds to test this.

Group 8B.—G2VV has little to report. BRS309 finds 7 M.C. a little better, but 14 M.C. still bad. G5CM agrees, but has Nijni-Novgorod on 5 watts.

G5JF has exam QRM. G6SO and G2OA believed to be holiday making. G2VV is rebuilding through-out.

Group 8C.—Agree that 7 M.C. is improving. G2AT has 1.5 watts and several contacts. G2AV finds a new crystal gives him good reports from all Europe. AOG found no improvement on harmonic type. G5AQ has 3 to 5 watts of CC on fone and CW. G6PS and G5QA do not report. G5PH keeps in touch with group on 3 to 5 watts of CC from A.C. mains. Fone R6 in Channel Islands. DE5 is used as oscillator. G5ZN has got away on CC with a G5PH ground crystal.

Group 10A.—G6QC has unfortunately been compelled to resign from 10A, but his place is taken by G6ZH, winner of the 2 M.C. test trophy. G5RX has done but little transmission during the month as he has been awaiting delivery of a new mains transformer. Until it arrives his sked with G6FO is held up. However, he has been doing some good work on the receiver, and reports conditions again as very good. His log is too extensive to reproduce in full, but it includes G2ZN, R6, G6FO, R6, G2AU, R3, G5UM, R3, and F8ZAZ, R2, to give but a few. G6FO has been trying out his 42 metre half wave Hertz aerial as a counterpoise on 2 M.C., and finds it gives an extraordinary increase in radiation on the small main aerial. Small grid and plate blocking condensers have been found much more efficient than the .002mfd. values usually used, and the transmitter functions better with these lower values. As he has only 230 volts DC available, and is thus running his LS5 below its rating, G6FO is substituting a P650, which has better characteristics, and can be run at maximum efficiency with the available voltage. DX conditions have been found to be good, and G2RV and G6GL, both of Cheshire, have been worked in daylight, on September 14. BRS164 has not been able to get on much, but reports all the same. He, too, has found conditions good, and notes very little QRN for the time of year. The sked with G5UM is still being held up as G.C. is QRL. G6ZH has hooked up a transmitter after being QRT for a few weeks, and welcomes reports. He is one of the star stations on the 2 M.C. band, and Group 10A are fortunate in possessing such men as G6FO and G6ZH. G.C. G5UM has been QRL with holidays at the beginning of September and with Radio Show work at the end of the month, and has only been on a little. Conditions have been found good, however, especially on September 14, when G6FO and G2RV were heard at excellent strength in daylight. It is hoped later to co-operate with G2ZC regarding the sunspot theory.

Review of Foreign Magazines.

Prepared by G6FY.

Probably the most important contribution to ham literature this month is Mr. George Grammer's article in the September *QST* entitled, "Bringing Frequency Measurement Up to Date," in which an account is given of the use of the dynatron oscillator as a heterodyne frequency meter. The dynatron is a valve oscillator in which oscillation is maintained by virtue of a negative resistance characteristic of the valve itself (usually a screen-

grid) instead of by some form of reaction coupling. The circuit recommended is reproduced in Fig. 1.

Compared with the ordinary heterodyne meter, the dynatron possesses the following advantages: (1) greater stability, hence greater accuracy and more permanent calibration; (2) more suitable for harmonic operation; (3) much simpler construction and initial adjustment owing to absence of reaction coil; (4) effects of drop in battery voltage or

filament emission easily observed and corrected: all that is necessary to eliminate errors due to these ageing effects is to keep the total H.T. plus screen grid current constant by adjustment of the filament rheostat.

It is estimated that an accuracy of 0.1 per cent. or better is obtainable with ease.

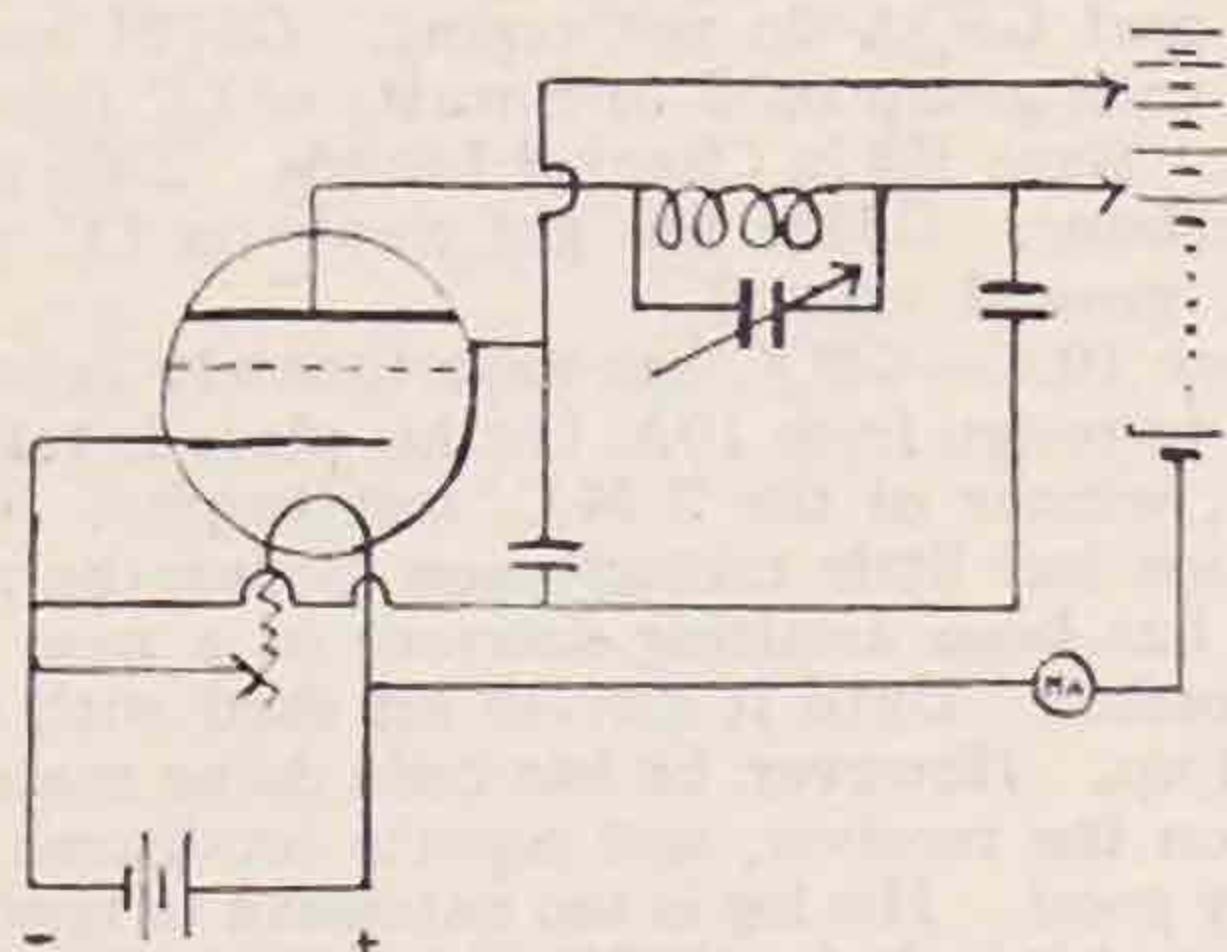


FIG. 1.

In the same magazine, W8ABX describes some 5-metre experiments. Using a split-coil Colpitts with inputs of the order of 10 watts, excellent fone contacts have been made over distances of up to 20 miles. An ordinary regenerative receiver and a superhet were used, the latter being by far the better. The best transmitter aerial system was found to be a horizontal half-wave fed at the centre, and having a half-wave reflector at one-quarter wavelength below it (the Warner Splatter system). This aerial could be fed efficiently through a feeder consisting of 60 ft. of twisted lamp cord.

Turning to the August issue of *CQ*, the German ham paper, we have some interesting notes by Mr. J. Fuchs (UOIJF), on his well-known aerial system (also known in England as the 6JV system).

This consists of an aerial whose length is one-half the working wavelength, or a multiple of this, joined directly to a pick-up coil tuned to the frequency of the transmitter and loosely coupled to it (Fig. 2a).

When the aerial, pick-up coil and transmitter are all tuned to the same frequency, connection or disconnection of the aerial makes no difference to the reading of the hot-wire ammeter A. The system is then working at maximum efficiency, the aerial being purely voltage fed, but even if the transmitter frequency is altered, the aerial will radiate at the new frequency with good efficiency, so that the arrangement is remarkably flexible.

The relative arrangement of the different components is of great importance. Four possible arrangements are shown in Fig. 2; their relative efficiencies as radiators have been measured and found to be as follows: (a) 100, (b) 89, (c) 61, (d) 28.

A low C/L ratio is recommended for the pick-up coil, and a high ratio for the transmitter coil to which it is coupled.

German hams are taking considerable interest in the 3.5 M.C. band, and notes on this work are contributed by D4UAB and "GO." D4UAB is carrying out a series of experiments on the propagation of 80-metre waves by night and day, and would welcome regular reports from stations able to carry out a listening schedule over a long period.

The use of a "valve grid leak" modulator in which a separate filament battery is not necessary is described by "WH." An indirectly heated valve is used as the grid leak, and since its heater and cathode can be operated at different potentials, the heater can be fed from the same source as the transmitter filaments.

Two other interesting observations are chronicled. RYIT has found that a brilliant meteor produced an exceptionally loud QRN effect in his receiver, and "QE" has detected the production of X-rays by his transmitting valve (an Ultra gasfilled UL43OL) when in action.

Red Espanola for August in an article on the calibration of a precision frequency meter, recommends the following RCA stations, working with thermostatically-controlled crystals, as reliable frequency standards:—

WER	44.709 m.	=6,710 K.C.
WEJ	44.510 m.	=6,740 K.C.
WEO	43.118 m.	=6,957.5 K.C.
WEM	40.541 m.	=7,400 K.C.
WEN	40.500 m.	=7,407.5 K.C.
WEG	39.894 m.	=7,520 K.C.

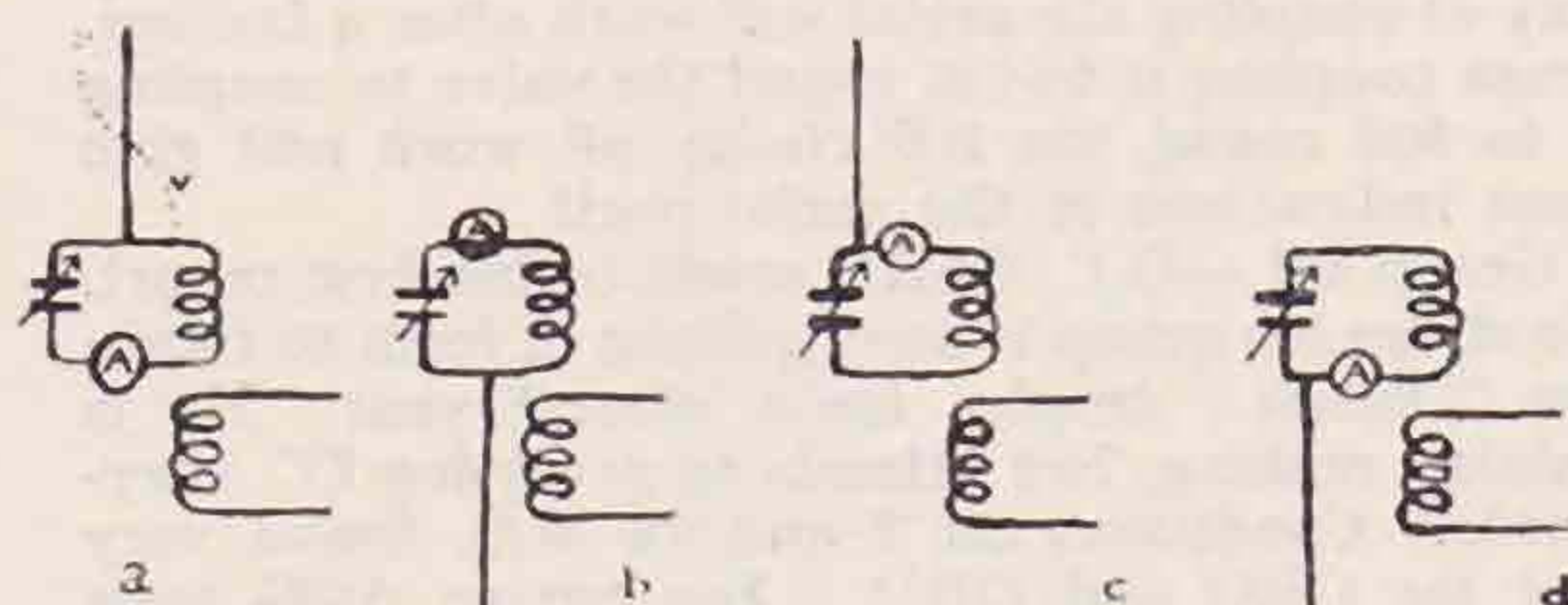


FIG. 2.

It is hoped that by the time the next notes appear, arrangements will have been made for a much more complete review of ham magazines.

HELP NEEDED. We receive a number of Russian magazines, which must remain unintelligible until we secure the services of an abstractor—any offers please?

Australian Short-Wave Conditions. — (Continued from page 93.)

library of technical instruments to assist in the experiments of individuals; the organisation of field days, excursions, etc., and an altogether very successful twelve months.

Field days at present are popular with all Divisions. These take the form of direction-finding work. Early in the day a portable transmitter is taken out and hidden. Various search parties are later organised and compete in finding the hiding-place. They have provided some excellent experience in handling and developing d.f. apparatus.

Some interesting experiments in measurements of the Heaviside layer were undertaken during July by one of the Victoria telephone stations, VK3BY, co-operating with the Radio Research Board of Melbourne University. Complete details of the results are not yet available, but will be reported later. The measurements were made on the reflected waves from VK3BY, the frequency of which was varied at a known value by means of a small paralleled condenser inserted in the aerial circuit and rotated by a constant speed motor.

HIC et UBIQUE.

"DX"

Congrats to the H.A.R.T.S. on their very fine first effort. When we go to Hongkong we shall certainly know where to buy our shoes and an engagement ring for the YL; think of that, you fellows, eight pages of non-radio adverts.

"DX" is the official organ of the newly-formed Hongkong Amateur Radio Transmitting Society, and the July issue, the first, contains 22 pages of interesting reading. It is well got up with both humorous and technical articles. We think the editors must have worked hard into the nights after the G's had faded out.

To the organisers we extend our congratulations; and, for the sake of would-be subscribers, the address is P.O. Box 414, Hongkong, and the annual subscription is \$5.00, with an entrance fee of a similar amount.

"More ink to your pens, VS6's."

W.B.E. Certificates.

W.B.E. Certificatees have been awarded to the following: G. Brown (G5BJ); J. B. Scott (EI7C).

First Contacts.

AUSTRALIA-NEWFOUNDLAND. — VK4LJ claims the first Australia-Newfoundland contact on April 12, 1928, at 18.35 E.A.S.T., when he worked NESAE on 14 M.C.

Informal Meetings.

It is with very much pleasure that we have to advise London members that the Lensbury Radio Society have offered us the hospitality of their headquarters, at Finsbury Circus, E.C.2, for informal meetings of our Society.

The following dates have been arranged for 1930:—

October 10.
November 14,
December 5.

The meeting on November 14 will be opened by Mr. A. D. Gay, G6NF, when he will discuss "Rectifiers," whilst Mr. H. Bevan Swift will give an "Historical Survey of Amateur Radio" at the December meeting.

All meetings will commence at 6.15 p.m. and light refreshments will be available at very moderate prices.

Please book the dates and note the address: The Lecture Theatre, Anglo-Mexican Oil Co., 16, Finsbury Circus. Two minutes from Moorgate Tube Station.

Convention Photograph.

Copies of the Convention photograph can be obtained from G. E. Smith, "Lyndhurst," Hempsted Road, Kings Langley, Herts.

These photographs are mounted and may be purchased for 3s. post free. Enlargements are also available, size 12" x 10", at a price of 6s. 6d. post free.

District Representative Elections.

In accordance with the decision reached at the Convention Business Meeting, Mr. H. Harding (G2HH), has been elected D.R. for Monmouth, which will now be known as District 14.

Mr. B. F. Phillips (G5PH) has been elected D.R. for Wales.

Mr. Morton (GI5MO) has been re-elected D.R. for Northern Ireland.

In future, Scotland, Wales and Northern Ireland will be known by name only.

Smarter and Quicker Operating—(Continued from page 83).

international communication. How much ice shall we cut in this respect if all we can do is to emulate the slack operating methods so often heard and show an utter ignorance of the meaning and use of codes which are compiled to save time instead of to waste it? True, we get few chances of handling traffic yet, but the traffic handled between expeditions and amateurs is done in no slovenly fashion. Let us get out of the habit right away of this slack method and put the amateur back on his pedestal. To do this we must employ a correct interpretation of the codes in use and try to emulate commercial practice a little more than we do now. Let us take as our motto for the coming season—Smarter and Quicker Operating; we shall soon set an example to the rest of the world, and show that the British amateur, besides having the cleanest and best signals in the amateur world, is second to none in quick and efficient operating, and we shall keep ourselves prepared for the possible time when our hobby may be of service to mankind in general. We look forward to a definite improvement in operating throughout the world and particularly on the continent of Europe.

Correspondence.

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

News of the Expeditions.

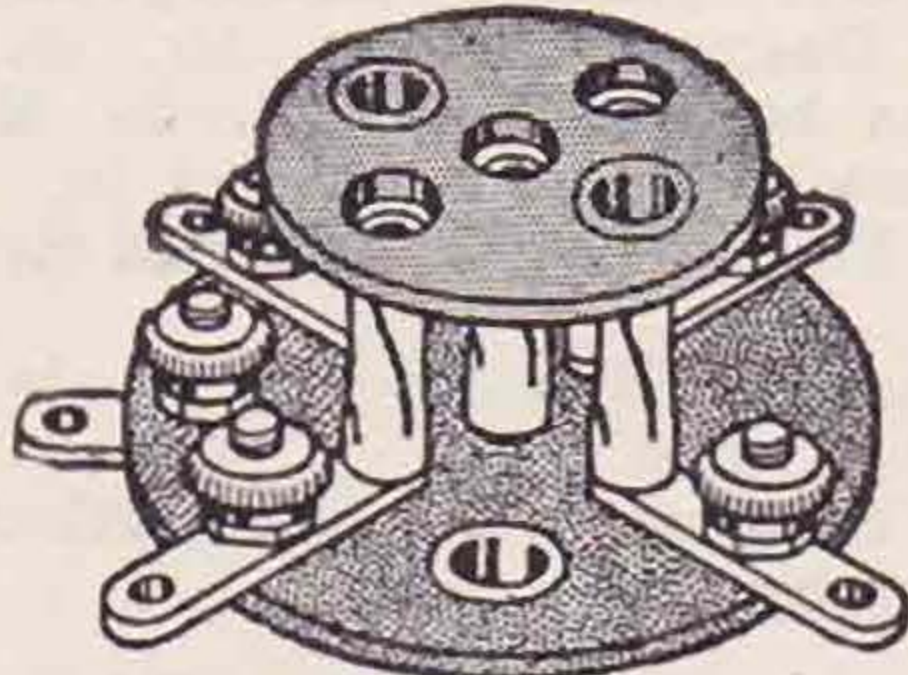
To the Editor of T. & R. BULLETIN.

DEAR SIR,—It may be of interest to the rest of the gang to know that the station of the Second Roumanian Arctic Expedition is now in operation, from Scoresby Sound, East Greenland. I was surprised to work this station on September 4, as I had read in August QST that the operator, W6BSB, said the Expedition had been cancelled. Also the call-sign is not XORC, but CVH, and W6BSB says: "Please give long call, and give me time to start and stop my gas engine!"

CLIX

CLIX VALVEHOLDER.

(4/5 Pin Base).



No. 27. *Prov. Pat. Reg. Des.*

Incorporating the new Resilient Sockets. Perfect contact with solid or any other type of valve pin. Sockets air-dielectrically insulated and self-aligning. Impossible to blow valves.

Type B for Baseboard Mounting:

With Screw Terminals ... 10d.
Without Screw Terminals ... 8d.

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Incorporates the Clix Resilient Socket and Solid Pin. All metal parts entirely insulated under every condition of use. No spade or other tag required. Supplied in Black with full range of markings.

Flex Portion, 4d. Panel Portion, 4d.
Complete terminal, 8d.

The All-in terminal can be converted into Twin Plug attachments by using the Clix Adaptor Plate (No. 26), 2d.

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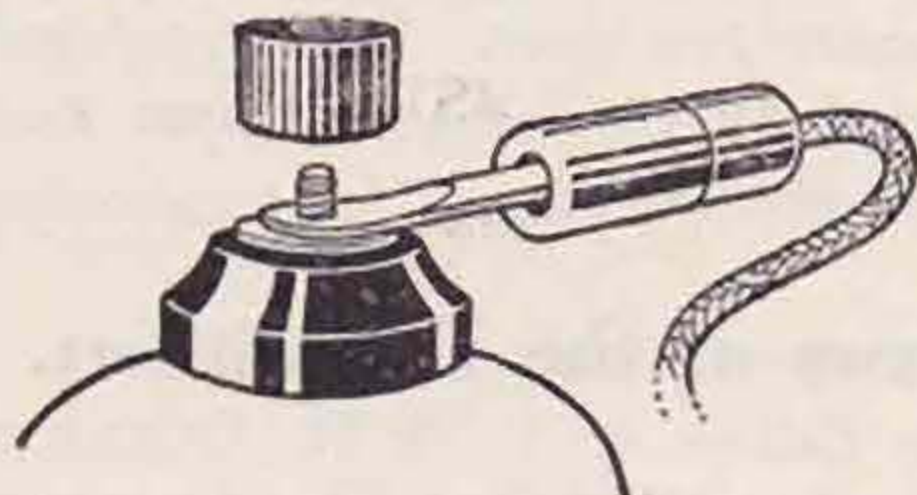


No. 8. *Pro. Pat. Reg. Des.*

Gives strong spring contact. Has self-cleaning surfaces and Solid End. Non-collapsible. Horizontal, vertical or special short insulator. Engraved or plain.

Price 2d.

CLIX ANODE CONNECTOR.



No. 6. *Pro. Pat. Regd.*

For use with Screened Grid or Pentode valves. Provides a certain and safe push-pull contact. Impossible to short anywhere. Solid Pin Tag is permanently fixed to valve terminal. Black insulator. Engraved. Price 3d.
WRITE FOR COMPLETE ILLUSTRATED LIST OF CLIX AIDS TO PERFECT CONTACT.

LECTRO LINX, LTD.,
254 Vauxhall Bridge Rd., London, S.W.1

This contact was on 7 M.C. band.

Regarding the British Arctic Air Route Expedition aboard the *Quest*, I have been officially informed that the P.M.G. states that GKN will not be able to work with amateur stations in future, as, by so doing, the agreement with the Danish Government is contravened. Unless the terms are altered, GKN will not be permitted to QSO amateurs.

Yours truly,
B. DUNN (G6YL).

Amateur Radio and International Goodwill.

To the Editor of T. & R. BULLETIN.

SIR,—A letter with the above title, written by G6XJ, appeared in the September issue of the BULLETIN, and I write to add my testimony to the truth of his remarks.

It has been my privilege this year to meet a large number of amateurs in foreign countries, and I can say without fear of contradiction that amateur radio is one of the most potent forces in the world for breaking down those barriers of parochial patriotism which the politicians spend so much time in erecting.

Whilst travelling in East and North Europe in September, I had ample opportunity of proving that a "ham" regards himself and his friends, not as Englishmen, Germans, etc., but first and foremost as amateurs, and it strikes one forcibly that if only the rest of the world could have the opportunity of meeting its fellows of different countries on the ground of common interest it would mean that our present narrow nationalisms and antiquated methods of settling disputes would melt away before a new understanding. If this is politics, then I must crave pardon for introducing such "taboo" into a "ham" magazine, but I do feel very strongly for those of my foreign friends who have shown me that nothing is too much trouble to assist a fellow amateur in a strange country.

It is impossible for me to thank each of them individually for their kindness, and I must be content with thanking the amateurs of Germany, Lithuania, Latvia, Estonia and Finland in a body for the hundred and one ways in which they showed themselves to be possessed of the true "Ham spirit."

Yours faithfully,
J. D. CHISHOLM (G2CX).

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

CALLS HEARD.

By M. F. SOMERVILLE, H.M.S. "Queen Elizabeth," c/o. G.P.O., London: during August, at Malta.—7 M.C.: d4opg, d4lgh, eu5kao, f8ji, f8kwt, f8csi, f8ej, g2mr, g6gd, haf9af, xoklow, on4dj, on4or, splae, su8wy. 14 M.C.:—ct1aa, d4iwf, f8rvl, f8whg, f8dt, f8aly, f8ca, f8xh, f8fix, fm8asm, g2op, g2cj, g2kl, g2by, g6wt, g2hz, g6ut, g2bm, g2ig, g6wy, g5uy, g2ol, g2kx, g5ml, g6mn, g2zp, ei7c, ilra, ok2si, ok2lo, on4jc, pa0qf, pa0da, pa0xf, pa0zm, pa0qz, pa0zk, on4fm, sp3fs, su8rs, su8wy, uodx, w3jr, w1bux, w2nf, (O-V-2). Receiver O-V-2 with very bad aerial screening.

By SU6HL, Aboukir, Egypt, on July 1 and 2 :—
ctlaa, d4gnq, fm8mst, f8er, g2gf, g2gm, g2op,
g6cl, g6wn, g6wt, oh2nm, on4jc, on4or, ok2pa,
sp3ar, st2c, xd4go.

By ST6HL, R.A.F., Khartoum, Sudan, August 10-29 :—
ctlaa, ei7c, eu2hs, eu2hs, f8whg, f8ca, f8tex,
f8pag, f8cs, fm8cfr, fm8asm, g2ao, g2cj, g2ol, g2vq,
g2zw, g5ml, g5bq, g6up, g6xq, g6wt, g6rb, g6wn,
g6qb, haf6b, k4kd, uh7nf, oh3na, ok2op, on4vo,
on4vu, on4jc, on4fe, on4oc, on4dj, on4jb, on4fk,
on4bz, oz7y, oz7ii, paohp, pa0qf, paoop, paoop,
pylax, su8rs, su8wy, sp3ar, uoljh, ve2ap, vp9sr,
vq2xa, vq4cre, vq4msb, vq5nk, vs2ap, vs7ap,
yi6kr, wlnp, w2ccc, w2at, w2ff, w2rer.

By VE2AP (Summer, 1930) :—on4dt, on4fe,
on4gn, on4jc, f8ol, fo8hs, f8mrc, ctlaa, g2cj, g2ma,
g5ml, g5yg, g6hp, g6ut, g6wt, g6xb.

By VP3SRB, G. G. LIVESEY, Linslade, Private
Bag, Gwelo, S. Rhodesia, August :—g2vq, g2cj,
g6vp, g2op, g2xv.

By VS7GJ, G. H. JOLLIFFE, Frocester Govenna,
Ceylon, August :—g6wt, g2vq, g2zp, g5bj, g5ml,
g6vp.

By G6RH, September 21, 06.00-07.00 G.M.T.,
on 7 M.C.—zl4bt, zl3aw, zl3bn, celah, hh7c.
September 19 to Sunday, September 21, on 14
M.C.—wlary, wlbox, wlbsm, wlccz, wlzz, w2ccc,
w3ajd, w4jrw, velbr, ve2bi, vo8mc, pylah, cn8mop,
cne, su8rs, ct2aa, fm8asm, fm8cr, fm8eor, fm8hi,
fm8mst, nl8mrc.

By BERS3, C. A. C. WHEELER, 2nd Indian
Divisional Signals, Quetta, August 28 to September
12.—g2cl, g2ci, g2gm, g2gy, g2mr, g2ol, g2tk,
g2vq, g5pj, g5vb, g6nx, g6qb, g6wt, g6yk, gi5nj,
su8rs, su8wy, vp3sr, vp3srb, vp9sr, yi6kr, zt2d,
zt6r, zs4s, zu5b.

QSL Section.

There is little to say this month except to recom-
mend those who did not see the rules of the QSL
Section as printed in this paragraph last month, to
have a good look at them and so ensure that they
cause the minimum amount of trouble to them-
selves (and, incidentally, to the Section), when they
next have occasion to use the Section.

I am indebted to BRS300 for his valuable help
in keeping the Section going during my holiday.

J. D. C.

QRA Section.

NEW QRA's.

G2KB.—H. K. BOURNE, 11, Elgin Park, Redland,
Bristol.

G2PA.—W. P. JONES, 24, Maesglas Road, New-
port, Mon.

G2QO.—A. C. F. DEARLOVE, 50, Cloberhill Road,
Knightswood, Glasgow.

G2TJ.—P. AUZEAS, 13, Salters Road, Gosforth,
Newcastle-on-Tyne.

G2VO.—A. E. HOLMES, "Mavore," Valley Drive,
Ben Rhydding, Ilkley.

G2WS.—W. A. SCARR, 282, Stainbeck Road, Leeds.

G2WZ.—A. HARE-HOBSON, "Milking Close," Ditch-
ing Hassocks.

G2XP.—J. F. PANE, 53, Otley Drive, Ilford, Essex.

G5PO.—H. J. POLLARD, "Elmwood," Oldchester
Road, Woodhey, Rockferry, Ches.

G6CZ.—L. C. COOKE, Harrodene Road, Wembley,
Middlesex.

G6NG.—N. E. HAIGH, Tanglewood, Newton Hill,
Wakefield.

G6PW.—W. B. G. COLLINS, 480, Manchester Road,
Sheffield.

G6VP.—A. SMITH, 12, Ferres Avenue, West Dray-
ton, Middlesex.

GI6YW.—T. P. ALLEN, 62, Balmoral Avenue,
Belfast.

2ABS.—J. HUNTER, 63, Hervey Road, London,
S.E.3.

2AVF.—J. NORRIS, 16, Gorse Street, Stretford,
Manchester.

2AWA.—A. W. ALLAN, 3, Lansdowne Terrace,
Gosforth, Newcastle-on-Tyne.

2AZP.—L. SANDERSON, 104, Croxted Road, Lon-
don, S.E.21.

The following are cancelled :—G2FX, G2TM,
G2ZZ. M. W. P.

NEW MEMBERS.

P. F. W. OFFORD (BRS370), 46, Heigham Road,
Norwich.

J. S. DINWIDDIE, P.O. Box 59, 63, Queen Street,
Colombo, Ceylon.

F. C. THEOBALD (BERS11), Polgahawella, Ceylon.

W. TREGENZA (BRS371), 1, Peel Road, Douglas,
I.O.M.

C. J. GARDNER (BRS372), 11, Whitefriars Crescent
Westcliff-on-Sea.

D. F. WADDINGTON (BRS373), 9, East Shrubbery
Redland, Bristol.

EARL N. SCHNOOR (W9AZZ), 532, West 8th Street,
Davenport, Iowa, U.S.A.

AHMED M. SHIHA, 21, Hill View Gardens, Kings-
bury, N.W.9.

E. J. HARPER (AC8JK), 310, Bubbling Well Road,
Shanghai, N. China.

N. A. M. SWETTENHAM (VQ2BC), Anglo-Belgian
Boundary Commission, c/o Postmaster, Eliza-
bethville, Belgian Congo, via S. Africa.

W. KEITH HILL (G2VT), Sarine, Wickham Road,
Shirley, Surrey.

F. W. J. B. PIGOTT (G2WA), 180, Franciscan Road,
Tooting, S.W.17.

A. R. OSBORNE (BRS374), 132, Woodmansterne
Road, Streatham, S.W.16.

T. PRATLEY (BERS13), 6, Officers' Bungalow,
Manora, Karachi, India.

A. M. HARDIE (BRS375), 131, Hamilton Place,
Aberdeen.

W. G. L. KENNARD (BERS12), Iraq Army Head-
quarters, Baghdad.

R. J. W. BISSHOP (BRS376), 80, Kensington Gar-
dens Square, W.2.

V. D. J. FRENCH, H.M.S. "Caledon," c/o G.P.O.,
London.

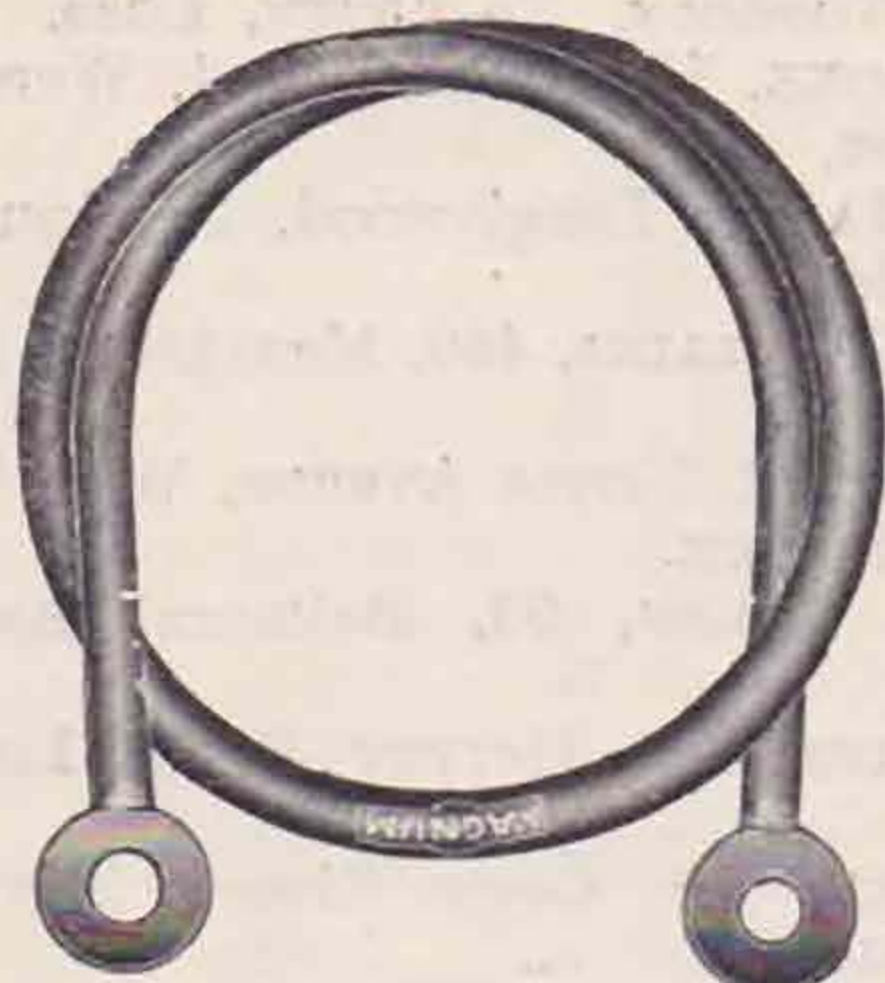
E. L. SHIRLEY (BRS380), 77, Bramcote Drive,
Beeston, Notts.

CORRECTION TO AUGUST "BULL."

C. W. Jennings was incorrectly given as being
BRS363. This should have been 362.

H. J. Gwillim (BRS359) was shown as holding
the call sign G2QG. He is the second operator of
the station in question.

G2KB's address was given as 11, Elgin Avenue,
instead of 11, Elgin Park, Redland, Bristol.



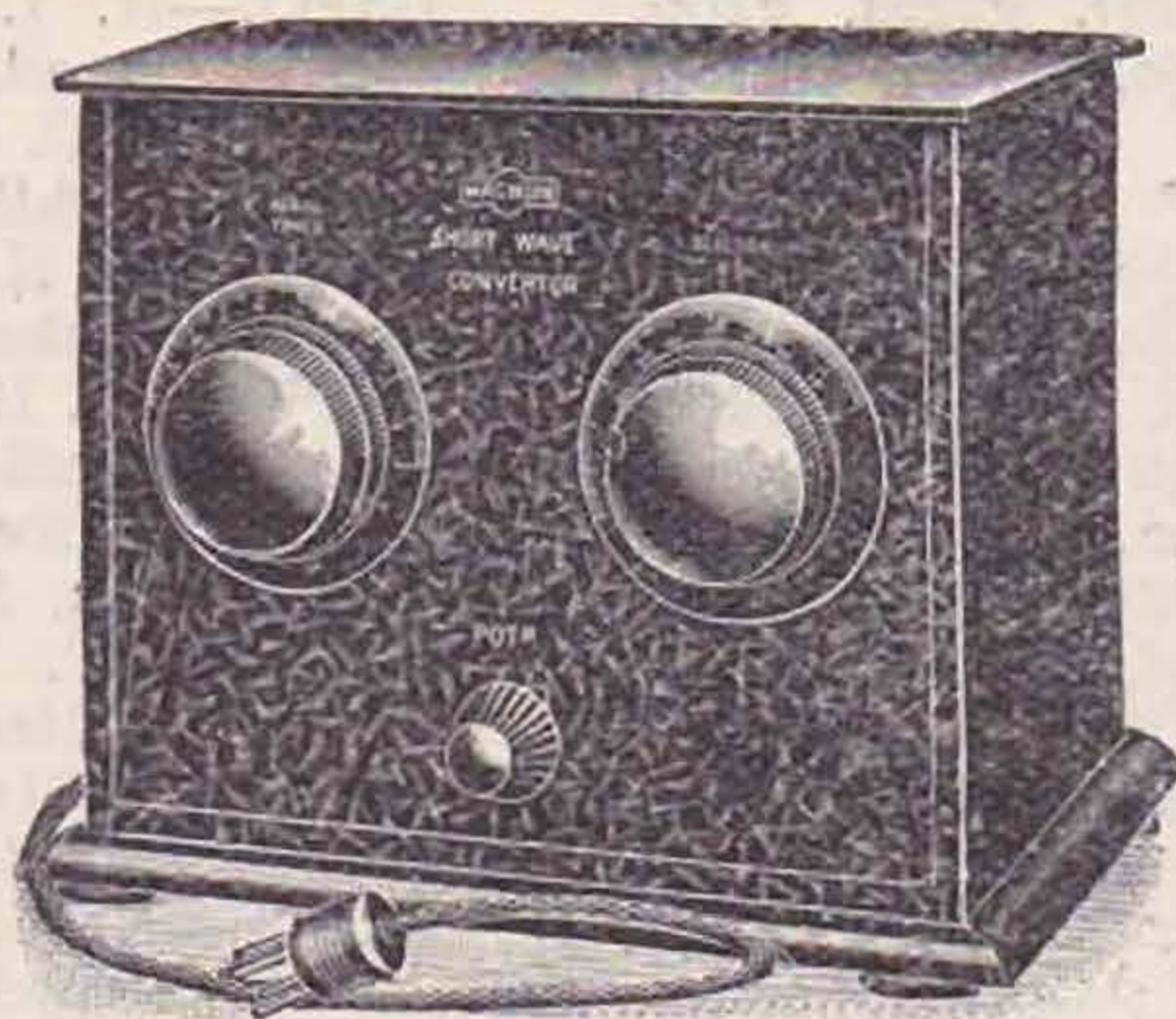
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NOTES & NEWS FROM THE BRITISH ISLES.

DISTRICT No. 1.

Representative: J. BROWNE (G2XB).

IN BRS369 we welcome a new member and hope he will continue to contribute to these notes. He is learning code. G2WP reports unreliable conditions and has been working on the 1.7, 7 and 14 M.C. bands. Would like to get some DX on the former band. He reports the peculiarity of hearing HAF9AF calling G2ZN and G2LZ at R8 and yet not QSO with them. G5ZN was heard three times in Sumatra in July—QRG 7 M.C. input 9 watts. He is now using harmonic CC. G5CI has been on holiday and reports a visit to G6LY. G2GA is now on R.A.C. with about 7 watts input, has worked all Europe, best DX EU2. G2OI notes a return to good conditions during September for a week, but things have gone off again. Logged 45 Yanks in an hour on September 22, all districts except 4th. G2XB and G6BJ have not done anything in the radio line, but have been very busy arranging for our meeting in Manchester, when we hope to see all the hams. Tickets can still be obtained from G2XB, price 2s. 6d.

DISTRICT No. 2.

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

G6KO visited G6OO and is holiday-making in Scarborough. A separate power supply is being built up to isolate completely the PA from the MO and buffer stage. Complete rebuild on return. BRS270 (Doncaster) sits for Morse test next week. G5QY.—Little DX done through worse conditions. Worked CT2 with 4.7 watts on 7 M.C.; while on 14 M.C. ND. Visited G5CX and G5DD and had FB time. G2TJ and self also visited G6QT, where we met G6GC and G6HF; return visits followed. G2FS using two DE5's in parallel T.P.T.G. worked OH and ES on 14 M.C. and CT on 7 M.C. Harmonic CC is used on 7 M.C. Up to the present five continents, 34 countries worked using 7 watts maximum. Conditions greatly improved and five continents worked in one evening on 14 M.C. G6PS is still rebuilding. BRS290 reports poor conditions continue and, although much time spent on receiver, nothing to report. (Cheer up, OM, conditions are improving daily!—D.R.) 2BYP (ex BRS253) was in error called 2BYB in last month's notes. Sorri, OM. Testing out 2NH type CC adaptor with G2UG helping, was soon going well. Built similar adaptor with PA for G2IL (Southampton), which soon became defunct owing to high voltage on generator breaking crystal. Visited G2IL and heard FB results on his RX. Hope visit Convention. BRS270 reports improved conditions on 7 M.C. Using indoor aerial still. P.M.G. agreed to give full ticket on passing Morse test. (Congrats, OM!) Expect start with MOPA and buffer amplifier. Aerial will be single, 30 ft. high, 33 ft. long, current fed. BRS348 sends first report since last March (as his "Matric" exams. have prevented much work on RX until now.) Reports poor conditions on 7 M.C. during last two weeks. Nothing heard until 20.00 B.S.T., whilst G's appear entirely absent. ON and F come over well. On

28 M.C. and below everything appears entirely dead, except very faint commercial harmonics. G5DR starts up again after summer and business QRM. Now using 20 2volts mains (D.C.), plus wet H.T. batteries on 7 M.C. TPTG and CC adaptor 2NH type. G6DR has done most work on 2 M.C. with locals, using hand-generator and harmonic CC. G6UJ visited G6OO and hopes to be at Convention also (for the first time). Good reports received from extreme corners of the British Isles on his 2 M.C. sigs. Usual work with Europe on 7 M.C. Conditions greatly improved. G6OO visited by G6UJ, G2FS, G6PS, G6KO, whilst a very enjoyable time spent during G6QB's holiday here. The TPTG and 2NH type adaptor was scrapped, and with "Kewbie's" aid, TX has been rebuilt to Goyder-lock system, using CO, FD and TPTG. On 7 M.C. some FB reports received during QSO most Europe. Staying with G6QB over Convention. BRS336 has now his full licence and call sign. He is building a CO and hopes to be on "the air" right away on 7 M.C.

DISTRICT No. 3.

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

G2OA reports that his 28 M.C. tests have only yet yielded results up to 7 miles. On the 14 M.C. band, FM being the greatest DX, but finds reception improving. G2VP has been busy on the 14 M.C. band and managed to get out of Europe at last by working an FM. He has much trouble with key clicks. G5FG has saved himself this month by having received a report from Australia noting the reception of his 7 M.C. sigs at R4. G6TW.—A little of 7 and 14 M.C. work has been done, but time mostly confined to the ultra-short waves in the way of 58 M.C. Now experimenting on a suitable receiver for working with my 1-metre transmitter that was exhibited at Olympia.

DISTRICT No. 5.

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

Before starting these, the last reports which I shall have the pleasure of sending, I would like to thank all the members of my area who have helped me so much during my term of office.

Having determined to resign for some time past, I feel more than happy to think that your interests will be so ably looked after by G5ML. G5ML has asked me to say that in future the notes for Warwickshire should be sent to G5VM, Mr. V. M. Desmond, 199, Russell Road, Moseley, Birmingham. Again, I thank you all.

G5BJ, finding DX excellent and now working regular schedule with V1YB of Barbadoes every night. New aerial mast, 45-footer erected and now commencing alterations to transmitter for 10-metre work. Has worked all continents in six and a quarter hours. G6XJ is concentrating on new RX, using SG valve for detector—gives wonderful amplification. G6XK still working portable experiments during week ends.

DISTRICT No. 6.

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

Very few reports are to hand this month. 2BVR

has finished his super RX and gets good results. G2OW is now at Chelmsford and busy with fixing up his gear in digs. BRS342 has been on holidays and reports 7 M.C. dud. G5RV and G6FX are both active, and together with BRS191 and G2DQ I paid them a visit and a very FB evening was spent. G6FX also kindly showed us over G5SW, and we all had a grand time. G2DQ is now a member and we welcome him. Also wish to say how successful our area budget is going on. We are still prepared to enrol a few more. I shall be pleased to send particulars to anyone. Lastly, I regret I was unable to attend the Convention Delegates meeting, but I had sudden unexpected business QRM. BRS191 has just built a tube base coil set, but it won't perk yet. Activity in the district is very good, judging from our budget, and I shall be pleased to send any D.R.'s the idea of how we run our budget. It's a great social and technical link for scattered districts.

DISTRICT No. 7.

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

When we held our Conventionette at Tunbridge Wells this summer you all agreed that Area Notes were to continue. Personally, knowing you as I do, I did not think I should have much trouble in the matter, but it appears that I am wrong. Since that happy day I have only received ONE report for the Notes, and that was from someone who was not present at Tunbridge Wells. Now I give you fair warning, if you don't send notes in from now on you won't see any notes at all published for this Area. I have just been informed that you have elected me your representative for the ensuing year. For that I thank you, but I can do very little unless you give me more help than you have in the past, so see about it OM's. By the time this is in print the Convention will have taken place, and I have no doubt you will all have voted for Area Notes. Well, show you want them by sending in yours. That's all!

DISTRICT No. 10.

Representative: SEYMOUR BUCKINGHAM (G5QF), 19, Oakleigh Road, Whetstone, N.11.

It is with very much pleasure that I learn of my election as No. 10 D.R., and assure all members of the District that I shall do my utmost to make their acquaintance during the coming year.

Convention has decided to discontinue the present method of presenting the District Notes, therefore I must ask all who send me reports to confine them to points of general interest to all. A special column will be allocated for these items.

During September the following stations were reported active: G5UM, G6CL, G6PP, G6OT, G5QF.

I hope to hear from BRS members as I feel many of them are out of touch at present.

I have considered the desirability of running monthly meetings and a letter budget. Will you let me know your wishes?

DISTRICT No. 11.

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

I must apologise for the fact that the reports for last month, although they left my hands at the usual time, apparently did not reach the printer. For that reason only one report, handed in after-

wards by G2CX, appeared in print. This month, apparently owing to holidays, reports are very scarce. On the subject of holidays, however, the following may be recorded: G2CX went to Estonia and Finland and had a really f.b. time, coming back laden with trophies and souvenirs. He wishes to thank all the hams concerned very much. G6QB and G6NF together visited G2CJ, BRS310, G5ML, G2VQ and G2IO, and also paid an external visit to one GBR! They wish to thank all concerned for looking after them. G6QB alone then continued and visited G5UB and G6OO, to whom also thanks. G2AI has been working on 7 M.C. only, and has found all other bands too bad as regards conditions. G2GM is working at Rugby with B.T.H., and hopes to install a second transmitter there with a power about five times that of his London gear. The latter has been rebuilt and seems to get out well, the note also being better. G2UX has not done much, but had the honour of being the first G to inform SU8RS of his winning the Wortley Talbot cup. G6HP has completely rebuilt in "radio-gramophone" fashion, and the station still works, although it is tidy! He is on 28 M.C. on Sundays. G6QB has been working fine on 14 and 7 M.C. Best report so far R9 from SU8RS on the former. BRS25 is keeping watch on 28 M.C., but nothing yet except locals. On 14 M.C. plenty of DX, including South Africans. He passes on word that ex-G2DZ is on the Majestic (GFWV), which is also G2IV for the purpose of ship-to-shore telephone service. 2 kw. in the aerial and a 14-valve receiver!

DISTRICT No. 12.

Representative: T. A. ST. JOHNSTON (G6UT), 28, Douglas Road, Chingford, E.4. Tele: Silverthorn 1557.

G2ZN has discarded chemical rectification for valve rectification, reports conditions generally bad and has been concentrating on 2 M.C. band. G6FY wants to hear more amateurs use the 3.5 M.C. band. He is now CC on 1.7 M.C. Most active stations have little to report, except that conditions are bad. G6UT has worked VQ3MSN, ST2C and a ship FNHM off Carthage. As the above will be the last of "Notes and News," members are considering the Budget. They have also instituted a collection box to be used at monthly meetings (held every fourth Tuesday of each month) for assisting the "Fighting Fund." The District Representative thanks all members for their co-operation during the past 12 months and in carrying on for a further period with their assistance looks forward to still further success.

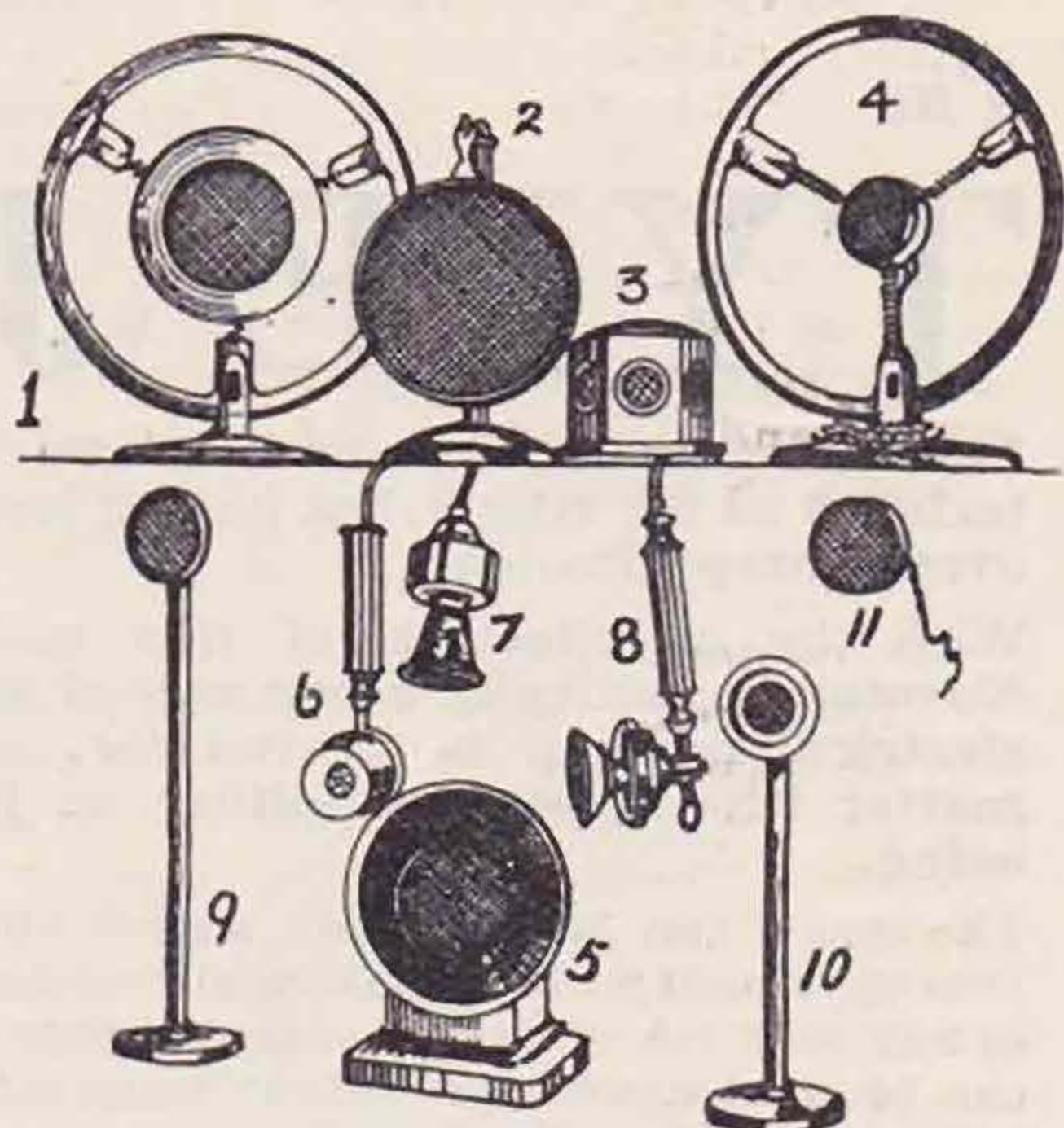
DISTRICT No. 13.

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

The Convention is over, you have re-elected me as your representative for another year (to those responsible, accept my thanks), and I hope we shall see even more reports and a bigger letter budget than we have seen during the past year. There will be quite a number of new members in the area during the coming year, and I look to every one of you to make them welcome and help them as much as possible. To members old and new, my QRA's open to you at all times. Just drop me a card and come along, and don't forget reports by the 20th please. I intend to hold a meeting at my QRA on Sunday, October 26, at 7 p.m., so make a

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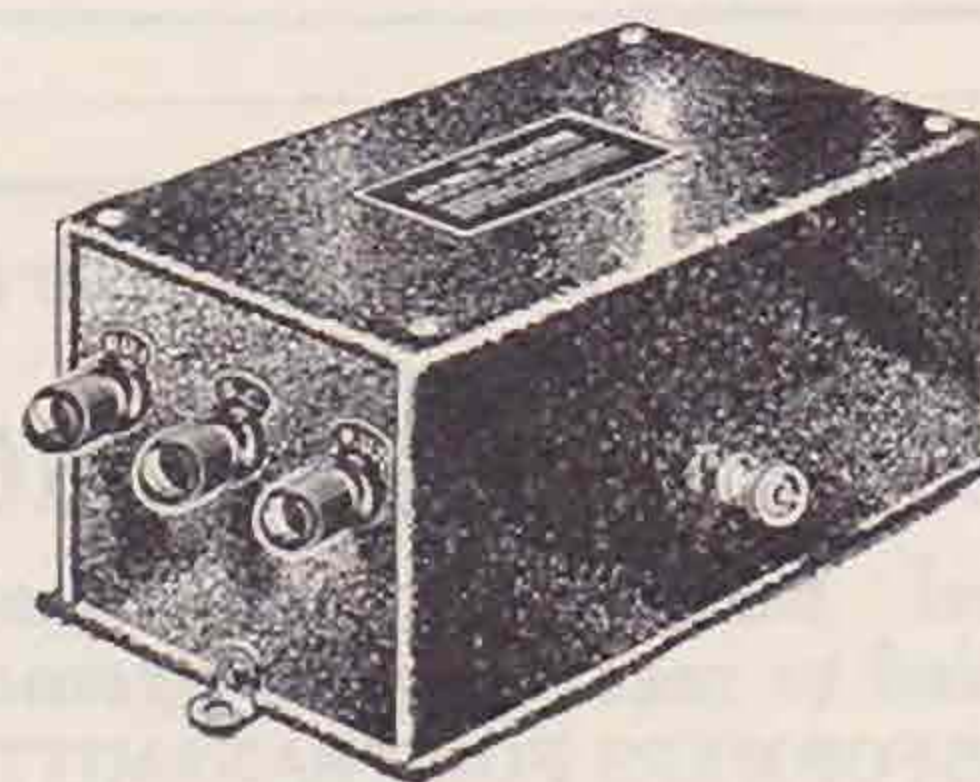
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note of the date. G5WB has been running a portable under canvas with the Signal Corps. Despite bad screening, quite a number of countries were logged, and most of Europe worked. BRS273 is the star station this month, having received television transmissions from New York (congratulations, OM, from the whole area). This on 19 metres. G2BY worked four continents, including plenty of U.S.A. stations. G2OW reports for the last time in this area, and is sorry to leave it. G6XN has rebuilt station; finds DX still bad; made his debut on 1.75 M.C., but cannot raise local stations on this band. G2OL had both G2BY and G6XN reply to his test call recently on 56 M.C. Both heterodyning each other. Found ZL's good on 7 M.C. G6VP is on again and finds location has not altered his DX. Has blown his pet B.T.H. B12 valve. G5VB has been on 7, 14 and 28 M.C. during month, and hopes to be on 56 M.C. soon. Has worked ST, SU and W on 14 M.C. G6WN has all mains going fine now, but have been too QRL exhibition for much radio.

SCOTLAND.

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

The period August-September was, as expected, a particularly barren one in the matter of radio work. The holiday season, together with the wretched conditions pertaining on all bands, served to divert individual enthusiasm in other directions, so that, in the matter of reports, there is nothing of note on which to comment. September 24 saw the resumption of "A" District monthly meetings, when there was a good turn out, which included several Edinburgh members and G5SK, of Coventry, whom we were glad to welcome. The opportunity was taken of presenting to G6NX the prize kindly given by G6IZ to the Scottish station to work most new (to Scotland) localities over a given period. G6NX led the contest with four new contacts, and was declared winner. His contacts were Martinique, Paraguay, Sumatra and Southern Rhodesia, and were all made on 14 M.C. The meeting requested the writer to convey to Mr. Ingram, on behalf of the Scottish transmitters in general, their appreciation of his kindness in making the contest possible, and he has pleasure in doing so publicly here and now. F. Dearlove (late VO8AE) has been granted a 200-watt permit, and will shortly be heard with a crystal-controlled transmitter. His call sign is G2QO, and his QRA is 50, Cloberhill Road, Knightswood, Glasgow. Recently, on comparing my office nominal roll with that of HQ, considerable discrepancies in my roll were noted, due to the resignations of certain old members and the election of new ones. Steps have been taken at HQ to prevent a recurrence of this, but at the same time I cannot help feeling that the four Scottish District Representatives have been considerably remiss in failing to notify me of these changes. If they were unaware of them, then the matter is still worse, as it clearly indicates lack of touch with their Districts. The writer endeavours to cultivate an all-seeing eye and all-hearing ear, but in spite of that, things do get past at times, and he has to depend on the District Officers. As regards the work of individual stations, little can be said, as few have reported. G6WL is reported as being heard on the "W" 6th District, which represents his furthest reach west. He has also been carrying

out some listening schedules with the s.s. "Transylvania" of the Anchor Brocklebank line, which has just been equipped with S.W. apparatus. G5YG is likely to be QRT for a month owing to the changing of the position of his masts to enable a properly constructed Zepp to be erected. He intends to abandon the $\frac{1}{2}$ λ C.F. Hertz, which, though efficient, is much too directional for general purposes. G5XQ has serious illness in his home, and radio as a consequence *non est*. (Best wishes for Mrs. 5XQ's rapid recovery, OB.—G5YG.) G2MA has just completed a new TX, but cannot report as yet on its capabilities. G5CL is known to have been active on the 7 M.C. band, but has not reported. G5JK has been getting out fairly well, and has had a report from Sumatra. He is not satisfied, however, and with 6IZ assistance has rigged a new M.O.P.A. TX, which seems to be "delivering the goods." G6IZ is busy getting into quartz crystal control, and expresses himself highly pleased with the results so far. BRS375 has got a S.G. Det. 2LF RX going, and is also putting in his papers for the transmitters ticket (good luck to you, O.B.—G5YG.) He claims to observe a distinct improvement on the 14 M.C. band conditions.

WALES.

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

I am pleased to report that things are moving in the District. There are several new members and plenty of stations on the air. We have had several visitors to our district, viz., G6FY, G6RG and 2BPM, and hope they left us with a high opinion of the ham spirit of the Welsh and Monmouth hams. G6PF is home again after a long absence and we hope he will remain in our midst for a long time and will be on the air by the time these notes are in print. G2BG is also on the air again.

G5FJ and 2AWT are rebuilding. BRS359 has been operating G2QG (TX, of Ebbw Vale and District Radio Society). G2QG is QRP 150 volts 10 m/A to a P215 valve, and has done extremely well on 1.75 M.C. band. BRS237 has been experimenting with heterodyne wave filter—result, F.B. G2HH has been busy with combined crystal oscillator-absorption F/meter, and heterodyne monitor. Also finds 3.5 M.C. very steady band for European QSO. G6FO is QSO regularly on 7, 3.5 and 1.75 M.C. bands, using single coil high-C Hartley to end-on Hertz for 7 and 3.5 and a 40 \times 40 twin for 1.75. Is also tackling 56 M.C. Tx. G2PA rebuilding to Hartley and has done very well, especially on 1.75 M.C. with maximum of 4 watts. BRS239 has changed his QRA and has been busy with erection. Station visits G6FO to G2PA and vice versa.

NORTHERN IRELAND.

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

GI6NY is a newcomer and I welcome him to the "gang," and wish him the best of luck. His QRA is W. Locke, Junr., Daisy Hill Villa, Newry, Co. Down. He is at present working on 7 M.C., using a hand generator. GI5NJ sends a good report. The station has been completely rebuilt to conform to the very latest practices, and everything is very satisfactory. Frequencies can be given now to much less than $\frac{1}{4}$ of 1 per cent. Conditions for DX on 14 M.C. have been found ex-

(Continued on page 115.)

Empire



News.

CONDITIONS for Empire contacts seem from all accounts to be singularly poor at the time of going to press, but it has been said that on the 7 M.C. band it has been possible to get to VK and ZL in the early mornings. Many G stations have been using this band for communication with the antipodes and B.E.R.U. stations in India.

We are always delighted to hear from our Dominion and Colonial friends, and if you happen

to be tucked away in a corner of the world which is not represented by the notes below, please do not hesitate to send us some details of the conditions, etc., in your locality. We should like to be able to print in full the notes which are received from B.E.R.U. representatives, but owing to the heavy demands on our space this is nearly always impossible, and we would ask the indulgence of our friends when they find their work cut rather ruthlessly.

* * * * *

AUSTRALIA.

By H. R. CARTER (VK2HC).

At the present time of the year, DX is practically non-existent, and conditions are very erratic on all bands, although by the time these notes appear things should be looking up again. On 28 M.C., everything is dead, except a few local QSO's of not more than twenty or thirty miles; 14 M.C. is a little better—W. stations are fair during the afternoon, and European signals are moderately good in the early morning. But these conditions vary greatly. The 7 M.C. band is the best, as contacts can still be had with W's KA1 and KA6 during the evenings, while an occasional European signal is heard in the early morning. 3.5 M.C. is the most consistent for local work and a good number of ZL's are there. We are expecting more stations after September 1 on this band on account of the final test for the Maclurcan Cup in N.S.W. The prospects for a large B.E.R.U. membership in VK are very bright, and members of the W.I.A. are getting very keen. By October we should be able to work our fellow-Empire stations quite well, as the Indian, South African, and British signals start to come in again then. The various divisions of the W.I.A. in the different states have been having field days and getting quite a lot of fun, with plenty of success, in locating the hidden transmitters. One thing is very unfortunate out here; that is, VK hams are scattered so far apart that it is very hard to get full co-operation between the various sections.

CANADA.

By CHAS. E. DAWES (VE2BB), Ste. Anne de Bellevue, Quebec.

Report for June 15 to July 15.—We regret to say that but little DX with Europe has been reported, but the boys are still earnest and optimistic. Nothing is reported on 10 metres. On 20 metres VE2BE, VE2AP, and VE2CA still manage to get across occasionally. VE2BE still does good work with the VK and ZL stations; he handled twenty-three messages from one VK station. South American stations are good at times. Conditions generally have been very poor, and even QSO's on 40 metres have been difficult to get. But we still keep smiling.

CEYLON AND SOUTH INDIA.

By G. H. JOLIFFE (VS7GJ), Frocester, Govinna, Ceylon.

Taking things all round, the 14 M.C. band has been generally unsatisfactory, although at one or two good periods have been noticed when G stations came through, as reported by VS7AP. He also states that the 7 M.C. band is fairly consistent throughout the day for local communication. It is most interesting to note that AC3FR and G2BXP, who happened to be passing through Colombo, paid a visit to VS7AP. VS7AL reports having worked an Australian station, VK5HG. This is our only report for working with Australia for August. The power employed by VS7AL is reported as 3.91 watts. Good work has been done during this month by VS7MP, VS7AL, and VS7GJ with telephony and music on the 42-metre band; in all cases good reception has been given as far afield as Bangalore, Singapore, F.M.S., and locally. These stations are all working on about 5-7 watts. VS7GJ signals have been reported from the N.W. Frontier, India, as R6. VU2EV and VU2KH, both South Indian stations, have been received here very well, both on Morse and telephony. Towards the end of this month, with the approach of the north-east monsoon, atmospherics are at times very troublesome. The annual meeting of the Club was held in Colombo on August 29 at 5.30 p.m. The following office-bearers were appointed for the current year:—President, Mr. G. H. Joliffe, Frocester, Govinna; vice-presidents, Sir Solomon Dias Bandaranaike, Mr. F. E. Kennard, Mr. E. Harper, Mr. J. S. Collett, Hon. Mr. L. Macrae, Mr. M. S. Rockwood, and Mr. R. F. Dias; hon. secretary, Mr. J. S. Dinwiddie (acting meantime), P.O. Box 59, Colombo; hon. treasurer, Mr. J. F. Ness, P.O. Box 100, Colombo.

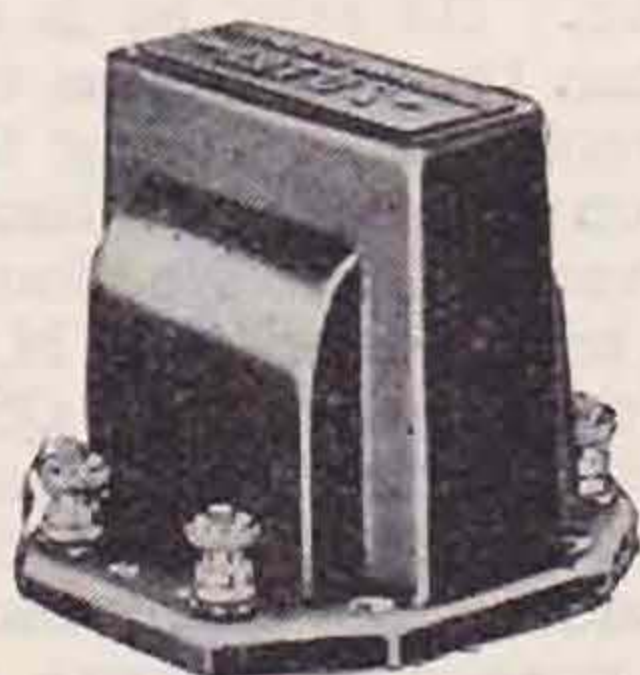
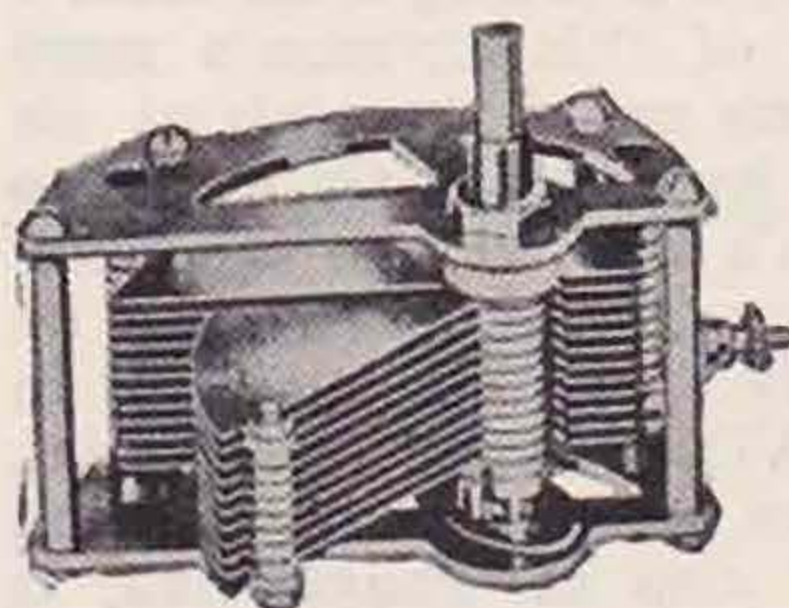
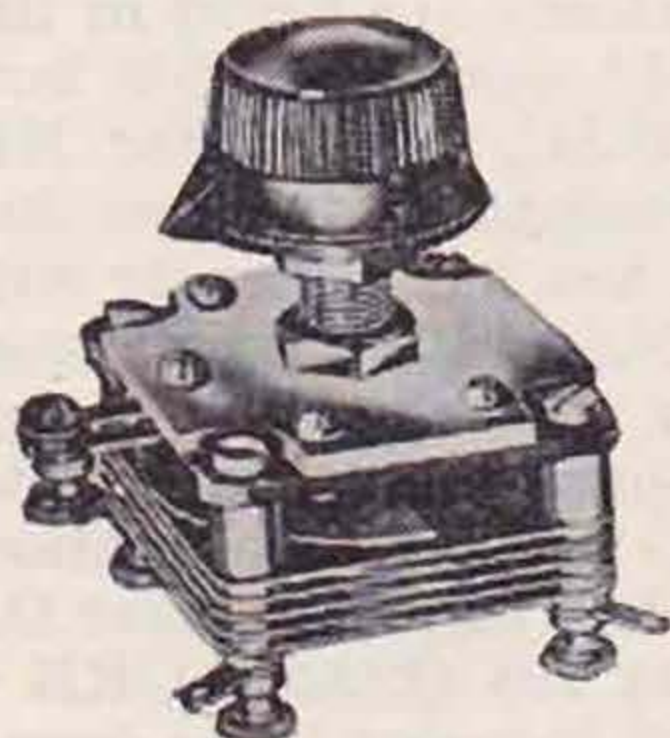
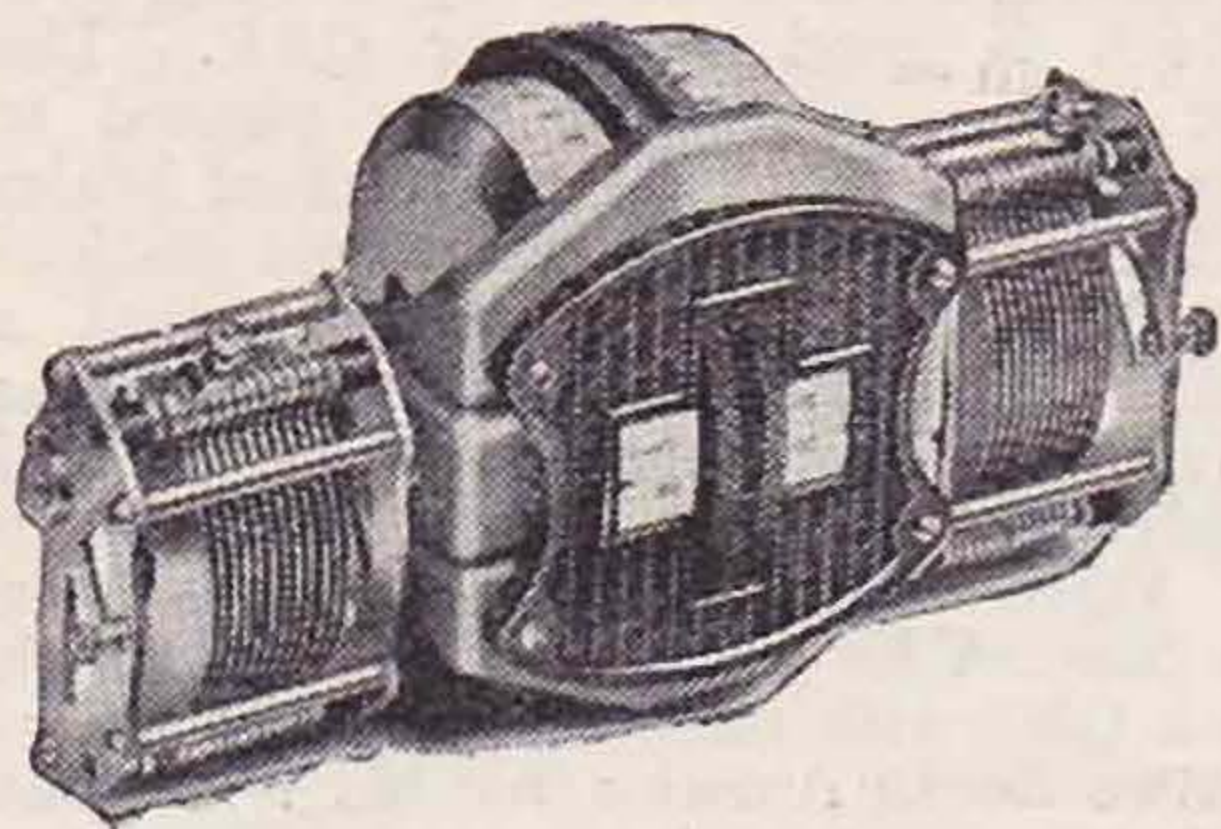
EGYPT.

By C. R. RUCKLES (SU8RS).
(Via Radio to G6VP.)

Our remarks last month regarding the return of good conditions on both the 7 and 14 M.C. bands were rather premature, for no sooner were the notes sent away than the reverse was the case; and these conditions have persisted more or less for the whole of the month. We have heard G stations working

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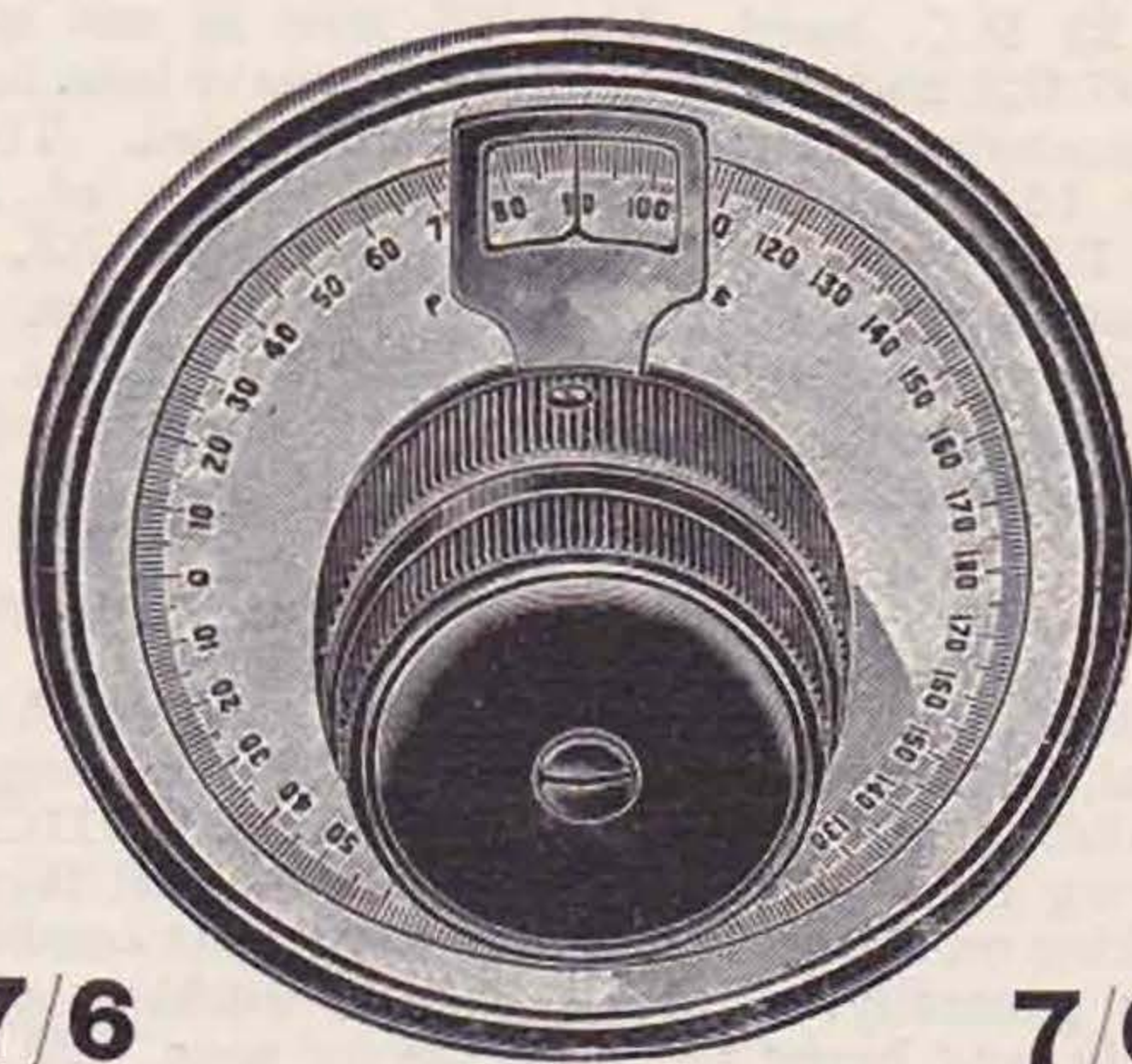


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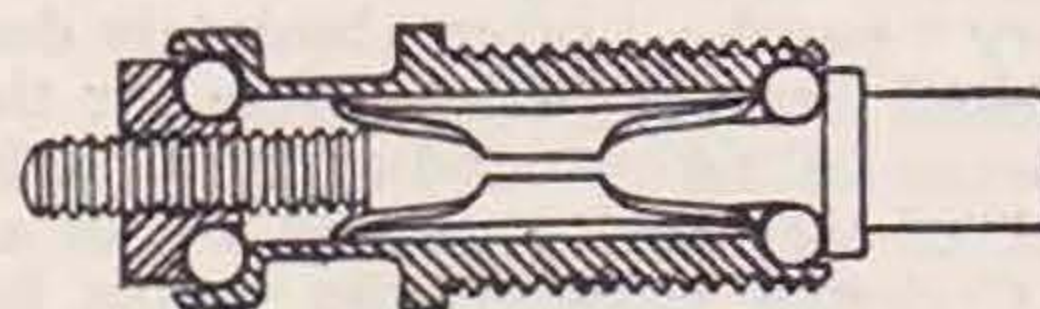
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ZL's and VK's in the morning, but these signals have passed over our heads, and there have been no signs of any DX signals here except a few W's now and again. SU8WY reports plenty of contacts on 7 M.C. within the 2,000 limit and one with VO8MC (on 7 M.C.) at 01.00 S.M.T. He needed a QSO with either a W, VE or VO for WBE, and is now awaiting card confirming this contact. SU8RS has overhauled all his gear in preparation for work on the 28 M.C. band. The RX now in use is the R.S.G.B.3, and plenty of harmonics have been heard, particularly on the 11 to 12-metre band. To-day from 15.00 to 17.00 S.M.T. harmonics of KBJ and DFC were very good, being a good R8. No variation until an hour after sunset, when they suddenly faded out. This seems to indicate that the best time at present for 28 M.C. contacts will be from 14.00 to 18.00.

IRAQ.

By H. W. HAMBLIN (YI6HT), 84(B) Squadron, R.A.F., Shaibah, near Basrah.

YI6KR is active with T.G.T.P. and an A.O.G. aerial, but is not very happy about it, and proposes rebuilding to Ultraudion with Zepp. YIICD is moving into 6KR's shack, and they will then be working on alternate days. They report conditions poor generally. YI6HT is still working at his CC rig, and hopes to be on the air soon. 28 M.C. is dead, but harmonic of JNA has been heard for first time in early morning; 14 M.C. patchy, but most of regulars heard; 7 M.C. consistent, but very bad QRN. The group is losing three members at the end of October, two going to G and the other to VU. The best of luck at your new QRA's, OM's.

IRISH FREE STATE.

By COL. DENNIS (EI2B), Fortgranite, Baltinglass, Co. Wicklow.

Things appear to be getting more lively over here and conditions are undoubtedly improving, although, in the writer's experience, the 14 M.C. band is still very "patchy," often absolutely dead. The 14 M.C. band has been remarkable for the almost instantaneous fading out, and equally sudden return to normal, of signals, but this is not of a periodic nature. Curiously enough, the writer has found the best conditions to be when the weather is wet and stormy with a rather low barometer. EI3B is converting the transmitter to CO on 7 M.C. and should be working before these notes are in print. EI8B brothers have recently returned from a visit to London where, in addition to meeting many G friends, they met D4CL and CT2AA. They are not regularly on the air as their transmitter is still under reconstruction. EI6C has come back and is CC on 7 M.C., but is troubled with unsteady mains voltage and hum. EI7C brothers have had some pleasant chats with old G friends on 1.7 M.C. They have been experimenting with different aerial systems without reaching any definite conclusion. EI8C has worked VT again on 14 M.C. EI4D is now in his new QRA with A.C. mains, and is experimenting with rectifiers. EI2B has been on the air on 7 and 14 M.C., but has nothing of special interest to report, having been away fishing for a fortnight during the month.

KENYA, UGANDA AND TANGANYIKA.

By GEORGE F. K. BALL (VQ4MSB), Radio Station, Mombasa, Kenya Colony.

During July, conditions on the 14 M.C. band were

very poor, and VQ4CRE, VQ4CRF, and VQ4MSB went up to the 7 M.C. band and worked each other. VQ4MA had a good crop of DX up to the end of May, but the outstanding feat of the month, so far as this OM is concerned, was the advent of a second op. Congratulations, OM! VQ4KTA has at last got on the air and was heard at VQ4MSB on the 14 M.C. band on July 1. He uses 40 watts to a D.E.T.1 with a tuned plate fixed grid circuit similar to that used at VQ4MSB. VQ5NTA, of Masaka, Uganda, has just come to life. His power is 3 watts, and I heard him having a QSO with ON4BZ, which is good work for QRP. The amateurs of Kenya, etc., were very pleased to receive a reply from H.R.H. the Prince of Wales in response to their birthday greetings via stations G6VP and VQ4CRF. It was thought that a paragraph in the local paper would help the amateur cause in Kenya and therefore our message and H.R.H.'s reply was published in the "East African Standard." VQ4CRE says conditions have been appalling in Nairobi for some time past, although he manages a QSO with difficulty now and again. He still requires South America for his WAC, but it is rarely that South Americans are heard in this part of the world. VQ4LMA and VQ3MSN both want South America for WAC, but so far ND. VQ4CRE rewound his transformer to give him 1500-0-1500 v. off load, but has had difficulty with his rectifiers. VQ4CRF in Nairobi has now a most imposing aerial system up, and is using about 80 watts from a ML motor generator. He also has gone over to the TP fixed G cct. Several stations have been logged on the 7 M.C. band, the best DX so far heard being G6VP at R6 QSA5. QRN is very bad in the evenings, and listening is far from a pleasure. VQ4CRE, one of this division's most active transmitters, informs me that in about six months' time he will be leaving for G, never to return to Kenya. Kenya's loss will be G's gain. We shall be sorry to lose you, OM. However, he intends to get going in G and hopes to keep in touch with us out here. VQ3MSN, in Tanganyika, is still on the air, as I have heard stations working him recently. VQ3SKW also in Tanganyika, is hung up waiting for a valve. He says he is all ready to step on the key when the valve turns up. For myself, I have had several QSO's during the month, mostly Europeans on the 14 M.C. band, but conditions have been very poor. No South African stations have been heard on the 14 M.C. band for months, but I just managed to QSO VQ2BH, ZS6U, and VP9SR on the 7 M.C. band during the month. And so ends the dope for Division 8 for this month, and I must thank most heartily all the OM's who were good enough to keep me supplied with items of interest. LATER (by radio to G2OP).—G2SC has arrived and hopes to be on the air shortly. VQ3MSN has been on 28 M.C., but nothing doing. He hopes his 28 M.C. sigs have been picked up. VQ4LMA has been QRT for some time owing to battery trouble. Both VQ4LMA and VQ5NTA have joined R.S.G.B.

SOUTH AFRICA.

By W. HEATHCOTE (ZT6X).

During the past couple of months things have been rather quiet, so to keep up the interests of South African amateurs during our so-called "wipe out" period a competition was organised on the 3.5 M.C. band. A number of our "hams" donated

prizes, and with the assistance of advertisers in our official magazine, "Q.T.C.," a fine array of prizes awaits the successful competitors. The competition was quite a simple one, and the results will be announced at the end of August, but judging from the number of stations I personally logged, fully fifty-five members were on the air at various times, and in this respect Division 5 (Natal) certainly put up a very fine effort, approximately fifteen of their members were actively engaged in the contest. It is pleasing to note the number of amateur stations in South Africa who have gone over to crystal control, ZT6T and ZT1J being the latest offenders. Hi! VP3SR started a "Black List" of all stations who were heard with prehistoric notes—his efforts have had a very good effect, and some of the worst offenders can now be heard with greatly improved notes. Most of the Division 6 amateurs are busy rebuilding in anticipation of the DX they hope to work when conditions improve. Personally I have noticed that it is quite possible to hear and work DX even at present, and PK and PY were worked the other afternoon with ease. The 28 M.C. band of "hopefuls" under the wing of OM Owen anticipate having a fairly busy time as soon as conditions improve. We expect this band to be fairly busy as a number of amateurs in all divisions have intimated their intention of giving this particular band their attention for DX. The membership of the S.A.R.R.L. continues to grow every month, and the number of "Overseas" amateurs joining our League is very gratifying. All applications for membership should be addressed to the Hon. Organising Secretary, Mr. Raymond Coombs, Box 7028, Johannesburg. The annual subscription being only 10s. per annum, which includes a copy of our monthly magazine, "Q.T.C."

S. RHODESIA.

By G. G. LIVESEY (VP3SRB), "Linslade," Private Bag/Gwelo, S. Rhodesia.

The big event of the past two weeks is that, at long last, the 14 M.C. band is beginning to show some stations. 3SRB's log shows that on August 21 19.00 S.A.S.T., Europe was heard for the first time for many months (nearly six). VP9SR is down on 14 M.C. again, and I heard English CC stations calling him between 18.00 and 19.00 B.S.T. on August 24. The QRO station 3SR will shortly

Chair Warmers' Club—(Continued from page 95.) a possible member, please communicate with the writer, who has been asked to become British representative.

The writer would also be glad to have the names of any active member of the R.S.G.B. who would be willing to undertake to do small practical services to any C.W., such as alterations to sets, aerials, wiring, etc. At the moment this need is not pressing, but if it should arise and an appeal was made to any specified district, it would be pleasant to know that such appeal would bring forth willing hands. Such an appeal will be made through the District Representative of the area in which the help was required. Communications should be sent to A. M. H. Fergus, G2ZC, La Cotte, St. Brelades, Jersey, C.I., or to the Hon. Secretary, W. J. Colpus, W8BRS, 23, Henderson Street, Pontiac, Michigan, U.S.A.

be crystal-controlled on 14 M.C. band, and 6SR is also on this band. 6SR has just received a report from OA4Z giving an R4, with ultra-QRP of about 3 watts!! Will British stations watch for us between 18.00 and 19.15 B.S.T.? You are then audible here, but at 19.30 B.S.T. you fade out. VP2SRA is going strong, with a nice note.

SUDAN.

By J. G. HILL, Wireless Section, 47(B) Squadron, R.A.F., Khartoum.

During July, SU6HL was moved from Aboukir, Egypt, to the above address, and the first call made with an ST prefix on August 10. ST2C is disturbing the ether from Wad Medani, and it is believed that there are other hams at present dormant. I would like to get in touch with them and have an ST rag-chew with a view to forming a branch of the B.E.R.U. Present gear at ST6HL comprises a 50-watt T.P.T.G. push-pull portable for CW and RT, and a 250-watt T.P.T.G. feeding a Zepp aerial. As this is the season of winds, rain, and sandstorms, conditions are not too good, and already one mast has been re-erected twice. Conditions on 7 M.C. are almost hopeless; 28 M.C. has yielded no fruit, and the only joy is on 14 M.C. from 16.000 G.M.T. to about 23.00 G.M.T. (18.00-0100 local time).

Notes and News from the British Isles—(Continued from page 111.)

cellent, and VS, VU, ZS, ZT, VP, ZU and many others have been worked, also "fone" to India and N. Africa. This has now W.A.C. on fone, and application for certificate has been made. GI6YM has been testing aerials and been in contact with most of Europe, using 8 watts input. GI6YW has now got more or less settled in his new QRA, 62, Balmoral Avenue, Belfast, and hopes to be "on the air" again very soon.

European Notes.

Reports this month from Europe are very scarce, probably due to the bad conditions which have recently prevailed and also probably due to the fact that many stations are rebuilding for the coming season. We heard from the N.V.I.R. that their long-awaited book containing all the technical details which amateurs should know is now ready. Dutch amateurs are now in possession of three books which together form a collection in which can be found the answer to anything about which the amateur is likely to be in doubt.

The Council of the N.V.I.R. has decided in future to return to the sender any QSL card which does not conform to the regulations of the Washington Conference. It is hoped that this will help to bring to an end the childish effort of a few amateurs to create a political atmosphere in amateur Radio. Another important announcement comes from Holland and that is with regard to the Dutch Air Service from Holland to the Dutch East Indies. The regular weekly service is to be resumed in November by the K.L.M. and for the first time one of the planes will carry a complete Radio equipment. It is hoped that a licence will be forthcoming for this station to work within the amateur bands for short periods, the purpose being to try and prove that amateurs can render assistance in relaying distress signals in case a plane should be forced down in the

jungle. The call sign will be PHAGA and the transmitter will have an input of 75 watts from dry batteries. An interesting fact is that it will be able to operate it whilst resting on the ground; this should prove very useful in cases of emergency.

Prizes are offered by the K.L.M. to those amateurs sending in the most valuable listening reports and offering the most reliable contacts. No definite details as to the frequency to be used are yet available but it is probable that the operator, Mr. Strykers, who is chief of the aeronautic radio-station at Waalhaven, will work on the 7 M.C. band. All reports should be sent to Mr. A. O. L. Strykers, Radio-station, Waalhaven, near Rotterdam, Holland. We hope to have more information for next month's BULLETIN. The N.V.I.R. earnestly ask all amateurs to assist in making a success of these tests.

From Norway we hear that the outstanding event during August was the Convention and general meeting. Much work was done and much importance attached to the Inland tests to be arranged during the autumn, in order to establish reliable National Relay Lines. It was decided to stimulate the exchange of foreign reports and co-operation in international tests, and it is interesting to note that the N.R.R.L. have arranged for foreign reports to be distributed to all their members by means of a monthly circular.

The Board for the next two years will consist of:

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The Convention included a good "hamfest" and very interesting visits to amateur stations, the commercial transmitting and receiving stations at Oslo, the new Oslo Broadcasting station, the Sailor School Laboratory and the works and laboratory of the Norwegian branch of Philips Lamps.

It was very much regretted that no opportunity occurred of welcoming any foreign amateurs; it was very much hoped to see G6YL and SM6UA.

Notice to Contributors.

The Editor is pleased to have manuscripts submitted to him for publication, but would remind contributors that, owing to lack of space, a delay often elapses between the receipt of the MS. and the date of its appearance in these pages. All matter intended for publication should be written on one side of the paper only and preferably typewritten (double spaced). Diagrams should always be shown on separate sheets. Rough sketches can be re-drawn by our draughtsmen. Photographs, if any, should not be smaller than ¼-plate as otherwise the reproduction will be poor.

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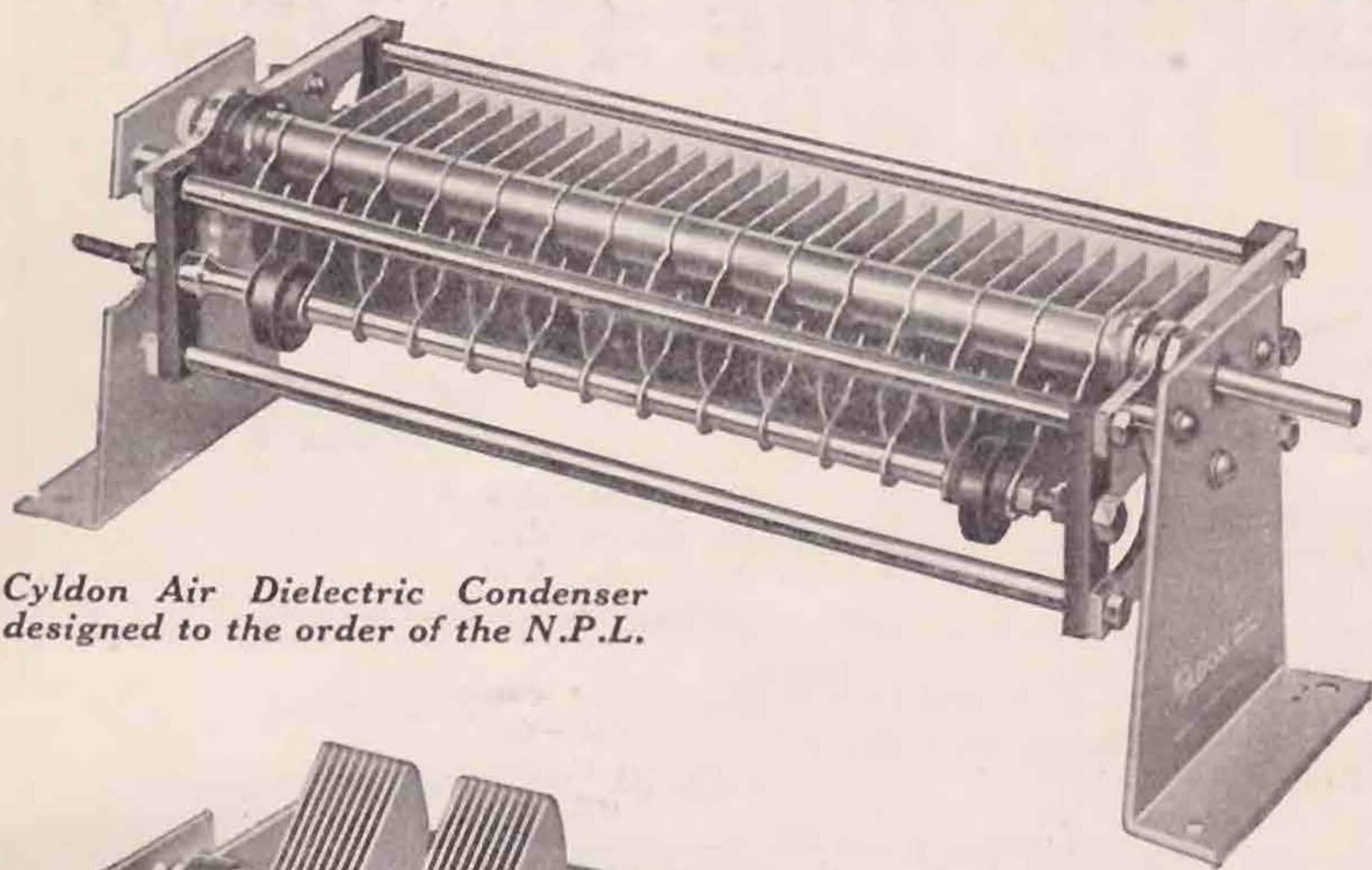
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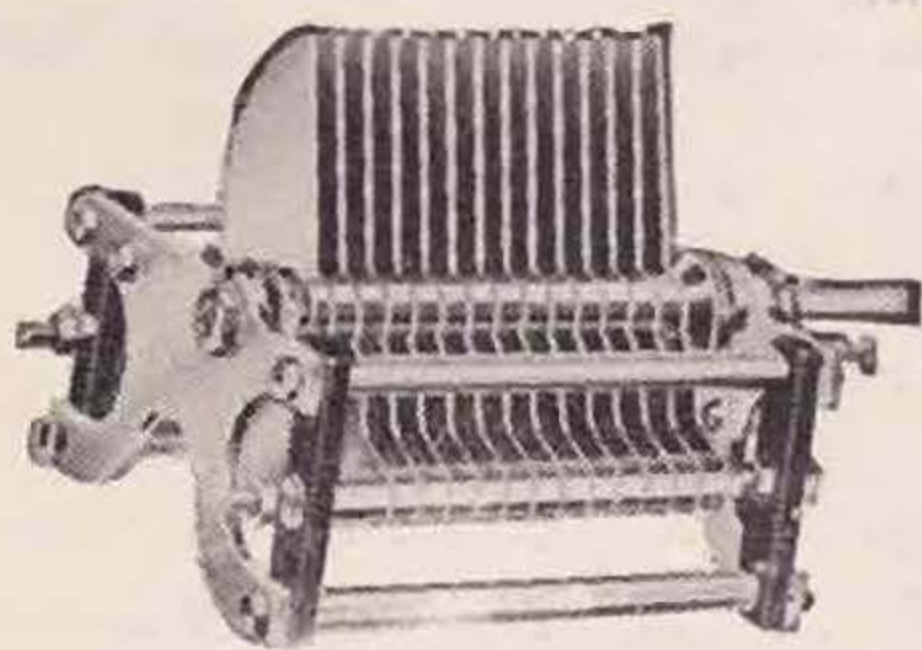
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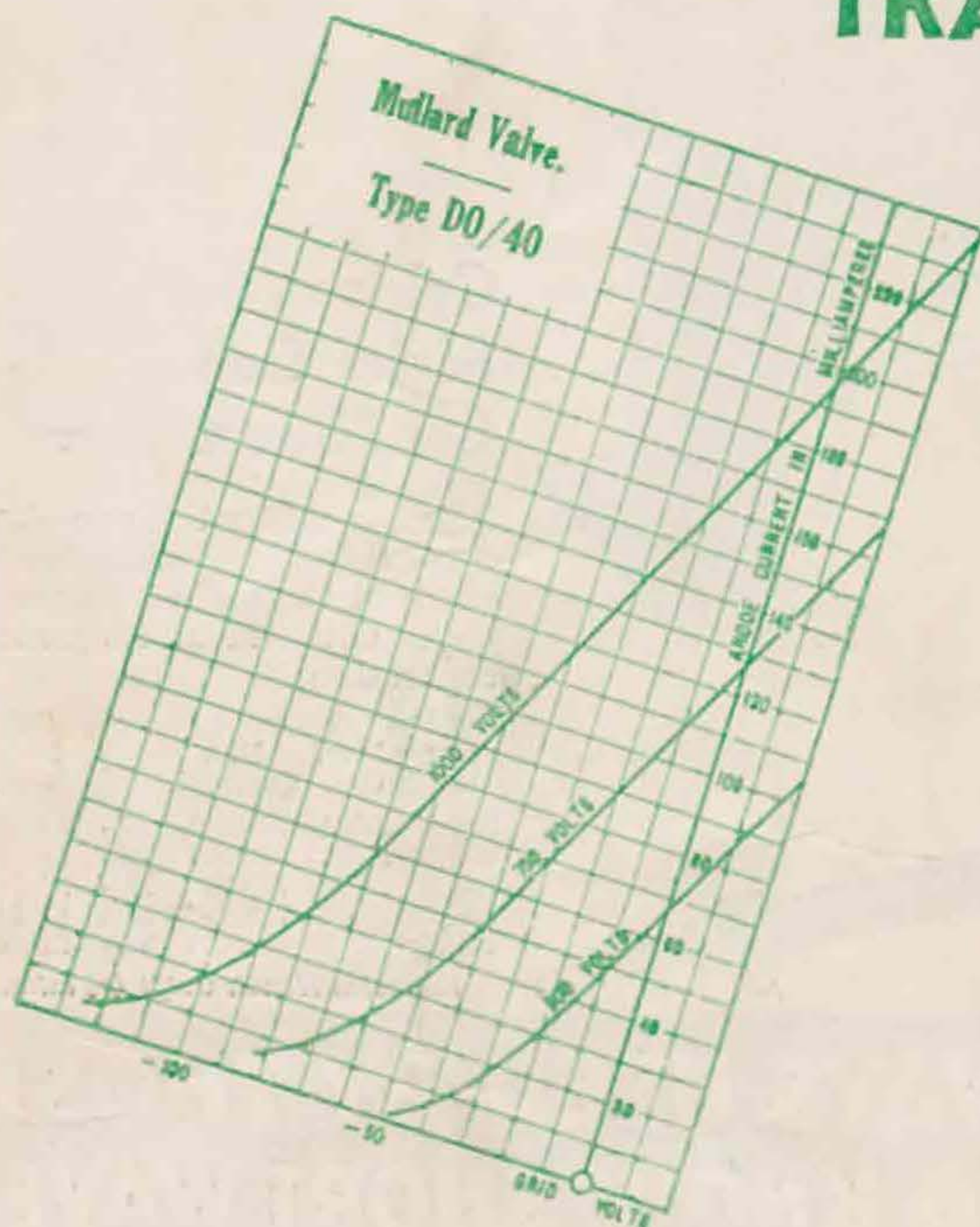
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LOW TEMPERATURE FILAMENT TRANSMITTING VALVES.



The Mullard D.O/40 is a dull emitter transmitting valve capable of working on anode voltages up to 1,000 volts and tested dissipating 40 watts at the anode.

The D.O/40 has a low impedance, and is suitable for use as a modulator in choke control transmitters. It is also suitable for short wave transmission (down to 40 metres).



Max. Filament Voltage	...	...	...	6.0 volts.
Filament Amps.	...	...	...	2.0 amps.
Max. Anode Voltage	...	...	...	1,000 volts.
Total Emission	...	...	...	300 mA.
Impedance	...	...	...	4,000 ohms.
Mutual Conductance	...	...	...	2 mA/Volt.
Amplification Factor	...	...	...	8

PRICE £5-5-0

Mullard

THE MASTER VALVE

The Mullard Wireless Service Co., Ltd., Mullard House, Charing Cross Road, London, W.C.2.