THE T. & R.

BULLETIN

THE INC. RADIO SOCIETY OF GT. BRITAIN

AND THE BRITISH EMPIRE RADIO UNION

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The Incorporated

Radio Society of Great Britain

and the

British Empire Radio Union

53, Victoria Street, London, S.W.1 (Phone: VICTORIA 4412)

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R.S.G.B. CALENDAR

Unless otherwise announced all meetings are held at the Institution of Electrical Engineers, Savoy Place, W.C.2, commencing at 6.15 p.m. Tea is served at 5.30 p.m.

March 30.—Mr. F. E. Henderson, of the G.E.C., will read a paper on "The Thermionic Gas Relay."

April 22.—"The Manufacture and Use of Quartz Crystals," by E. A. Dedman (G2NH) of the Quartz Crystal Company.

Details of forthcoming Local Conventionettes will be found under the District Notes Section as they become due. The full list appeared in the Convention Report, October BULLETIN.

The T. & R. Bulletin.

(*Published on the 14th of the month.*)

Hon. Editor: G. W. Thomas (G5YK).

Editorial Committee: A. W. Alliston (G5LA), J. D. Chisholm (G2CX), J. J. Curnow (G6CW), J. W. Mathews (G6LL), A. O. Milne (G2MI).

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T&R

Bulletin

The only Wireless Journal Published by Amateur Radio Experimenters in Great Britain

MARCH, 1932. Vol. 7. No. 9.

MADRID, 1932

EVEN our newest member must at some time or other during the past few months have heard something about the forthcoming International Conference, which is due to take place this autumn in Madrid.

Last June we attempted in our Editorial to review the future of Amateur Radio, at the same time explaining briefly the events which had occurred since the last I.R.C. was held in Washington.

Our object then was to prepare our members for the coming Convention, which will undoubtedly have far-reaching effects in every branch of Radio Communication. Mention was made of the meeting of the International Radio Consulting Committee, which had recently met in Copenhagen, whilst we gave it as our opinion that the closing scenes at this meetind would provide the opening scenes at Madrid, referring, of course, to the proposals which hag been made by the various delegates. Fortunately, or unfortunately, amateur matters received little or no attention, with the result that to-day we have only a hazy idea of the amateur proposals which will be made by other Governments at Madrid.

With this information before us, we consider it desirable to advise our members that steps have already been taken to fortify our Government delegates against any proposals which are likely to jeopardise our future welfare.

At a recent meeting in London, Mr. Marcuse (Licences Manager) and Mr. Arthur Watts (Acting Vice-President), were enabled to lay before the Post Office officials (who will also be the Government Delegates at Madrid) our views on several important matters. This meeting was attended with highly satisfactory results, and whilst it would be " sub rosa " to outline in detail the points discussed, we feel it necessary to state that our proposals were given sympathetic consideration. Prior to this meeting Council had considered the desirability of asking for an extension to be made to some of our existing bands, but with the almost certain knowledge that attempts will be made to wrest portions, at least, of our *present* bands from us, we were convinced that no useful purpose would be served by making such recommendations. Our main objective, therefore, is to convince the Government that for the successful operation of our stations *each and all of our existing bands must remain as laid down in the Washington Table of Allocations.* We have been privileged to study the proposals which have been made by the American Radio Relay League to its Government, and we are glad to know that they are putting forward views parallel with our own. They realise that no useful purpose would be served by attempting to force extensions, but, on the other hand, they have pledged themselves to persuade their Government that the present allocations must remain intact.

It is now almost certain that both North America and Canada will propose that all present bands should be made *exclusively amateur*, but we are not sure whether success will attend

(*Continued on page* 302.)

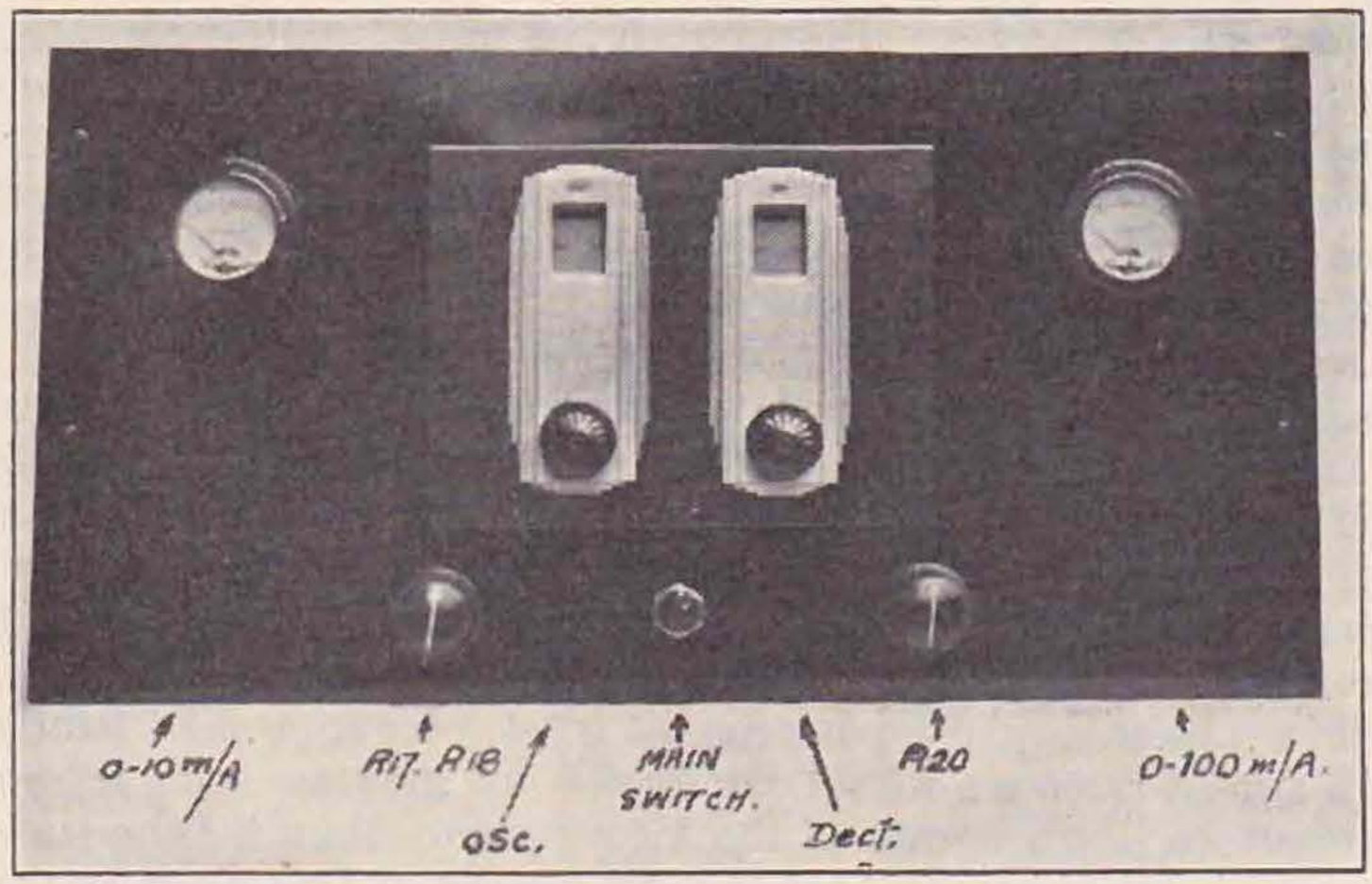
ALL-MAINS SUPERHETERODYNE SHORT-WAVE RECEIVER.

THE two or three-valve set is very popular with amateurs and if conditions are good, reception is all that can be desired, but with poor conditions the limitations of the "simple" receiver is at once appreciated.

With the object of popularising a receiver giving more consistent results, a superheterodyne is described in the following paragraphs, with sufficient constructive detail for it to be easily copied. The set described operates perfectly and eliminates all battery trouble, being worked entirely from the mains. It is, therefore, inexpensive in upkeep.

This All Mains Superheterodyne Receiver was built by one of our prominent members especially for publication in the "Bulletin." It is a very powerful receiver and may be relied upon to give excellent results.

The mains transformer, rectifier and smoothing equipment are all combined, and do not take up much space considering the number of components employed. A good idea of the compact layout will be gained from the various photographs, especially the sub-base one, for on the right can be seen the smoothing chokes and the high capacity condensers surrounding the feed to the amplifier valve holder, while in the centre is the first detector valve holder with its accompanying bias resistor and condenser, and below are the various dropping resistors. On the left is shown four valve holders with their accompanying bias and decoupling resistances and condensers, the top one being the oscillator, next the two valve holders for the intermediate frequency amplifier, followed by the second detector valve holder, with its grid condenser and leak.



Referring to Fig. 1, the frequency changer part will be seen on the left. There are many circuits to choose from, but the principle of operation remains the same. It will be seen that a screened-grid detector valve working in conjunction with a triode oscillator is used. An important point is that it is non-radiating and yet of high efficiency, the latter being obtained by the coupling of the oscillator to the detector anode circuit, this latter valve employing anode-bend detection.

The set is operative from 14,000 K.C. to the broadcast band with, of course, interchangeable coils. There are only two tuning controls (that is after the setting of screen-grid voltage by the potentiometer control), being the variable condensers controlling the first detector grid circuit, and the oscillator plate circuit. If the particulars given are carefully followed, much tedious work, involving trial and error, will be eliminated.

Study of Components Used.

Frequency Changer.—It will be noticed that the anode of the first detector is coupled to the grid circuit of the oscillator. A screened-grid valve is, therefore, used as the detector and must be properly screened; further the valve chosen must be one with a small grid/anode capacity. The valve used is an S4VA, the characteristics of which prove excellent for the work it is called upon to do.

The oscillator valve is an 164V. This valve has rather a low anode impedance which gives it a moderate amplification factor, and is not so erratic in operation as a valve of higher impedance. Particulars of the aerial and oscillator coils are given in the diagram, Fig. 4. It is probable that in the near future a small type of former suitable for this class of work will be available upon the market. The type of formers used are of American make, having a size of 3 in. by 1½ in. The variable condensers are Polar type "A" (tank and vernier), used in conjunction with National V.H.C.R. Dials. These condensers will cover many bands with

good margins above and below those for which the coils are rated.

Intermediate Frequency Amplifier.—A two-stage screen-grid amplifier is used employing two S4VB valves. These have a much lower impedance than the S4VA as first detector, and are most suitable for

Second Detector.—Here a triode valve is used, the 354V, and proved to be a very good leaky-grid detector. The anode is fed through a Burne-Jones screened H.F. choke, which forms a low pass filter, with the two condensers, C_8 and C_9 on either side and by-passed to earth. This method is used to

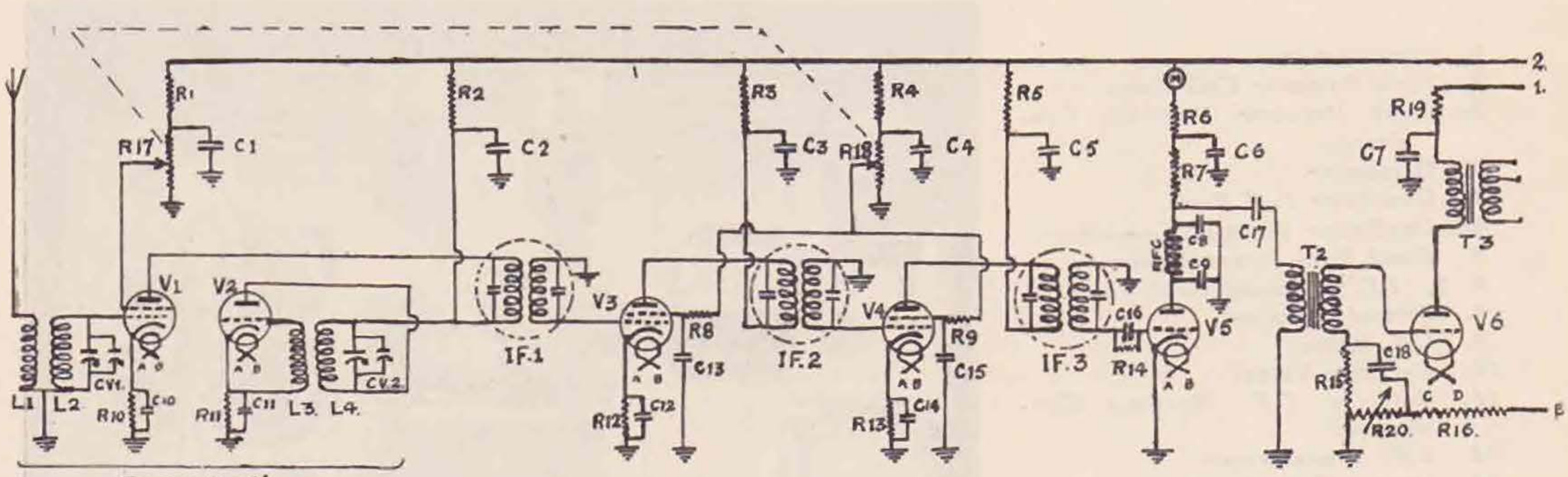


Fig. 1.

R_1, R_4—5,000 ohm Colverstat.
R_2—20,000 ohm Colverstat.
R_3, R_5.—10,000 ohm Colverstat.
R_6.—8,000 ohm Colverstat.
R_7—25,000 ohm Colverstat.
R_8, R_9, R_{10}, R_{11}, R_{12}, R_{13}=600 ohm Colverstat.
R_{14}.—250,000 ohm Leak.
R_{15}.—100,000 ohm Resistor.
R_{16}.—800 ohm Colverstat.
R_{17}, R_{18}.—St. 10 50,000 ohm Ganged Var. Colverstat.
R_{19}.—1,000 ohm Colverstat.
R_{20}.—500 ohm Var. Colverstat.
M.—0-10 m/Amp Meter.
C_1, C_4, C_6—2.0 μf Type 50 T.C.C.
C_2, C_3, C_5, C_7, C_{10}, C_{11}, C_{12}, C_{13}, C_{14}, C_{15}, C_{18}—1.0 μf Type 50, T.C.C.
C_8, C_9—.005 μf Type 34 T.C.C.
C_{16}—.0001 μf Type 34 T.C.C.
C_{17}—4.0 μf Type 80 T.C.C.
I.F.$_{1, 2, 3}$, Colverdynes.
CV_1, CV_2. Type A, Tank and Vernier "Polar."
R.F.C. Screened H.F. Chokes, "Burne-Jones."
T_2—L.F. Transformer DP3, "Varley."
T_3 Pentode-Output Transformer, D.P.5, "Varley."
L_1, L_2, L_3, L_4. See Fig 4.
Valves Mullard V_1—S4VA: V_2—164V: V_3, V_4—S4VB: V_5—354V: V_6—AC.044.

use with the particular type of I.F. coupling used, *i.e.*, Colverdynes. Three of these are used between the two detectors. Each contains two adjustable-coupled coils, and each coil is tuned to 110 K.C. by small trimming condensers.

keep the anode load impedance to the intermediate frequency low, and to prevent the intermediate frequency currents from reaching the low frequency circuit.

Low Frequency Amplifier.—As there is a fairly large anode current to the second detector, the most convenient form of coupling is that known as "shunt-fed transformer." This method was accordingly adopted here, and the components R_7, C_{17} and T_2 can be readily seen in the circuit. The coupling condenser is one of 4 mfds., and the transformer is a heavy duty Varley DP3. This transformer is quite adequate to feed the ACO44 final valve, which is capable of giving an output of 1400 m/watts, or if preferred, a pentode valve may be used such as the PM24C. With such a heavy output, a suitable transformer must be used, and the DP5 pentode output transformer was fitted, as it is suitable for both high and low impedance output work.

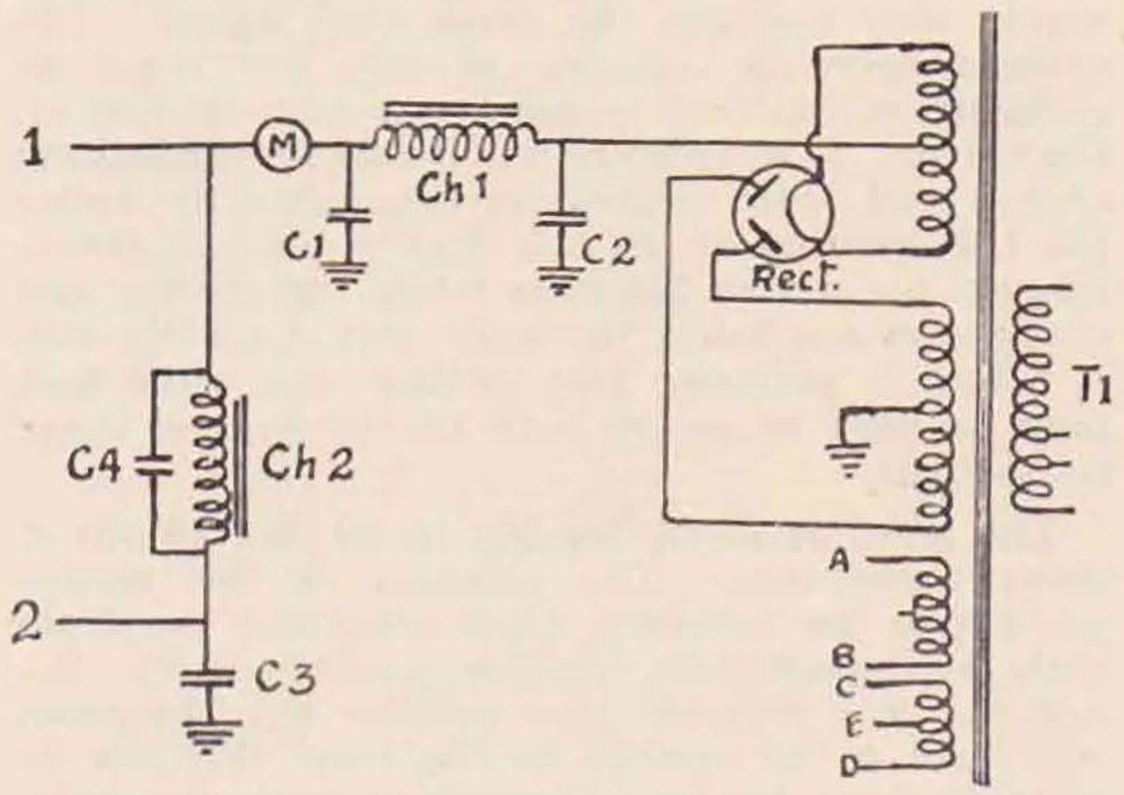


Fig. 2.

Ch_1.—Type N1 Subpanel. Chester Bros.
Ch_2.—Type N2 Subpanel. Chester Bros.
C_1, C_2, C_3—4 μf Type 80. T.C.C.
C_4—0.1 μf Type 34. T.C.C.
M—0.100 m/A. Meter.
T_1—Type N1 Mains Transformer. Sec. 400 V. Tapped 300V, 4V-2 Amp, 4 V-5 Amp, 4 V-1 Amp, all centre tapped. Chester Bros.
Rect. Type 1561. Philips.

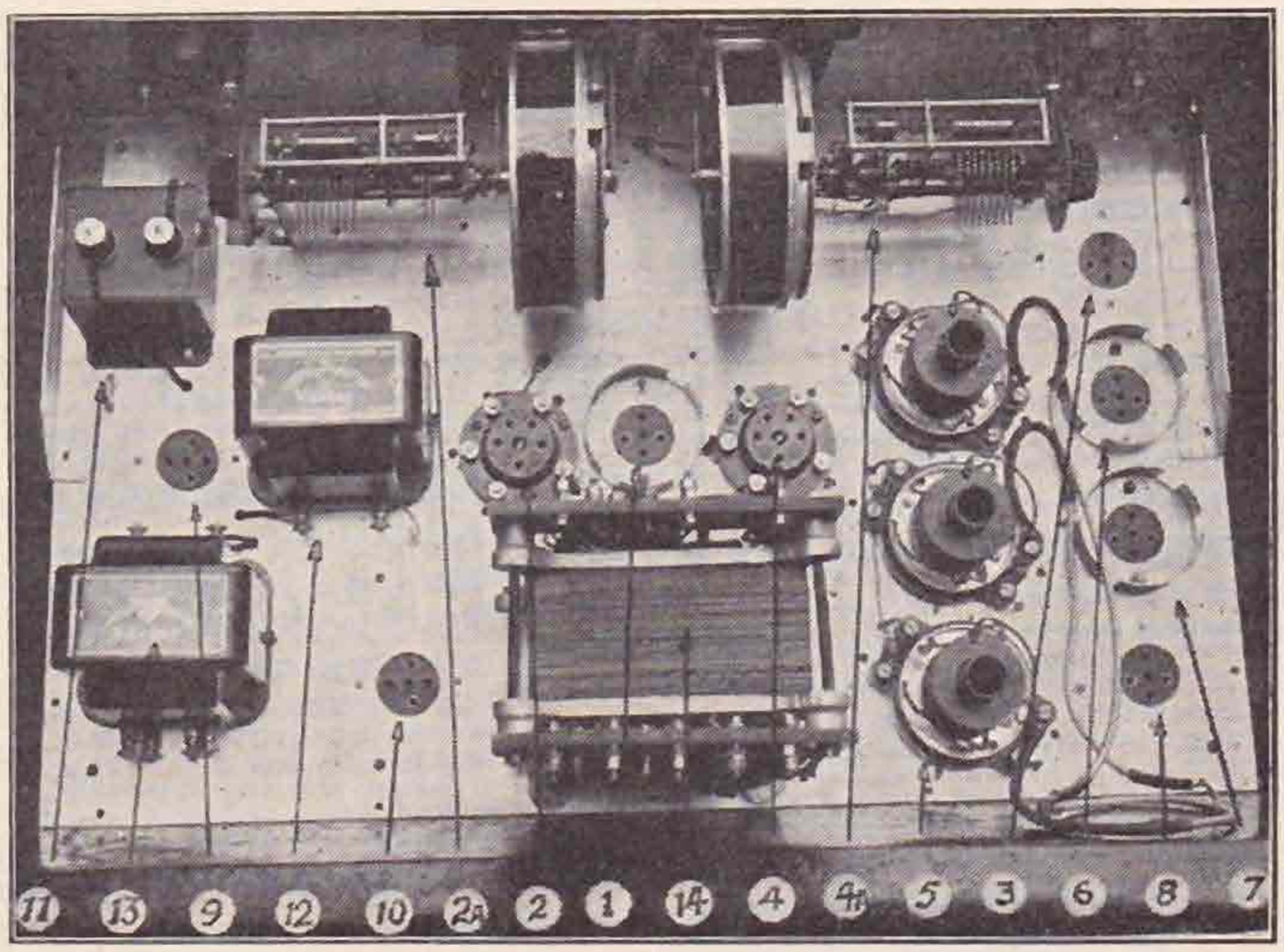
Rectified Current Supply.—The mains transformer, chokes, and smoothing circuit are shown in Fig. 2, along with the various constants. It will be noticed that the choke N_1 carries the whole of the current to the set, and choke N_2 current for all but the amplifier.

Voltage dropping, bias and decoupling resistors are all 10-watt rating. The double-variable Colverstat, R_{17} and R_{18}, also the variable bias resistance R_{20}, are wire wound. The type of condensers chosen are those suitable for the load. The use of current supply meters, 10 and 100 m/amp (Central Manufacturing Co.), is optional, but a superheterodyne receiver should not be used without

an indicating meter in the feed to the second detector valve. The use of switches for mains supply, as well as fuses, delay switch, aerial, earth, and output terminals or plugs and their respective positions are left to the builder.

1. *First Detector.*
2. *First Detector Coil Base.*
2a. *First Detector Variable Condenser.*
3. *Oscillator.*
4. *Oscillator Coil Base.*
4a. *Oscillator Variable Condenser.*
5. *Band Pass Intermediates.*
6, 7. *I.F. Screened Grid Valves.*
8. *Second Detector.*
9. *L.F. Valve.*
10. *Rectifier Valve.*
11. *Detector L.F. By-pass Condenser.*
12. *L.F. Transformer.*
13. *Output Transformer.*
14. *Mains Transformer.*

All Valve-holders are Clix Sub-base Type, and the Valve Shields (where used) are Colvern. Compare with "Fully Shielded" Photograph.



Construction.

The first thing to do is to prepare the chassis, the base being 20½ in. by 12½ in. of No. 15 s.w.g. sheet aluminium. For cutting and mounting particulars, see Fig. 3, and the photographs. To save time and trouble Burne-Jones & Co., Ltd., will bore out the one-inch circular holes (if ordered)

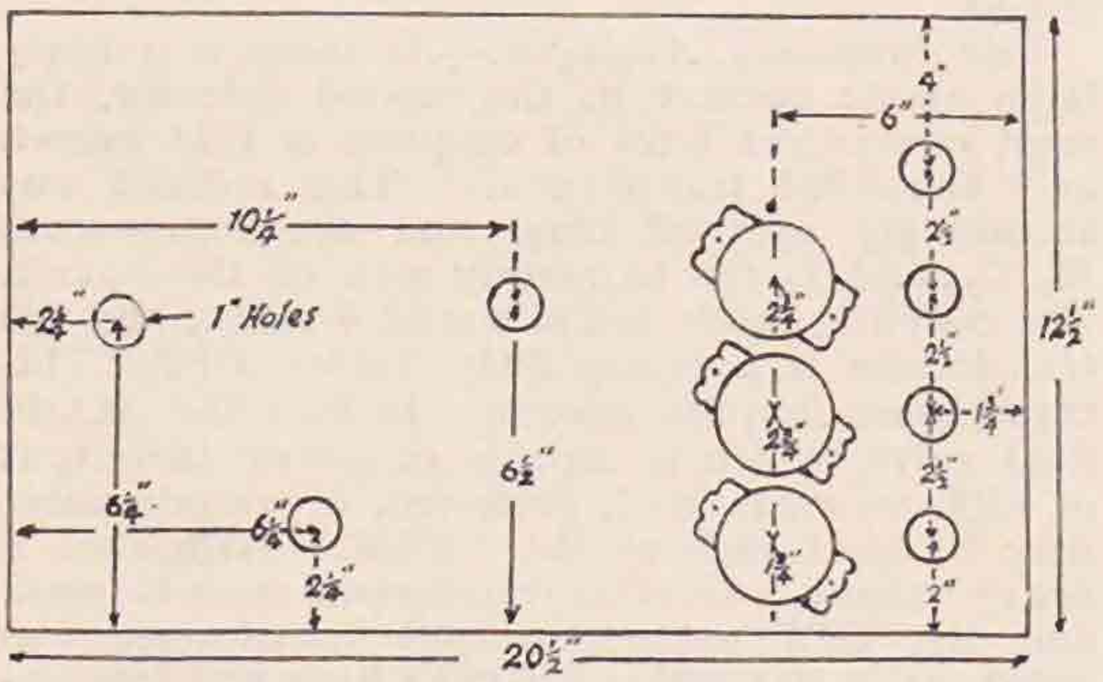


Fig. 3.
Aluminium Base, No. 14 S.W.G.
Aluminium Panel, 21 in. by 10½, No. 16 S.W.G.
"Magnum."

for the Clix sub-base valve holders. The smaller individual holes can be drilled by the builder. A hardened wood frame is to support this base, but it will be equally satisfactory to use metal sides and back strips. This frame was made from wood 3½ in. deep by ½ in. thick, but is not shown in the photograph. It will be necessary to leave half an inch clear round the edge of the base for fixing to the wood frame.

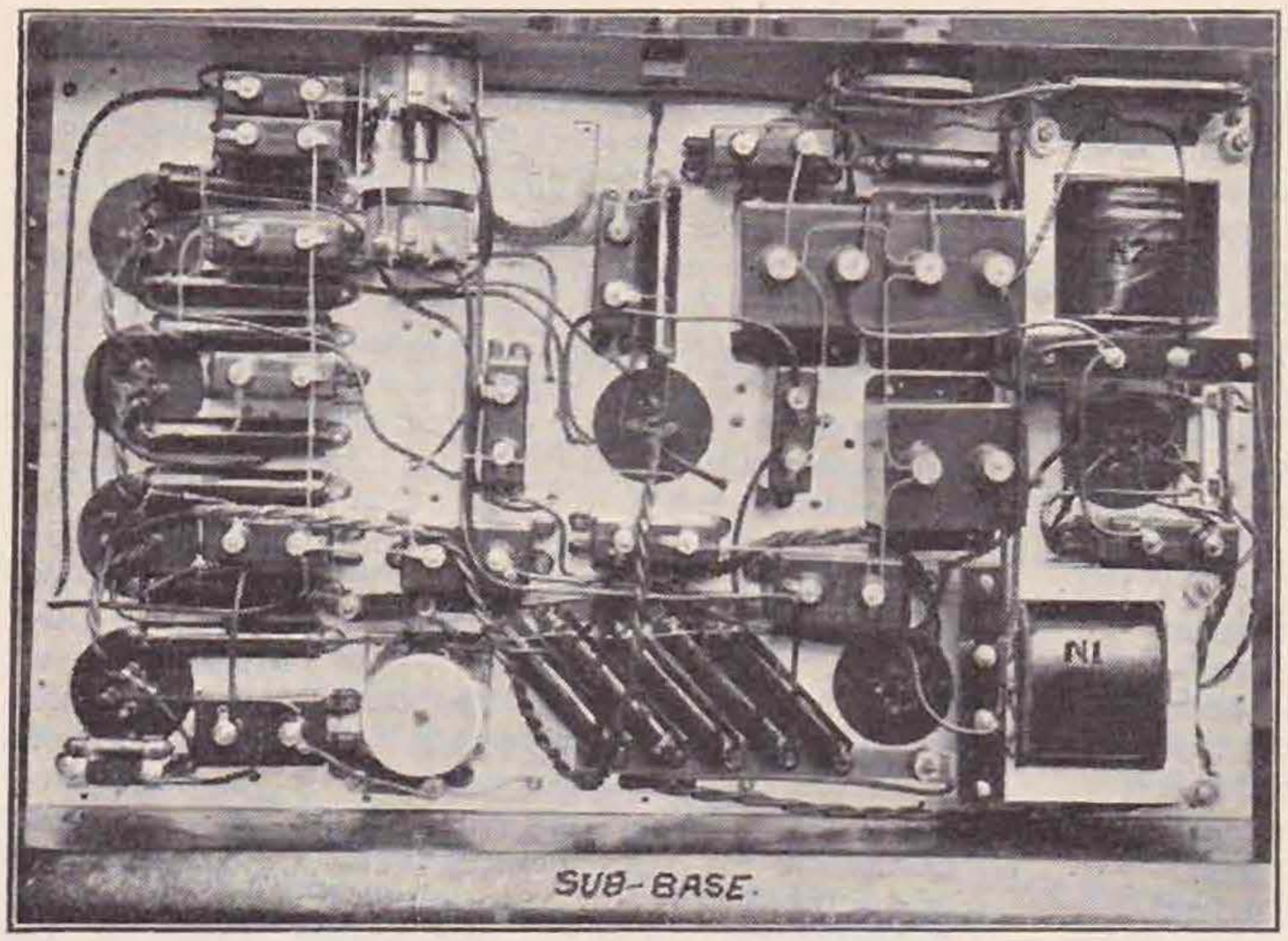
The sub-base and two above-base photographs can be compared with each other, and noting the prefix numbers in the list it will be easy to pick out the individual components and their mounting positions. All wires, well insulated and being kept as short as possible, are passed through the base to the various components. The class of base for the plug-in coils can be left to the makers' choice, and only four pins are actually required, although five are shown in Fig. 4, as the particular type of former used is supplied with five pins. Note that the oscillator plate coil is at high potential, so that the variable condenser (4a in photogaph) tuning it must be insulated from, and not to come in contact with, the metal panel or base. All filament leads are twisted vulcanised rubber covered flexible wire, and one set of wires supplies all valves but the amplifier; the amplifier filament wiring also supplies the drum dial lights. The current carrying capacity of this flex must be sufficient to enable it to keep cool while feeding all the valves. It will also be noted that the smoothing chokes and their condensers come directly under the L.F. portion of the set, that is the L.F. transformers are above the base while the chokes and condensers are below the base, and if a little care is taken in planning and drilling the same bolt may be used to secure both the upper and lower component.

The panel is 21 in. by 10½ in. of No. 16 s.w.g. sheet aluminium. The position of the meters are left to the builder. After mounting the drum dials for condensers, double potentiometer R_{17} and R_{18} and variable bias resistor R_{20}, the panel will have to be secured to the base, this can be suitably done by two aluminium angle brackets. Most of the wiring can be followed in the photographs, and it is not necessary to keep the sub-base wiring carefully spaced.

Shields are fitted to the first detector valve holder and to the two intermediate frequency screen grid valve holders. The mains transformer requires very careful shielding and an iron box will be found satisfactory; a suitable one can be made from tinned sheet iron.

Aerial and Oscillator Coils.

The construction of the coils proved to be a very simple matter and no difficulty should be experienced if a good type of former is used and the winding particulars carefully followed from Fig. 4.



SUB-BASE.

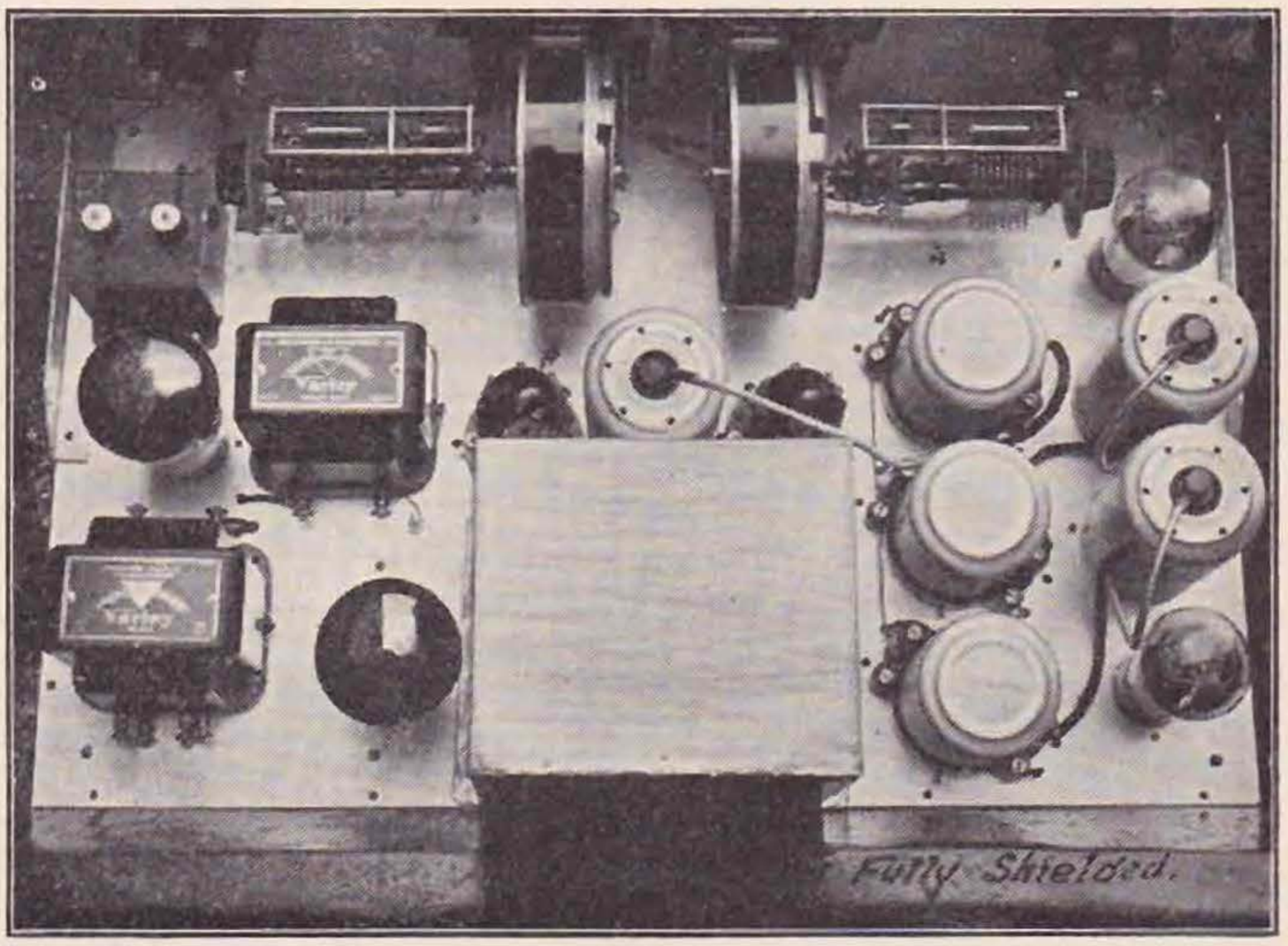
Silk-covered copper wire is used for these coils, the turns of which should be spaced the diameter of the wire for the 14 M.C. coils, though no spacing is necessary for the lower frequency coils. It is suggested that if cotton covered wire is used, the covering be treated with some form of damp resisting material or single spacing be employed as far as possible. Enamelled wire must, of course, be space-wound.

The set is now completed and all valves can be placed in their correct places, and for the sake of safety a fuse should be connected in the lead to the mains transformer. The whole of the set is being supplied with H.T. current from the 300-0-300 volt tapping of the mains transformer. This voltage is rectified by a Phillips 1561 full-wave rectifier valve. This valve is rated for 500-0-500 volts, so that a change may be made to the 400-0-400 volt tapping on the mains transformer for high voltage amplification, of which there is further mention in the notes on operation. Armoured cable should be used for the anode supply to screen-grid valves, and a word of warning may be given here as the vulcanised rubber on some armoured cables made for use on cars is very soft and under vulcanised, and if used for this purpose, it would certainly cause heavy leakage and high frequency damping.

Operation of Superheterodyne.

It is not necessary to enter into a prolonged explanation of the working of a superheterodyne, but a few remarks will not be out of the way. Anode bend rectification is used for the first detector, which gives less damping than grid rectification; a higher degree of selectivity is thus obtained.

There are only two tuning controls and one visual indicator, *i.e.*, the meter in the second detector anode lead. Assume the 7 M.C. coils are in circuit and the screen double potentiometer control is about midway, and the set is switched on. The meter that passes the whole of the current to the set will show a fairly heavy current straight away, as the final valve is a directly-heated valve though the previous valves will take time to warm up. The detector meter will be seen to rise to a certain point and then fall back. This denotes that a state of oscillation is taking place, but should not this occur the potentiometer control must be increased, and by so doing a higher voltage is put on the screens of all screen-grid valves, and allowing a higher anode current to flow. This anode flow can only take one course, and that is through the primary of the first intermediate frequency transformer, for it is part of the anode circuit to the first detector valve. In this manner the signal is transferred to the intermediate frequency amplifier and on to the second detector. Care must be taken to ensure that the I.F. amplifier transformers are band-passing to their best advantage. To do this, remove the shields and adjust the coupling between the coils, so that complete control over selectivity and quality is obtained, and adjusting to resonance by means of the capacity trimmers that are across each coil. When this is once done, the shields may be replaced and the


Fully Shielded.

(*Continued at foot of column* 1, *page* 298.)

THE PENTODE.

[The Edison Swan Electric Co., Ltd., kindly read a paper on the development of the Pentode at a recent Society meeting.]

THE pentode is an adaptation and development of the four electrode valve for low-frequency amplification. The interposition of a second grid between the control grid and the anode of a triode gives rise to several important effects, the chief being that the anode current is no longer controlled by the anode voltage, but depends mainly on the potential of the fourth electrode (or "screen"). The anode current-anode voltage curves of a four electrode valve, therefore, resemble the saturation curves of a triode with limited emission, i.e., for a given screen voltage the anode current rises to a given value and then remains constant over a wide range of anode voltage.

Another interesting effect is obtained when the anode voltage is less than that of the screen. In this case the impact of electrons from the filament to the anode is sufficient to dislodge secondary electrons from the surface of the anode which will be attracted by the higher potential of the screen and form an anode-screen current. In some cases this secondary emission actually exceeds the primary emission, and we have the case of a reverse anode current at low anode voltage. This effect can be seen on isnpection of the curves of an average "screen-grid" valve, which show a "kink" in the region of secondary emission. This "kink" and its cause is avoided in the pentode by the interposition of a further grid between the screen and anode which is at earth potential. The secondary electrons are thus repelled on their emergence from the anode, and prevented from reaching the screen.

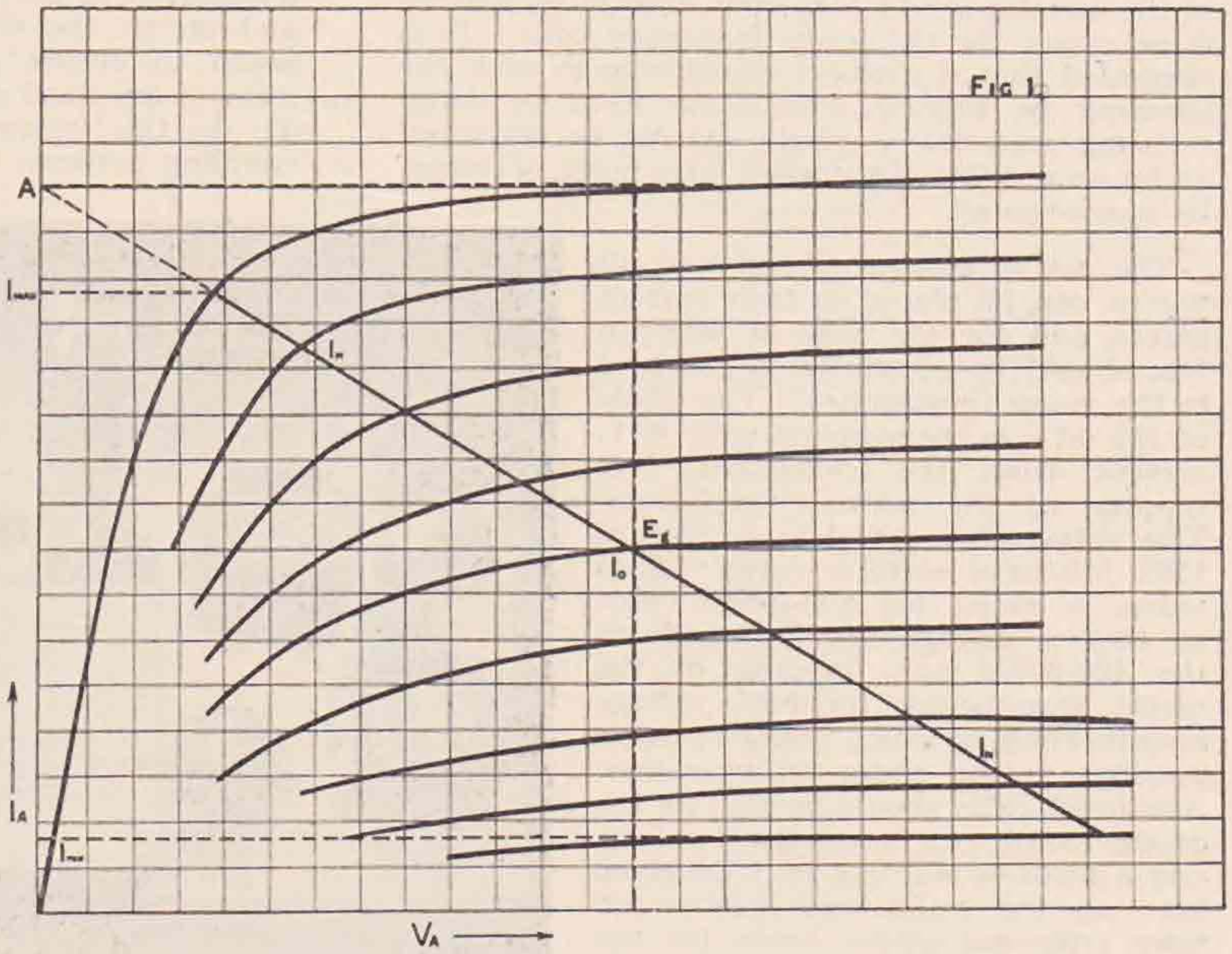
The characteristic curves of the pentode then appear as in Fig. 1, and from them can be deduced the approximate operating conditions and performance under varying values of pure resistance load.

It will be noticed that the curves tend to bunch in the higher grid bias values. This has an important effect on the reproduction of a pure sinosoidal input to the grid circuit, and can best be considered with reference to an actual operating condition.

To find approximately the optimum working condition for any given anode voltage a working grid bias is chosen so that the anode current does not exceed the safe dissipation of the valve. In most cases the instantaneous grid potential should not be allowed to become positive, so the upper limit of grid swing becomes the zero grid-volts curve shown. Assume the zero grid-volts curve to be extended backwards in a straight line to cut the I_a axis at A. Then if E_g, the working bias point, is tentatively marked half way up the perpendicular from V_a to the zero curve, the optimum load will be given by a diagonal joining A to E_g and extended to an equal swing on the lower portion. Having drawn this trial load line, determine the values $I_{max.}$, I_{min} and I_o shown.

Since the curves are closer together on the higher grid-bias values and open out slightly towards the knee of the curve, it follows that the anode current variation caused by grid swing along the load line will not be a replica of the applied voltage, but will take the form of a sine wave flattened on the lower portion, and peaked on the upper portion. Such a wave, if analysed, will be found to consist of a second and third (and higher) harmonic superposed on a fundamental sine wave. The value of these harmonics determines the satisfactory oeprating conditions of the valve, and it is customary to ensure that they do not exceed 5 per cent. of the fundamental wave.* The actual value of the harmonics can be calculated from formulæ given below, but for the time being, in determining the optimum working point, it is sufficient to check

FIG 1.



* The proposed permissible distortion of 5 per cent. is a purely arbitrary figure, and does not necessarily represent the point above which the valve is giving poor reproduction. Obviously this figure may be extended in a number of cases, depending on the taste of the individual, with a corresponding increase in the power output obtainable.

the value of the second alone. The load line drawn, the vertical distances $I_{max} - I_o$ and $I_o - I_{min}$ should be measured. If they are equal, the second harmonic is zero, and the load line correctly represents the optimum operating conditions, and the value of the third harmonic may then be calculated. If they are not equal, the load line will have to be altered in slope until they are, using the point E_g as a pivot. An alternative method of checking for zero second harmonic is to place a rule along the load line and measure the linear distances $I_{max} - I_o$ $I_o - I_{min}$, which should be equal. The rule can be pivoted about E_g to alter the slope of the load line as before.

If the value of the third harmonic greatly exceeds 5 per cent. (or the selected limit—see footnote†), the value of bias E_g will probably need to be altered and a fresh trial made.

The power output, assuming the distortion to be reasonable, is then calculated from the formula—

$$W = \frac{(I_{max} - I_{min})\ (V_{max} - V_{min})}{8}$$

It should be noted that this is *total* power output, including that due to the harmonics. If the fundamental power alone is required the formula below should be used.

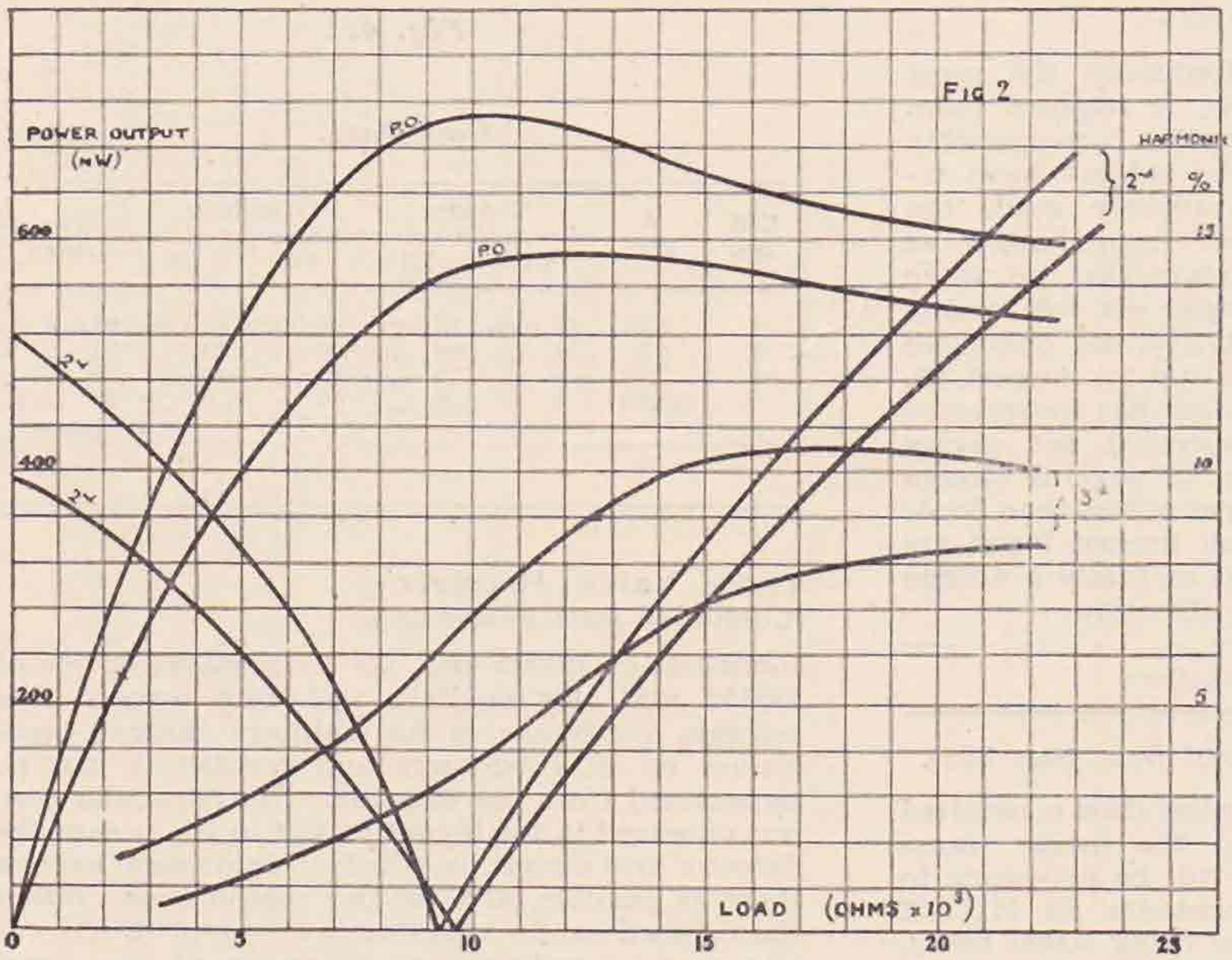


Fig 2

Calculation of Distortion.

To determine accurately the second and third harmonics from the curve and load line, two further readings of anode current will be required at grid bias values of $E_g \pm \frac{E_g \ddagger}{\sqrt{2}}$ These are indicated on the curve by I_m and I_n respectively. The max. amplitude of second harmonic is then—

$$\frac{(I_{max} - I_{min}) - 2\ I_o}{4}$$

The max. amplitude of 3rd harmonic is—

$$\frac{(I_{max} - I_{min}) - 1.414\ (I_m - I_n)}{4}$$

and the amplitude of the fundamental (max) is—

$$\frac{(I_{max} - I_{min}) + 1.414\ (I_m - I_n)}{4}$$

The percentage of each harmonic being calculated from the above formulæ.

The variation of power output and harmonics for a typical pentode is shown in Fig. 2.

The values of percentage distortion refer to the anode *current*, and, of course, are reduced when power output to the speaker is considered.

For example, assume a load of 10,000 ohms and a *fundamental* output of 10 mA. for 5 per cent. distortion, the harmonic content is .5mA, but the power associated with the harmonic is $\frac{.5 \times 5 \times 10{,}000}{10^6}$ or 2½ milliwatts. The fundamental power is $\frac{10 \times 10 \times 10{,}000}{10^6}$ or 1 *watt*, of which the distorted power is a negligible percentage. It follows, therefore, that with small power outputs the permissible distortion can be considerably increased without producing any unpleasant acoustic effects.

Considering the pentode with regard to the external circuit, it will be understood from an examination of Fig. 2 that the operating conditions are not so elastic as those of the triode. It is well known that the impedance of moving-iron speakers (and for that matter, transformers operating moving-coil speakers) increases rapidly with increasing frequency. Hence on the higher frequencies the pentode will be operating at a point far removed from its optimum conditions, which will lead to over-emphasis and possible distortion of the upper register. To maintain a proper balance it is essential therefore that the impedance of the load circuit should remain approximately constant. This can be ensured by connecting a compensating circuit across the speaker or output transformer designed to have a falling impedance characteristic with an increase of frequency. A suitable form of this is a condenser and resistance (preferably variable) connected in series across the output circuit. The values chosen depend on the load and on the frequency at which the desired reduction of impedance is to take place, but suggested trial

† The formulæ for distortion are based on consideration of a sine wave to which a second and third harmonic have been added, the second at 90° out of phase, and the third in phase. The points Im and In on the resultant wave correspond with points where the second harmonic is instantaneously zero.

‡ If E_g =10 volts, then I_a should be read at 10v.±7.07v.=17 and 3 v. approx.

values are .01 mfd. and 10.000 ohms. By varying either or both components a satisfactory tone control can be arranged to suit individual requirements.

Where, however, the amplifier suffers from a loss of higher frequencies, the pentode will be found very suitable to correct this defect and maintain an even response.

Sensitivity.

A convenient expression for the power sensitivity of the pentode is $\frac{\sqrt{W}}{E_g}$, W being the power output and E_g the applied signal voltage R.M.S. Since the sound intensity is proportional to $\sqrt{W}$, the formula gives a useful indication of relative audibility. A comparison of pentodes and triodes on this basis is given below.

	Signal Input volts R.M.S.	Power Output in milliwatts.	$\sqrt{W}$	$\frac{\sqrt{W}}{E_g}$
P.220 ...	3.5	75	8.7	2.48
Pen 220 ...	3.5	600	24.6	7.03
P.220 A. ...	6.5	150	12.2	1.88
Pen 220 A.	6.5	1,060	32.7	5.00

Conclusions.

While the pentode is undoubtedly the most sensitive type of output value, it requires more consideration in its use than the corresponding type of triode. Writers on the subject have repeatedly pointed out that, properly used, the pentode will give as satisfactory reproduction as the triode, and it is quite certain that no valve will give as many milliwatts output per volt input§. As an example of this sensitivity the one-valve set described in the *Wireless World* for August 13, 1930, may be cited, and the author has constructed a detector-pentode battery-operated set giving good moving-coil reproduction of several foreign stations with a total H.T. current of less than 8mA. Where economy of current and limited input are considerations, the pentode has certainly a unique claim on the radio engineer's attention.

§" Wireless World," May 7, 1930, and others.

Superhet Receiver—(*Continued from page* 295).

set is ready. If high power amplification is required and the 400-volt tapping on the mains transformer is being used, then it will be necessary to insert a voltage-dropping resistance in H.T. 2 lead (Fig. 1), a suitable value being 3,000 ohms. Between the full voltage and the screen of the pentode, such as the PM24C, a resistance of 35,000 ohms will be required. The bias fixed for the ACO44 valve will be found quite suitable for the pentode.

There are no real difficulties in the operation of this set, but there is a peculiarity which the beginner to superheterodynes may notice, and that is that the oscillator is sharper in tuning than the first detector; this is generally considered to be an advantage.

An effort has been made to introduce to Radio Amateurs an old type of receiver in an up-to-date guise, for without doubt there is plenty of room for improvement in many receivers in use to-day.

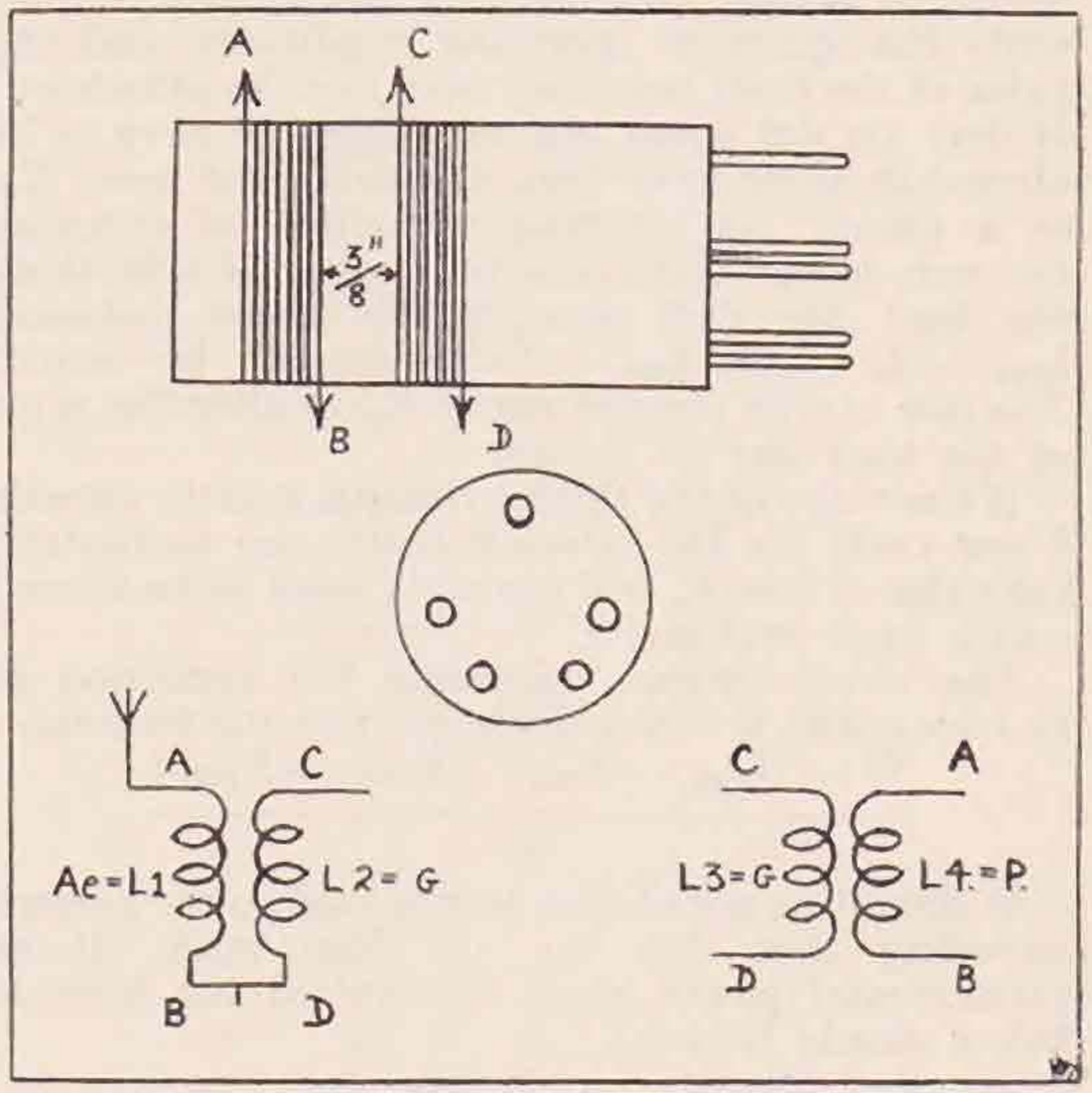


Fig. 4.

Coil Data.

Coil No.	λ M.C.	Detector		Oscillator		Wire Gauge
		L1	L2	L3	L4	
1	1.75	18 turns	45 turns	40 turns	40 turns	28 s.w.g.
2	3.5	12 ,,	20 ,,	20 ,,	20 ,,	26 ,,
3	7.00	9 ,,	11 ,,	10 ,,	10 ,,	22 ,,
4	14.00	5 ,,	6 ,,	5 ,,	6 ,,	22 ,, spaced

Three Valve Receiver—

(*Continued from next page*).

condenser of .00005 mfd. for short waves or one of .00055 mfd. for medium and long waves. The reaction condenser is an ordinary midget type. Values of all condensers and resistances can be ascertained from the diagram. No particular care was observed in the layout except in the case of the detector grid circuit, in which all leads were kept as short as possible, and for this reason choke rather than tuned-anode coupling was adopted. Headphones are hardly necessary, as almost any signal can be brought up to loud-speaker volume by careful adjustment of the reaction and H.F. circuits. The set is built up in a transportable cabinet with loud-speaker, accumulator and D.C. mains eliminator enclosed.

Thousands of amateur stations have been heard and also numerous short-wave broadcast stations, not to mention commercials. On the medium and long wave broadcast bands the receiver has performed very satisfactorily, the selectivity being quite good, and the quality is well up to the average for a three-valve receiver.

THREE VALVE ALL-WAVE RECEIVER.

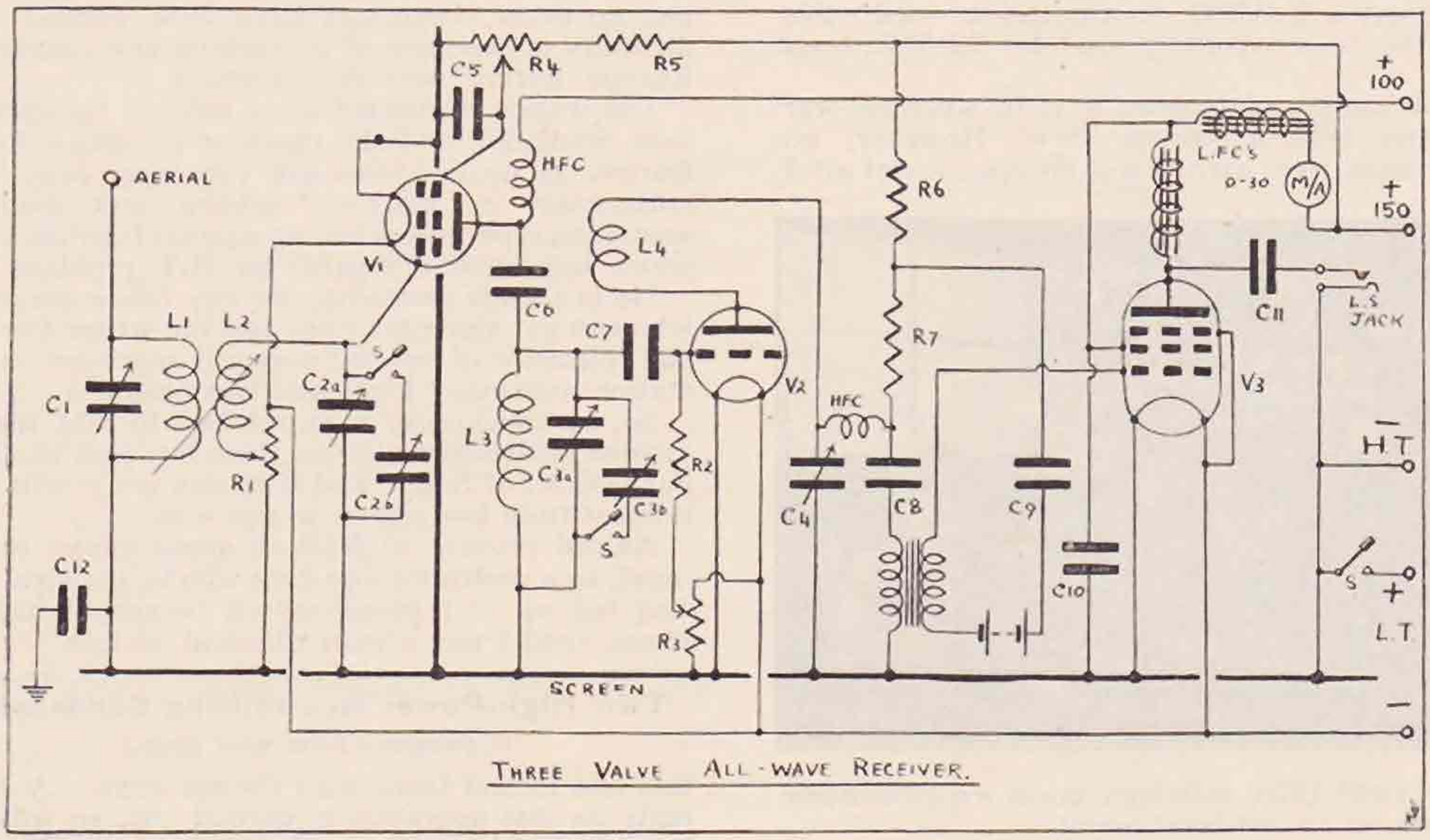
By W. G. P. Brigstocke (2AOI).

THE writer is not rendering a technical article but only giving brief details of a receiver, which has proved its worth on all wavelengths, and therefore may be of interest to fellow amateurs.

A study of the circuit diagram will be found to be the best possible introduction to this set. It was designed and built to work efficiently on all wavelengths, using ordinary components. The range aimed at was five metres and up, though it cannot be claimed to have responded to tests carried out below nine metres. There are, however, distinct signs of activity to just below ten metres wavelength. Ordinary plug-in type coils are used and prove very satisfactory. Some will say that the H.F. stage is only a " passenger " at the higher frequencies; this may be so, to a certain degree, but the writer is certain that there is considerable amplification as low as 15 metres, and if there is not, then the increased stability of the received signals brought about by the H.F. stage, warrants its inclusion in the receiver. The panel, baseboard and shielding are of aluminium; all controls are mounted on the panel, which is at earth potential, and there is a complete absence of hand capacity effects.

The circuit C_1L_1 is merely for selectivity and is a great help, though it does make tuning more complicated. C_2L_2 and C_3L_3 are similar, and could be ganged for simplicity of control. C_2 and C_3 were two double-ganged condensers each of .0005+.0005 mfd., one section of each being " doctored " so that only one moving plate remained (approximately .00005 mfds.). The result is that by means of a switch we have either a tuning

(*Continued at foot of col. 2, previous page.*)



THREE VALVE ALL-WAVE RECEIVER.

R_1 Potentiometer 400 ohms.
R_2 Grid-leak 5 Megohms
R_3 Potentiometer 400 ohms.
R_4 Potentiometer 50,000 ohms.
R_5 Wire wound 50,000 ohms.
R_6 Wire wound 25,000 ohms.
R_7 Wire wound 100,000 ohms.

L_1 Coupling Coil.
L_2 H.F. Tuning Coil.
L_3 Grid Tuning Coil.
L_4 Reaction Coil.

C_1 Variable 0.0005 Mfds.
C_2 (a) 0.00005; (b) 0.0005 Variable.
C_3 (a) 0.00005; (b) 0.0005 Variable.
C_4 Variable 0.0003.
C_5 Fixed 0.5 Mfd.
C_6 „ 0.003 Mfd.
C_7 „ 0.0001 Mfd.
C_8 „ 0.05 Mfd.
C_9 „ 2 Mfds.
C_{10} „ 0.5 Mfd.
C_{11} „ 2 Mfds.
C_{12} „ 1 Mfd.

Amplification Factor: V1, 300; V2, 43; V3, 80 (approximately).
s s s: Switches (S.P.S.T.)
HFC: High Frequency Chokes.
LFC's: Low Frequency Chokes.

STATION DESCRIPTION No. 23.

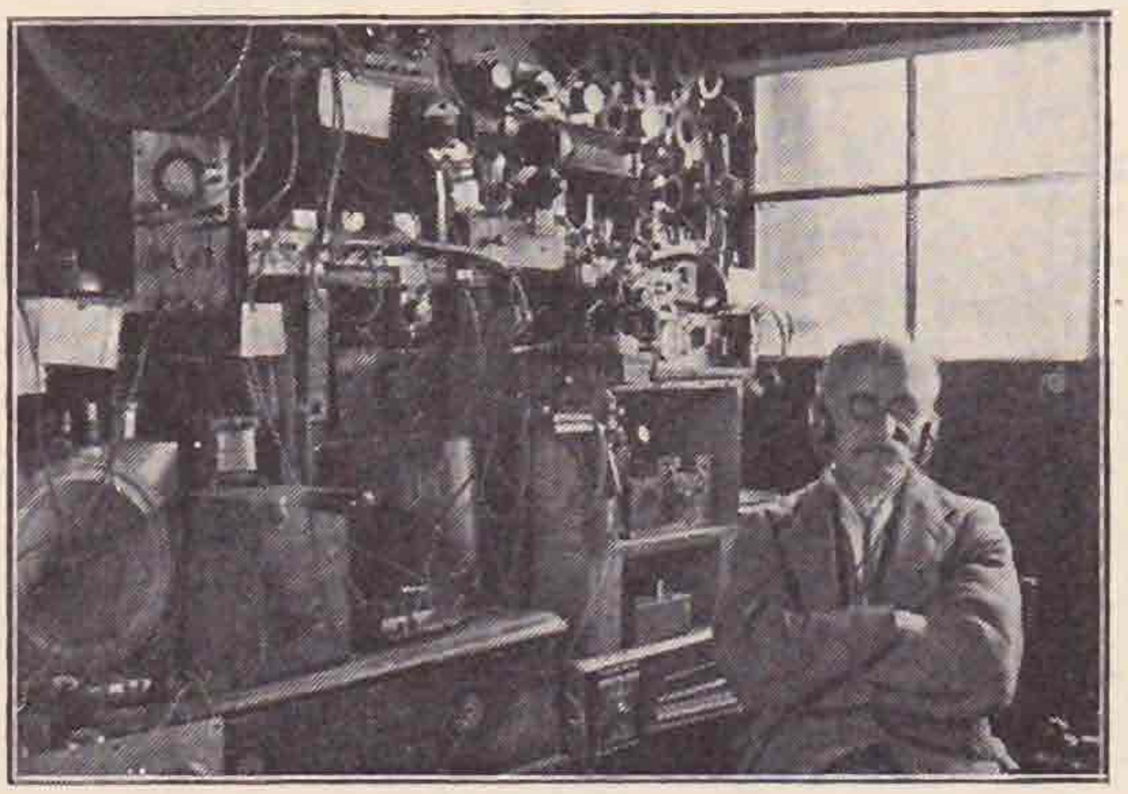
G6NW

By R. C. Horsnell (G2YI).

MANY very interesting descriptions of high power stations have appeared in the Bulletin in this series, and the writer thought that the following description of a low-power station working against that big drawback of no H.T. supply "on tap" would encourage other amateurs in similar and perhaps worse conditions.

The power used varies from 1½ to 4 watts maximum, and work is carried out on 1.7, 3.5, 7 and 14 M.C., being C.C. on all bands except 14 M.C., on which band a T.P.T.G. transmitter is used: this transmitter is occasionally used for 28 M.C. tests as well.

G6NW has been interested in radio since pre-war days, and held a licence then. However, no transmissions were carried out on open aerial after



the war until 1928, although much experimenting was done on an artificial aerial.

The apparatus is essentially of an experimental nature, and made up, to use the owners own words, of odds and ends, and switching arrangements for quick change-over of various units enable rapid comparisons to be made on signals sent and received.

All the gear is housed in a shack next to the house, and only about half to a third of gear is shown in accompanying photograph. The transmitters for 1.7 and 3.5, and also 7 M.C., are seen on the right of the photograph, all crystal controlled. The speech amplifier is underneath, and the key on the left. The "mangle" seen on the left is used for C.W. work, and G6NW is an expert sender and mangle turner combined, which is a job that needs a bit of experience to appreciate the difficulty.

For phone work dry cells of pocket lamp batteries are used, and often up to 50 m.a. load is taken from them!

All the receiving gear is out of the photo to the left. This is a conventional 0-V-2, the L.F. stages of which may be switched to the harmonic monitor. Here also is a crystal resonator and an absorption wavemeter for quick checking of bands on receiver.

Various aerials are used, Hertz for the higher frequencies and several indoor for receiving.

A private land line to house keeps G6NW within calling of his O.W., and he is persuaded to leave the shack occasionally!

An ordinary solid back mike is used for speech, and can be seen on adjustable arm in front of T.X.

A gramophone can be seen just over his left shoulder, and this is used very occasionally for modulation tests on 1.7 M.C.

With the low power available, over 300 different stations have been worked in Europe and Asia, but no other continents have been worked. No difficulty is experienced in working any country in Europe during normal conditions.

The station is situated a few miles in the country near Southend, and the operator ploughs a lonely furrow, as no amateurs are very near him. His enthusiasm is, however, seldom met amongst amateurs, especially when up against the difficulties which beset him as regards the H.T. problem.

He is always pleased to see any fellow amateurs who can get along his way, and the writer has had the pleasure of several personal ragchews at his station and many hints and tips obtained.

So, in conclusion, I would like to add that if anyone is dissatisfied with their lot, just think of our G.O.M. of Essex, and if he can get results and interest from low power, so can you.

An old proverb of Russian origin comes to my mind, as a motto for any ham who is, perhaps, getting fed up: "I pitied myself because I had no shoes, until I met a man who had no feet."

Two High-Power Neutralising Condensers.

(*Continued from next page.*)

this and locked there with the set-screw. Accordingly as this operation is carried out, so will the bearing be determined. It is naturally best to allow as little play as possible.

The free end of the rod is passed through a wooden guide to steady it, and a dial is mounted on the end so that the correct setting may readily be found when required.

A condenser of this pattern is clearly practical, since there can be no possible leakage path between the two plates other than over the air gap. In addition, it is easily adjusted to suit the inter-electrode capacity of any valve.

STRAY.

GI5QX will appreciate reports on his 7 and 14 M.C. signals.

* * *

"Raspberries are cheap to-day," mused a well-known fruit vendor, living not 100 miles from the Crystal Palace, and forthwith distributed his stock to all and sundry.

* * *

G6SK is now on the air consistently, crystal-controlled on 7,036 K.C.s, and will much appreciate reports, especially from BRS stations. Every report will be acknowedged.

TWO HIGH-POWER NEUTRALISING CONDENSERS

By A. E. Livesey (G6LI).

IT is disconcerting, to say the least, when an apparently good neutralising condenser is observed to melt away beneath the strain of a mere fifty watter, yet, not long ago, the writer experienced the discomfiture of this phenomenon.

The quality of the insulation of most small variable condensers is extremely doubtful, and for power inputs of over 50 watts it appears that nothing short of good porcelain insulation is at all suitable for use in the neutralising condenser.

Two simple designs have been evolved at G6LI, and these are shown in the diagrams below.

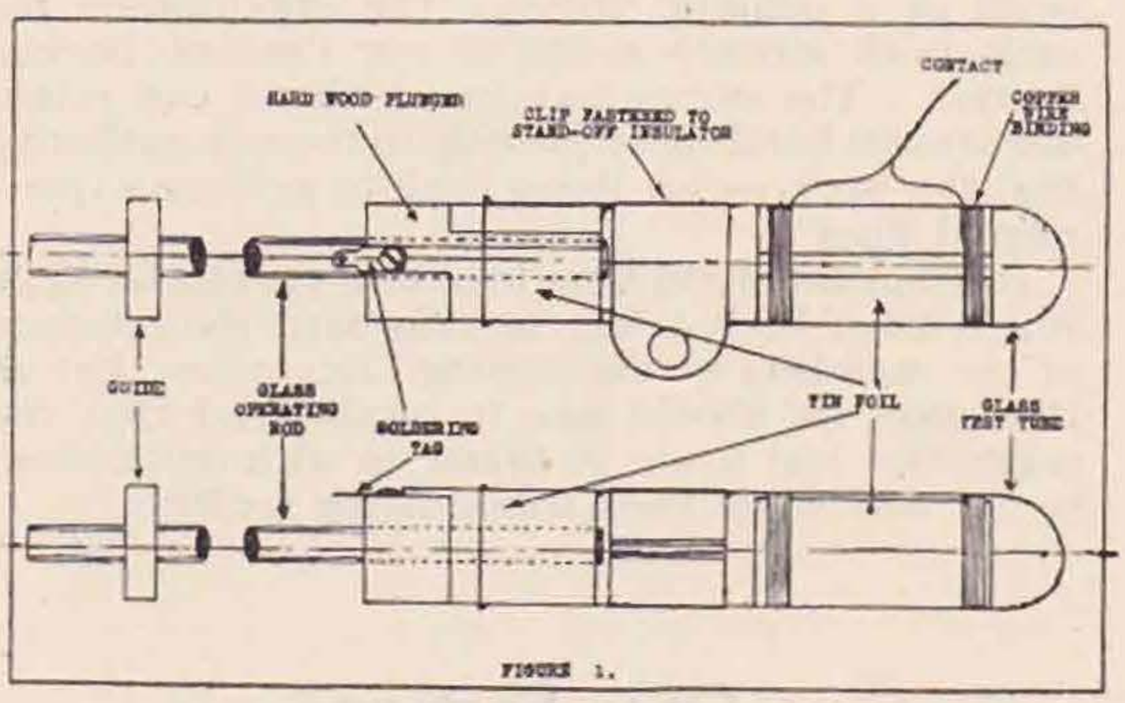


FIGURE 1.

The first consists essentially of a glass test tube, around which is bound a piece of thick tin-foil, in the inside of which a wooden plunger is operated, also having a section of foil wrapped about it.

The plunger is turned up from hard wood so that it will pass quite freely into the tube. A flat is filed at one end on to which is screwed a soldering tag. Under this tag the leaf of foil which surrounds the plunger is firmly secured. The centre of the plunger is drilled to take a glass rod—a firm push-in fit. This rod serves to operate the condenser, and is passed through a guide at the extremity to take up all play.

Around what should be roughly the middle of the tube a clip is passed, having holes drilled in it so that the tube may be mounted in the *horizontal* on a stand-off insulator.

In the original model the tube was 1 in. in diameter and the foil about 2 ins. long. If the entire girth of the tube and plunger is covered, the capacity will be very high, and it is suggested that only a part is utilised. The maximum capacity can be calculated from the standard formula for condensers. The foil may be secured to the plunger with celluloid varnish.

Contact is made with the moving plunger by means of a length of flexible wire soldered to the tag. This small operation must, of course, be carried out before the tag is screwed down on to the foil. When the plunger moves into the tube the flexible wire must not foul the edge of the glass, and care should be taken to see that the screw head is flush with the surface of the wood.

The fixed contact is made from the copper wire bindings, which secure the outer foil in position. This piece is also gummed to the glass before binding.

* * *

The second pattern is a more bulky evolution working on the normal system of a rotating blade.

The operating spindle is mounted in the horizontal, as previously, and the fixed blade, which is of ordinary straight-line wave-length shape, is secured at the two corners under nuts on the end of a pair of stand-off insulators, whose axes are in the horizontal, being screwed to a vertical wooden upright.

Since the blade is locked in place by nuts at each side, it is easy to position it irrespective of the final position of the moving blade, hence the spacing can be varied to suit requirements and centred very accurately.

Contact for the fixed plate may be taken from each insulator.

The moving vane, of the same shape, is run on to the end of a short length of brass rod, of which one end is threaded.

It is locked on to the rod by means of a nut, behind which is placed a length of copper braid,

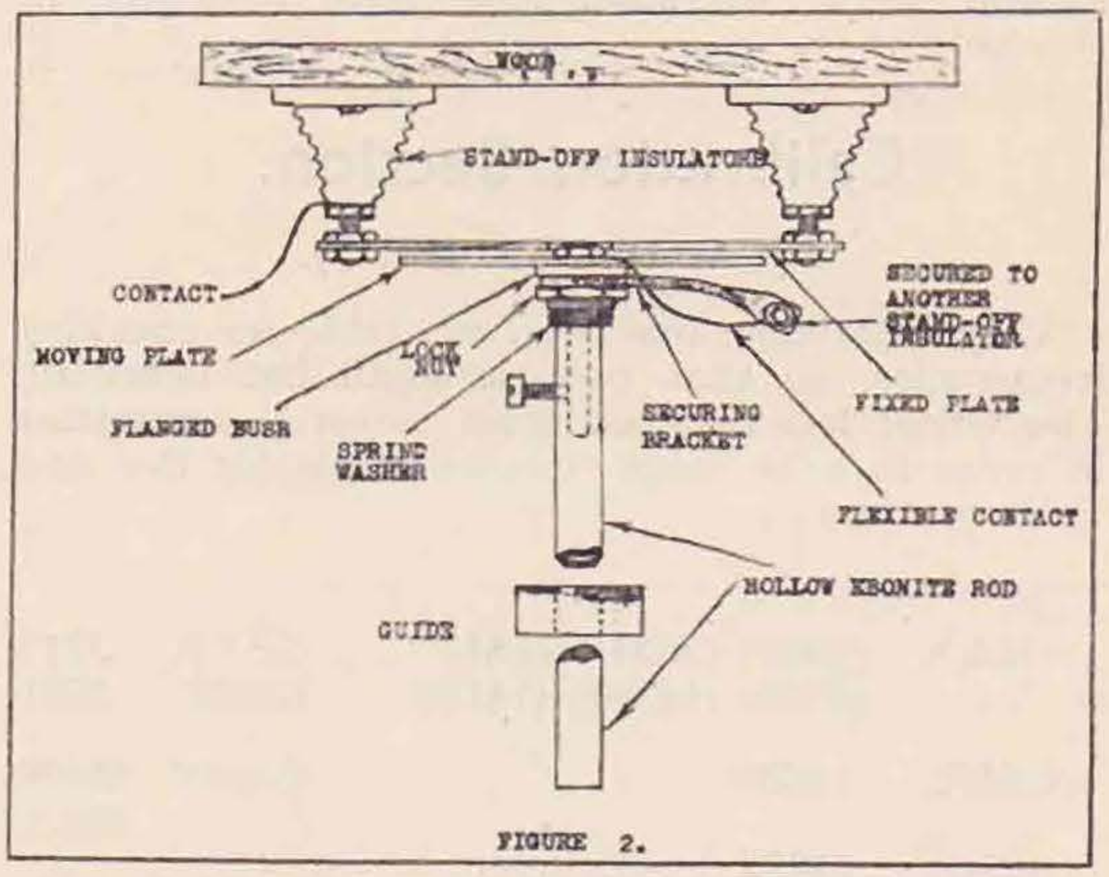


FIGURE 2.

which will serve as a pigtail contact. The spindle, with the vane mounted on the end, is passed through a flanged brass bush—threaded—such as can be discovered in any junk box as having formed at one time the bearing of some aged variable condenser. The spindle should project about an inch and one half through the bush and should be a good running fit. Some form of bracket, which should be of strong and stiff material, is locked up against the flange on the bush and serves eventually to secure the moving vane to the top of another stand-off insulator.

A length of ebonite rod is now obtained, and the one end is drilled to the diameter of the brass spindle, and a set-screw is fixed into the material, as shown.

A spring-washer is slipped over the end of the spindle, and the ebonite tube drawn up against

(*Continued at foot of col 2, previous page.*)

HIC ET UBIQUE.

Madrid, 1932—(*Continued from page* 291)

these efforts, knowing that many interests are particularly anxious to seize a portion of our lower-frequency bands. Whilst we should like to be in a position ourselves to request that the 1.7 and 3.5 M.C. bands be made exclusively amateur, we feel that here in Europe conditions are such that an attempt to press this particular issue would jeopardise the position on the more important higher-frequency bands.

As was pointed out in our previous Editorial and also in that dealing with the .1.7 M.C. band (July, 1931), although our Government has given us the unrestricted use of this band during the past three years, its use has been barred by practically every other European Government. This band is our closest to broadcasting and in view of the yearly increase in the number of broadcasting stations, we believe that some concerted action may be taken at Madrid to extend the present broadcasting allocations above 1.5 M.C.

We are not certain how much attention has been given to the suggestion given in our July Editorial, but we are convinced that unless our Society can prove to the Government authorities that its members are using this band for genuine experimental work, we shall experience difficulty in retaining it after the Madrid Convention takes effect. We wish to make it clear that each Government has power to allot such bands or portions thereof to its amateurs as it thinks fit and, therefore, although this band may still be listed as an amateur band, our own Government will have power to withhold its use.

This brings us to the point we wish to make; are we using our present bands (particularly 1.7 M.C.) for the purposes laid down in our application for transmitting facilities? We suggest that in a number of cases the answer is "No." We feel, then, that some sincere endeavour should be made AT ONCE by every active home member to carry out during this year some experimental work of a definite nature. The organisation for such work already exists in our Contact Bureau Section. The surest way in which we can retain our present bands is by proving to those in authority that the work we are doing is along genuine experimental lines.

It is our intention later to outline the official steps which have been taken to safeguard the interests of our members at the coming Convention, but at this stage we should like to recommend that the suggestion just made be taken up with enthusiasm by all who value their transmitting facilities.

J. C.

Calibration Section.

By A. D. Gay (G6NF).

Very little time has been available for checking frequencies, so that only a small list herewith. The writer has resigned from editorial committee in order to have more time available for this and D.R. matters.

*G2AX	(1966) (3534) (7184) (7068) (14368) (14136)	G5YK	3717
		G6BS	3561
G2BY	14296	G6HP	28080
			28520
G2DZ	14272		
	14276	G6LL	7058
			7191
G2GF	7149		
		G6OT	28560
G2GS	7033		
		G6UN	14376
G2LZ	3644		
		G6VP	14338
G2ZQ	7112		

*Not measured.

The German station D4WER, who works on 3.5 M.C. band and 7,146 and 7,308 K.C., wishes me to announce that he is prepared to measure frequencies within 0.1 per cent. for any British amateur who will give him a call or arranges a schedule.

QSL Section.

There seems to be some misunderstanding concerning the frequency with which cards are sent out to British members by the Section, and for the benefit of those who are in doubt as to the actual procedure I take this opportunity of explaining what happens.

In the first place, the files of cards are looked through every Friday morning, and all stations having three cards (or a larger number on request) are sent their cards. So far everything is quite simple, but misunderstandings sometimes arise when transmitters receive their envelopes with three cards and the cards may be concerned with transmissions of six months before. This cannot be helped, and the explanation of how it comes about is as follows: Suppose G3XX works three stations in May, 1931, and then does not come on

IMPORTANT.

With regret we have to announce that the A.R.R.L. has notified the QSL Section of R.S.G.B. that cards from reporting stations outside of North America will not be accepted for delivery by them after April 15, 1932. *This in effect means the R.S.G.B. will be unable to accept cards from B.R.S. or A.A. stations which are destined for W stations, and therefore any such cards which arrive at Headquarters after the end of March will be regretfully returned. A further announcement will be made in next month's notes.*

the air again until some months later—two of the stations worked may QSL within a month, whilst the third man, living in one of those countries where QSL cards are dealt with at intervals of three months or so by the National Society, may take a very much longer time to get his card to R.S.G.B. The obvious result is that all three cards are held up, and the unfortunate recipient of them sometimes is inclined to blame the QSL Section for a state of affairs which cannot be remedied until some of the other QSL agencies of the world come into line. Many of them have excellent services, but it is to be regretted that in some cases this is not so, owing to local difficulties, such as lack of financial support in small societies, etc. However, there is no doubt that this state of affairs is improving, and one can but hope that the improvement will be continuous.

J. D. C.

QRA Section.

Manager: M. W. Pilpel (G6PP).

NEW QRA's.

G2JH—J. K. Hankinson, 1, Eden Road, Tunbridge Wells, Kent.
G2NO—H. R. Adams, "Linley," Wallington Road, Walsall, Staffs.
G5DP—R. G. Norman, 10, Glossop Road, Sanderstead, Surrey.
G5HB—H. Biltcliffe, Wheat Sheaf, Kirkgate, Wakefield, Yorks.
G5KK—A. A. Bain, 28, Clyffard Crescent, Newport, Mon.
G5LO—H. J. Long, Stanton Harcourt, Eynsham, Oxford.
G5OL—B. C. Okell, "Lyndale," Grange Lane, Bowdon, Cheshire.
GI5QX—J. N. Smith, 73, Oakland Avenue, Bloomfield, Belfast.
G5RX—S. Newell, 9, Moor View, Rakehead, Stacksteads, Bacup.
G5TW—T. H. Williams, 61, Tir-penry Street, Morriston, Swansea.
G5UC—B. D. G. Barlow, Fulshaw Lodge, Christchurch Road, Cheltenham.
G5WH—W. C. Hinley, 17, Bethel Avenue, Tredegar, Mon.
G6KS—F. G. Kelshaw, 18, Hollingbourne Gardens, London, W.13.
G6PL—F. J. Popplewell, Hollin Bank, White Lee, Heckmondwike, Yorks.
G6SH—S. Hobson, Cedric Road, Edenthorpe, near Doncaster.
G6WS—J. B. Webb, "Mirtle Lodge," Sidmouth, Devon.
2AFW—P. J. Welbourne, 27, St. Stephen's Road, Bridlington, Yorks.
2AJU—J. M. S. Watson, 23, Eastwood Boulevard, Westcliff-on-Sea, Essex.
2ASK—E. A. Banks, Weston Grove Road, Coombe Dingle, Bristol.
2BHB—W. Griffin, 27, Park Road, London, E.10.
2BLJ—J. Hamilton, 10 Airlie Terrace, Dundee, Scotland.
2BWF—C. S. Pollard, 19, St. Mary's Avenue, Shortlands, Kent.
2BWP—F. W. Foster, 562, Woodborough Road, Mapperley, Nottingham.
BRS475 (ex BERS25)—P. Seymour, No. 15, Airmen's Married Quarters, No. 10 (B) Squadron, R.A.F., Amesbury, Wilts.

The following are cancelled: G2PH, G6DR, 2ALF, 2ALR, 2AUM, 2BDY, 2BNA.

QRA wanted: PJ5XJ.

Social Notes.

Having been appointed Social Manager, I am quite naturally going to look for the full support and encouragement of the membership.

The first important social function for 1932 has already been fixed as follows:—

A combined London Districts "hamfest," to be held at Pinoli's, 17, Wardour Street, W.1, on Wednesday evening, April 27, at 7 p.m., for 7.30 p.m.

As usual, the charge is 5s., so start saving right away for this opportunity to renew old acquaintances and make new ones.

H. V. W.

New Members.

Home Corporates.

T. Maitland (G5SQ), 29, Marlborough Park C, Belfast, N.I.
J. Murphy (G6MY), 23, Foster Street, Morley, Leeds.
D. F. Orchard (BRS772), 118, Devonshire Avenue, Portsmouth, Hants.
J. G. K. Walker (BRS773), c/o Mrs. Muir, 7, Claremont Crescent, Edinburgh.
C. M. Heath (BRS774), 21, Woodstock Drive, Newlands, Glasgow.
R. Perrin (BRS775), La Rocquette, Trinity, Jersey, C.I.
Miss N. Corry (BRS776), Redholm, Walton-on-the-Hill, Tadworth, Surrey.
E. F. Mortimer (BRS777), 72, St. Marks Road, Bristol.
D. R. Jones (BRS778), 1, Orwerth Avenue, Aberystwyth, N. Wales.
R. L. Williams (BRS779), The Spain, Petersfield, Hants.
M. L. Hooker (BRS780), 43, Leason Lane, Wolverhampton.
D. W. Fraser (BRS781), c/o 21, Leadenflower Street, Crieff, Perthshire.
M. Shaw (BRS782), The Hollows, Marton Road, Bridlington.
G. Skewis (BRS783), 22, Mountfield Road, Tunbridge Wells, Kent.
A. E. Richards (BRS784), 170, Ray Street, Heanor, Notts.
G. R. Cooper (BRS785), Cliffside, Mundesley, Norwich.
J. Clayton (BRS786), 140, Rishton Lane, Great Lever, Bolton.
E. A. Carrington (BRS787), 90, Derby Road, Heanor, Notts.
H. S. Cowin (BRS788), Kenwood, Brunswick Road, Douglas, I.O.M.
J. A. Bowie (BRS789), Rothiemay, Moss Lane, Timperley, Ches.
H. N. R. Steele (BRS790), Royal Hospital, Kilmainham, Dublin
A. Hickson (BRS791), "Cairn Begg," Carlton Road, Worksop, Notts.
I. B. Davidson (BRS792), 21, Queen Street, Worksop, Notts.
S. J. L. Pitchford (BRS793), 45, Cathay, Redcliffe, Bristol.
W. Jackson (BRS794), 33, Sevier Street, Bristol.
C. Uren (BRS795), 120, Stapleton Road, Bristol.
C. T. Hancock (BRS796), 4, Mathews Road, Redfield, Bristol.
F. J. Hunt (BRS797), 6, Eton Street, London, N.W.1.
J. W. Perris (BRS798), 17, Bridlesmith Gate, Nottingham.
G. B. Somers (BRS799), 65, Storks Road, S.E.16.
C. A. Foster (BRS800), Principal, The Scottish Wireless College, 17, Fitzroy Place, Sauchiehall Street, Glasgow.
G. A. Pope (BRS801), Tramore, Lodge Lane, Nutberry, Near Grays, Essex.
E. R. A. Henman (BRS802), 2, Ivanhoe Road, Camberwell, S.E.5.
H. Hale (BRS803), 10, Malmesbury Street, Wortley, Leeds.

Dominion and Foreign.

E. S. Cole (SU1EC), Haking House, Abbassia, Cairo, Egypt.
D. B. Stout (W3UX), Box 91, Berwyn, Penna, U.S.A.
R. A. E. Underhill (YI2FU), 70 (B) Squadron, R.A.F., Hinaidi, Baghdad, Iraq.
S. G. Taylor (ZL2GW), Beach Road, Weraroa, Levin, New Zealand.
A. M. Thackeray (BERS103), "Wootoona" Young, N.S.W., Australia.
O. A. F. Spindler (BERS104), Oorgaum P.O., Kolar Gold Mines, S. India.

PREHISTORIC SIGNALS.

The following list of stations heard has been received from a well-known member and is published without comment :—

December-February: G2GM, G2IH, G2IM, G2LZ, G2WV, G2XV, G5PE, G5SG, G5XM, G5ZG, G6AP, G6BS, G6IP, G6IZ, G6LB, G6SM, G6CJ, GI6WG, EI8B.

Some Helpful Suggestions.

By "Uncle Tom."

Now that we all seem to be turning amateur radio into a kind of huge competition, we must set about the task of setting it on a proper basis. Look at the motor papers—every week we hear that the "Woofit Six" has broken Class H International Records, aided by So-and-So Tyres, What-d'ye-call-em Plugs, Who-is-it Magneto, and so on.

Can't we apply this kind of system to amateur radio? First of all, let me make a few suggestions for some International Records which can be really standardised:—

Class A: An endurance record for the longest transmission of gramophone records without a break. One operator only, and electric motors not allowed.

Class B.—An "audacity" record for the operator who can use the highest input with a ten-watt licence for a given period without being found out.

Class C.—A "silence" record for the owner of the station that can transmit longest on 28 M.C. without being heard anywhere.

Class D.—A special futility record for the operator who can send the greatest number of "dah-dit-dit-dit-dahs" consecutively during a QSO without making the other fellow close down in disgust.

Class E.—A "thought-reading" record for the man who can give the man at the other end "QSA5" when he is only QSA2, and still keep up an intelligent chat as if he were getting him.

Class F.—A special class for fruit-sellers, based on the number of kilocycles rendered useless over a range of five miles while the transmitter is being adjusted.

Class G.—A "brevity" record, for the shortest possible QSO with U.S.A. QSL must be produced.

Class H.—Another special record for the station claiming the longest QSO with Russia, calling the distant man by the prefix "RK" throughout. Full text of QSO to be sent in, uncensored.

Now, having suggested some possible records, let us examine the way in which they might be collated.

"G7XX to-day succeeded in lowing the Class G records by 5 seconds. The winning station was equipped as follows:—

Input by Local Electric Supply Corporation.
Inductances by Henry, *Condensers* by Farad.
Volts by Jingo. *Crystal* by Grannie's Optician.
Interference by G2GM. *Raspberries* by accident (but blame Goyder all the same).
Valves by friend in G.E.C. *Output* by Heck.
Aerial by A.O.G., etc., etc."

You see the idea? Let's have some claims next month, and we shall have a brighter and better Bulletin than ever.

The R.C.C.

THE European Ragchewers' Club was founded in 1930 by a group of 3.5 M.C. enthusiasts, with the object of promoting international ham friendships and improving operating practice; an account of the Club as originally constituted was given by G2KB in the Bulletin for March, 1931.

Recently the R.C.C. has been reorganised. The headquarters are now located in Holland, PA0QQ acting as secretary. National R.C.C. managers (N.R.M.'s) are being appointed in various countries, the following having so far taken office for their respective countries: UO3WB, OZ1B, G6FY, D4UAB, HB9Q.

With the object of improving operating standards, the following are required of members: Ability to work at least 15 w.p.m., QSQ, and transmit with a T8 or T9 note, preferably with break-in. Operators are admitted to membership on the introduction of three members, who must testify that these conditions are fulfilled. On the air members follow the golden rule of adjusting their operating speed to suit the QSO partner, and it follows that in contacts between members, QRQ, QSQ is the rule, other conditions permitting. The institution of recognised club meeting times—*e.g.*, Saturday nights on 3.5 M.C. and Sunday mornings on 7 M.C.—provides an opportunity to meet fellow experimenters and to discuss problems of mutual interest without the necessity for arranging individual schedules.

A monthly bulletin is now published under the editorship of PA0KK and PA0MM. This does not compete with the journals of the various national societies, but serves to form a bond between hams in the various European countries, in which operating and personal activity can be recorded and discussed.

It is the hope of the promoters that the signature R.C.C. will come to be recognised as the hall-mark of the experienced operator, and all those who possess the necessary qualifications are invited to help the cause of smartening amateur operating by applying for membership. Those not qualified for membership will find much to interest and amuse them in the monthly journal *Ragchewing*, the subscription to which is 3s. for the calendar year. Members are expected to subscribe to *Ragchewing*, but pay no other membership fee.

Further information will gladly be supplied by the Secretary, PA0QQ, or, in the case of G hams, by the N.R.M., G6FY, 37, Wallwood Road, London, E.11.

STRAYS.

H. H. Bridgman, ZT1Z, is very anxious to make a G contact and is nearly always QRX for G stations between 17.00 and 19.00 G.M.T. on 14 M.C. band.

* * *

G5TC, J. Norris, will be working on 7 M.C., and will welcome reports, all of which will be replied to.

CALLS HEARD.

In response to many requests we have decided to revert to the old system of listing "Calls Heard," and in future we will publish lists of "Calls" from all parts of the world.

D. H. Donaldson and forwarded by G2XT.

Position off Lisbon.—7 M.C.: haf3wr, sp1cf, ve2cu, w1avl, w1azl, w1dmw, w2afr, w2aup, w3aay, w4all, w4ec, w4eg, w5abq, w8afm, w8dhc, w8duw.

Off Cape St. Vincent.—g2xa, gi5qx.

300 *miles east of Gibraltar.*—g5ll, g6al, g6nk.

1,000 *miles east of Gibraltar.*—g5gq, la1p, oh2ao, sp1bc.

At Port Said.—d4fye, d4uao, g2zq, g5fv, g5vl, gi5zy, sp1bt, vk6wi.

* * *

Dr. J. Lunt, ZT1Q, Kenilworth, Capetown, October 30, 1931, *to January* 31, 1932 :—

14 M.C.: "Borneo" ce3ca, ct1aa, cx1af, cx1jw, cx2bm, cx2bt, ear96, ear136, ear177, ear185, earmc, f8ex, f8od, fm8is, fm8ih, g2by, g2dz, g2vq, g2yd, g5ml, g6hp, g6vp, g6wt, gx2tm (October 30, November 1, 4, 8, 9), haf4d, ka1jm, lu1ca, lu4bh, lu7ke, lu8db, lu8dy, lu8en, om1tb, om2rc, on4au, on4jb, on4wk, pk1, pk1ci, pk1df, pk1jr, pk2aj, pk2wj, pk3bm, pk3bq, pk4aj, pk4ja, pk4yy, py1ba, py1dy, py1fb, py1ff, py1ha, py1xo, py2aj, py2az, py2bn, py2bq, py2xa, py9am, py9an, py9hc, st2d, ve1dq, vk6wi, vq2ty, vs2ad, vs3ac, vs6ae, vs7ao, vs7ap, vs7gt, vu2ah, vu2df, vu2jb, vu2jp, vu2kt, w1bbq, w1bdl, w1bsd, w1cpm, w1ra, w1xp (7 M.C. SF sigs.), w1yu, w2aqb, w2le, w2us, w2vd, w3blq, w3blr, w3kj, w4awo, w6dio, w8bbl, w8ben, w8een, w8eys, w8pe, w8su, xg2b, xg2c.

* * *

*A. T. Mathews, BRS*497, 24, *Woodside Park Road, N. Finchley, N.*12, *January* 21 *to February* 21 :—

14 M.C.: bip (qra ?), k5aa, py1ff, su1aq, su1fc, v1yb, ve1dq, ve2be, vk2lz, vk2nr, vk2oc, vk2xg, vk2xu, vk4gk, vk6mu, vo8mc, vs6ae, vs7ap, w5za, yi2dc,, yi6kr, yi6wg, zl2ci, zs6y, zt1z.

7 M.C.: cm8yb, ct2ap, hh7c, k4aop, su1ch, su1ec, ve1bv, vk2hg, vk2hq, vk2hz, vk2lq, vk2ns, vk2oc, vk2rk, vk2xg, vk2xu, vk3aj, vk3gp, vk3je, vk3lz, vk3pp, vk3pr, vk3pz, vk3yp, vk3wl, vk3xi, vk3zw, vk3zx, vk5hg, vk5ml, vk6gf, vk6wi, vk7ch, vs2af, vs6ag, vs6ah, vs7ap, vs7gt, vu2fx, vu2kh, vu2jp, w5bri, w5buz, x1aa, xzn2a, yi2fu, yi6kr, yi6wg, zl1ak, zl1ar, zl2ab, zl2aj, zl2bz, zl2cj, zl2ci, zl2cl, zl2du, zl3aq, zl3aw, zl3ax, zl3az, zl3ca, zl3cc, zl3cx, zl4ai, zl4ao, zl4ap, zl4ba, zl4cm, zs1z, zs5u, zu6w.

3.5 M.C.: vo8aw.

* * *

*BRS*616, 13*b*, *Lime Walk, Headington, Oxford, January* 27 *to February* 14 :—

7 M.C.: au7kah, ce3ag, cm2jm, cm2mm, cm2na, cm2op, cm2vm, cm2ww, cm8az, cm8yb, cn8mb, cn8md, cn8mi, cn8mk, ct2ab, ct2ae, ct2an, ct2ax, ct3ab, fm4ab, fm8cq, fm8cr, fm8da, fm8eg, fm8ev, fm8fs, fm8gt, fm8ih, fm8rdi, hi8x, j1ct, k4acf, k4aop, k4kc, k4kk, k4ph, k4rj, k4ry, k5ab, lu2la, lu5ar, oa5p, py1ff, rv2ar, rx1aa, su1ch, ti2fg, ve1ax, ve1bl, ve1br, ve1bv, ve1bw, ve1dq, ve2co, vk2pz, vk3aj, vk3je, vk3wl, vk3xi, vk3yk, vk3za, vk5hg, vk4vv, vk7ch, vo8mc, vp2pa, vs1ad, vs2af, vs6ah, vu2fx, vu2jp, vu2kh, xzn2a, yi2fu, yi6kr, yi6wg, zc7jm, zl2ab, zl2ci, zl2cl, zl2gq, zl3aq, zl3az, zl3ca, zl3cc, zl3ct, zl3cu, zl3xc, zl4ai, zl4ap, zs1z, zs2a, zs5u, zs6d, zt1t, zu6w.

* * *

*BRS*457, *Addiscombe, Branston Road, Burton-on-Trent, January* 17 *to* 31 :—

cn8nk, ct2ax, eu2nx, eu2ol, fm8cr, fm8da, fm8ih, fnfh ? (qra), j1ag, lu5ar, ve1bw, w1asf, w1bdx, w1boy, w1cae, w1ra, w1yu, w2akw, w2ar, w2bdu, w2bhw, w2bro, w2bst, w2djo, w3rr, w4anx, w5akh, w8afx, w8clw, w8sie, w8wf, w9adn.

* * *

G6YL, December, 1931 :—

7,000 K.C.: ka1hr, st2d, su1ch, au7de, vk3tm, vk3zb, xf8nih, xf8ufm, xx1yj, yi2dc, yi2fu.

14,000 K.C. band: pk3bm, st2d, ti3la, ve1dq, vk2lz, vk2rg, vk2xu, vk3rj, vk3wl, vk5gr, vk6wi, vo8mc, vs3ac, vs7ao, yi6kr, xok2ak, xsp3kw, xsu1aa (Cyprus), xx1yj, xx5ce, xzn2a, zs2n, zs4m.

January, 1932 :—

7,000 K.C. band: py1ff, st2d, su1ch, au7kao, au8kal, vs7gt, yi2dc, zs2a, xlpg, xx1yj, xzn2a.

14,000 K.C. band: ve1bl, ve1bt, ve1dl, ve1dm, ve1dq, ve1dr, ve2aa, ve2df, vk2lz, vk2xu, vo8mc, vq2lc, yi2dc, xf8jsc, xoh5oa, xla1s, xx1yj, xzn2a, tun5, zu6w.

VK2BR, The Rectory, Terrigal, N.S.W., December, 1931 :—

14 M.C.: ac8al, ac8ce, ct1aa, ear136, f8pz, f8sc, ok2op, on4uf, pk1ci, pk1xl, pk3bm, st2d, vp1ff, vs3ac, vs6ae, vu2kq.

7 M.C.: ka1ne, ka1rt, om1fo, vp1ff, vs7gt.

* * *

2BHK, 4, *Dunkeld Gardens, Oldpark, Belfast, N.*1, *January and February*, 1932 :—

7 and 14 M.C.: au7ak, au7cz, au7de, au7dj, cn8mk, ct2ae, ct2ag, ct2am, ct2an, ct3ab, es3ht, fm4ab, fm8cr, fm8da, fm8eg, fm8ev, fm8ih, fnbh, fnfh, frear148, frear149, k4acf, lu2ca, lu5ar, lu9ax, prub (QRA ?), py1ff, st2d, su1aq, su1ch, v1yb, va2xg (QRA ?), ve1dq, vk2lz, vk2xg, vk2xu, vs7ai, vu2fx, yi6kr, yi6wg, xcnp, xf1br, xf8rlm, xzn2a.

* * *

Heard and worked December-January by VS7GT :

14 M.C.: ct1aa, ear96, ear224, g5is, g5yg, g6rg, ok2cc, st2d, vk2hz, vk2lz, vk2ns, vk2xu, vk4ju, vk5gr, vk6lj, vk6mj, vs1ad, vs3ac, vu2ah, vu2df, vu2fx, xsu1aa, xsu1aq, yh2rv, yi2dc, zl2bz, zs2a, zs6y, zu6w.

7 M.C.: ar8mo, ct1aa, ct1em, d4ab, ear185, ear226, fm8bg, fm8dh, fm8ih, g2vq, g5la, g5yh, g6li, hb9h, ok2cc, st2d, v8ab, vk2br, vk2lx, vk2oc, vk2ou, vk3aj, vk3bw, vk3jf, vk3lz, vk3nm, vk3rj, vk3tm, vk3ua, vk3zb, vk5hg, vk5lx, vk5mk, vk5ml, vk6an, vk6dr, vk6fl, vk6jk, vk6lj, vk6ow, vk6rl, vk6rx, vk6wi, vk7lj, vs1ad, vs2af, vs3ac, vs6ad, vs6ag, vs6ah, vs6an, vs6ao, vtu, vu2ah, vu2cs, vu2df, vu2jb, vu2jp, vu2kh, vu2kt, w6am, xx1yj, yi2dc, yi2fu, yi6wg, zl2di, zl2fi, zl2go, zl3cc, zl3ch, zs2a, zs5b, zs5q, zs6u, zs6y, zt1b, zt1t, zt1z, zt2b, zt2c, zt5v, zt6j, zu6w.

G5CV, 7 M.C., *January* 22 to *February* 25: Au7kah, au7kao, au7kat, cm2wa, cm2op, cm8az, hh7c, hi8x, k4acf, k4aop, k4rj, k4uan, py1ff, vk2xu, vk3hl, vk3uq, vk3up, vk3wl, vk3xi, vk5cr, vk5pc, vk7ch, vq3msn, vs7gt, vu2bg, vu2fx, vu2jf, yi2dc, yi6kr, yi6wg, zl1ck, zl2ab, zl3aq, zl3zx, zl4ai, zs1z, zs2n, zu5u, zu6w, xearz (QRA ?)

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.

Transmitters Please Note

To the Editor of T. & R. Bulletin.

DEAR SIR,—The Society is holding an official listening competition for the benefit of its members on Sunday, March 27, and in view of the fact that prizes will only be given to members whose results are confirmed by QSL cards, I appeal to all transmitters who may receive reports from our members to acknowledge them accordingly and thus give encouragement.—Yours faithfully,

p.p. Pye Short-Wave Radio Society,
L. W. Jones,
Hon. Secretary.

[The QSL Section has, in this instance, made arrangements with the Pye Short-Wave Radio Society to accept QSL cards from transmitters addressed to individuals, c/o Pye S.W. Radio Society, and to forward them in bulk to Cambridge. Transmitters replying to these report cards are therefore asked to indicate clearly on the reply card that it is for a member of the Pye S.W. Radio Society.—Ed.]

Shall We Abolish Phone?

To the Editor of T. & R. Bulletin.

Dear Sir,—I have read with considerable interest in recent numbers of the Bulletin the controversy regarding telephony on the higher frequencies.

My experience is that telephony stations are a nuisance and cause far more QRM and mush than many of the foreign stations complained of using unsteady A.C. notes.

Personally, I think that the question of telephony on the amateur bands should be put to the general vote of all interested R.S.G.B. members, and not to be discussed by a few who were fortunate enough to be present at the last Convention.

Mr. Marcuse has, no doubt, gone to a lot of trouble to get our tolerances reduced, and why should those, if it be only a few, selfish members continue to pollute the band and spoil other people's QSO's, when perhaps the majority would vote for a further reduction of the tolerances without telephony licence. Just recently the QRM on 7110 K.C. and below has made consistent working very difficult. Why not adopt "the British policy" and realise that we are causing QRM and not blame the foreigner entirely for the appalling state of the bands.

Hoping to arouse someone's interest, 73's to all, and better operating conditions.

Yours sincerely,
Will J. H. Kempton (G2AI).

Cape Town Flight

To the Editor of T. & R. Bulletin.

Sir,—I am directed to refer to Air Ministry letter under the above reference dated January 8, 1932, relative to the non-stop flight to Cape Town, and to inform you it is regretted that the flight has been postponed until November, 1932, owing to unfavourable weather conditions.

It is hoped that your co-operation will be extended to the Department when the flight actually does commence.

I am, Sir,
Your obedient Servant,
A. R. H. Foster, Flight-Lieutenant,
for Head of Signals.

Air Ministry, London, W.C.2.

MISUSE OF CALL-SIGN.

We are repeatedly receiving complaints of the misuse of call-signs. In most cases it is obviously the work of the "Pirate," that most unsportsmanlike person who gets a rotten phone set on the air, then looks around the band to see whose call he will take. We publish complaints of this kind in nearly every issue, and G2GF appears to be the latest victim.

Mr. Griffiths comes forward with the complaint that his call is being used by an atrocious phone station on various bands. He is prepared to go further than most others have and offers to provide the money to prosecute the offender if he can be found.

* * *

A further complaint comes from G6CA, who has received a batch of foreign cards addressed to him. He has, however, not been on the air for six months, and is unlikely to be on in the near future. He even suggests the "Pirate" may have the cards, but we think it would be much better if they were burnt.

R.S.G.B. AND N.P.L. CALIBRATION SERVICES,

R.S.G.B. Calibration Services take place from (1) G5YK (Cambridge) on the first Sunday in each month, commencing at 09.30 G.M.T. (or B.S.T. if in force) in the 3,500 K.C. band, and (2) from G2NM (Sonning-on-Thames) on each Sunday at 11.00 and 23.00 and Thursday at 23.00 G.M.T. (or B.S.T. if in force) in the 3,500 K.C. band.

The N.P.L. Service is given on the first Tuesday in March, June, September and December from G5HW at 21.00 G.M.T. on 1,785 K.C.

Full details of all these Services were published on page 259 of the February issue.

STATION DESCRIPTION No. 101a.

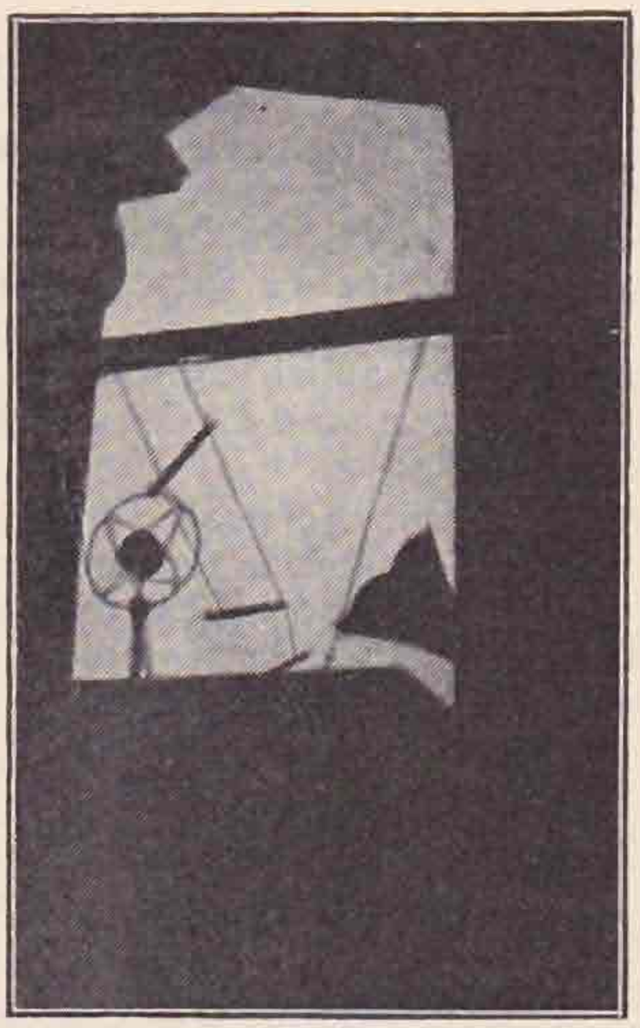
G5KOD

By G2WS.

SITUATED in the pretty village of Chopping Bilbury, in the heart of Loamshire, this station is within easy reach of the Metropolis, though the wealth of true Loamshire mud and water makes chains, skis and grappling irons indispensable if the last five miles of the journey is to pass without incident.

Kenneth Ian Dessi Bell (G5KOD), who came to this charming spot last year for business reasons, occupies a commodious bed-sitting room at "The Haven," now happily re-named the "Hertz," where he is well cared for by a dear old lady, Mrs. Amp, and her daughter, Millie Amp.

On my arrival I was cordially received by G5KOD, who hastened to explain that, as it was Monday, the antenna was temporarily lowered to within five feet of the ground and supported at the centre by a wooden spreader or prop. However, with a stiff breeze blowing, G5KOD assured me that all would be dry by lunch-time.



The next hour was spent in an interesting tour of the station. As the photograph shows, the general lay-out leaves nothing to be desired, and quiet efficiency is the keynote of the station.

The main aerial, which is half-wave on week-days, is connected to a pair of dummy feeders borrowed from the twins next door.

The high-power transmitter (just out of sight in the photograph) consists of a standard split-crystal circuit oscillating on a wave-length of 672 metres, and followed by several F.D. stages, and, lastly, a P.A., which may be persuaded to work on all the licensed bands and several of the unlicensed ones by simply turning on the power. Interference with broadcast listeners has been reduced by the simple expedient of keying all the F.D.'s at once, with the result that all sets within a wide radius of the station have been dismantled long since.

Power supply for the transmitter is obtained from the Chopping Bilbury Company's supply, rated at 55 volts D.C., but liable to slight fluctuations (T7) during the day, and often rising to 420 volts R.M.S. (Rotten Mains Supply) after closing time. G5KOD is therefore careful not to measure the input to his set except during the early hours of the day, and is usually QRT after 10 p.m. for fear of a burn-out. It was during a late QSO one night that he accidentally shorted the main rheostat and obtained his W.A.C. (Wrecked All Components) certificate.

G5KOD is a member of several societies, and a regular entrant for radio contests. During the recent 256 M.C. tests he was placed first, together with the other seven competitors, all of whom reported their own signals R9, but failed to log any other DX. Even greater success would undoubtedly have been obtained in the 128 M.C. contest had not Mrs. Amp torn off two pages of the calendar at once, with the result that G5KOD called test for several hours on the wrong day and found conditions very poor.

It may be said here that visitors are always given a rousing welcome at "The Hertz," and G5KOD is always pleased to receive reports of his signals provided these are expressed in polite language and do not bear a Government stamp. He is usually on the air between breakfast and lunch, but is QRT for a while after the latter meal, owing to Mrs. Amp's method of choke feed.

In conclusion, we all wish G5KOD the very best of DX, and express the hope that his station will long remain a shining example of what a British station might be.

(*Continued from next page.*)

are "Around the Short-wave Dial," being a resumé of the month's conditions for reception, and an excellent descriptive article entitled "The A.C. All-Empire S.W. Set."

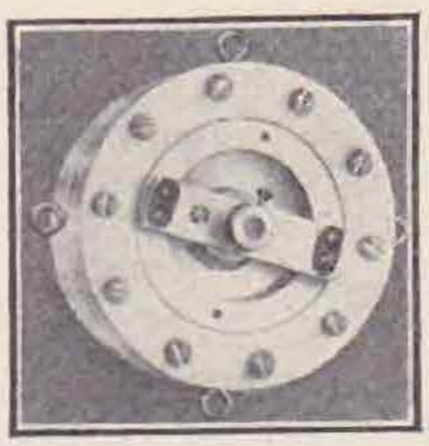
The future of high-frequency transmission and reception in Australia seems secure as long as there is such an excellent stimulus to interest as *Radio Monthly*.

OBITUARY.

The Society has to note with regret the passing of General Ferrie, a Vice-President since 1913. General Ferrie was an enthusiastic member of the R.S.G.B. in the early days and arranged the famous transmission from the Eiffel Tower to the Society meeting, which was the real foundation of the Amateur movement. General Ferrie was the principal wireless officer of the French nation during the war and established the main principles of working.

MICROPHONES — **B·A·T** "BEST AFTER TEST" — **OF QUALITY**

(Registered Trade Mark)

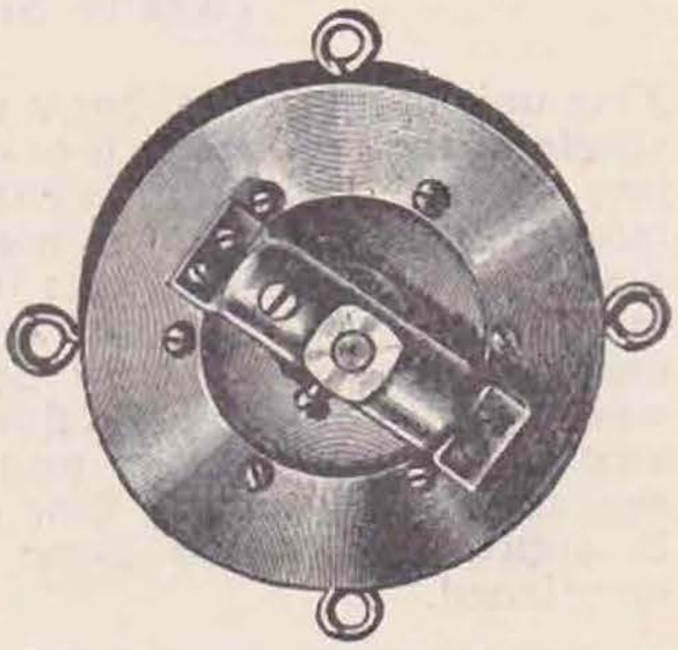


A SUPERLATIVE MICROPHONE, MODEL "A1."

An extra large two-button microphone extremely sturdy in construction, built especially for all broadcasting purposes. Only the best materials are used. The diaphragm is of special duralumin .002 thickness, with pure gold contacts on each surface under the buttons. This model is three and one-half inches in diameter by one and three-quarter inches thick, the frequency range being from 30 to 7,500 cycles; 100 ohms per button, requiring 6 volts with not over 10 mils per button. Very beautiful in appearance, being of bright nickel finish, highly polished. This microphone compares with any other microphone on the market, no matter how expensive, in appearance and quality of tone. Each unit carefully inspected and tested before shipment, and shipped you unconditionally guaranteed for two years. (Made in three sensitivities: A—very sensitive; B—medium sensitive (standard); C—dampened.)

Model "A1" Microphone Unit. Codeword "MICRO" ..... **£19 15 0.**

SPECIAL NEW MODEL "S.D."

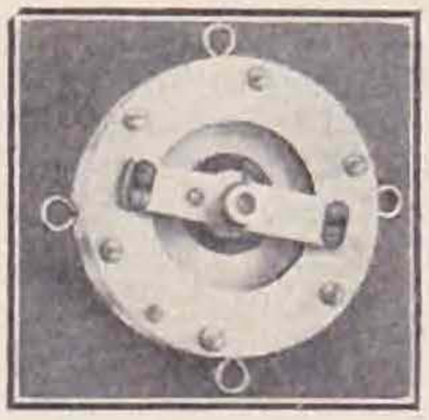


A splendid and really robust two-button microphone, built of only the finest material obtainable, with a very minimum of hiss. This unit uses a duralumin diaphragm .002 thickness, with pure gold contacts below each buttton, the same diaphragm as you obtain in the large A-1 unit. (Guaranteed two years.)

Model "S.D." has a frequency range from 30 to 6,500 cycles, which is greater than that of competitive models, which use entirely Gold Plated Diaphragms, that cannot give you the frequency response desired. Buttons 100 ohm resistance each. Many of these "S.D." models are in use in Broadcasting Stations throughout the country, producing very satisfactory results, with an increasing demand. (Made in three sensitivities: A—very sensitive; B—medium sensitive (standard); C—dampened.) Finish bright nickel highly polished.

Model "S.D." Microphone Unit. Codeword "ESDEE" ..... **£13 15 0.**

HIGH-QUALITY MICROPHONE, MODEL "C.D."



A two-button microphone, built only for voice pick-up, faithfully reproducing all the notes and sounds within the audible range of the human voice. It is especially built for Public Address work; Amateur Broadcasters, and experimenters. A great many radio broadcasting stations use this model entirely, when announcing record programmes. Its straight-line frequency characteristic is from 45 to 3,500 cycles, impedance 100 ohms per button and operates on 6 volts, and not over 10 mils per button. This microphone is of bright nickel finish, highly polished. Each unit carefully inspected and tested before shipment, and unconditionally guaranteed (abuse alone excepted) for two years from date of despatch. (Made in three sensitivities: A—very sensitive; B—medium sensitive (standard); C—dampened.)

Model "C.D." Microphone Unit. Codeword "CEDON" ..... **£6 10 0.**

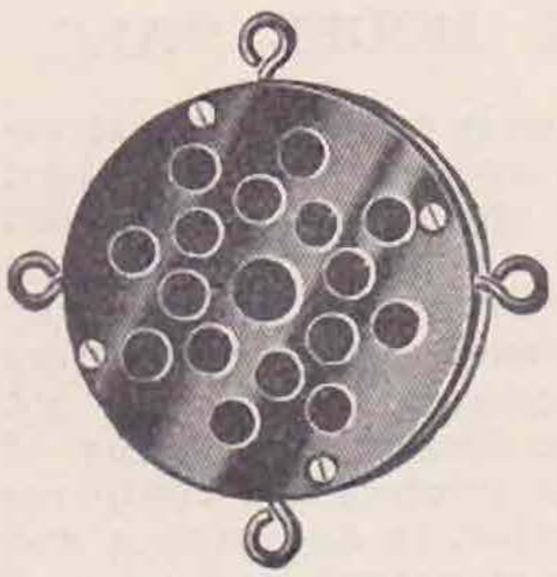
ADVERTISEMENT OF CLAUDE LYONS LTD., LIVERPOOL AND LONDON.

MICROPHONES

B·A·T
'BEST AFTER TEST'

OF QUALITY

(Registered Trade Mark)



NEW MODEL "S.J." MICROPHONE.

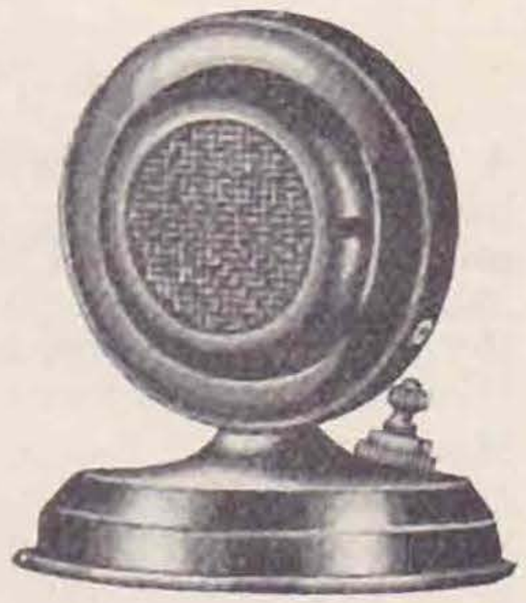
This unit is a single button microphone built for use where only the voice is necessary. It is entirely hand-made throughout, and not die-cast, as competitive models. Extremely sturdy in construction, using only the best material obtainable. Unconditionally guaranteed for one year.

Model "S.J." will handle frequencies from 70 to 3,000 cycles; the single button is 100 ohm resistance. Our ever-increasing demand for this unit has caused the factory to treble production on this item alone. (Made in three sensitivities: A—very sensitive; B—medium sensitive (standard); C—dampened.) Finish bright nickel highly polished.

Model "S.J." Microphone Unit. Codeword "ESJAY" ..... 75/-.

"B.A.T." "BABY-MIKE."

(Really Superior Type.)



This unit is not a toy, but a microphone of real quality, using a single button with switch to cut unit off and on, and twenty-five feet of cord. This unit is entirely different from the competitive models in as much as it uses a positive back upon which the diaphragm is able to work; in this manner the sensitivity of the microphone can be accurately controlled, which competitive units cannot do. A very positive off and on switch is used, which permits a steady flow of current, whereas the button switch found in cheaper units of this type is unsatisfactory by not allowing a steady flow of current. The frequency range is approximately the same as that of our model "S.J.," because of the features mentioned.

DO NOT BE DECIDED BY CHEAPER MERCHANDISE, AND, WE REPEAT, THIS IS NOT A "TOY."

"BABY-MIKE," Complete. Codeword "BABMI" ..... 47/6.

MODEL "F.G." "HANDY-CASE."

We have had a great many calls for a carrying case of this type to be used on remote control jobs where it is most convenient to carry the unit around. Also very fine for public address work on trucks where the announcer drives and announces at the same time. Complete with covers; springs and handle ready to install unit. The small ring will accommodate our "C.D." unit, "S.D." unit and "S.J." unit, though the larger ring is necessary to install units of the size of our A-1 or Western Electric Units.

Type "F.G." "Handy-Case" (Small Ring) ..... 45/-.
Codeword "HANDY."

Type "F.G." "Handy-Case" (Large Ring) ..... 65/-.
Codeword "DANDY."

NUMBER ONE OF A NEW SERIES OF ADVERTISEMENTS

B·A·T
D A
BEST AFTER TEST

(Registered Trade Mark)

HIGH-GRADE DESK-STAND, MODEL "A.D."

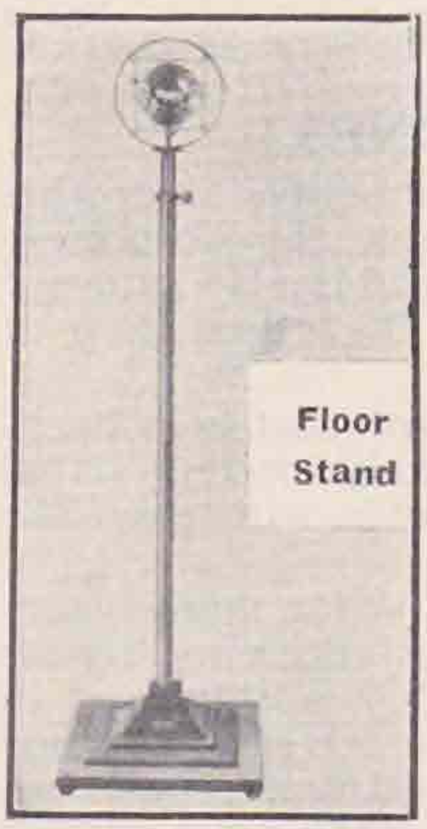
This Desk Stand contains a ring six and one-quarter inches in diameter, and is built to accommodate Models "C.D." and "A.1" Microphones. It will also fit any large two button microphone now in use. The same principle of construction is carried out in this model, the only difference being the large four point suspension ring, six and one-quarter inches in diameter. Ample room is allowed between the covers and units so that no damage can be caused in concealed wire connections, and in moving. The microphone cable passes through the base of the stand. Finger rings are provided at an extra charge of **3s. 6d.** per stand.

Model "A.D." Desk-Stand, with Springs & Covers. Codeword "AKDON." **90/-**

HIGH-GRADE DESK-STAND, MODEL "B.D."

In presenting this Desk Stand to our many clients, we offer a Desk Stand of four point suspension, much superior to any now on the market. The ring is five inches in diameter, built especially to accommodate small microphones in use. The base is cast and sits upon four rubber legs, which protect polished surfaces, and eliminate any possibility of "blasting" while in use. The microphone cable passes through the base of the stand. The ring and covers are of brass, and the complete product is beautifully finished in Statuary Bronze Plate. This stand will accommodate models "S.J.," "C.D." and "S.D." It can be furnished three point suspension, if desired.

Model "B.D." Desk-Stand, with Springs & Covers. Codeword "BEDEE." **50/-**



STATUARY BRONZE, ADJUSTABLE FLOOR AND "BANQUET" STANDS.

The Floor Stand is an extra-heavy one, with very heavy base, weighing 18 pounds, so that all possibility of tipping is eliminated. The top ring is 6¼ inches in diameter, four point suspension to accommodate all large microphones now in use. Total extended height, 6 feet. It is smoothly operated with very positive clamp lock, preventing falling of stand while extended. Finished in Statuary Bronze, making a fine studio appearance.

The "Banquet" Stand is also beautifully finished in Statuary Bronze, adjustable from twelve inches to twenty-four inches. The top ring is 6¼ inches in diameter, four point suspension, built to accommodate any large microphone on the market. Can also furnish top ring of five and one-quarter inches in diameter, three point suspension to accommodate smaller microphones now in use. Weight of base, six pounds, so that there is no possibility of damage being caused by tipping. Covers are furnished with both models.

Floor-Stand, 6¼in. Ring, with Covers & Springs. Code "MICSTANCAT." **105/-**

Banquet-Stand, 6¼in. Ring, with Covers & Springs. Code "MICSTANDOG." **95/-**

MIKE REPAIRS **AND ACCESSORIES**

(Registered B·A·T "BEST AFTER TEST" *Trade Mark)*

MICROPHONE REPAIRS BY U.S.A. EXPERTS.

We are equipped to give expert repair work, absolutely guaranteed, upon any make two button carbon microphone, at a nominal charge. The very latest of testing equipment has been installed, and all technicians are experts in their various lines of microphone work. A complete overhaul of any make two button carbon microphone includes a new duralumin diaphragm .002 thickness with gold contacts on each surface, new buttons and granules for **50/-.** All repairs are carefully inspected, tested and packed, and returned to you under the guarantee of our U.S.A. Factory. The very latest of General Radio testing equipment has been installed, making them the only Microphone Company, outside of Western Electric, which is in a position to run curves on carbon or any make of condenser microphones.

MICROPHONE CABLE (FLEXIBLE CLOTH COVERED).

6 Foot Cable, terminal each end, Three conductor.	Codeword "LASSY."	List **7/6**
12 Foot Cable, terminal each end, Three conductor.	Codeword "LATEL."	List **13/6**
25 Foot Cable, terminal each end, Three conductor.	Codeword "LATUB."	List **27/6**
50 Foot Cable, terminal each end, Three conductor.	Codeword "LAVOY."	List **55/-**
Three Conductor Cable, cut to length, per 100 feet.	Codeword "LEBUN."	List **75/-**

SPECIAL MICROPHONE CABLE (RUBBER COVERED).

100 Feet three conductor Cable, cut to length. Codeword "LAKON." **85/-**

POTENTIOMETERS.

A Potentiometer is used in all microphone circuits with switch combined, which cuts current from and applies current to the microphone buttons at lowest current flow, preventing burning of buttons and damage to the microphone, also eliminating noise caused from sudden current surge.

POTENTIOMETER & SWITCH ..... List **8/6**
Codeword "AMEAR."

MICROPHONE TRANSFORMER.

A Microphone Input Transformer is used in all microphone hook-ups. The primary is split 100 ohms each side with secondary impedance of 400,000 ohms. This matches the impedance of all standard two-button carbon microphones to the valve input of any normal succeeding microphone amplifier.

LIST PRICE, each **55/-.** Codeword "MITRE."

THREE-WAY PLUGS.

We carry a full line of three-prong Microphone Plugs and Sockets, with cable clamps. Prompt shipment can be made on this item at any time. These goods are of exceptional quality, guaranteeing absolutely noiseless connections.

PLUGS, each **5/-.** Codeword "LAJAY."
SOCKETS, each **6/6.** Codeword "LAJIG."

MICROPHONE AMPLIFIERS.

We invite enquiries for Microphone-Amplifiers, either Battery-Operated or D.C. or A.C. Mains-Operated. An excellent range of Amplifiers is carried in stock, but if necessary special apparatus can be made up rapidly by us at our Liverpool Works. Our Microphone Amplifiers, as well as amplifiers for other purposes, have repeatedly been supplied to Government Departments, Universities and Commercial Undertakings, and we have yet to experience a complaint. Prices are very reasonable, and early delivery can always be arranged.

IMPORTANT . . . . . "CONDENSER MICROPHONES."

In Broadcasting certain items, the Condenser-Microphone is of great utility, since this type of Microphone can be employed in motion whilst still preserving the absolutely noiseless background for which it is renowned. This form of microphone is also superior by far as regards its frequency-response and sensitivity-response, to any other form of Microphone, no matter how well made or of what make.

The microvoltage-output of the condenser microphone, unaided, is below that of a high-grade double-button carbon microphone; but, because of its absolutely perfect background, this lower output can be brought up to volume levels impossible with even the very best D.B. unit.

Our " J. & A." CONDENSER MICROPHONE has been supplied by us for many years to British Government Departments, and we have had the pleasure of receiving repeat orders from even the National Physical Laboratory, where the " J. & A." is employed in the Electrical Measurements as well as the Physical Research sections. Over 400 of our Condenser-Microphones have been supplied, in Great Britain alone, during the past two years. This " J. & A." Condenser-Microphone is quite expensive. It is the most perfect microphone science has yet produced. Prompt delivery can always be given, together with all desirable or essential accessories, and our special Bulletin " 6-E " will be sent to bona-fide enquirers stating the exact purpose for which this type of microphone is required.

Kindly send all enquiries or orders direct to:—

CLAUDE LYONS, LIMITED,

76 Old Hall St., Liverpool; 40 Buckingham Gate, Westminster, London, S.W.1.

PULL OUT AND FILE THIS ADVT. WITH FURTHER ADS. OF THIS SERIES.

APPARATUS WORTH BUYING.

Microfuses.

MICROFUSES, LTD., of 36, Clerkenwell Road, London, E.C.1, have recently introduced a new and better form of *Microfu*, which, while it is very much cheaper, is much more robust. The fusing element of the *Microfu* is an extremely thin deposit of gold on a backing which is gripped by eyelets passing through a flat strip of bakelite, and the complete article may be dropped without fear of damage or altering its characteristics. The speed of operation of the fuse, as measured by oscillograph tests, is 1/10 second at three times overload, and 1/1000 second at eight times. We believe we are right in saying that no wire approaches this speed of fusing, and it follows that the fuse will more adequately protect any wire instrument than a wire fuse. The *Flat Type Microfu* is available in four models for voltages of 140, 260, 750 and 1,500. It is designed to carry its rated current indefinitely, and to blow at twice that current. The samples tested conformed very accurately to this. The fusing element, being gold, does not depreciate with time. The F2 type of fuse is safe for use on mains voltages. The resistance of the *Microfu* is very low ; that of the 250 m.a. 1,500 volt type being 11 ohms. The price of ratings from 50 m.a. to 500 m.a. is 6d., but fuses are made to carry 25 m.a., 10 m.a., and 5 m.a., costing 1s., 2s., and 3s. respectively. *Although it is claimed that the gold standard has done an immense amount of harm to the business of Great Britain, the amateur will do well to adopt it as far as fuses are concerned.*

* * *

The "Eddystone" Valve-Holder.

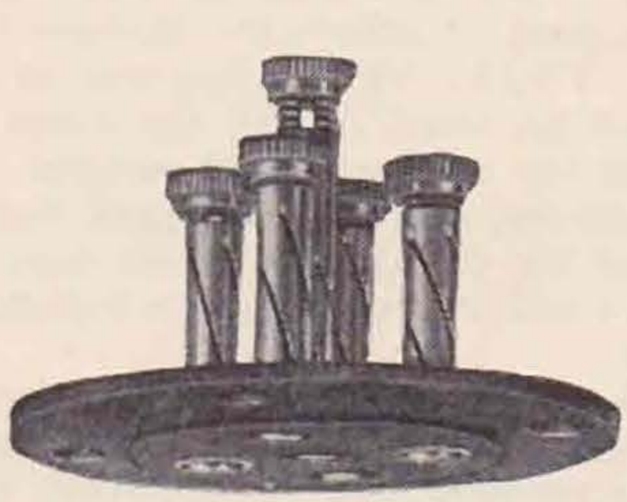
Stratton & Co., Ltd., the manufacturers of the well-known *Eddystone* products, make an extremely good, low-loss, 4-pin valve-holder. This is constructed in an ingenious manner, so that the sockets and contacts are each formed from one solid piece of material. This eliminates all chances of noise or bad contacts, as in the case when these are composed of different pieces of metal. The sockets are air-spaced, and the only solid dialectric is a mounting ring of the best quality bakelite on which they are fixed. The valve-holder is supplied with or without terminals, and the price is 1s. 6d.

Owing to an increase in the cost of the porcelain and the improvement of fitting wing-nuts as standard, the makers have had to increase the price of the *Eddystone Stand-off Insulator* to 1s. 3d.

* * *

Lectro Linx, Ltd., for ever to the front with apparatus for the experimenter, have just placed on the market a new type of Clix Chassis Mounting Valve Holder, which sells at 9d. for the 5-pin type, and 8d. for the 4-pin type. There has previously been on the market such a valve holder with provision for soldered connections only, and this valve holder is used very extensively by set manufacturers. Their new type is made complete with screw terminals on the ends of the projecting valve sockets. The sockets are of a new turned type and with the now standard slotting employed by Clix cannot fail to make excellent contact with the modern solid valve pins.

Small slots in the paxolin fixing plate allow a slight movement of the pins, thus giving a semi-self-centring effect; the slots also give greater insulation between the plate (or grid) pin and the other pins.



Regarding the excellence of the Clix type of valve holder for short-wave transmitting or receiving apparatus we have little to add to our remarks in the October, 1930, BULLETIN.

* * *

The New Mullard D.O.25 is now on the market with greatly improved characteristics. The impedance has been reduced from 1,150 to 800 ohms, the amplification remaining at 3—a material improvement in mutual conductance. The filament consumption (at 6 volts) has been reduced from 1.6 to 1.1 amps.

Book Review.

RADIO MONTHLY. Technical Editor : Don B. Knock (VK2NO). 1s. per copy. Published by Federal Publications, Sydney, Australia.

Many members will remember a notice in the BULLETIN recently concerning the demise of *QTC*, organ of the Wireless Institute of Australia, and its reorganisation in the form of a supplement to a popular monthly radio magazine, and will be glad to hear that their hopes of a successful debut for the new venture have been realised.

Radio Monthly appears as a 70-page magazine, which consists partly of broadcast reception articles and partly of short-wave information. There is also a 12-page supplement, which is devoted entirely to the doings of the Australian transmitters and to club reports. The matter dealing with short-wave work in the magazine certainly preponderates, and the Australian amateurs are to be congratulated on a magazine which deals so fully with subjects in which the amateur fraternity are interested. There is no doubt that the strong "Ham" flavour noticeable in *Radio Monthly* is due in no small measure to the fact that Mr. D. B. Knock (VK2NO) is the Technical Editor, and in the first number (December, 1931) he has contributed an excellent article relating his experiences as operator of an expedition into the wild North-West district of Australia. Other items of interest to the amateur

(*Continued at foot of col.* 2, *previous page.*)

CONTACT BUREAU NOTES.

By H. C. Page (G6PA).

I SUPPOSE that most people's minds are directed to the 28 M.C. Tests just now. Owing to the fact that only one or two reports have been received of the work done in the first two weeks, it would not be fair for me to say whether the results have been good or otherwise, though I rather fear the latter. VE2AC-VE2AS has sent in a very complete log of his work during the Tests, but unfortunately he has not had much success. A few commercial harmonics have been heard, but the greater part of the log is taken up with that nasty little word—*nil*—and a very complete report on weather conditions.

BRS615 was the only other station to report, and he sends in quite a list of local G stations, and also of harmonics, both of amateur stations and commercials. He also heard HAF3B on January 24, when he was QSA 5 T7 fading to R5.

I have just received a long report from VK3WL, in which the results of the VK VU-VS7 28 M.C. Tests are set out. While these stations have been extremely active, there does not seem to have been much success to attend their efforts. However, on the last three Sundays of the Tests, it was possible to maintain QSA 5 contacts between VK3-4 and VK4-5 from 8 a.m. to well after 11 p.m. This work during darkness is rather unique, and it is to be hoped that we shall hear of some more of it. From the details of this report, which, unfortunately, space does not allow me to publish in full, it is quite apparent that the VK, VU and VS stations have been making great use of the 28 M.C. band.

It is to be hoped that we may have more particulars in the future. Possibly it could be arranged for the news to reach us via E.L. Stations, so that the news may be more up to date. VU2JP sends in a general report on conditions, and work in Southern India. He reports that DX has been moderately good, and good contacts have been had with Western Australia, and with Africa and Mauritius. A good deal of this work was done on phone, with an input of only six watts.

Now I have one or two S.O.S. messages! Both the Television and Fading Groups are in need of more members. This is the last appeal for the Television Group. If help is not forthcoming very soon, the Group will be abandoned.

Two more members are needed for the Fading Groups. Those interested should write to G2ZC, La Cotte, St. Brelades, Jersey, C.I.

BRS107 writes asking for schedules with 56 M.C. stations. Apparently the 56 M.C. Groups have become extinct, but if there are any of you interested in this work, I would suggest you get into touch with BRS107, whose address is: 26, Patrick Road, West Bridgford, Nottingham.

Elsewhere in this issue you will find the rules for the 1.7 M.C. and "One Watt Week" Tests. I would like to say a few words about the 1.7 M.C. Tests. The Tests are open to all members of the Society residing in the British Isles, and they will afford an excellent opportunity for record making and breaking. This year the radius within which no contact for transmission or reception will count has been increased to 200 miles. Those of you who are on low power need not be disheartened at this, for last year two stations in Yorkshire and Caithness worked Czecho-Slovakia with an input of only four watts.

While only stations over 200 miles will count for direct points, I would point out that the excellence of your logs will be considered, and, therefore, you should work as many stations as possible. This also applies to reception. We want the logs to be as complete as possible, and no detail is too small to make a note of. Constructive comments on the associated subjects of weather, signal strength, fading, and skip effects will be welcomed. I would point out that Telephony will *not* be allowed.

The winners of the "Blank" Trophy this year are Group 8F. Their score is set out below. Owing to the excellent work of G5LN, they are far ahead of the runners-up—Group 8A—with a total of 9,890 miles.

28 M.C. Work.

G6VP, Group Manager.

As individual reports have been sent direct to the organisers of the Tests, it leaves me with no copy. Full particulars will, no doubt, appear, so there remains only the Group reports.

Group 1B.—G5SY, who is still unfortunately ill, has nothing to report. Seemingly his members have reported direct.

Group 1C.—BRS77 reports nil. G2XH reports local QSO's only. G6VP reports local QSO's only, but heard HAF4D and HAF8B on January 24. HAF4D remained audible during the whole of his QSO with G6HP, but HAF8B was not heard again after his first CQ change over. G6WN have kept watch during the whole of the period, but have only heard HAF4D and 8B, and CTIAA's harmonic although many G's were heard and worked. They comment on the fact that no

Claims of 8F Winning Group.

QRG.				
14 M.C.	G2TJ QSO ZC6JM	2,350 miles on 2.5 watts	QRA = Jerusalem.
14 M.C.	G5LN QSO W2CCJ	3,300 miles on 2.7 watts	QRA = New Jersey.
14 M.C.	G5LN QSO ST2D	3,180 miles on 2.7 watts	QRA = Khartoum.
14 M.C.	G5LN QSO VE1BV	2,500 miles on 2.7 watts	QRA = Nova Scotia.
14 M.C.	G5LN QSO PY9AN	5,200 miles on 2.7 watts	QRA = Bello Horizont.
1.7 M.C.	G5LN QSO D4WUM	630 miles on 2.7 watts	QRA = Plauen.
	Total	17,160 miles on 16 watts	

commercial harmonics were audible on either of the week-ends.

They heard G6VP, G2DZ, G5BY, G5LA, G6CJ, G6NK, G2BM, G2XA, G2BY, G2YD, G6HP, G6NF, G6UN, G5SR, G2OL, G6XN, G6LL, G6QB, G2CX, G6MB, G5RY.

Worked: G6HP, G2DZ, G6CJ, G5LA, G6NF, G6XN, G6VP.

Group 1F.—BRS25 heard HAF4D at 13.42 G.M.T. on the 24th. He comments on the scarcity of even local signals. G2DZ heard HAF4D and 8B. Had only local QSO's. G2OA says that as no other hams work on 28 M.C. in his locality, the Tests were a blank. Has tried S.G. Detector (Fig. 1) on 14 and 7 M.C., and thinks it an improvement. Regrets that conditions were such that he could not test it on 28 M.C. The method of obtaining reaction is unusual. BRS615 reports that only DX heard was HAF8B for a few minutes at 13.40 G.M.T. on the 24th.

VK3WL heard VK4XN, VK3BQ, and VK7CH QSO VK3JJ at 23.10 G.M.T., January 30.

F8RJ heard SU1CH's harmonic on February 6, at 18.45.

Fading, Blindspotting, and Skip.

G2ZC, Group Manager.

This month I would point out that the G.C. of 2A is now running definite schedules, and will welcome reports from anyone, especially BRS members, who might like to participate in observation work. I have had an interesting letter and outline of a method of observation work from 2ASX, with some interesting graphs. 2ASX points out that a Group formed to study one band, or for each member to stay on one band over a definite time, while the others were on other bands, might give us all some interesting data. As the idea is thoroughly sound, I would like to see a new Group formed, who would be willing to do this observation work (1.7, 3.5, 7, 14, 28 and 56 M.C.), so if any BRS members would like to assist, will they please write to 2ASX direct. His address is: J. W. Hamilton, Upper Parting, Sandhurst, Gloucester, and if he can get enough members, I will gladly form a Group.

2B are voting at the moment for a name to fill their vacancy, and as they have five names, I hope we shall be able to form a new Group from those who do not get into 2B. This Group will be known as 2C, and I will be glad to have further names of those interested in the subjects we are studying, as 2C will still want two more members. I would remind applicants that they must not only be members of the R.S.G.B., but must also join C.B. This can be done via the G.C. of the Group, the G.M. or direct to the Manager of C.B.

Group 2A.—In view of the interest shown by the 2 M.C. Group Manager in weather effects, and his reference to 2A in the December BULLETIN, this subject has been re-discussed this month.

The expressed opinion to which he refers was to the following: "That weather has no effect on radio waves, but that the same causes which influence radio also influences the weather, and thus correlation between the two may be possible."

This opinion referred to the atmospheric and *not* to the ground wave. The Group are not in entire agreement over this, but, generally speaking, have difficulty in connecting the two. Fog has been said to cause a blanketing effect, but on discussion, this does not appear to hold, while barometric pressure does not appear to have any effect, except, as one member says, on the ground wave.

Earthquake Report.

DATE (1932).	TIME, G.M.T.	SITUATION.	REMARKS.
Jan. 3	01.20 G.M.T. ?	Two shocks, lasting several seconds, felt at Crotone and Catanzaro, Italy	—
Jan. 4	10.25 G.M.T.	Two shocks (a light one followed by a violent one). Felt at Horta, Fayal, Azores	Reported by CT2AN, who observed bad QSB on high freq. sigs.
Jan. 6	09.00 G.M.T.	Slight shocks felt at Horta, Fayal, Azores	Reported by CT2AN
Jan. 13	07.50 G.M.T.	Short but pronounced tremor felt at Pwllheli, N. Wales, and around a 20-mile area	—
Jan. 14	?	Brief shock felt at Belfast, N. Ireland	—
Jan. 16	00.25-00.35	A series of earth tremors felt in S. E. Lancs. over an area of several miles on the W. side of Manchester	Not recorded on the siesmograph at Stonyhurst College, near Blackburn
Jan. 19	16.32 G.M.T.	Earthquake lasting ½ min. felt at Lima, Peru. The worst known there for 30 years	F8BY reported very bad conditions on 3.5 M.C. band. Plenty of stations heard, but QSO's practically impossible, due to QSB from R8 to R1 and QSC
Jan. 20	?	Shock felt at Tortona and Voghera, near Milan, Italy. Particularly strong shock at Tortona	—
Jan. 20	?	Severe shock, of volcanic origin, felt in a number of villages around Mt. Vesuvius, Italy	—
Jan. 22	23.00 G.M.T. ?	Eruptions of 3 volcanos in Guatemala, followed by earthquakes of long duration. Two cities destroyed	Volcanic dust fell as far as the borders of Mexico and Nicaragua

It is generally agreed that very dark clouds appear to have a blanket effect, this being due to the cloud carrying an electric charge.

It would thus appear that weather effects are of a very minor character as regards the atmospheric waves.

It is hoped that further experiments will enable us to form some opinion on weather and the ground wave.

G.C. of 2A is now running definite schedules, which are on Wednesday evenings at 18.30 G.M.T. or B.S.T., and Sunday mornings at 12.30 G.M.T. or B.S.T., on the 7 M.C. band, using the call "Test 2A," and reports from any BRS stations will be very welcome.

(G.C. of 2B also took up the matter of fog and smoke with 2 M.C. G.M., but on his part he stated a strong argument in its favour, from practical results, especially in industrial districts, which the G.M. of 2 M.C. briefly referred to in the January BULLETIN, —G.M.)

Group 2B.—This month we again publish a list of earthquakes compiled by G6YL, and we would particularly ask readers to compare logs with the dates, and report to G6YL. So far, from the lists issued, there does seem to be a general agreement with conditions to earthquakes, but we want all the evidence, pro and con, that we can get. So far as the work of the Group goes, we had an open discussion this month, each member taking a subject and stating a case, and from these cases we hope to frame full Group discussions in the near future, so I shall not give any full report this month. However, a few interesting points have arisen, amongst which are: What causes hollowness of signals? (G6PP). What causes blanket? (G2IM). How does lightning striking the earth upset the potential? (G2ZC), etc. We have to thank EI7D for a very full report as to earthquake conditions as compared to his log, and CT2AN for his interest in the subject.

3.5 M.C. Work.

Group 4A.—Despite the fact that the much looked for DX has failed to appear, there seems a large amount of activity on this band, and all Group members are showing great keenness. The 3.5 M.C. Tests should see great activity on this band.

One item of special interest to all users of the 3.5. M.C. band, and especially to those who are after DX, is that the U.S.A. fone band will be moved from 3,500-3,550 K.C. to 3,900-4,000 K.C. on April 1. With this most welcome change, the prospects of good DX on 3.5 M.C. would seem to be greatly increased.

G2XT reports very little doing, and has only been able to get on the air during daylight when he has found conditions very poor. Has been experiencing a very bad power leak from the mains, which almost renders reception impossible.

G6LI, whom we welcome to this Group, is using CC with 100 watts input to a Mullard T61D. Zeppelin aerial with series parallel tuning is used, and some very interesting details of the tuning of this aerial are given.

G6WY reports very little activity owing to business ties, but hopes to get on air during the Tests a good deal.

G6OM writes that his WX-DX theory has "gone west" and says that, although the barometer has been high for over three weeks, DX has been absent. Is also another convert to the new T61D valve, and reports very good results.

G2QB, another new member, has been unable to get on the air since January, but hopes that now he is going again next month's report will be less meagre. Gives detailed description of apparatus employed, normal input being about 80 watts. Has quick change system with aerials, and can change from one to another in a few minutes.

BRS408 has found little time for reception, but will be OK for the Tests. What little has been done shows no improvement in conditions.

G6RB has also found that all his pet theories of WX-DX, etc., have come unstuck. Conditions are still mainly poor, and no DX QSO's have been obtained, but one or two good DX stations have been heard. W5 has been heard at QSA5 R8 on two occasions in the early morning between 07.00 and 08.00 G.M.T. This would seem to support the theory that we are experiencing very long "skip" this year.

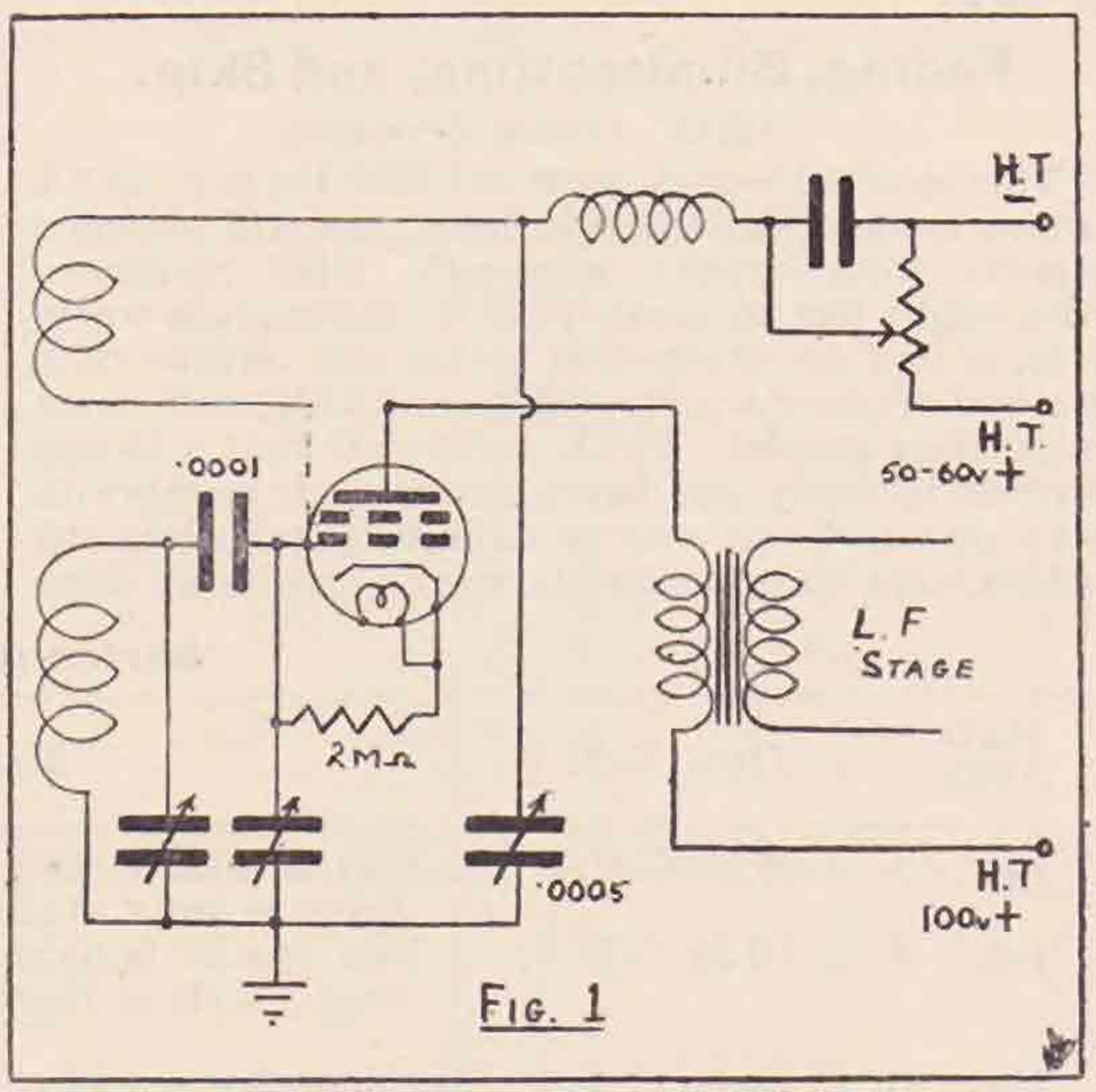


FIG. 1

Group 4B.—G2WP has been using a G6JV type of aerial, but finds this does not work unless either an earth or counterpoise is used. He is busy getting gear ready for a change over from D.C. to A.C. mains. BRS552 has not been able to do much work owing to examination work. SM6WL reports that the 3.5 M.C. band was found to be very satisfactory in the Inter-Scandinavian contest between Finnish, Danish, Norwegian and Swedish stations.

G5NS is a new member to the Group. He is working with a self-excited Hartley transmitter, using an LS5 and D.C. mains. The aerial is an A.O.G. tapped on to the anode coil. G6BS is also a new member. He suggests that the G.M. try a wavetrap to reduce the QRM from Hillmorton, as he has such an arrangement working very nicely. He has worked W1BOE on the 3.5 M.C. band with an input of only 7 watts, which is very good work indeed. G2KB has very little to report this month owing to BCL trouble. He has also had a breakdown of his smoothing condensers. A complete re-build is being carried out, and he will then be ready for the 3.5

M.C. Tests. He remarks that conditions generally appear to have been very poor, but that the maximum signal strength in daylight has been good at times, though fading has been very pronounced.

QRP Work.

G2VV, Group Manager.

I should like to take this opportunity of thanking all members of this section who took part in the 1931 3 Watt Contest, and to congratulate 8F on winning the trophy. G5LN is also to be congratulated on his very fine individual scores for this Group. Good luck to you all in the 1932 contest. I must also thank G5NF, who helped to check the vast number of claims submitted, and made it possible to publish the results at such an early date.

Before commencing the reports, I should like to thank all those who have written to me regarding positions in various QRP Groups. My request for more members in the February BULLETIN resulted in something like twelve applications, and it certainly seems that QRP is still much to the fore in these days of QRO and QRM! G.M.

Group 8B.—Weather Effects and Aerials.—G.C. G2VV is still testing the 66 ft. Windom, but cannot yet decide if the results obtained on 7 M.C. are much better than results obtained when using the 33 ft. Windom on this wave. Apparently it is not so good locally on 14 M.C., as European stations fail to answer calls! Conditions on the whole seem to be improving on all bands, and the DX to be heard on 7 M.C. from 22.00 until 24.00 is remarkable.

G5OQ says that his crystal will control the TX when using his 67 ft. A.O.G., but as soon as he hooks up the 33 ft. Windom, everything goes out of resonance. He is now working on 7 M.C. as well as 1.75 M.C.

We welcome G6SK to this Group, and he finds that radio conditions in fog are hopeless! In fact, everything is exactly opposite to G2VV's results noticed on foggy days.

Group 8C.—Lunar Effects.—G.C. 65PH reports that the Group are still unable to advance any direct theories regarding the moon and short wave work, but will furnish details at a later date. He is now using harmonic C.C., and finds it much better than COPA employing a 7 M.C. crystal, and is now busy on an FD for 14 M.C. work. The circuit will be TPTG CO FD PA. G5LQ says that a PM252 is a good oscillator for QRP work. Finds 7 M.C. conditions poor, and DX limit seems to be 1,000 miles, whilst 14 M.C. is dead. G2WS has nothing to report other than very poor conditions. BRS587 is using a PM202 as an oscillator with crystal, and 1.2 watts on a portable station. G6OJ (portable call of G6OI) and wants skeds.

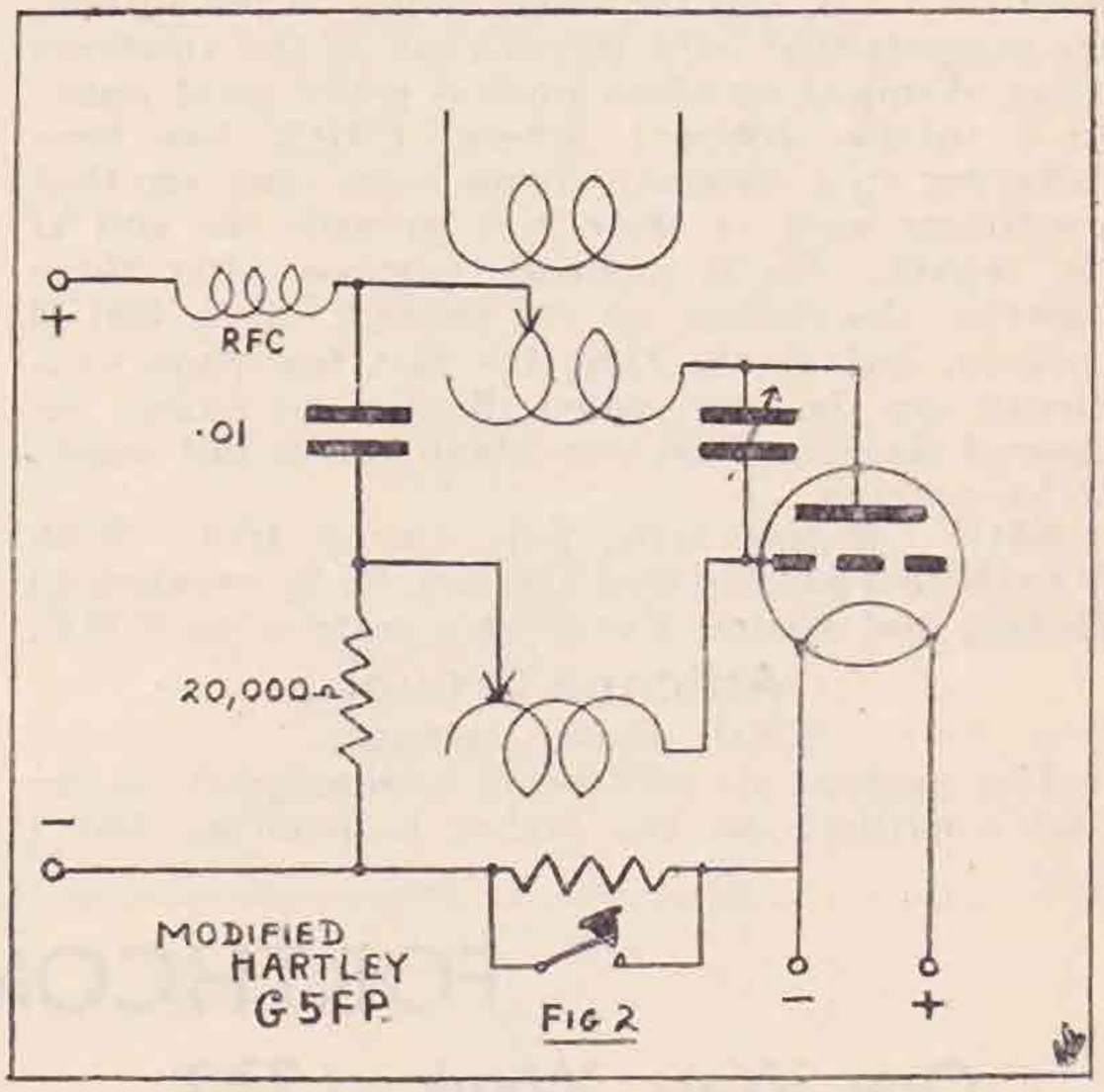
Group 8D.—G.C. G5QU complains of constant slackness in this Group, and reorganisation is considered. He reports bad conditions and has been busy erecting a half-wave Zepp on 7 M.C., which appears much better than A.O.G.! Has also rebuilt the transmitter to CO TPTG and gets T9 always. G51X is rebuilding for B.E.R.U. Tests. Is going C.C. on 7 and 3.5 M.C. and TPTG for 14 M.C. Has been QSO Germany on 0.6 of a watt.

Group 8E.—Direct and Loose Coupling Effects.—G.C. G5JU has been trying a Windom 33 ft. and has worked W1 on 14 M.C. and got R9 in FM on same, and has put R6 fone to PA on 3.5 M.C., so this Windom seems really good after all!

Congratulations to ex-2AOX, who is now G5QL. He is using 1 watt on 7 and 14 M.C., but will use 5 watts when conditions improve! Also congratulations to BRS493, who is now 2BRA. He uses a direct-coupled 30 ft. T aerial for reception, and finds results excellent, and gives no blind spots. He is now busy building a TPTG and Hartley transmitter.

G2OC reports bad conditions, and has trouble in finding a suitable tube for QRP work to work with A.C. on the filament, but is testing a CX350 with 300 volts on the anode.

Group 8G.—Weather Effects on 28 and 14 M.C.—G.C. G2TK reports that the Group consider that these two bands are highly susceptible to weather effects, although little QRN is noticed on either. The members of this Group all reside in Hull, and local work is being arranged and also station visits, etc. The Group consists of G2KM, G2UG, G6PS, G5FV, and BRS575. Full reports from all members will appear next month.



2 MC. Work.

G5UM, Group Manager.

"Distant stations good when heard; fading and QRN much worse than last winter, and DX inconsistent." This statement epitomises conditions on the 2 M.C. band during the first seven weeks of 1932. Good contacts have been made, but not with the ease of last winter. When the cold spell arrived on February 8-9, it was hoped that matters would improve, but unfortunately for radio work, the weather reverted to its original mildness before the next week-end; February 13-14 did not prove to be "the consummation devoutly to be wished," but gave us fair DX and occasional static.

Amateurs on 2 M.C. in S.E. England have been much perturbed by the virulent interference from lightships—believed to be Dutch. Two of these spend hours every Sunday evening chatting to one another with perfectly abhorrent telephony. Coming in at R7 or more, these lightships occupy the whole of the lower half of the frequency band, and have completely spoilt the work of many 2 M.C. transmitters in the South-East. Quite apart from "frequency-grabbing," they are using objection-

ably antediluvian methods of transmission. Their modulation " boils over," and blots out half a dozen C.W. stations immediately.

Following the discussion in *Group* 10*A* on the relative merits of self-excited transmitters *versus* crystal controlled outfits, G5FP has built a modified Hartley (Fig. 2). Initial tests gave very encouraging results—and T8 reports every time. A P650 valve is used with 200 volts from the D.C. mains. G5FP confirms G6FO's remarks last month about this valve ; he also has found it to give better R.F. output than an LS5—in this instance in a COPA transmitter.

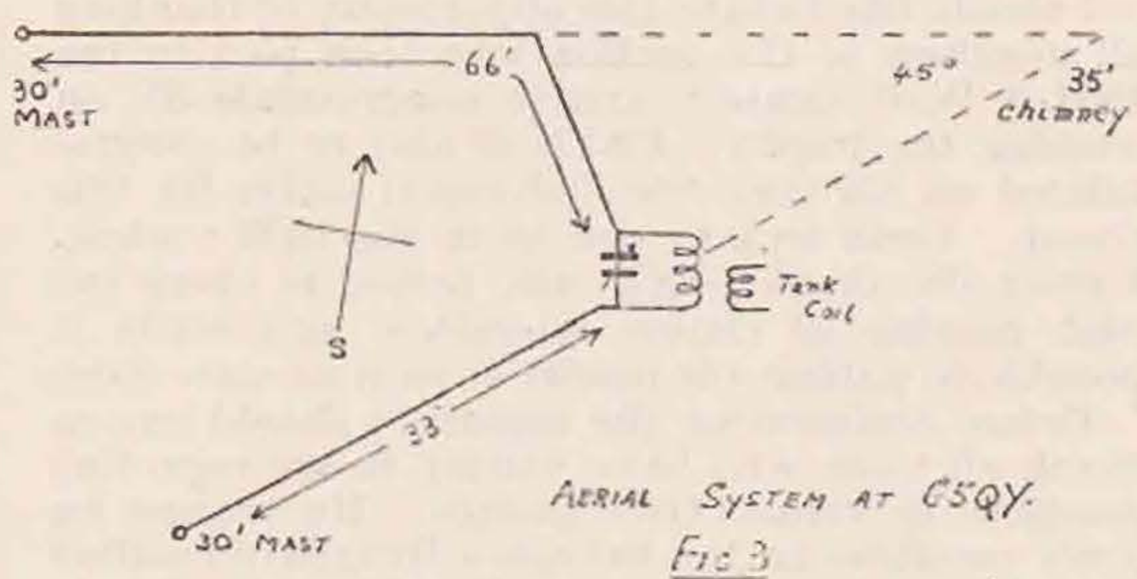
G5RX has now started up again at the new QRA, and commenced activities with a 7 M.C. Windom (66 ft. 7½ ins., tapped 9 ft. 3½ ins., and direct earth). Results on 2 M.C. were very encouraging, and several distant contacts were made on the band almost immediately. Locked T.P.T.G. is still used. G5RX comments on the vagaries of chemical rectification ; the difficulty of obtaining an even output from each cell, and the unreliability of the system. He suggests that only 10 per cent. of the amateurs using chemical rectifiers possess really good notes. In a totally different sphere, G5RX has been following up a statement made some time ago that conditions were at their best towards the end of the month. He is inclined to agree, after three months' observation on the subject. G.C. G5UM concurs, but thinks that the last few days of a month are the best, when there is no moon ; increased static is often coincident with a full moon, in his opinion.

G5QY, of Newcastle, joins Group 10A. With 5 watts to a parallel feed Hartley, he has worked all Britain and several European countries on 2 M.C.

Antenna Group.

G2OP, Group Manager.

The sections are still being handicapped by the bad conditions on the higher frequencies, but I hope to receive many reports and descriptions of antennas used by successful stations during the B.E.R.U. Tests. Reports are welcomed from anyone whether in the Group or not. Their results are all carefully summarised so that a store of valuable and useful information may be gathered. We



AERIAL SYSTEM AT G5QY.

FIG 3

welcome ZT1H to the B.E.R.U. Section, and look forward to his reports with interest.

G2WS has rigged up an indoor Wilkinson with 200 v. to a DE5, which gave five QSO's in two hours, including R8 from OK.

G2YX is testing a current-fed half-wave on 3.5 M.C., and a half-wave voltage fed on 7 M.C.

G5QY has sent me particulars of a system used but little, but which has been very successful. Between April and August of last year 70 American contacts were made, some at R7 using 5 watts at 240 v. Other results with the same power are R6 from ST2D, R4 from ZU6W, and R7 from ZC6JM, the power for the latter QSO being 1.8 watts only. G5QY suggests that the same arrangement might be used very successfully with the legs at an angle of 180°.

FORTHCOMING TESTS.

One Watt Week, 1932.

1. The Tests commence at 18.00 G.M.T. on Saturday, April 2, and terminate at 24.00 G.M.T. on Friday, April 8. Only contacts made between the hours of 18.00 and 24.00 G.M.T. each day will count.

2. The input to the output stage must not exceed one watt of pure D.C. supplied by dry batteries, accumulators, or D.C. mains, but in the event of the station being crystal controlled, rectified A.C. may be used.

3. No schedules may be arranged, and more than one contact with the same station within one period of from 18.00 to 24.00 will not count.

4. Contacts may be established on any licensed amateur band, according to individual licences.

5. Contact must not be established on high power, and the power then reduced to one watt. Less than one watt may be used, but will not count for extra points.

6. Contacts within the British Isles do not count.

Points will be allotted for other contacts as follows :

1 point each : France, Belgium, Holland, Germany, Denmark, Switzerland.

2 points each : Norway, Sweden, Spain, Italy, Austria, Hungary, Czecho-Slovakia, Luxemburg, Faroe Islands.

3 points each : Portugal, Finland, Jugo-Slavia, Latvia, Esthonia, Lithuania, Poland, Roumania,

4 points each : Algeria, Morocco, Azores, Madeira, Russia in Europe.

5 points each : Egypt, Iraq, Palestine, Syria, Transjordania, Canary and Cape Verde Islands, Iceland, Russia in Asia.

Contacts with ships will be awarded points for the groups in which they would naturally fall.

Every contact over 10 with a single country counts for double points.

In addition to the above scoring system, every country worked counts 1 point.

7. All logs, giving details of Date, Time, QRH, WX, QSA, QRK, QSB, etc. (as reported by the station worked), should reach G6PA, Plumford Farm, Ospringe, Faversham, Kent, not later than Saturday, April 23, 1932.

8. The decision of the President of the R.S.G.B. will be final.

9. Competitors may be called upon to demonstrate their station under working conditions, should any doubt arise regarding the power used.

1.7 Megacycle Tests.

Dates : April 3, 10, 17, and 24.

RULES.

1. Stations must strictly adhere to any licence which has been issued to them by H. M. Postmaster-General.

2. The Tests will take place between the hours of 22.30 on Saturdays and 24.00 on Sundays. The period of 15.00 to 22.30 will not be used for the purpose of these Tests out of fairness to those stations which are unable to operate during broadcast hours.

3. The Tests will be split into two parts as regards times of operation. There will be a dark period, 22.30 to 24.00 on Saturdays, and 24.00 to 05.00 on Sundays. The light period will be from 05.00 to 15.00 on Sundays, with a further dark period from 22.30 to 24.00 on Sunday evenings. Times will be G.M.T. or B.S.T., as in force.

4. A QSO during the light period will count two points, and during the dark period one point. Contacts with stations less than 200 miles distant will not count for the purpose of these Tests.

5. Power is limited to 10 watts to the output stage of the transmitter, and only C.W. may be used.

6. It does not matter if the station you are working is entered for the Tests or not. You will score your points just the same, provided always that it is over 200 miles distant.

7. The Tests are open to all members of the R.S.G.B. resident in the British Isles. (This includes the I.F.S. and the Channel Isles.)

8. No station may be worked or logged more than once in each period during the whole day.

9. BRS and AA stations only may enter for the receiving Tests, and the points will be as for the transmitting entrants.

10. All entries for the Tests must reach Contact Bureau before March 17.

11. A complete log of each day's results must be sent to C.B. *weekly*, and, if required, confirmation of any contact must be supplied. All logs must reach C.B. before April 30.

12. The results will be judged by Contact Bureau, but in the case of any dispute arising the matter will be referred to the President of the R.S.G.B., whose decision will be final.

Reception Tests.

It is proposed to continue the above tests each month, and a list of reception periods and bands is given. For full details please consult the December and January issues of the BULLETIN, as it is essential that the procedure indicated should be followed. In addition to the logs from British stations, the February-March Budget will contain a number of logs from Holland, as the Dutch amateurs are now participating in co-operation with us. One log was recently received from Corfu ! Most of the logs sent in are from transmitting stations ; it is hoped, however, that B.R. stations will take interest and send in their logs. The tests are certainly proving of interest, particularly when results in the various localities are compared. Logs should be sent to T. A. St. Johnston, 28, Douglas Road, Chingford, E.4, by April 6.

RECEPTION PERIODS AND BANDS.

Date.	Period G.M.T.	Band.
March 19	23.00—24.00 ...	1.7 M.C.
,, 20	18.30—19.30 ...	1.7 ,,
April 3	12.00—13.00 ...	1.7 ,,
March 23	20.00—21.00 ...	3.5 ,,
,, 25	21.00—22.00 ...	3.5 ,,
April 2	19.00—20.00 ...	3.5 ,,
March 20	07.00—08.00 ...	7 ,,
,, 23	22.00—23.00 ...	7 ,,
April 3	00.00—01.00 ...	7 ,,
March 27	07.00—08.00 ...	14 ,,
,, 27	16.00—17.00 ...	14 ,,
April 3	17.00—18.00 ...	14 ,,
March 20	At any time during the day	28 ,,
,, 27	,, ,, ,,	28 ,,
April 3	,, ,,	28 ,,

H.A.R.T.S. DX Contest.

The Hongkong Amateur Radio Transmitters' Society have arranged a unique DX Contest, taking place from April 1 to 7 inclusive. The DX trophy is to be awarded to the foreign amateur who scores the greatest number of points in accordance with the rules published below.

Much time and consideration have been given to the method of scoring, and multiples of scores made in order that all locations will stand an equal chance.

Foreign participants need not enter beforehand for the Contest.

The " special multiples " referred to in Rule 5 (and after) are listed in detail in the January issue of *DX*. As this information is received as we close for press, we are unable to reproduce the list in full. The multiple for England and Scotland is 6, for Ireland 7, and for Egypt, Iraq and Sudan 8.

Rules of Contest.

The rules of the contest are as follows :—

(1) Every VS6 station and every foreign amateur station is eligible to compete.

(2) VS6 stations must enter their names for the contest, but foreign stations may take part without so doing.

(3) All communications must take place on the frequency bands allocated to amateur transmission. Any station logged off the correct frequency assignments will be disqualified.

(4) The contest opens on April 1, 1932, at 00.00. G.M.T., and closes at midnight G.M.T. on April 7, 1932. All contacts made before or after these times will be disregarded.

(5). *Scoring. Foreign stations* :—Each VS6 station worked counts one basic point. This score will be multiplied by the number of amateur frequency bands upon which communication is effected, and again by a special multiple agreed upon by the Contest Committee. This last-mentioned multiple varies widely in the various locations in order that in the light of our past experience all parts of the world will be afforded an equal chance of winning.

VS6 stations :—Each foreign station worked will count the same number of points as the special multiple of the place in which the foreign station is located. This score will then be multiplied by

the number of amateur frequency bands upon which communication was carried out during the contest. The object of the frequency multiple is to encourage DX stations to exploit the 3.5 and 7 M.C. bands in contacting VS6.

(6) *Foreign stations* taking part must report by mail to P. O. Box 651, Hong Kong, and such reports must be mailed within four days of the close of the contest. The envelope should be addressed H.A.R.T.S. "DX" CONTEST, P. O. Box 651, HONG KONG, and the reports should include date and time of reception of test message, frequency used, call of station worked and the report of signals which was given.

Russian 28 M.C. Tests.

We have been asked by WKS-ODR, the Russian amateur body, to notify our members of some 28 M.C. tests, which it is proposed to hold during the month of March, and take this opportunity of asking for co-operation from the 28 M.C. C.B. groups. News from Australia seems to show that over there they are finding this band quite successful for QSO of about 1,000 miles or so, and we welcome the opportunity of testing their finding in this part of the world.

The tests began on March 1 and will end on April 1. All reports should be sent to the Hon. Organiser of C.B. G6PA, or to Headquarters for forwarding to Moscow.

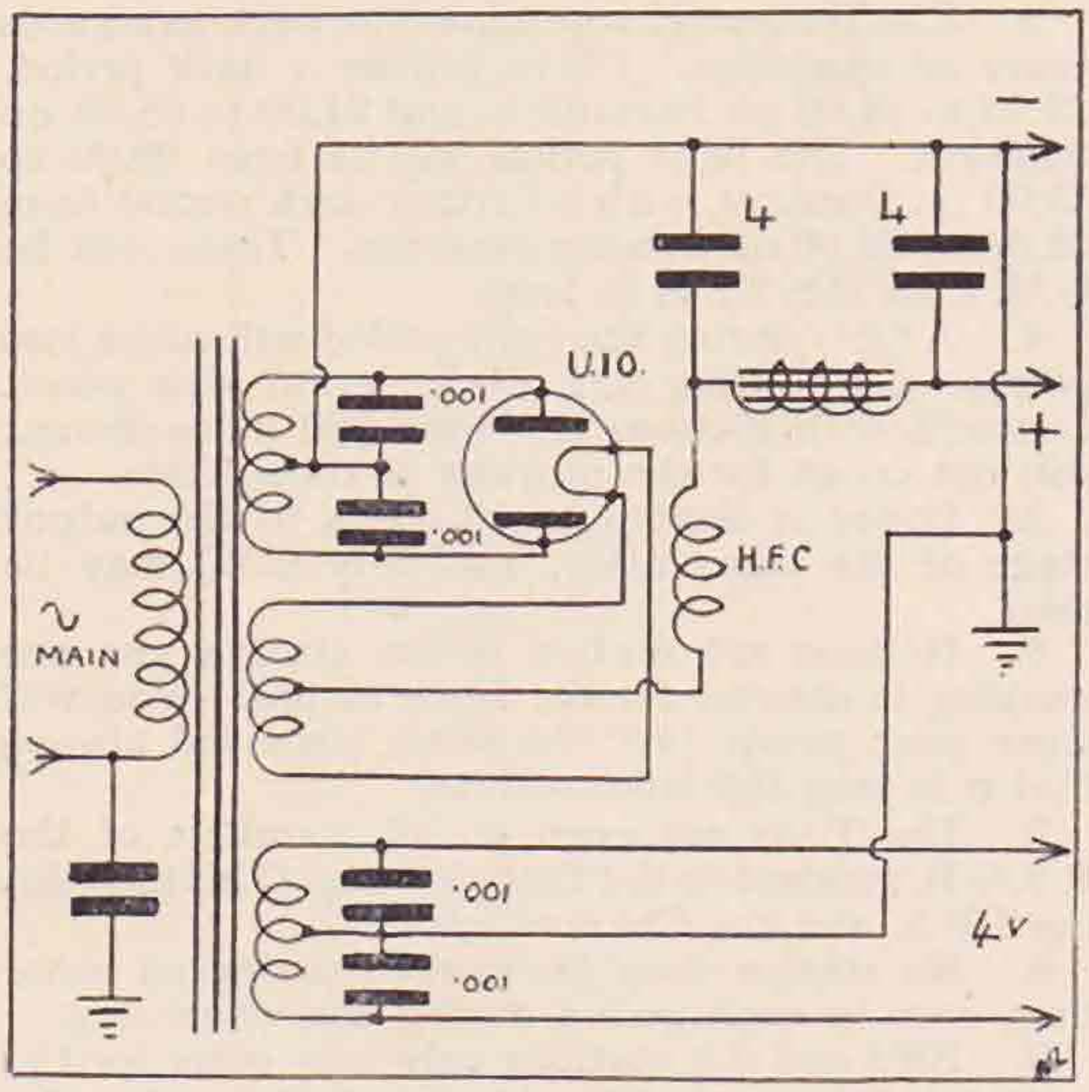
NOTES ON OPERATING ALL-MAINS RECEIVERS.

By W. P. DOLPHIN (G6DP).

It is thought the following remarks may be of use to those experimenters who contemplate using "all mains" short-wave receivers, from 15 metres upwards, or those who may have tried running on ultra short wave receiver from "all mains," and have not had great success.

First of all, preliminary experiments were tried, using a built-up battery eliminator, using an Osram U.10 rectifier. When the receiver was in a non-oscillating condition all was well, but so soon as reaction was applied, a terrible roar was set up at the mains frequency, which made the reception of C.W. stations utterly impossible. The first thing to be looked to was the smoothing arrangement; this consisted of 4 mfd. choke, and 4 mfd., the choke being in the positive lead. No improvements were effected either by increasing the condenser or choke values. Next .1 mfd. condensers were placed across each high tension secondary winding; C.W. reception was now possible to the extent of 10 per cent. of the tuning range. It was found later that these could be reduced to .001 mfds. with the same effect. Oscillation hum was still bad at certain portions of the dial, more particularly at minimum capacity end of the dial (this latter point was later found to be a characteristic of the receiver—maximum sensitivity at minimum capacity). Having reduced H.F. voltages on the H.T. secondary windings, attention was paid to the heater 4-volt windings supplying the indirectly heated valves, Osram MH4 and MPT4 (selector as pentode).

It is thought that, due to the close proximity of the low voltage windings to the others, H.F. voltages may be induced electrostatically, and the hum was practically eliminated by putting the centre tap of heater winding to earth, and also connecting from centre tap to outside extremities of winding two .001 fixed condensers. With the addition of an H.F. choke in the positive H.T. from filament and receiver to set, and a .001 fixed condenser from the live feed wire of the A.C. mains to earth, no trace of hum is audible from 25 upwards when reaction is applied.



Using headphones on the lower range of 15 metres to 25, some oscillation hum is audible, but reception is possible. Experiments are in hand to eliminate this.

[EDITORIAL NOTE.—It has frequently been found that bad hum is obtained from an eliminator with a valve rectifier used to supply a Short Wave Receiver. The substitution of a Westinghouse metal rectifier for the valve will considerably assist in eliminating the hum on all wavebands].

Stray.

It is often said that London is the home of the junk shop, or ham's paradise. Is that true? Probably few towns can boast of being able to provide more of the kind of junk and second-hand stuff that we love.

G6TX and G5ZG are quite sure that the Provincial hams envy the Londoners their bargains, so these two are going to start a "Bargain Department for Hams." They will scrounge London for anything good and offer it through the small advertisements section of the BULLETIN to the rest of the members. Keep an eye on the last page!

* * *

B. D. G. Barlow, G5UC (ex-BRS305), Fulshaw Lodge, Christchurch Road, Cheltenham, will appreciate reports on his 14 M.C. transmissions during the early mornings of this month.

The Incorporated Radio Society of Great Britain.

Headquarters Society:—BRITISH EMPIRE RADIO UNION,
53, VICTORIA STREET, LONDON, S.W.1. ('Phone, Victoria 4412.)

APPLICATION FORM.

The Hon. Secretary,

Sir,—I beg to make application to be enrolled as a member, and shall be obliged if you will submit my name to your Council. I agree, if elected, to act and abide by the Rules of the Society as expressed in its Articles of Association and By-laws.

Signature.....

Name in full (please use Block Letters) .....

Address (to which all communications may be sent) .....

Nationality..... Age (if under 21).....

Call Sign.....

NOTE.—*Members not having Call Signs are allotted B.R.S. (British Receiving Station) or B.E.R.S. (British Empire Receiving Station) Numbers, which are used for identification purposes only.*

Proposed by..... Seconded by.....

NOTES.—*Applicants who do not know any member may accompany their forms by references in writing by persons to whom they are known. Such persons should be householders, and should state profession and length of acquaintance with applicant.*
The Council reserve the right to refuse any application without reason.

UNDERTAKING TO BE SIGNED BY APPLICANT.

I, the undersigned, agree that in the event of my election to membership of the INCORPORATED RADIO SOCIETY OF GREAT BRITAIN, I will abide by and observe the Rules, Regulations and Articles of Association of the Society, and that in the event of my resignation from the Society given under my hand in writing, I shall, after the payment of all arrears which may be due by me at that period, be free from this obligation. I further agree to observe strictly the terms of any licence issued to me by the responsible authorities to operate transmission or receiving apparatus.

Witness my hand this.....day of..... (*signed*).....

SUBSCRIPTION RATES.

Corporate Members and Associate Members (Town) ...	**£1**	**1**	**0**	**per annum.**
Corporate Members resident outside 25 mile radius Charing Cross	**0**	**15**	**0**	**,, ,,**
Corporate Members resident outside British Isles ...	**0**	**12**	**6**	**,, ,,**
Non-Corporate Members—Associates	**0**	**10**	**0**	**,, ,,**

Associates are not eligible to vote or receive individual notices of the Society.
Certrficates of Membership and copy of the Articles of Association are issued to all members upon election.

NO ENTRANCE FEE.

A copy of the Articles of Association may be inspected at the Headquarters of the Society, 53, Victoria Street, London, S.W.1, by applicants upon request.

FOR OFFICE USE ONLY.

Approved by Council.....

B.(E.)R.S. Number issued..... ....First Subscription Paid.....

MEDWAY TRANSMITTERS' SHOW

LOCAL conventionettes, field days and even "night operations" are quite a regular feature in the annual programme of most of our districts or local societies. We believe, though, that "The Gillingham Gang's" idea of holding an Amateur Transmitters' Show in the Queen's Hall, Chatham, on February 3, is something new in amateur radio; such a show certainly has not been of frequent occurrence during the past few years.

The Hon. Secretary of the Medway Experimental Transmitting Society, G6XO, has given a detailed account of the show. It is gratifying to see that, quoting his own words, "the object of the show was to bring to the notice of the local public the *raison d'être* of amateur radio in general, and the work of this Society in particular." The local Press representative attended and gave a very excellent account of the show, besides leaving his readers in no possible doubt as to the aims and objects of amateur radio and of the type of person permitted to style himself "An Amateur."

The show opened at 3 p.m., and it was a matter for keen regret that Capt. Eckersley was unable to be present.

The Gillingham Gang were fully represented and immediately got the three transmitters working in the hall, the licences belonging to G6VV, G6QG and G2IG, having been temporarily transferred for that purpose. Duplex working on 160 metres and 40 metres was effected between two of the stations which used only artificial aerial, but, being housed in different parts of the building, were out of sight of each other and thus greatly added to the interest shown. The public were invited to communicate with friends.

In contrast with G2IG's 50-watt c.c. set was G5MN's 1913 40-watt spark transmitter duly polished up for the occasion. The "bread-board" type of transmitter was not so evident as might have been supposed, and one unusual type of set was G6XO's 5-metre transmitter literally "built" on a Cyldon series-gap condenser.

G6BA showed a c.c. set and G6NU's entire station, complete with side-swiper, caused severe QRM around the stand. G5JT showed a compact 40 and 160 metre combined outfit, and he and G6BA provided a musical entertainment of excellent quality. G6QC was responsible for a "radio-train" which started and stopped with G6QG's carrier wave. The super QRP side was under G5FN's care.

BRS675 and G2IG showed 5-metre receivers, and excellent receivers were also supplied by BRS651 and 2AFZ.

G6WY "blew in" after office hours, but G6PA, through unfortunate indisposition, was unable to attend, and frequency metres were therefore neglected.

Many firms specialising in amateur gear were invited to loan apparatus for the exhibition, and the Hon. Secretary therefore extends thanks to Marconi's, Easticks, Mullards, G.E.C., Wingrove and Rogers, Audiovisors, Baird's Television, Cossor's, Stratton's, Ferranti's, Ecko, Kolster-Brandes, *The Wireless World*, *Amateur Wireless*, *Popular Wireless*, and the *Daily Express*.

Later in the year the organisers hope to hold another show and much has been learned as a result of their first one. Two things stand out in their memory; one is the interest taken by the public—three hours was definitely not long enough—and the other is contained in a suggestion offered gratis to anybody. *"Don't argue about radio with schoolboys, because you may be wrong."*

STRAYS.

SU1AA has now returned to Cairo and hopes to be on the air shortly.

* * *

Will all members who have not received one of the Society's new membership certificates please notify Headquarters.

* * *

W.B.E. Certificates have been issued to: G2YD, G. A. Wright; G5KL, O. B. Kellett; ZL2GW, S. G. Taylor; ZS6Y, R. Keir.

NOTES and NEWS from the BRITISH ISLES

DISTRICT REPRESENTATIVES.

DISTRICT 1 (North-Western).
(Cumberland, Westmorland, Cheshire, Lancashire.)
MR. S. HIGSON (G2RV), "Hebblecroft," Egremont Promenade, Wallasey, Cheshire.

DISTRICT 2 (North-Eastern).
(Yorkshire, Durham, Northumberland).
MR. L. W. PARRY (G6PY), 13, Huddersfield Road, Barnsley, Yorks.

DISTRICT 3 (West Midlands).
(Warwick, Worcester, Staffordshire, Shropshire.)
MR. V. M. DESMOND (G5VM), 199, Russell Road, Moseley, Birmingham.

DISTRICT 4 (East Midlands).
(Derby, Leicester, Northants, Notts, Rutland, Lincoln.)
MR. H. B. OLD (G2VQ), 3, St. Jude's Avenue, Mapperley, Nottingham.

DISTRICT 5 (Western).
(Hereford, Oxford, Wiltshire, Gloucester.)
CAPT. G. C. PRICE (G2OP), 2, St. Anne's Villas, Hewlett Road, Cheltenham, Glos.

DISTRICT 6 (South-Western).
(Cornwall, Devon, Dorset, Somerset.)
MR. H. A. BARTLETT (G5QA), 95, Old Tiverton Road, Exeter, Devon.

DISTRICT 7 (South-Eastern).
(Berkshire, Hampshire, Kent, Surrey, Sussex.)
MR. J. DRUDGE COATES (G2DC), "Burleigh," Farnborough Park, Hants.

DISTRICT 8 (Eastern).
(Cambridge, Huntingdon, Norfolk, Suffolk.)
MR. S. TOWNSEND (G2CJ), 115, Earlham Road, Norwich.

DISTRICT 9 (Home Counties).
(Bedfordshire, Hertfordshire, Essex, Buckinghamshire.
MR. F. L. STOLLERY (G5QV), "Kingsmead," Lancaster Gardens East, Clacton-on-Sea, Essex.

DISTRICT 10 (South Wales and Monmouth).
(Monmouth, Glamorgan, Breconshire, Carmarthen, Cardigan, Pembroke.)
MR. A. J. E. FORSYTH (G6FO), "St. Aubyns," Gold Tops, Newport Mon.

DISTRICT 11 (North Wales).
(Anglesey, Carnarvon, Denbighshire, Flintshire, Merioneth, Montgomery, Radnorshire.)
[To be appointed.]

DISTRICT 12 (London North).
Mr. S. BUCKINGHAM (G5QF), 19, Oakleigh Road, Whetstone, N.20.

DISTRICT 13 (London South).
MR. A. D. GAY (G6NF), 49, Thornlaw Road, West Norwood, S.E.27.

DISTRICT 14 (London East).
MR. T. A. ST. JOHNSTON (G6UT), 28, Douglas Road, Chingford, E.4.

DISTRICT 15 (London West and Middlesex).
MR. H. V. WILKINS (G6WN), 81, Studland Road, Hanwell, W.7.

SCOTLAND.
MR. J. WYLLIE (G5YG), 31, Lubnaig Road, Newlands, Glasgow.

NORTHERN IRELAND.
Mr. C. MORTON, (GI5MO), 27, Bristol Avenue, Belfast.

District Notes for publication should be written as concisely as possible and should be in the Editor's hands by the 25th of the month preceding publication. They should be of a general rather than personal nature. Individual reports from County Representatives will not be accepted for publication.

DISTRICT 1 (North-Western).

A VISIT to the "Lotos" Works is being arranged by G5KL on April 12, so will all those members in this District who would care to go, please let him know as soon as possible. At the Liverpool meeting held on February 20 it was decided to hold a Field Day on May 15. Please make a note of this date and don't let anything else clash, because we want to make this the finest ever. Further details will be available to all later. Some fourteen members were present and the meeting was enjoyed by everyone. The Manchester meeting was held on February 3 and proved very successful, some fourteen members being present. G2WP gave an extremely interesting talk on his station and the experimental work done, and an animated discussion on aerials followed. The next talk will be by G2DH. They are also staging a debate on C.C. *v.* Self-excited. Twelve stations have contributed to the letter budget, and the C.R. for Lancs seems more satisfied. Keep it up! It seems to be Lancs turn to be under the influence of the rebuilding wave. Evidently all taking advantage of the prevailing dud conditions. G2OI says that he can now modulate his ten watts on all bands with 1½ watts. The Wigan Police Station is causing quite large amounts of QRM at 2AWV. Hi! BRS605 is expecting full "Ticket" any day. G6QA reports domestic QRM—a new junior op.—a YL (?). G6LY wants more 2 M.C. contacts. 2BZZ is busy with Fultograph along with several others in this district. Cheshire reports are few and far between, perhaps due to bad conditions. Several members have been on 3.5 M.C., notably G6OM, G5XD. G2OA is trying hard to get there, and G2RV has had one or two contacts on that band along with G2QB, who is there almost exclusively. G5WG is contemplating a change of QRA and has not been heard much, and is then going QRO! We wish to add a word of welcome to the new members in this area, and it has been decided to give personal Morse lessons to those BRS men who

are interested, and they should just drop a line to the D.R. or the C.R.'s, who will do the needful. I should be very pleased if more members would write some notes to the C.R.'s, so that they can let me have better reports each month. The matter given in their reports this month is about the smallest I have had. Come on, boys, don't be disheartened by the bad conditions!

DISTRICT 2 (North-Eastern).

First of all, OM's, the next Conventionette has been fixed at The Black Swan Hotel, York, for April 16 next. Tea at 5.30 p.m., meeting afterwards.

I have few individual reports to hand this month. 2ARN, who reports conditions fairly good, have heard most of the world. He would like suggestions for curing bad AC hum on RX, although he is in no way connected with mains. Hi! He also points out that in an issue of *World Radio* a 7-metre transmitter is described in full and states that anyone may operate same. "If this is the case, why am I, among others, paying 10s. per year for a licence which restricts me to three bands, with an artificial aerial?" he asks, and suggests that this requires some explanation.

G6MY is working QRP with 2 watts on 7 M.C. and would like reports. G6DB and G2WS have been active on 7 M.C. and 14 M.C. and report bad conditions on the latter; with short good periods on 7 M.C., G6DB has had good reports on 2 M.C., and G2WS had some GB contacts in the Spanish tests.

Other stations are asked to report more often.

Sheffield District Meetings.—First one held on January 27, 1932. It was decided to form a Radio Society in Sheffield affiliated to R.S.G.B. for the purpose of creating interest in short wave radio and to increase the membership of R.S.G.B. Suggestions to be made to scout masters. Next meeting resulted in a very good ragchew. Meetings in future are to be held on the third Tuesday in each month (Roll up, ye "hams."—D.R.) at The Angel Hotel, Sheffield, 7 p.m.

Leeds Meeting.—Held on February 6, 1932. Here was another opportunity for a very good ragchew. It was decided to hold district meetings each three months and in the meantime to have visits to stations. G2WS will notify the members of all arrangements in future. All three meetings were well attended and there is no doubt that they go a long way towards getting the true "ham" spirit.

Activities in Yorkshire, I think, are all that can be desired. I would like to hear something from Northumberland and Durham. Please let G5DI, your C.R., know what you are doing, OM's.

Do please let me have a card direct as soon as possible if you intend coming to the Conventionette at York, as I must have some idea of the number of members who will be there, so that I can make the necessary arrangements with the hotel people. Come on, lads; help to make it a better success than the last one.

DISTRICT 3 (West Midlands).

Congratulations to Mr. R. W. Kidner (G6KI) and Mr. S. A. Taylor (G5TL) on obtaining their full tickets. The meetings of "Mars" have been well attended and we were pleased to welcome G6WY to one of them recently. B.E.R.U. Contest affairs have claimed the attention of members very largely, and a good number of points have been obtained. These will doubtless be published in the proper place later, as most of our active stations have been out for fresh laurels. Reports from Shropshire, Worcestershire and even Warwickshire are almost non-existent this month (why, OM's?). G2ZW is still looking for that elusive spare hour or so in which to complete his conversion to AC mains supply and test out. BRS77 has had trouble with a howling S-G valve and has gone back to a normal 0-v-1 RX in a biscuit tin! G2KB, who has been receiving BCL complaints, is moving to a new QRA shortly and rebuilding his Xmitter. He asks that anyone using the Sunday morning Morse practices should send him a card to say that these services are appreciated and used as otherwise they will be discontinued.

G2NV sends in another useful report from Staffordshire from which the following notes are taken: The combined station of "Uncle William" (G5UW) and G2OQ is active on 7 M.C. and has carried out several DX contacts, but various modifications are to be carried out to cure trouble due to mains voltage variation, also a speech amplifier and modulators are being built for local phone contacts. Thermostatic crystal control is also under consideration, further to ensure stability. G2ATK is carrying out intensive listening on 28 M.C., but is also swotting for exams. (Best wishes for both, OM.) G6WF is still very active with phone on 1.7 M.C., his efforts on this band being notable for quality and constancy. He is also active on 28 M.C. and anxious to receive reports. BRS488 reports that since reading the February report, he has redoubled his efforts towards claiming his ticket. G60I-G60J and G6MW are, as usual, very active at week-ends, particularly with the portable unit (G60J), which has been in use on various occasions for tests with fixed station at H.Q. G6PC is interested in the relative merits of straight *versus* push-pull circuits, but, though on the air at intervals, he is not at the moment keeping regular schedules. G2NV is occupied with investigations as to the best arrangement of aerials, somewhat limited, however, by his having only one mast available. Good results are being obtained on all bands, though under difficulties, which, he hopes, will disappear when the new new mast is erected.

DISTRICT 4 (East Midlands).

(These were received too late for insertion in last month's issue.)

The district in general is still going strong and, without doubt, making very active progress. Much interest is being shown in the B.E.R.U. contest and by the enthusiasm beforehand (particularly amongst the B.R.S. and three-letter stations) this district is hoping for something good.

Nottinghamshire.—No reports received. Judging by the stations heard on the air the county is 100 per cent. active. The monthly meeting was well attended. The 56 M.C. band is receiving the attention of two or three members. G2VQ has worked VS7AI on 7 M.C.; this is believed to be a first contact on the 7 M.C. band.

Northants.—2ATV is still the only active member here. He reports conditions bad and is interesting locals in S.W. by holding weekly

meetings at his home. This should encourage an increase in Northants membership.

LEICESTER.—I am pleased to record a further increase in new members again this month, and welcome G6GF and G6WW.

G6GF and 6WW are both old hams, and we hope to hear them on the air again in the near future.

G2CZ has built a C.O. stage and is now awaiting the arrival of a crystal. He hopes to get going on 56 M.C.

BRS601 has RX for 28 and 56 M.C., but has heard no sigs on these bands yet.

BRS650 has rebuilt his receiver and reports conditions good on 3.5 M.C.

BRS559 is active on 3.5, 7 and 14 M.C. He is building a dynatron frequency meter.

All the B.R.S· stations have been putting in plenty of Morse practice.

Reports have been received from the following stations this month : G5BD, G5CY, G5IX, G5LQ, BRS426. G5BD, G5CY, and G6LI have all been on 3.5 M.C., the latter, with a 50 watter, having established contact with K4AXG, of Porto Rico, on this band. This is thought to be a "first contact" for the new frequency limitations.

G5BD, 5CY and 5IX are all building C.C. transmitters as per G2TK.

BRS426 reports very favourable tests with Copex S.W. coils.

During December G6LI received a QSL from VS3AC acknowledging the "first 40 metres contact between G and VS3."

As a suitable rendezvous for the next Lincolnshire area meeting, G5LQ proposes Lincoln City, as also G6HK and G6LI. Who else agrees with this ?

I am sorry to see that the B.R.S. membership of the area has failed to report—with one exception. Surely some of you fellows do a spot of listening ? By the way, Grimsby, your patient C.R. still hopes for news of your activity.

Conditions in the area have been uniform and no sign of improvement has been observed on 14 M.C. Everybody awaits 7 M.C. signals from the U.S.A. Strong signals are heard from the U.S. on 3.5 M.C. most evenings which fade out around 02.00 and do not reappear with sunrise.

February.—It is regretted that only four stations have reported in time for this set of notes.

G5IX has been trying hard to get a B.E. contact or two, but is very QRP. G5LQ has been standing by for B.E.R.M. with 9 watts, but N.D. G6HK is active now on three bands, and is occupied with 14 M.C. crystals. BRS426 is concentrating on improving the Code. G6LI has been unfortunate in being unable fully to participate in B.E.R.M. since the transmitter cannot yet be worked on 14 M.C. at full power. The station has been highly active on 7 M.C., and standing by for 3.5 M.C., on which latter band nothing has been heard of B.E. stations, but G6HK reports hearing SU1CH recently. South Africa is heard to predominate on 7 M.C., but is hard to work on account of summer static over there. I am pleased to hear that G5GS is again active, although he does not report.

Please, OM's, do try and send something in at the conclusion of the tests, especially BRS stations.

DISTRICT 5 (Western).

The notes given under this heading are of a general nature, and members who are doing good work should not be discouraged. We here in the West follow the requests of Headquarters ! How many of the B.R.S. members have reported to their C.R. if they are making use of the National Morse practices, and if they find these useful ? This District is holding its Annual Conventionette on May 1, and I would remind members that the West Midlands are holding theirs in Birmingham on March 20. They have always supported us, and I hope that a number from my District will go to Birmingham. We are delighted to see that our old colleague, G2CJ, has been appointed D.R. of No. 8. We offer him our congratulations and best wishes and hope that he has now found his hat ! The membership in Gloucestershire is still increasing, and we now have 74. The fifth monthly meeting was held at Bristol on February 4 and 33 attended. Morse classes are in full swing and all are getting on well. G2IP reports having heard phone from W. on the 160 m. band. The Wilts letter budget is still excellent, and an interesting discussion on the merits of neutralised power amplifiers *versus* Goyder Lock is in full swing. Will G6ZH please send his new QRA to his C.R., and will several who do not contribute to the letter budget, please send their C.R. a monthly report on their activities. For those who are in doubt as to how Great Circle distances are measured, an article on the subject by the D.R. is being circulated with the March letter budget. At the time of writing, the January budget has not been returned to the C.R. ; we know it is full of interest and worth keeping, but it should circulate according to the rules. For the present the individual reports of Gloucestershire members appear in the County Magazine, together with some excellent technical articles.

THE WEST MIDLAND (No. 3 District) CONVENTIONETTE

Sunday, March 20th, 1932

"Hope & Anchor" Hotel, Edmund Street, Birmingham

ARRANGEMENTS :

2.45 p.m.—Assemble "Hope & Anchor" Hotel.
3 p.m. —Visit to Works for Demonstration.
4.30 p.m.—"Hope & Anchor" Hotel. Tea and Rag-chew.
6.30 p.m.—"Hope & Anchor" Hotel. Dinner.

Tea 1/6 ; Dinner 4/- ; Both 5 6.

Will members of other Districts who would like to attend, kindly notify G2ZW at 72, Lordswood Road, Harborne, Birmingham, **on or before March 12.**

DISTRICT 6 (South-Western).

Conditions on all bands have been complained of by the members, although on 7 M.C. in the mornings many VK and ZL stations have been worked.

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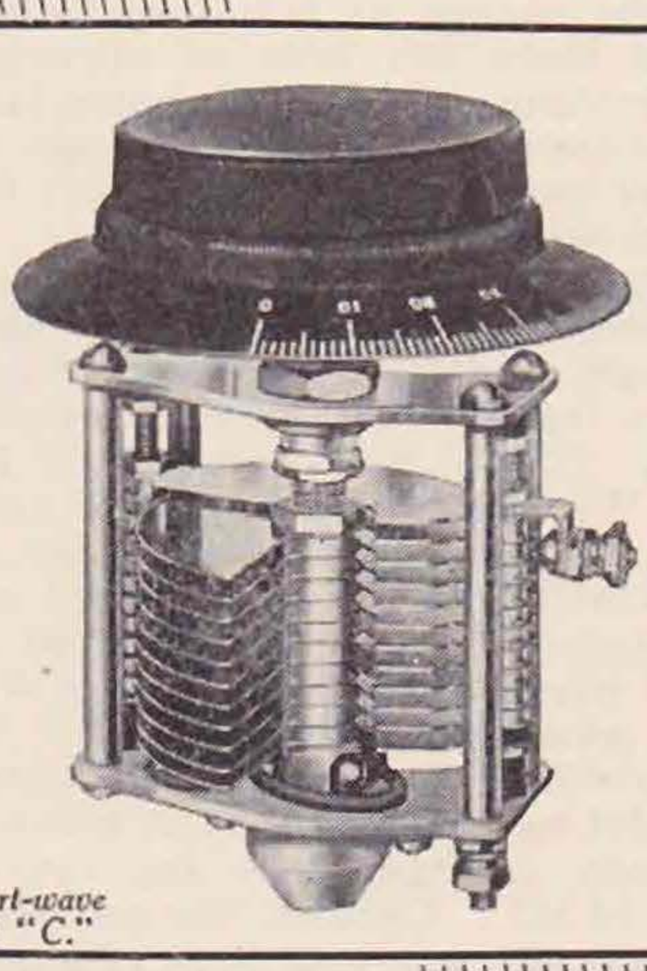

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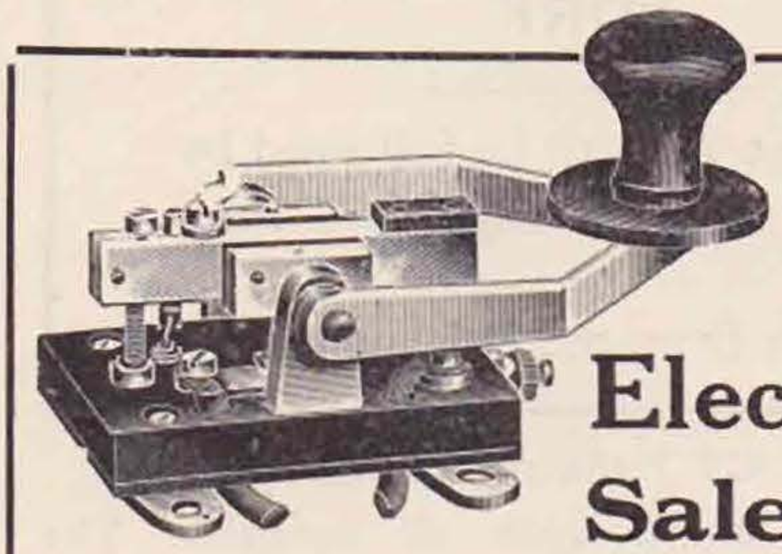

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Somerset and Dorset are apparently dead, as although I have repeatedly asked for reports there are as yet none to hand. It appears to be necessary for me to pay a personal visit to each member in these counties, which is what I shall do, although my petrol bill will suffer accordingly! All stations in Devon and Cornwall are active, and G5WY and G5QS are nearly ready to kick off with super C.C. stations. It is hoped to arrange for a county ragchew for Devon to be held in the very near future, and this matter is being put to the C.R. for his approval and arrangements. The Morse tests on Sunday mornings are being very much appreciated, and it is even hoped that these tests will be the means of introducing new members to the R.S.G.B., as several non-members are being helped by the tests sent out by stations in this district. I have had visits from G2ZP, G5WY, G5QS, and the real ham spirit is very much alive in this part of the country, I am glad to say. I am arranging to give talks to the local scout organisations, commencing with the Easter holidays, and also to arrange for some experiments to be carried out with my portable transmitter in conjunction with the troop. I am quite convinced that this is one of the finest ways of fostering interest as well as of being useful to the boys themselves.

DISTRICT 2 CONVENTIONETTE

APRIL 16, 1932

The Black Swan Hotel, Coney Street, YORK

Tea at 5.30 p.m, to be followed by the meeting.

All details from the D.R. or C.R.'s.

DISTRICT 7 (South-Eastern).

Reports this month from all counties. The general conditions show very little change from January and more stations are being forced on to the 3.5 and 1.75 M.C. bands.

G6WY and his men are taking full advantage of the times and are organising an "All Kent QSO Party" on 3.5 M.C., to take place on March 27 between 10.00 and 12.00 G.M.T. A Kent "Relay" is also proposed, the idea being that each station originates a message and points are scored for each relay. All interested should communicate with G6WY.

Congratulations to G2JH and G5IB on getting their two letter calls and to G2IG and G6XO, who were responsible for a wonderful show of amateur apparatus at the Amateur Radio Exhibition held in Chatham. The apparatus included a complete 5 metre transmitter and receiver. The Kent Letter Budget fell to ten contributions this month. BRS men are specially invited to contribute.

G2AX reports that a state of apathy exists in Sussex, only one station reporting, although many more are known to be active. (Buck up, you chaps.—D.R.) G2AO is reported to have had a 1.75 M.C. QSO with ZS2A. G2NM reports that with the exception of G2GG he thinks that the Berkshire "Hams" have all retired. G6GZ is quite happy with his Letter Budget, which now contains an average of 15 contributions and is a very interesting document each month. There is still room for YOU, OM. G6NK reports that the Surrey "gang" are still fighting the bad conditions and that all are hoping for the best during the B.E.R.U. tests. The monthly meeting was held at G2US and was attended by 19 members. The April meeting will be held at G2NH, New Malden. Roll up!

DISTRICT 8 (Eastern).

Attention is drawn to the plans for the District 8 and 9 Conventionette, particulars of which will be found elsewhere in this issue. Arrangements for this event have been made by G5QV, and all members who attend are assured of an interesting and entertaining time. As far as this District is concerned, the change of D.R. has rather upset matters, and there has been no opportunity of arranging anything definite with individual members, but you are all asked to make a special effort to attend. If the wife and family don't like your going, take them too.

Reports this month indicate a continuance of poor conditions on all bands, with occasional bright intervals. G6BT has worked W5 on 7 M.C. with 5 watts input. He awaits conversion from D.C. to A.C. G2RW has started up in Bury St. Edmunds. We wish him luck. G5UF and 2AAK are active. G2CJ has visited G6BT and received visits from G5UF and Mr. Cooper (new member). Finds conditions hopeless, but observed signs of life one night recently on 3.5 M.C., when W stations were really good. Is building a QRP 3.5 M.C. outfit, which should be in use by the time this is n print. G6BT has an 0-V-2 RX, on which reaction is substantially constant over the entire bands of 3.5, 7 and 14 M.C. Once set, the reaction control may be practically ignored, thus genuine single-dial tuning is obtained. G6BT claims that this happy state of affairs is an accident. The D.R. doubts this and would like to know the secret.

There are not sufficient active members in this District to make County Letter Budgets a success. Will C.R.s ascertain how many of their members would contribute to a monthly District Letter Budget?

DISTRICT 9 (Home Counties).

There is not a lot to comment upon this month, most stations on the terrain appear quietly active. The C.R.s, G2HJ, G5FB and G6DH report respectively, all's well. G2WJ is interesting himself in 58 M.C. G2WG had a most enjoyable trip over to the Chatham men, and Essex would like to reciprocate if they will visit us at Clacton at Easter. Unfortunately there is no Medway Packet until the summer season, so it means—road. G5QV is confronted by building operations and several lines of trenches between his present and new QRA down the garden. He hopes to return shortly with C.C. and super-het. Please read special notice *re* 8th and 9th Districts Easter Conventionette at Clacton. We expect a good muster. All details from G5QV or G6QO.

DISTRICT 10 (South Wales and Monmouth).

Activity this month has been general on all bands, but most stations continue to make their customary appearances on 1.75 M.C. The improved DX conditions attracted several people to 7 M.C., and G5LP, of Ebbw Vale, one of our QRP men, who uses COPA with a CT25X in the output stage and an input of 6 watts, was QSO VU2FX at this frequency. His aerial is a 33 ft. "Windom." A number of members are working regularly on 3.5 M.C., but few use 14 M.C. consistently.

The support which the Letter Budget is getting is rather disappointing, both to the D.R. and the regular contributors, and unless more interest is evinced during the next month or two, the question of discontinuing it will have to be considered.

Thanks to the indefatigable efforts of 2BRF, the C.R. for Glamorgan, and the kindness of the Principal, the first area meeting is to be held at the Cardiff Technical College early in March. This will be history by the time members get the March BULLETIN.

I regret to have to record that, with G5FI still laid up, we are also to lose, temporarily, another of our active members in 2BPI, of Merthyr, who is suffering from a nervous complaint brought on by wearing headphones too long at a stretch. He is to give up radio for six months, after which he hopes, as we all do, that he will be able to carry on the good work.

The following stations are active:—G2PA, G5KK, G5LP, G5NS, G5OC, G5PH, G5TW, G5WH, G6FO, G6GW, 2AIS, 2BPM, 2BRA, 2BRF, BRS245, BRS518, BRS570, BRS727, BRS766.

We also welcome as a new member Col. Isaac, BRS735, of Swansea.

DISTRICT 12 (London North).

Practically all stations are competing in the B.E.R.M. tests, but the QRP side are not having much luck.

The monthly meeting on February 27 promises to be a big success. I have not been able to fix the next one yet, so cannot announce it, but will write to everyone who attends when I have the date.

G6CL had the misfortune to have his aerial break down during one week-end.

Welcome to G5SG, a new station with a T9 note. G6OT has a very accurate frequency meter and is willing to check anyone's frequency.

I hope that all the B.R.S. stations will compete in the listening tests.

DISTRICT 13 (London South).

Much activity has been shown in No. 13 District during the B.E.R.U. tests. DX conditions have been excellent, although a few stations have had bad luck in raising the B.E. DX. Conditions on 7 M.C. were unusually good; at one time the band appeared to be full of VK's. But when the ARRL tests started on February 21, what QRM—everyone calling test at once!

By the way, which is the station in this District that has never read any articles on how a station should be operated? "Test B.E.R.U." *ad infinitum*. I expect others have heard him. The correct method, as practically everyone knows, is "test" three times and call sign three times. Please don't send "test" more than three times. When searching for DX you know how irritating it is to hear one of these "boobs" who send CQ at least a dozen times before signing.

The British amateur can at least set an example to some of his less informed foreign comrades.

G5AW was within less than 0.1 per cent. in the recent District frequency measuring test. FB, OM. He is using a Pentode (PM24D) as a choke modulation valve.

The following stations are active:—G2CX, G2GF, G5PL, G5YH, G6BB, G6HP, G6QB.

DISTRICTS 8 & 9 CONVENTIONETTE

EASTER 1932

Connaught Room, New Town Hall

CLACTON-ON-SEA

Principal Convention meeting Sunday, March 27, at 3 p.m. Tea at 5 p.m.

Will all attending kindly notify the D.R., G5QV.

DISTRICT 14 (London East)

Despite the very poor response to the request made in last month's Notes concerning the number of members availing themselves of the slow Morse tests, at the February meeting, held at Chingford, it was decided by a well-attended meeting to continue the schedules on the 1.75 M.C. band at 11.00 G.M.T., every Sunday, when a preliminary phone announcement will be made and 10 minutes practice will be given. Arrangements are now being made for further Field Days, and the tentative dates are April 9, 16 and 23; it is hoped to publish details in next month's Notes. A special transmitter is being constructed by G6LL and G6FY. BRS631 is now 2BHB. The following were welcomed for the first time at our last meeting: G5NC, G6KA and G5JM. The next meeting will be held at Chingford on March 22 at 7 p.m. G6UT wishes to take this opportunity of thanking all the many members—both inside and outside the District—for their very kind wishes and enquiries during his recent illness and to say that they were very much appreciated.

DISTRICT 15 (London West and Middlesex).

The February meeting, although only rather poorly attended, proved quite successful from the discussion point of view. As arranged, this started with the L.F. coupling of the receiver, but soon spread to other parts, bringing forth many interesting arguments.

A line from those making use of the Morse practices would be welcome by the writer, as a guide to their worth in our particular area.

Only three area reports have come to hand this month, and I wonder why.

I have been recently receiving reports of bad or indifferent notes of certain stations in this area. As this area has, in the past, been well to

(*Continued on page* 327.)

Empire B.E.R.U. News.

B.E.R.U. REPRESENTATIVES.

Australia.—H. R. Carter (VK2HC), Yarraman North, Quirindi, N.S.W.

British West Indies, Bahamas, Bermuda, and British Guiana.—H. B. Trasler, No. 2 Mess, Pointe à Pierre, Trinidad, B.W.I.

Canada.—C. J. Dawes (VE2BB), Main Street, St. Anne de Bellevue, Quebec.

Ceylon and South India.—G. H. Jolliffe (VS7GJ), Frocester Estate, Govinna, Ceylon.

Channel Islands.—Captain A. M. Houston Fergus (G2ZC), La Cotte, St. Brelades, Jersey, Channel Islands.

Egypt and Sudan.—H. Mohrstadt (SU1AQ), No. 1 Co. Egypt Signals, Polygon, Cairo.

Hong Kong.—P. J. O'Brien (VS6AE), 12, Kent Road, Kowloon Tong, Hong Kong.

Iraq.—H. W. Hamblin (YI6HT), Wireless Section, R.A.F., Shaibah, Basra, Iraq.

Irish Free State.—Col. M. J. C. Dennis (EI2B) Fortgranite, Baltinglass, Co. Wicklow.

Kenya, Uganda and Tanganyika.—H. W. Cox (VQ4CRF), Box 572, Nairobi, Kenya.

Malaya.—G. W. Salt (VS2AF), Glenmarie Estate, Batu Tiga, Selangor, Malay States.

Newfoundland.—Rev. W. P. Stoyles (VO8MC), Mount Cashel Home, St. John's East.

New Zealand.—D. W. Buchanan (ZL3AR), 74, Willis Street, Ashburton; and C. W. Parton (ZL3CP), 69, Hackthorne Road, Cashmere Hills, Christchurch.

Nigeria.—Capt. G. C. Wilmot (ZD2A), 1st Battalion Nigeria Regt., Kaduna, Nigeria.

N. India and Burma.—R. N. Fox (VU2DR), C/o VU2FX, Sgt. C. D. Connerton, Aircraft Park, Lahore Cantonments, Punjab, India.

South Africa.—W. H. Heathcote (ZT6X), 3, North Avenue, Bezuidenhout Valley, Johannesburg.

South Rhodesia.—S. Emptage (ZE1JG), Salcombe, Plumtree, Southern Rhodesia.

Australia.

By VK2HC.

January: With the possible exception of 28 M.C., general conditions on all bands have been very patchy of late. The outstanding feature has been the 28 M.C. inter-state contacts, over distances of 1,000 miles or so, and the good phone work by VK5HG, VK4XN, VK3HK. Latest reports indicate a rapid falling off of conditions on this band.

The 14 M.C. band is very dull, occasionally a QSO can be managed with DX stations, but let us hope that conditions improve before the B.E.R.U. contest commences.

The best DX (if any!) is obtained on 7 M.C. between 18.30 and 20.30 G.M.T., the usual W signals are also fair from 09.00-12.00 G.M.T.

Little to report on 3.5 M.C. on account of QRN.

I understand that some television broadcasts will shortly be commenced under the direction of VK2RC. Good luck, OM!

May I also add, on behalf of all VK B.E.R.U. members, a few words in support of ZT6X's remarks in December issue congratulating G5YK and Co. on the excellence of the BULLETIN now being produced, FB OM's.

[Thanks!—ED.]

Ceylon and South India.

By VS7GJ.

January: The new year has not started with favourable conditions. VS7GT reports that conditions on 14 M.C. have been mainly bad, and this band is of little use at present. The 7 M.C. has been variable, and still liable to early local wipe-out. Signals of good strength are coming from the East, but difficulty in working the opposite way is experienced.

VS7GJ, who has been chiefly confined to the 14 M.C. band, has only been able to work Indian stations, whilst a few VK's were called with no result.

February, via VS7GT *and* G6QB.—As our hams are busy trying to annex the B.E.R.U. Challenge Trophy, I am left to make this report single-handed. Conditions this month on the 14 M.C. band are consistently poor. The few stations heard about 12.00 G.M.T. are weak by 17.00 G.M.T., fading to complete wipe-out, which makes this band useless.

The 7 M.C. band, especially over week-ends, is so full of QRM and QRN that several good QSO's are completely spoilt.

QRN throughout the month has been bad, and general conditions very poor.

Channel Islands.

By G5OU.

G2ZC having resigned from the position of B.E.R.U. D.R. for Channel Islands, the writer (5OU) is to take over duties for this district, and in thanking the Council, trusts that he will have the wholehearted support of the area.

Activity during the past few months has considerably increased. We now have with us a very old member.

G2ZC is off the air until April, when it is intended to re-start on 1.7 and 3.5 M.C. only, and the writer has been very inactive owing to business and "flu" QRM. The letter budget of No. 7 District, under G6GZ's supervision, is going well here, but G6GZ would be glad to have your letters by the 15th of each month.

The following report activity :—2BDP, 2BCS, BRS657, BRS775, G5OU.

Iraq.

By YI6KR (*via* G5LA).

January-February : Conditions during the past month have been as follows :—

28 M.C. is quite dead and no commercial harmonics have been heard. YI6KR is on 28 M.C. every Sunday from 08.00 to 10.00 G.M.T.

14 M.C. generally has been poor, but weak signals, compared with same period last year, are being heard from VK, VS6, VS7 and ZS. Very bad fading occurs after 15.00 G.M.T.

7 M.C. has been better, and conditions may be called "fair." From 16.00-22.00 G.M.T. GVK, VS and ZS signals are good, with very little fading. No DX in a westerly direction has been heard.

3.5 M.C. yields a few weak European signals after 18.00 G.M.T.

Mr. Devoil (YI2GN) has joined YI6KR, and his presence is very welcome. YI2DC and YI6WG are heard on the air, and it is hoped that the latter will soon be a B.E.R.U. station.

Newfoundland.

By VO8MC (*via* G5LA).

January : All active stations have been notified of the B.E.R.U. contest, and a copy of the rules has been forwarded to each.

There is very little of interest to report, as conditions have been very poor on all bands. The 7 M.C. band has been good at times, but QRM has been so strong that satisfactory QSO's were next to impossible.

N. India and Burma.

By VU2FX.

December : Conditions on 14 M.C. have become even more erratic, and with the exception of VK, very little DX has been heard. On the other hand, 7 M.C. conditions have been excellent, and the following countries have been heard on this band by VU2AH and VU2JB respectively.

Calls heard by VU2AH : 16.30-23.30 G.M.T.—ok, on, ear, hb, d, f, g, pa, haf, sp, eu, fm, zs, zt, yi, au, j, and vk. 01.30-04.30 G.M.T.—w, hc, ti, cm. 11.30-12.30 G.M.T.—ka, zl, vs6, vs7. 12.30-14.30 G.M.T.—vu, vs3, vs6, vs7, pk, au, ar (? Syria), fm, zu, zl, vk, eu, sp. (SP and ZU appear to be stray signals, as they were heard on only one occasion.) 14.30-16.30 G.M.T.—vk, zl, vu, vs7, vs3, au, d, eu. (This period is now very bad, as fading is much in evidence.)

Calls heard at VU2JB : 11.30-14.30 G.M.T.—w6, zs, zt, zu, vs3, vs6, vs7, ac, j, vl (QRA ?). (South Africans are seldom heard, but when they do break through they are quite strong.)

VU2JB is rebuilding, and hopes to be on the air with C.C. very shortly. It is to be regretted that VU2FS (BERS14) and VU2FX will be unable to take an active part in amateur radio work during the remainder of their stay in India.

South Africa.

By ZT6X.

Conditions in the Union are very bad at present, due to the exceptionally severe QSB we are experiencing at this time of the year. 14 M.C. is absolutely dead, and DX only heard on very rare occasions. 7 M.C. is nearly as bad, and unless conditions improve very few Union hams will be heard in the B.E.R.U. tests. A number of our hams have intimated their intention of participating in the tests both on 7 and 14 M.C., but personally I think the former band will give better results. Things are rather quiet on the air. QRN is very bad indeed, and it is a job to work hams in the neighbouring provinces. Here's success to the B.E.R.U. contest, and if Union hams are not heard you'll know the reason why—our hams are keen enough.

Irish Free State.

By EI2B.

I am afraid that I have very little to report this month. Conditions on 14 M.C. continue to be very bad, whilst 7 M.C. is poor, especially for QRP stations. However, EI8B, with their new QRO transmitter, have, I hear, W.A.C. on this band during the past month. So far as the writer's experience goes 28 M.C. is absolutely dead at present.

The transmitter's section of W.S.I. is reorganised and will probably be more independent of the parent society in the future, the latter confining itself to B.C. work. At all events this is the idea at present.

EUROPEAN NOTES.

Notes from Europe this month are somewhat scarce. The 3.5 M.C relay tests which were being conducted in Switzerland have been abandoned, owing to the very bad conditions prevailing on this frequency. Swiss stations report a very pronounced directional effect in the propagation of radio waves; eastern stations are seldom heard, but the majority of reports on Swiss transmissions are received from this direction.

The U.S.K.A. 3.5 M.C. competition is still running, with a prize of 50 francs for the Swiss operator who first succeeds in establishing two-way communication with the U.S.A. on this frequency.

We understand from the R.E.F. that the governing body of that society has been reorganised. The Council for the current year consists of some twenty members, with F8EF and F8IL president and secretary respectively. An experimental section is in course of organisation and will be divided into various groups, each studying some question concerning short-wave propagation and both national and international tests will be organised. Support for tests organised by foreign societies will be given. The 28 M.C. group is already active, managed by M. Tourrou and all communications should be directed to M. Godfrin *via* the R.E.F.

Notes and News—(*Continued from page* 325).

the fore with quality signals, I look to all to keep the area's record a clean one.

2BWF is leaving us for Shortlands, Kent, and will be pleased to see anyone visiting his locality. His new QRA will be found in the current or succeeding QRA list.

It is not known what success has been obtained in the area during B.E.R.U. tests.

The first half the 28 M.C. tests were well supported in the area, but with very little profitable results.

SCOTLAND.

I have to apologise for the brevity of these notes on this occasion, but I have been laid aside by

illness for the greater part of February and am a little out of touch.

As I write, three week-ends of the B.E.R.U. tests have gone, and judging by letters received, no one in Scotland has achieved anything of note owing to the exceptionally poor conditions prevalent here.

At a representative meeting of "A" District, a handsome presentation was made to Mrs. Wyllie by G5XQ on behalf of the members to indicate their appreciation of the hospitality afforded them at these monthly meetings. Mrs. Wyllie replied suitably.

Two new crystals fall to be added to the crystal register (1) that of G2MG, which has a fundamental frequency of 7069 K.C.; (2) that of G5DK, fundamental 7080 K.C.

In the near future G5AP may be heard frequently at the week-ends. This is the portable transmitter of G5NW, who is proposing, in conjunction with G5IM, 2AHY and 2BLJ, to go camping at the week-ends, operating the transmitter from different localities.

I am sorry that circumstances indicated in the first paragraph have prevented me from commencing the 3.5 M.C. Morse fortnightly transmissions, but I hope to get a move on ere long.

I am sorry to hear that "A" District Officer (G5XQ) has gone sick and will be laid up for several weeks.

"D" Officer (G6SR) has also been laid up for the first month with a poisoned foot, and I hope both will have a speedy recovery.

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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