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AND THE BRITISH EMPIRE RADIO UNION

Vol. 8 No. 4

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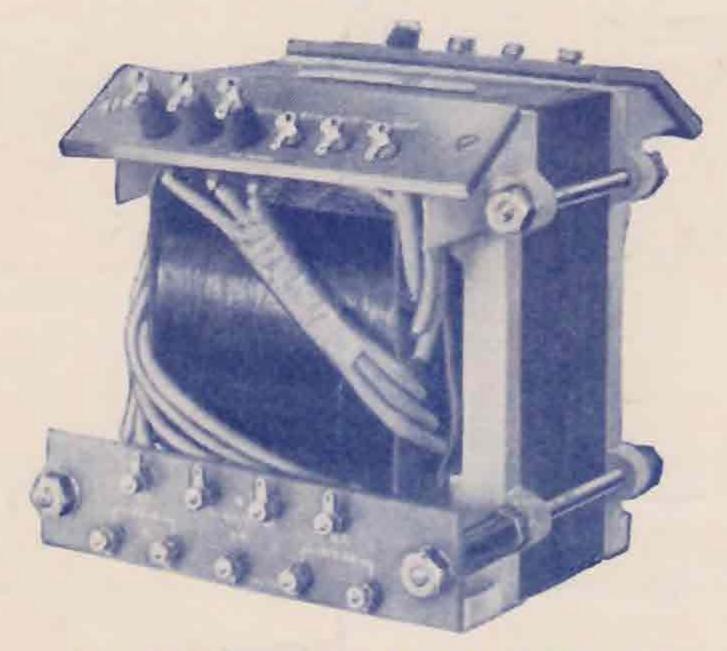
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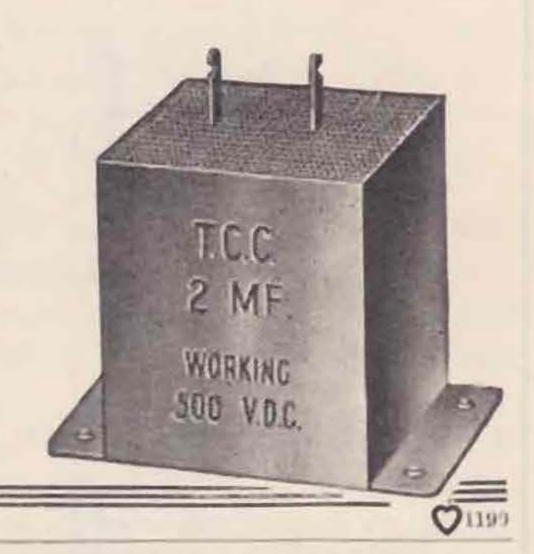
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Followed by a Lantern
Lecture by Mr. J. Clarricoats.
November 25. Lecture on
Television by Mr. T. M.
Lance.
December 20. Annual General
Meeting.
Lecture by Dr. Raynor.

February 24.

March 31.

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

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OCTOBER, 1932.

Vol. 8. No. 4.

THE R.S.G.B. TESTS.

Nour last issue, and again in this number, readers will notice details of forthcoming tests. We hope that the programme as set forth will interest all members and lead to many participants. The details have been carefully thought out by a special committee, who

have devoted much care to their compilation.

Some of the recent tests have not been very encouraging to the organisers, and the lack of entrants has been very disappointing in many cases. We are aware that, in some cases, the rules governing the contest were difficult to comply with, and gave in some instances unfair advantages to certain entrants. It has been tried as far as possible to avoid these circumstances in the forthcoming tests. Obviously it will always be impossible to devise tests which will

What, however, we do wish to impress upon our members is the fact that these tests are not merely inserted with the object of finding copy to fill the pages of the BULLETIN. They are devised with the object of meeting one of the main objects of the Society: the raising of the standards of amateur radio work. Every member, whether transmitting or receiving, taking part knows that upon the efficiency of his station much depends for his success or otherwise in the competitions. By efficiency here we not only include the actual material of which the station is composed, but also the ability of the operating personnel. A station may have been built regardless of cost with the finest of components, but would be a poor factor in a contest without the skill of the human element as regards adjustment and operation. In fact, very often the latter attribute outweighs the former, for many amateur stations exist to-day where the cost of equipment has been kept at a very low figure, while the skill of the operator has carried out its working to a successful issue. We have always had unbounded admiration for these so-called "Hay wire" stations and the remarkable feats they perform in the way of DX and concise working.

However, we do hope that members will enter for the many tests and prove to the organisers that their labour has not been in vain. There is a competition for every class of

member and we want to see plenty of entrants for each of them.

This year Council had some difficulty in allotting some of the awards for the various Society trophies due to lack of outstanding merit in the various classes. It is hoped that the results of these tests will do much to prevent this difficulty in future and render the allocation of the awards easy.

We further hope that all entrants will carefully consider the general rules and also the special conditions governing each test. In many cases in recent competitions, it was obvious that entrants had not attended to this most important matter. An especial fault was the

(Continued on page 125.)

A MODERN ALL-WAVE AMATEUR RECEIVER

INCORPORATING GANG-CON-TROLLED BAND-SPREADING.

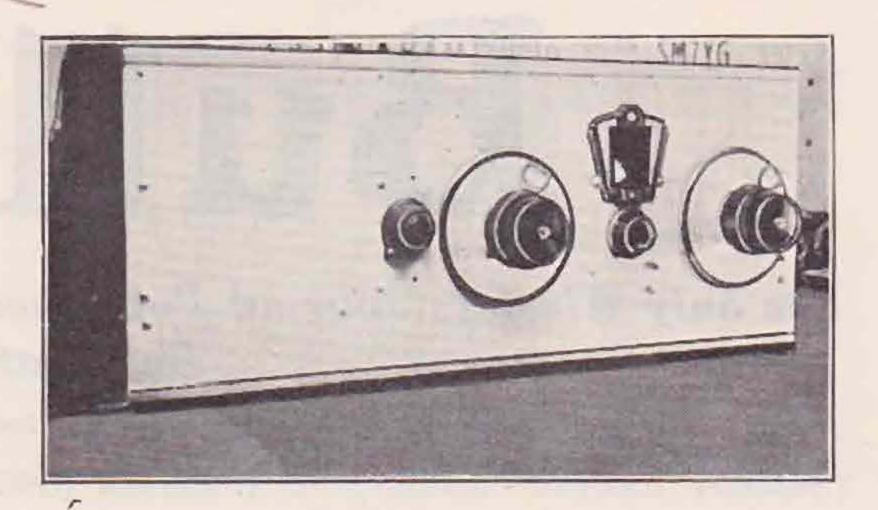
By

A. E. LIVESEY (G6LI).

Choosing the Circuit.

N the design of the receiver about to be described, the reader will find nothing new. The most normally used circuit arrangement is employed—one tuned H.F. stage, a detector and one L.F. state. It is, however, perfectly possible to construct from this basic design an unstable instrument or one which lacks that ease of control so essential to an efficient, modern station.

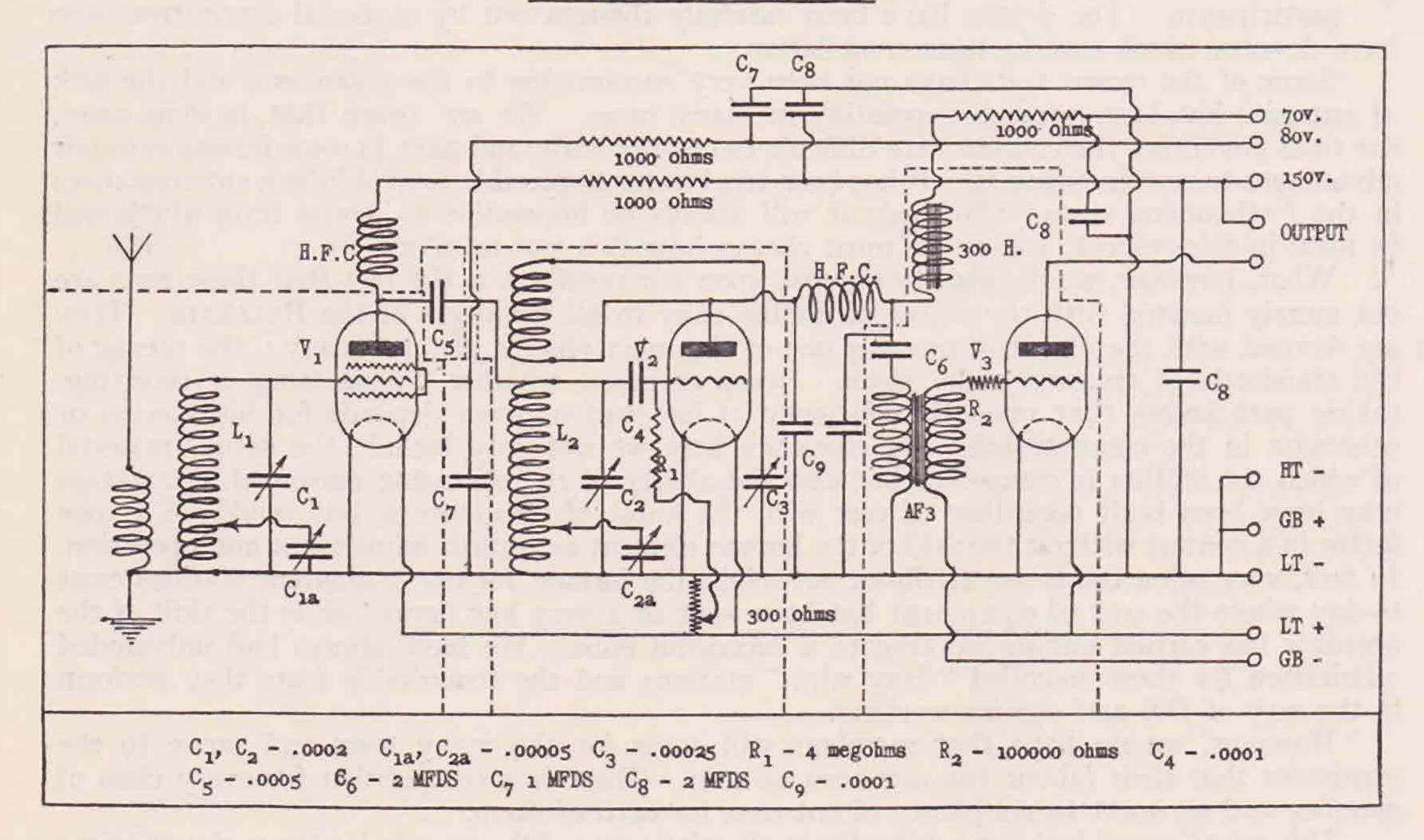
Bearing in mind these points, the writer has attempted to build a thoroughly stable and flexible single-knob-control receiver from high-quality standard components at a cost which is within a reasonable figure.



by arranging that it tunes a different value of inductance for each band—tapping the vernier condenser across a portion of the tuning coil only.

The use of loose coupling in the grid circuit of the H.F. stage sharpens the tuning enormously and generally gives better signal strength where direct coupling produces heavy damping. The

THE THEORETICAL CIRCUIT DIAGRAM.

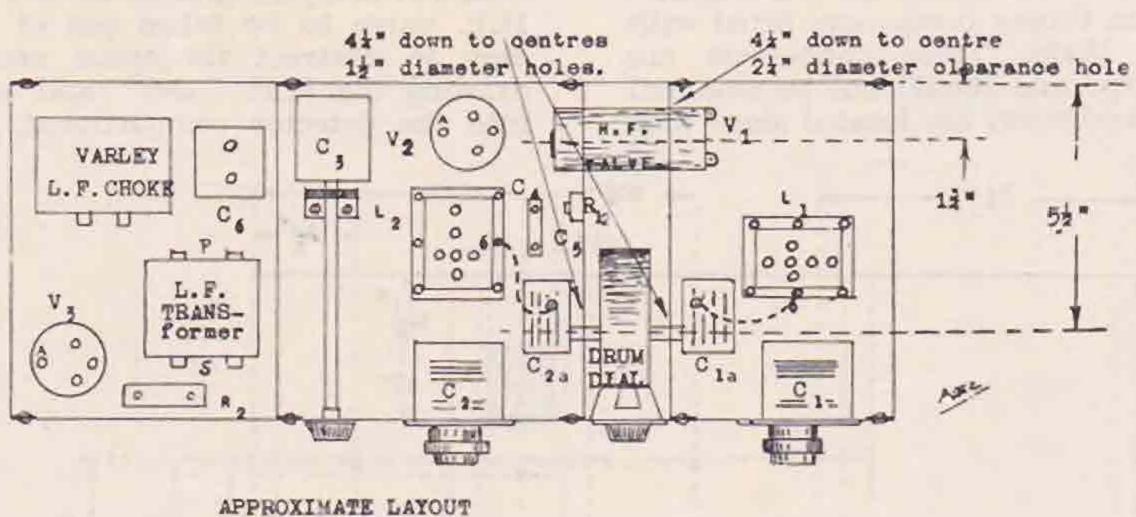


The outstanding feature of the design is the twinganged condensers utilised for band-spreading. It is known that a vernier condenser in parallel with the main tuning inductance can be arranged to spread out the 20 m. amateur band over its full capacity range, but that the same condenser will not be large enough to deal with the higher bands in the same way. The spreading of the different bands by a single variable capacity may be effected

sharpened tuning means more accurate and constant variation of the H.F. grid tuning condenser over a small number of kilocycles such as one of the amateur frequency bands. The awkwardness of three controls for a short-wave receiver is not worth the while. It is therefore essential to gang the H.F. and detector grid circuits. The loose coupling assures the fact that "tracking" will not be upset by the aerial itself.

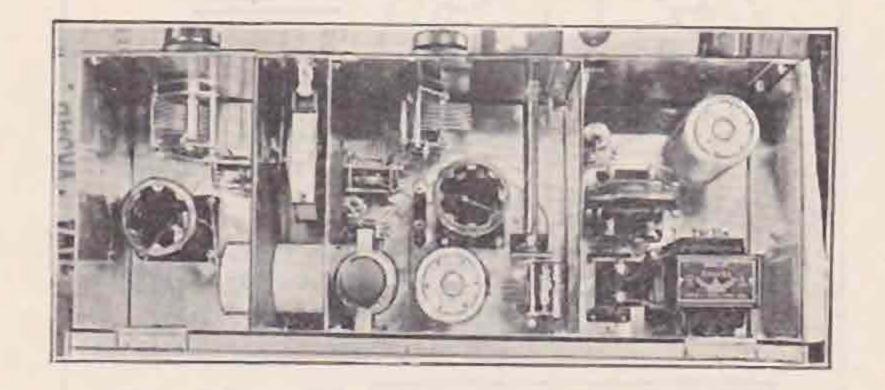
It is noticed that most amateur-band receivers employ series feed to the anode of the H.F. stage and that the constructor goes to a certain amount of trouble insulating the low potential side of the grid tuning condenser from earth. In our receiver we have fitted parallel feed and decoupled the H.T. supply. The detector grid is thus isolated from H.T. positive and the small coupling capacity to the H.F. anode will produce less damping. The scheme is perfectly sound provided that a high-class H.F. choke is used. It might be of advantage to use two different chokes in series and filter by-pass condensers between them. We have found that the General Radio all-wave H.F. choke is most satisfactory.

The choice of valves is a point for debate. The use of the S.G. valve detector is in vogue. Personally, one fails to see serious advantages over a good triode. During preliminary tests, the S.G. detector was tried. Slack, microphonic filaments and electrodes



produced an unbearable state of affairs. The power-handling capacity was far too small without early-stage distortion and some difficulty was experienced in obtaining smooth regeneration. These points, added to the low mutual conductance of the average S.G. valve of the 2-volts class, outweighed the high amplification factor and the alleged sensitivity, and, in the matter of background noise, the S.G. valve did not appear to be very much less noisy than a good triode.

The receiver is designed for two-volt valves throughout and for battery operation, and the Mullard PM2DX was proved to be the best detector for strength, clean regeneration and absence of any microphonic pick-up.



Interior View of Receiver.

The H.F. valve resolves itself to one possessing good characteristics, and the Marconi/Osram S22 produced very good amplification and complete stability.

In the L.F. stage one is limited in the matter of H.T. consumption, and a Pentode of the 500 milliwatts type is productive of good power, quality and quiet operation. Actually, a triode was found

to be all that is needed, and a Mullard PM202

gives pleasing results.

The exponents of the S.G. detector employ potentiometer control of the screening grid voltage to obtain regeneration. Leaving the bias constant, the reaction will not occur at the same voltage value as the wavelength is altered. The value of screening voltage is quite critical, and one cannot therefore work the valve at full efficiency all the time. It would compare favourably with the system of altering screening voltage on an H.F. stage as a means of volume control—an out-of-date principle that introduces distorted amplification. One might do better to control the biasing to a

variable-mu valve. Even then one cannot perceive that it is working "full out."

out.

There are snags in everything, and capacity controlled regeneration affects the frequency of the grid circuit, and one is painfully aware of this when trying 28 mc.

This particular receiver is operated on the verge of oscillation all the time, and experiment has shown that the reaction may be set and left fixed over all the amateur bands—28 mc. excepted, since no coils have been arranged for this wave.

It is seen from the circuit that the low frequency transformer is parallel fed to the detector stage. The advantage is nothing serious, but good quality telephony results, and the stability produced by the decoupling effect is noticed. The choke carries considerable current with ease, being the Varley 300 H. type.

An output filter circuit is not incorporated in the last stage since it is intended that this be added externally.

The Aluminium Box.

Since most amateur receivers are not subjected to mechanical strains in the same way as the amateur pocket-book, it was decided to make the box from thin sheet of size consistent with required strength and shielding properties. The ends, back, front and lid are of No. 20 gauge sheet, which is quite rigid enough when bolted to the internal divisions, which are constructed of the same gauge material. The false bottom, however, carries the heavy weights and is of No. 16 gauge sheet aluminium. The scale drawings show exactly how the box is assembled. The original was made by the Nottingham Sheet Metal Works, of Greyfriar Gate, Nottingham, for 15s., which may be considered as a reasonable price. As a word of warning, it may be mentioned that the dimensions of the box ought tobe adhered to closely or some difficulties will be encountered in getting the parts to fit. The experimental model had to be cut and altered extensively.

Practical Construction.

The first component which is mounted is the special twin-gang condenser. This condenser was

made up by Messrs. Wingrove & Rogers from two Polar "Volcon" Reaction condensers, double spaced, having a capacity of .00005 mfd. per section. The unit was arranged so that the right-hand section was totally insulated from earth in order that series feed might be tried to the H.F. stage anode. Since we preferred to use parallel feed no useful purpose is served by this arrangement. The condenser was accurately matched and set up with a standard Polar Drum Dial, which is quite slow enough in its reduction gearing, complete with all fittings for 24s.

The lid, sides and back of the box are removed, and also all of the internal screens. The panel can then be cut and drilled as shown on the diagram. There are two main tuning condensers fitted with Utility "Micro" Dials. These condensers are Cyldon "Bebe" type and should not be mounted until the ganged condensers are located since they

have to be turned so that they do not foul anything when they are operated. On the extreme left is a hole to carry the Bulgin extension spindle which drives the reaction capacity, and, immediately below the rectangular hole for the escutcheon plate, is a single hole

7½ " 10½ " - 23

DIMENSIONS FOR DRILLING FRONT PANEL

for the fixing of the ganged condensers and driving knob. The two screens, which are close together, have to be drilled to carry the H.F. valve which lies in the horizontal inside a Colvern valve shield. The H.F. valveholder is bolted to the base of the valve "can" and to a pair of small brass brackets that fasten to the baseboard and maintain the valve in correct position and earth the "can" to the chassis. The anode, of course, projects into the detector compartment. Dimensions are given for drilling each shield to take the valve " can "which should be a close fit. Two large holes are made to admit the spindles of the ganged condensers. The condensers must be removed from the drum dial, the spindles passed through the holes, after which they are re-fitted. The drum is then bolted up to the front panel and the screens. The constructor will perhaps wonder that 11-in. holes are needed for these spindles. Suffice to say that they are essential!

The coils used are the "Eddystone" SIX-PIN type. The holders are mounted flat on to the aluminium base and, if the coil is plugged right home, all six pins will pass right through the sockets and short-circuit themselves! Before bolting down the bases, a sheet of mica is put underneath each. The diagram indicates the position of the bases and the six pins relative to the box. This position naturally gives shortest wiring.

Having set up the twin-gang control, the two Cyldon tuning condensers are fitted, the H.F. valve-holder and the coil bases. Both the Detector and the L.F. valves are enclosed in Colvern valve shields.

The Polar "Volcon" Reaction Condenser is raised above base level with a right-angular bracket and operated by a Bulgin extension spindle, which must be "bushed-down" to take the $\frac{3}{16}$ in. spindle of the condenser. The rod is the full-length pattern with about $\frac{1}{4}$ in. cut off the metal end which takes the knob. A suitable reducing bush is a bit of $\frac{1}{4}$ in. copper tube, drilled to take the two set screws right down on to the spindle itself.

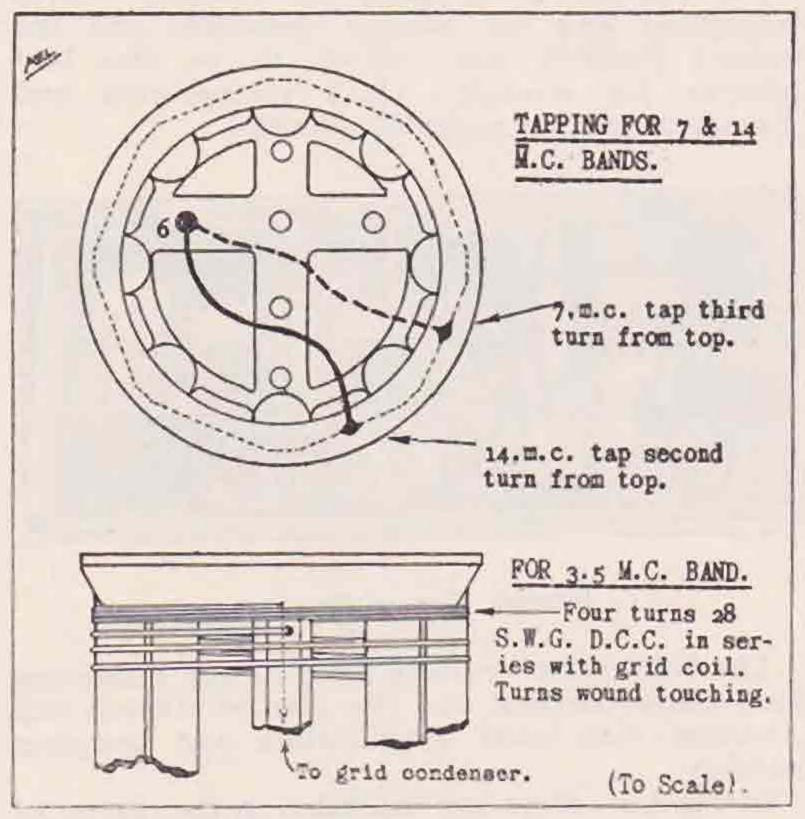
The grid condenser is mounted on the base along the right-hand side of the grid coil, whilst the leak holder and the H.F. coupling condenser are set on the side of the screen, in the vertical. The grid leak potentiometer may be fitted to the back of the box, but everything must be so set so to allow the H.F. valve to be taken out of its shield. It is easy to obstruct the space necessary for with-drawing the H.F. "can" and valve horizontally into the detector compartment. This cannot be

done until the detector valve is first taken out.

No wires pass
through the
screen dividing
the detector
from the L.F.
valve. This
screen can be
bolted to the
panel when the
five L.F. components are set
up.

One can now wire up everything above the

base and drill holes to lead the necessary wires below. The sub-base components are not fixed until the top is wired and lengths of wire are allowed for and left sticking through the bottom until later. All L.T. leads and H.T. feeds are taken straight below.

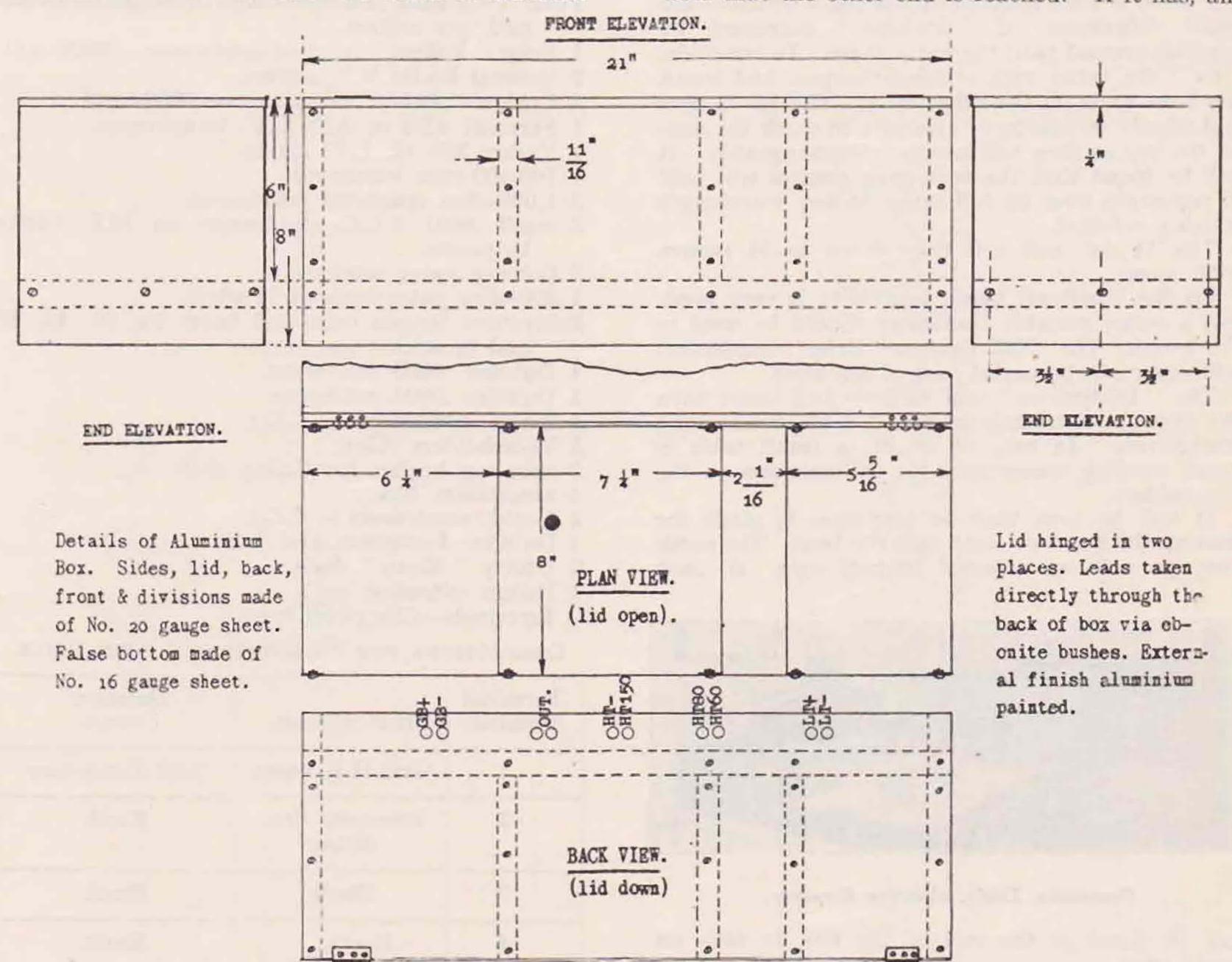


The theoretical circuit diagram shows exactly, by means of dotted lines, what components go below the base. Having wired up the top, fit the sides and the back and reverse the job. The parts that go below can be mounted anyhow, and sufficient space is allowed for General Radio H.F. chokes. Leads are secured to components underneath and brought straight out through ebonite bushes at the back and below baseboard level, thus obviating unsightly terminals. The diagrams show the positions of these bushes.

When all is wired up and finished, the coils must be tapped and tested for "tracking" and for spreading the bands properly. A frequency meter is almost essential for this performance. It is seen that the vernier condensers are taken to terminal and then the H.F. control will be found to be dead sharp tuned and the detector will only oscillate when the H.F. is brought into resonance. On no account must one oscillate heavily.

If everything is still O.K., remove spring clips and solder the tap permanently onto the detector grid coil. Test again after soldering, to be sure that the band is still covered properly by the full 180 degrees of the drum dial.

Repeat stages 1-3 with the H.F. coil. Start at one end of the band and bring the H.F. main tuning condenser dead into resonance. Run over the drum dial and see if it has gone out of step by the time that the other end is reached. If it has, and



No. 6 on the coils and holders. The procedure is as follows:-

 Select the band on the main detector grid tuning condenser, without an aerial.

(2) Solder a piece of No. 18 tinned wire into leg No. 6 of the coil (mark this coil permanently with a "1" to show which place it belongs to).

(3) Scrape off enamel at turn indicated by sketch and join temporarily by clips to the wire in No. 6 pin.

(4) Test with wavemeter and see if drum dial just covers the band, if not, move tap a shade up the coil; if more than the band is recovered, reverse procedure.

(5) Try aerial on H.F. stage, using main H.F. tuning condenser to keep in resonance.

Keep the reaction control set just in oscillation

an increase of capacity on the main control is needed to bring it back into step, this means that the tap is not high enough up the coil winding. If the capacity on the main control has to be decreased to bring the stage back into resonance with the grid coil of the detector then move the tap a shade down towards the base of the coil. On no account touch the main control on the detector stage whilst "tracking" the H.F. stage.

The writer found that the position of the tap was the same for both stages on the 14 mc. band, but that one inch of wire difference was needed at 7 mc. This is a matter for the individual receiver.

After the H.F. stage is ganged properly, the tap

is soldered on permanently.

Unfortunately, even if the .00005 condenser is connected across the full grid winding of the 3.5 mc.

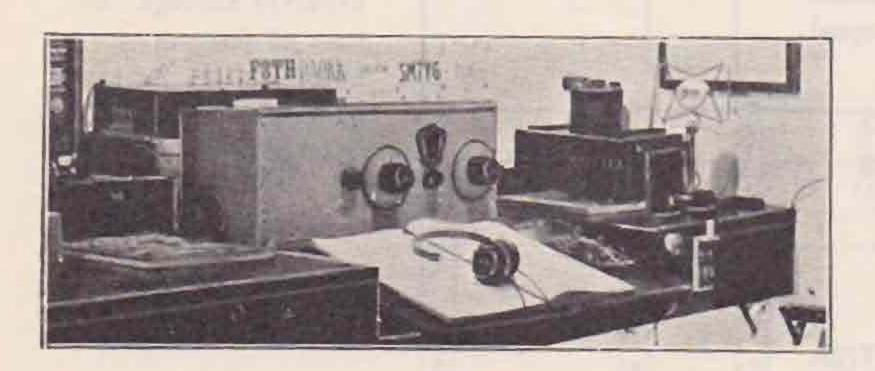
coil, one cannot get all the band to come into the scale of the drum dial. Reference to the sketch shows that four turns of No. 28 gauge wire are added to the grid coils in each case. The top of the grid winding is unsoldered from its pin on the coil and cut off short where it passes through the upright of the former. At this point the 28 gauge wire is added on and soldered, and wound round four times, then passes through a small extra hole, and returned back to the pin from which the original wire was taken as well as to pin No. 6. Both coils are treated in the same way and wire is wound with turns touching-there is just enough space. The band is then selected on the main controls and small differences of "tracking" corrected by juggling around with the extra turns. To conclude, "fix" the turns with celluloid lacquer and touch the bare spots on the other coils. The job is neat and wholly satisfactory. Be sure to mark the coils on the top as they will not be interchangeable. It will be found that the twin-gang control will hold in resonance over its full range at any wavelength which is selected.

The 14 mc. coil will tune down to 14 metres with ease.

On the broadcast band, selectivity is very good, but a series variable condenser should be used in the aerial. The .0002 Cyldon "Bebe" condensers will cover all the useful part of the band.

The "Eddystone" coil formers and bases have the pins and terminals marked I-6 to avoid wrong connections. In case of doubt, a small table is given showing connections for the numbers on the coil-holders.

It will be seen that no provision is made for leading the aerial or earth into the box. The earth may go onto an external battery wire. A bush



Operating Table, showing Receiver.

can be fitted in the end of the box to take an aerial wire.

Operation.

The H.F. stage should be given its full working voltage and about 80 v. on the screen. The detector will function at about 70 v. or more depending on the point at which reaction ceases to be smooth. The grid leak potentiometer will be rather critical, and the writer found that too much positive bias produced threshold howl. Pre-setting the bands will be found easy and accurate with the Utility "Micro" Dials. The set should be worked oscillating gently and not heavily as is often the case with a screen-grid detector.

Selectivity and range will be found on the broadcast waves.

In Conclusion.

It is hoped that this receiver will appeal as much to the transmitting amateur as to the BRS station for, in the case of the latter, almost any wavelength can be covered. For the transmitter, this is a luxury outfit and definitely ranks amongst the "one knob control" varieties. More power might be gained by adding an untuned S.G. stage, but this would do little good at 14 mc., and the strength on other bands is unpleasantly loud with the apparatus in its present state. The speech quality is very tolerable and thus renders the receiver well suited for listening to telephony and puts the operator in the position of being able to give a fair report.

List of Parts.

Polar Twin-gang condenser and drum dial-.00005 mfd. per section.

1 Polar "Volcon" reaction condenser—.00025 mfd.

2 General Radio H.F. chokes.

2 Cyldon "Bebe" condensers—.0002 mfd. 1 Ferranti AF3 or AF5 L.F. transformer.

1 Varley 300 H. L.F. choke.

1 100,000-ohm resistance.

3 1,000-ohm spaghetti resistances.

2 small .0001 T.C.C. condensers for H.F. choke by-passes.

3 Colvern valve screens.

1 300-ohm potentiometer (Varley).

Eddystone six-pin coils and bases for 20, 40, 80 and broadcast waves.

1 Dubilier .0005 condenser.

I Dubilier .0001 condenser.

4 2-mfd. condensers (T.C.C.).

3 Valveholders (Clix).

2 reducing bushes for Utility dials.

1 aluminium box.

2 1-mfd. condensers (T.C.C.).

1 Dubilier 4-megohm grid leak.

2 Utility "Micro" dials.

1 Bulgin extension rod.

Terminals—Clix panel type.

CONNECTIONS FOR "EDDYSTONE" 6-PIN COILS.

Terminal Number.	H.F. Circuit.	Detector Circuit.
1	Grid H.F. valve	Grid Condenser
2	Reaction Con- denser	Earth
3	Blank	Blank
4	Earth	Earth
5	Detector Anode	Aerial
6	Band-spreader Cla	Band-spreader C2a

NOTICE.

Will all readers please note that all matter for insertion in the "Bulletin" should be sent addressed to The Editor, Incorp. Radio Society of Great Britain, 53, Victoria Street, London, S.W.1. The Printers have instructions not to set up any copy unless it has been duly initialled. Consequently any matter sent to them has to be returned to H.Q. and delay is occasioned.

56 mc. AERIALS AT G6YK

By G. A. EXETER.

I do not propose to delve into the mathematics of aerial design for waves of the order of 5 metres or less but to summarise the design of several experimental types erected and the results obtained in practice.

We all know that a radiating system can be energised in several ways, and as long as conditions are such that the radiator accepts power the type of aerial used is largely a matter of local conditions and the particular fancy of its owner.

In the absence of contradictory information, we must assume that antennæ systems for 56 mc. behave exactly the same as those used on lower frequencies, with the added advantage that their physical dimensions are so small that easy checks on their behaviour can be made.

The first system used was our old friend the current-fed Hertz. This was strung up in the radio room and fed with feeders, as shown, coupled to a split Colpits oscillator, using a UX210 with 30

watts input. The feeder current was .4 amps, and careful checks showed that the voltage and current nodes were in their right places, and the aerial behaved exactly as similar types on lower frequencies.

Signals were reported by G5CV about 11 miles away as being very strong but very directional, as alterations made of its position made very great differences in signal strength.

The next step was to try a voltage-fed system, and our old friend again, the Zepp, was erected with a full wave top.

Checking of this system with .3 amps in the feeders showed the same normal behaviour, and signal strength at G5CV was the same, but subsequent tests with a portable receiver were disappointing.

Signals were not audible very far, but this may have been due to screening at the receiver, and prolonged tests were unfortunately not possible.

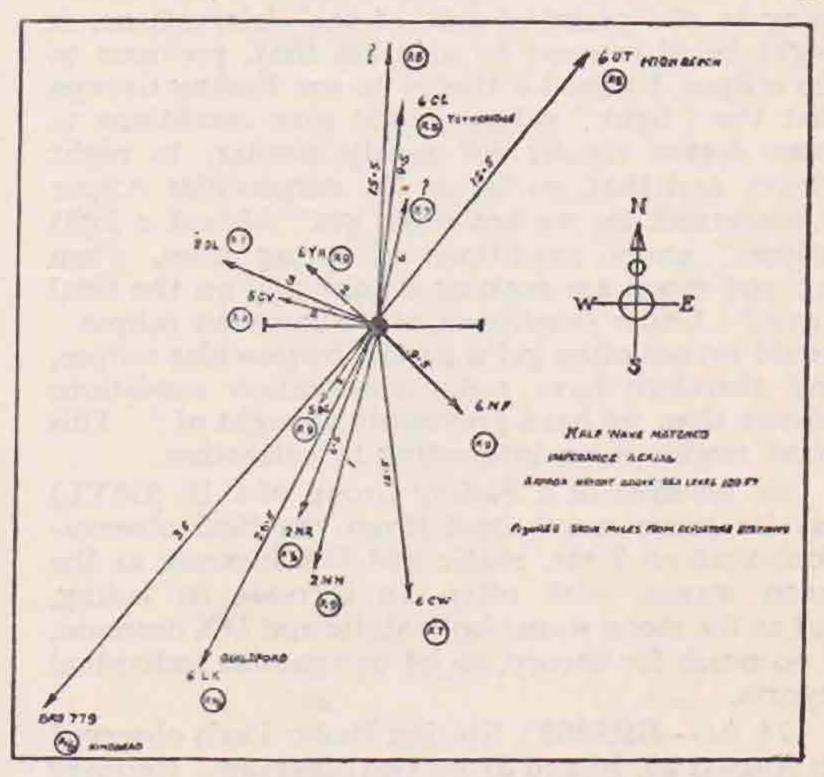
The idea of reflectors was next played with, and

suitable locations sought for a high spot.

G6JP came to the rescue with the privilege of a building over 80 feet high and the use of his shack. An ordinary antennæ slung between two posts was constructed, and it was decided to feed this radiator on the constant impedance transmission line principle, mainly because the transmitter was not exactly portable and there are a good few steps to the top!

The line was designed in accordance with usual practice, and with the help of G6JP, G5CV and a friend the whole thing was erected in an hour or two. The feeders are approximately 190 ft. long, spaced 29 ins. apart, and rigidly held in position by wooden spacers every three feet. The actual feed point is critical, and requires careful adjustment. Impedance was calculated to be about 470 ohms, but measurements taken later showed nearer 580 ohms.

The transmitter feeding this system is a push pull job using two LS6 valves modulated up to about 30 per cent. with a PT25 after two stages



of amplification. Input is about 60 watts. Current limitations prevent fuller modulation.

Checks of the behaviour of this rig showed that it was functioning as expected, feeder current was .2 amps, and a good burn could be obtained from antennæ.

The height of the antennæ above the roof is 14 feet and screened on the north side by a building approximately 20 feet higher.

G6JP has compiled an interesting chart (shown herewith) of reports received and their location with respect to the plane of the antennæ, which runs east to west. The photograph shows the aerial and its supports.

Up to the time of writing no reflectors have been fitted, but arrangements are in hand for a series of special reflector tests to take place on October 2, and any results will be published in the BULLETIN.

In conclusion, I should like to place on record my deep appreciation of the help of G6JP and his friend in crime "Tich"-G5CV-always ready to help in emergencies, and others who have helped in a very interesting experiment.

ECLIPSE OF THE SUN, AUGUST 31, 1932.

OBSERVATIONS MADE BY MEMBERS OF THE R.S.G.B. COMPILED BY G2ZC.

General.—Owing to the spread of frequencies observed on, and the variety of individual reports, it has been a little difficult to make a short summary, or draw up a representative graph, as I had hoped to do.

I think, under the circumstances, it would be of general interest to give a summary of each report, in order of frequency, and to attempt a conclusion on an average of the reports, bringing forward any point of particular interest.

Object.—The object of the observations was to try and discover if (a) the light eclipse had any effect on wireless signals, and (b) if the corpuscular

or particle eclipse had any effect.

An article in Wireless World (issue of August 19, 1932) explained about the corpuscular eclipse, so there is no need to enter into this here. Before going to the practical side of the observations, it might be of interest to mention that, previous to the eclipse, I issued a theory to the Fading Groups that the "light" eclipse might give conditions to some degree similar (or nearly similar) to night effects, and that, so far as the corpuscular eclipse is concerned, do we not often get "almost a light eclipse," under conditions of spring tides, when sun and moon are making a joint pull on the tidal wave? Under conditions of "almost an eclipse" would we not often get a partial corpuscular eclipse, and therefore have radio observation conditions oftener than we have previously thought of? This point might prove interesting investigation.

One member of a Fading Group of C.B. (G6YL) has for years maintained (from practical observation) that on 7 mc. static and DX increase as the moon waxes, with often an increase in fading, but as the moon wanes both static and DX decrease.

So much for theory, so let us examine individual reports.

174 kc.—BRS565: Station Radio Paris observed on August 29, 30 and 31 by two observers. Receiver adjusted on August 29, and left at that setting to give R8. On August 31 static noted—nil at 17.45 G.M.T., R1 at 18.45, R2 at 19.00, R3 at 19.30, remaining at this figure till 21.00. Result: Negative.

(A very full report, carefully laid out and filled

by both operators.—G2ZC.)

797 kc.—G2GD: Scottish Regional Station observed. 17.30 G.M.T. station inaudible, and at 18.54 station growing in intensity. (Report finishes there, so no conclusion can be drawn.)

Broadcast Band (Medium) .- BRS479 (via 2ASX).

-Reports a negative result.

8 mc.—BRS926 observed shipping band, also

PMD working FYC. Result: Negative.

G5VO had intended observing on 21 mc., but owing to a faulty receiver he took the first reliable station he could find, namely, IBF. Being late in observing, his report is not over the whole period of the eclipse, but ordinary night conditions prevailed. Result: Negative.

6 to 8 mc.—2ASG reports bad static, otherwise

result negative.

8 to 12 mc.—2ASG: Result negative. (See 2ASG under 14 mc. for full report.)

9 to 10 mc.—2ASX observed on WJQ (10,000 kc.), DGC (9,890 kc.), KAZ (9,980 kc.), UOR (10,035 kc.), using WJQ as the key station, and the others as a check. Observations, started two days before, and two days after the eclipse, were also observed, and a very complete graph is sent. On the average of the five days' observation he concludes that the eclipse gave a definite negative.

(A beautifully and carefully prepared report,

which is of great value.—G2ZC.)

9 mc.—2BWF: Result positive. (See full report under 14 mc.)

11 mc.—2BWF: Result negative. (See full

report under 14 mc.)

12 to 16 mc.—Generally negative. One exception

-see 2ASG re W2XAD in 14 mc. report.

QSA 4, R5, and remarks that, though this is an unusual time to hear U.S.A. 6th District, the light eclipse gave similar conditions as one gets in June between 04.30 to 06.30 B.S.T. He also heard east coast U.S.A. and South America, but in all

cases the result was negative.

G6CL contacted with W1CMX (who was in totality area) at 20.15, W1, VE1, W8, W2 and W6 having been heard between 19.02 and 19.50. Reception of W6 up to R8 is phenomenal, but W6CUH was 100 per cent. readable, and was the only strong amateur signal heard in the band, indicating that skip had lengthened, and the layer had become highly conductive for signals from the far west. During totality W1CMX was fairly strong, but otherwise the absence of U.S.A. signals was strange. One hour after eclipse ended the band was dead.

(This is a very interesting log, even giving W1CMX's actual description of conditions during the eclipse. G2OA had been in contact with W1CMX during the eclipse, G6CL standing by till they had finished contact, but G2OA does not send a report. One interesting extract I give from W1CMX's remarks to G6CL: "Radio conditions as of night—strong signals with mush and bad fading." This is important, as it gives an indication of the effect of the light eclipse in the area of totality.—G2ZC.)

G5HJ: Noted that signals were weaker about three hours prior to the light eclipse, pointing to corpuscular effect. In theory, however, he points out that the corpuscular shadow ought to have had an effect about two hours before. Stations observed were: W2XAD, WJX/WKS, and Atlantic telephony. Result negative, though possibly posi-

tive for corpuscular eclipse.

2ASG: Apart from the bands already shown in this report, 2ASG took the description of the eclipse from W2XAD. He noted that 20 seconds after totality this station rose from R4 to R7 for 1½ minutes, then faded to R3 (20.35 G.M.T.). WJP, WJK and Transatlantic telephony were not effected in any way, giving as a result: Negative (excepting W2XAD's behaviour).

G2OP (via 2ASX): Worked a W station during the eclipse (though no details are given), and reported no change whatsoever. Result: Negative. 2BKF (via 2ASX): Result negative.

G5IX sends in a very useful and serviceable report, and has obviously given much time and thought to the eclipse. He first of all concentrated on the particle eclipse, taking WJX/WKS from 18.15-18.45 G.M.T. This station faded about three R strengths, but by 18.45 had returned to original strength. For the light eclipse KAZ was observed, and, from graph supplied, a rapid fade set in at 20.00, reaching minimum at 20.35, and from this it improved, but not above R3.

G5IX observed many stations between 20 and 30 metres from August 25 to September 1, and will gladly supply data to assist in filling up other reports. (Did you notice any of the positive results given in this report?—G2ZC.) Particulars are given of WJX, W2XAD, DGZ, HBJ, HAT, HJO, IRR, W8XK, Rome (11,810 kc.), PLR and KAZ. Both particle and light eclipse give a positive result.

G5KU observed WQP, WIK and W2XAD. Up to 21.30 reception was normal, and then a gradual fade out, but perfectly normal. Scatter on WIK is always worse than on WQP, but during eclipse WIK's scatter was worse than usual, being too variable to measure definite intervals, and at times bad enough to fill space between dots. Result: Negative.

(Note.—I presume oscillograph was in use? If any unusually interesting photographs were taken, readers of the Bulletin might like to see these, with an explanation.—G2ZC.)

2BWF, in conjunction with his sister, sends in one of the most complete reports received, observations starting on August 21 and continuing (excepting for 26th and 27th) until September 2. Zeesen (9,560 kc.) and W2XAD being the main stations observed on, with Rome (11,810 kc.) used as a check. Zeesen was found to vary from R8 to R0 on August 21, and on August 31 rose sharply to R8, dropping to R0, and again reaching R8/9 on September 2. On day of eclipse he faded slowly, till at 19.20 G.M.T. he faded out. Rome, when observed, did not fade or vary. W2XAD on 21st was R3/5, on 22nd R3 with fading, 23rd R5 fading, 24th R6, 25th R5, and on 28th, 29th and 30th was R0 (no carrier being heard), on 31st R3 fading to R1, on September 1 R0 (no carrier heard till 21.43), and on September 2 R5. This shows the type of behaviour of this station over a period. Results: Negative on 11 and 15 mc., positive on 9 mc.

G6PP sends a report and graph of SUC from 19.15 G.M.T. until SUC stopped sending at 20.30. Between 19.20 and 20.05 a sharp drop in strength is recorded, and a recovery was logged, but as SUC stopped no more data was available. A search on 14 mc. was then made, and a number of weak stations logged. Static was R2/3 at 19.15, but by 20.10 was R4.

General Remarks.—Both G5FV and G6CL report a 6th district U.S.A. station, one giving it as W6CUS and the other as W6CUH. I suggest that this may be the same station, the "H" or "S" having possibly been misread. G5FV heard him calling "CQ" at 19.40 G.M.T. (QSA 4, R5), and G6CL working W4OT at 19.50 (R5/8). It would be of interest to know if any other observers logged

this district (or station) at the times given. (See

G5FV's explanation.)

Reports on W2XAD vary, but as this station appears to be the "key" to around 14 mc., I shall be glad to get further reports for comparison. I regret that more reports have not been sent in, and I also regret that observations, in many cases, did not extend some days prior to, and after the day of, the eclipse (as suggested in the BULLETIN), for it is obvious that we cannot draw up a scientific conclusion without comparative results being given, and in this way some of the reports are practically valueless (e.g., because a station faded (say) on August 31, this does not prove the fade was due to the eclipse, unless we have data of the behaviour of the station over a period, to show that this fade was unusual).

The importance of the possibility of the corpuscular eclipse having an effect on signals seems to have been lost sight of, though in the two cases that this was taken into account it would appear to have given more positive results than did the light eclipse, and I would appeal to those who may have observed the corpuscular shadow period, and who have not sent in a report, to let me have this.

Lastly, I would thank all those who sent in reports, especially those who obviously took great pains to make them clear, detailed, and of scientific value. I shall be glad to receive further reports from any member of the R.S.G.B.

Conclusion.—Although some of the effects of the eclipse are uncertain or varied, the following appears to sum up the results obtained on the different frequencies to date:—

Abbreviations used: N = Negative. P = Positive. X = Static noted. m = Majority report. C = Constant of the content o

Corpuscular.

Broadcast band.—Long wave = NX.Medium wave = N. 6-8 mc. = NX.9 mc. = N & P.32 8-12 mc. = N.10 mc. = N.11 mc. = N.12-16 mc. = Nm, P. 14 mc. = Nm, P. CP,X (1 case). = N & P, 15 mc. CP.

Now the question is: were the few positive cases due to the light eclipse, or were they due to what we have got into the habit of calling "conditions"? Without a great deal of further data, I fear I for one cannot answer that question, but from the majority report I should be inclined to say "No," though frequencies above 14 mc. seem to hold a promise of a "Yes" if we can only get more data to examine.

The following additional reports have come in since the main report was made up :—

G5UT and 2BUI send a joint report of observations made on KAZ and WJQ on August 31 and September 1, and, although the report is carefully made out and shows much detail, results are similar to those already given in the main report.

G6UN observed W2XAD, and results show a gradual fade from 20.31 G.M.T. until 20.44, and from then onwards a gradual improvement was noted. (G6UN reports that VE2AP, who is a member of the expedition of Cornerbrook, will let (Continued on page 131.)

"THE CRUISE OF THE SUSANETTE."

From a Radio Point of View.

By G5UW.

N October, 1931, the writer was invited to be one of a crew of four, to help cruise the motor yacht Susanette from her winter moorings at Tewkesbury, to the Isle of Wight, the cruise to commence in early June, 1932. The opportunity to take along a short-wave receiver and transmitter seemed too good to be missed, and the owner-skipper, who was also mildly interested in Radio, gladly gave his consent, while the P.M.G. also turned up trumps with the necessary authority.

The writer paid his first visit to the yacht at Easter of this year, where she was moored up at Stourport, and found her to be an exceedingly trim little craft, 41 ft. long, 9 ft. beam, with 6 ft. head-room throughout, drawing 4½ ft. of water, and registered at 13 tons. The marine engine consisted of a 30 h.p. unit driving a single propeller,

and her cruising speed lay between eight and twelve knots.

The skipper consented to the aft cabin being utilised as the radio shack, measurements were then taken to get some idea of the space available for both the set, and erection of an aerial. The mast placed well forward was 20 ft. high,

and would do to carry the aerial. The ship's "mains" consisted of a 12-volt block of large accumulators, charged by a dynamo from the main engine when cruising, and by an auxiliary charging plant for use when in harbour.

After inspecting the yacht, a very considerable amount of thought was expended as to what type of transmitter would be best for the purpose. At first it was decided to use a portable transmitter built up some years ago for a similar cruise on board the Alsatian on the Norfolk Broads, but experience gained on that trip pointed definitely to use of crystal control, because by no other means is it possible to maintain stable frequency when afloat aboard small craft.

It was decided, therefore, to scrap the old portable, and build a new one specially for the trip, and to use crystal control. The next point to be decided was which wave band would be the most suitable, as it was desirable to be able to work anywhere inside a radius of at least 300 miles. In the old days, this question would not have arisen, as the old 45 meter band would have done the trick

nicely, but since last September, the 7 mc. band seems to have become most erratic,, as "G" seeming to be only workable on rare occasions. The 3.5 mc. band came under a considerable amount of thought, but eventually abandoned for several reasons, chiefly because of the comparatively few number of "G" stations operating on that band, and because the power, and aerial space, available were not sufficient for consistent or effective work from the yacht on that band. The 14 mc. band received just a few moments' consideration, but as a transmitter for this band would require an additional doubler stage, and because this band, blessed also with most erratic tendencies, seemed tobe more of a DX band, than for local work, was abandoned also, and so, by a process of elimination, it was decided to concentrate on the good old 7 mc.

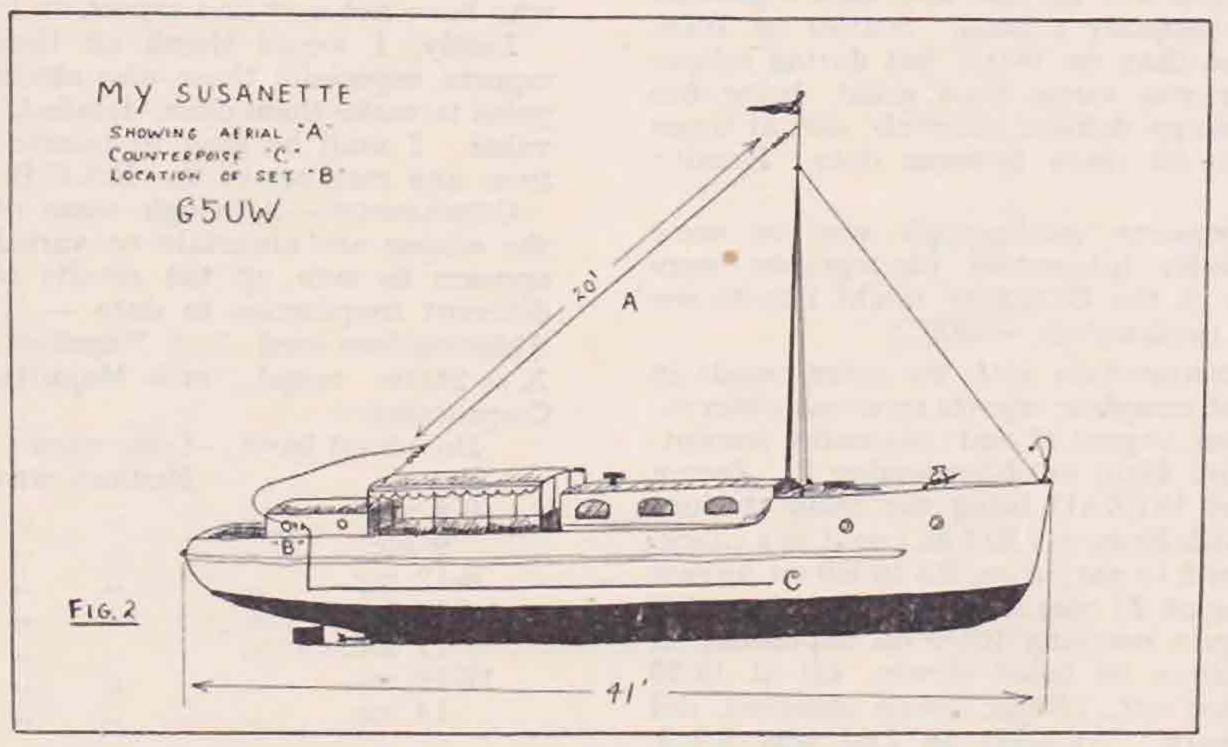
band, and hope that conditions would be kind, and permit of some local, in preference to-Continental contacts.

At this stage, G6CC very kindly offered to lend his ML motor generator for the trip, and as his machine required an input of 12 volts, same voltage as the ship's mains, it was accepted, as

previous visions of grinding away at a hand-generator had been far from pleasant. The output of the ML was about 500 volts at 40 ma., so that approximately 20 watts of power was available for HT to the transmitter, and this fact had to be borne in mind when the design of the set was under consideration, and made it imperative to keep down the number of stages to the minimum, if 10 to 15 watts were to be allotted to the stage feeding the aerial. Several schemes were reviewed before deciding upon the fundamental frequency of the crystal, because it had to be determined whether it would be preferable to use a 7 mc. crystal driving, either by Goyder lock, or a neutralised P.A. stage, or alternatively, to utilise a 3.5 mc. crystal, driving an output stage at double frequency, and the latter arrangement was finally decided upon after some lengthy correspondence with G2NH, from whom was obtained a totally enclosed, plug-in type of crystal, its frequency being 3,585 kc. As will be shown, the arrangement of a crystal stage driving

an output stage at double frequency was highly

satisfactory, and the writer wonders exceedingly



why QRP stations ever use an additional P.A. stage at all, it seems that prejudice without foundation is the only reason for condemning CO.FD, unless used with a neutralised P.A. stage.

All these little points being settled, attention was turned to choice of valves to use in the transmitter, and as it was intended to utilise the 12-volt ship's mains for filament supply, as well as for driving the ML, 6-volt valves were indicated. After much scrutinising of characteristic curves, a PM.5A was chosen as the crystal oscillator, and an LS.5B for the doubler-output valve. It may be of interest to state here why these two valves were selected from quite a wide range. The PM5A seemed on test to give a greater efficiency than a DE5B, as recommended by the crystal manufacturers, and only required 100 volts HT, and a filament consumption of .1 amps. When oscillating, this valve draws 7-10 mils. as previously stated. The LS5B valve gave a better RF output than the LS.5, while the latter was condemned because of the excessive battery bias required, about 100 volts,

with HT at 450 volts, whereas, with the LS5B valve, battery bias could be dispensed with in favour of a grid-filament resistance of 40,000 ohms. Also, it was found on test that the CO valve, PM5A, used with a gridfilament resistance of 20,000 ohms, permitted dispensing with battery bias on that stage too, with conse-

40,000 1 10003 L558 0003 PMSA. 0003 LT HI 32,82 CRYSTAL 7 0003 *#TI 7170 K.C RECEIVER 400001 V. KEY JACK G5UW CIRCUIT OF PORTABLE USED TRANSMITTER 12 V. INPUT MY SUSANETTE FIG. 1. M/G HOON

quent saving of weight, space, expense, and making for much greater compactness; all four conditions of which are most desirable for portable work.

Having satisfactorily settled the choice of valves, crystal frequency, it only remained to gather together the rest of the components, calculate the minimum amount of space they would require, and proceed with construction. A polished oak cabinet was made to measure 28 in. long by 16 in. high by 12 in. deep, complete with hinged back and front, fitted with locks, carrying handles, etc.

The M.L. generator, and 2-volt jelli-cell accumulator, and H.T. battery for the receiver, were bolted down to the base of the cabinet, while above these was fitted the valve panel carrying most of the transmitting components, and the complete receiver, which was of the conventional detector and 1 LF type.

A vertical panel recessed 3 in. into the cabinet carried two milliameters, one in each plate circuit of the two transmitting valves, a voltmeter shunted across the transmitting valve filaments, so that

correct voltage could be maintained by a variable dropping resistance, to 10 ohms., to drop the ship's mains voltage to that required by the valves, all the variable condensers of both the transmitter and receiver, switches, and phones and key jacks. The coils for the transmitter were space wound Eddystone receiver coils, and proved very satisfactory for this low-power work. The receiver coils were wound on Colvern BCL. formers, while RF chokes were mostly home made, or converted BC chokes.

A voltage dropping resistance of 40,000 ohms. was included in the HT positive feed to the crystal valve to drop the ML output voltage from 500 to

100, for that stage.

The completed self-contained transmitter and receiver making a very nice-looking and convenient GRP station, whether for portable or permanent use, requiring only a good 12-volt accumulator to run the transmitter, and as the total consumption of the transmitter is only 4 amps., is not a heavy load for a car battery.

On completion, the set was tested out at G200, using a halfwave Zeppelin aerial, and results were almost as consistent as far as European contacts were concerned, as those obtained by the Q.R.O. transmitter.

As it was desirable to test the station under portable conditions, the outfit was taken out into

the country in 200's car, which was fitted with a 12-volt lighting set, and two portable masts, each 15 ft. long, had been prepared from 1 in. conduit, and taken along. The venue was a piece of common land, about 13 miles out from Wolverhampton, and the aerial erected, a half-wave Hertz, without feeders, and here trouble was experienced with the receiver, which refused to oscillate, owing to damping effect of the low aerial, which seemed to be so completely in resonance with the tuning range of the receiver as to effect a complete wipe out. The temporary cure was to use only one half of the aerial when receiving, and with this arrangement, Berlin was worked, and one or two French stations, quite a satisfactor, performance for a sunny afternoon. On arrival back at 200, a small capacity pre-set condenser was permanently fitted in series with the aerial coil of the receiver, and subsequently proved of great importance later on during the cruise.

The portable was now ready for installing on board the Susanette, and was taken by car to Tewkesbury on May 28, where the Susanette was

moored in the River Avon, presumably alongside the landing stage, but owing to floods was surrounded by an acre or two of flooded meadow land, which considerably augmented the difficulties of getting the set on board, but with the aid of a leaky punt, this was eventually accomplished. All that evening was spent in rigging the aerial, laying a counterpoise, and heavy gauge cable direct from the ship's accumulators to the aft cabin, where the set was installed. The counterpoise had perforce to pass by a large metal petrol tank, and equally large metal water tank, past the massive engine, with its magnetos and dynamo, all of which had a noticeable effect upon the fundamental frequency response of the aerial-counterpoise system, which had previously been measured off accurately to the length required. The counterpoise was taken along the bulkheads under the floorboards, just above "bilge" level, while the aerial went straight from the aerial coil, through a porthole, and up to the top of the mast at an angle of 45 degrees, both aerial and counterpoise were originally 33 ft. long.

On first switching on the transmitter, nothing happened, it being found that the ship's mains had fallen too low in voltage, so further testing was suspended until next day, to permit of the auxiliary charger boosting the batteries up to normal voltage.

The following afternoon, tests were resumed, but the aerial did not seem to absorb any energy, and as no measuring instruments were available, a guess was made, that due to the large amount of, and close proximity of metal to the counterpoise, the complete system was badly out of resonance to the crystal-controlled drive frequency, and such

proved the case, and a cure was effected by cutting off, by stages, about 6 ft. from the length of the counterpoise. The aerial remained untouched on the assumption that the more sky wire at the greatest height obtainable, would permit of better wave propagation. The system now seemed well in resonance, but the shortening was continued until the output began to fall off, when the odd foot or so was joined on again. The final aerial current, as measured by a hot-wire instrument in series with the aerial, read .5 amps., which was quite flattering, considering all things. A first call raised Portugal, followed by contacts with Spain and France.

After tea, we were hailed from the "shore" by G2OP, of Cheltenham, who was duly punted aboard, and afforded the occasion for a very mutually interesting chat, after which 2OP kindly offered to hurry back to Cheltenham, and carry out some tests, as I particularly wished to try out transmissions on 3.5 mc. band. We made contact on schedule on 7 mc., and only very poor results were obtained on 3.5 mc., due no doubt to the noncapability of the aerial system to come into resonance on that band. However, I am indebted to 20P for the tests on 7 mc., and the consequent adjustments certainly gingered things up on the transmission side. This completed the installation tests, and the set was left on board all ready for the commencement of the cruise on the following Thursday, June 2.

Fig. 1 shows the circuit arrangement of the transmitter, and Fig. 2 that of the aerial-counter-

poise system.

(To be continued in next issue, when a description

of the actual cruise may be of interest).

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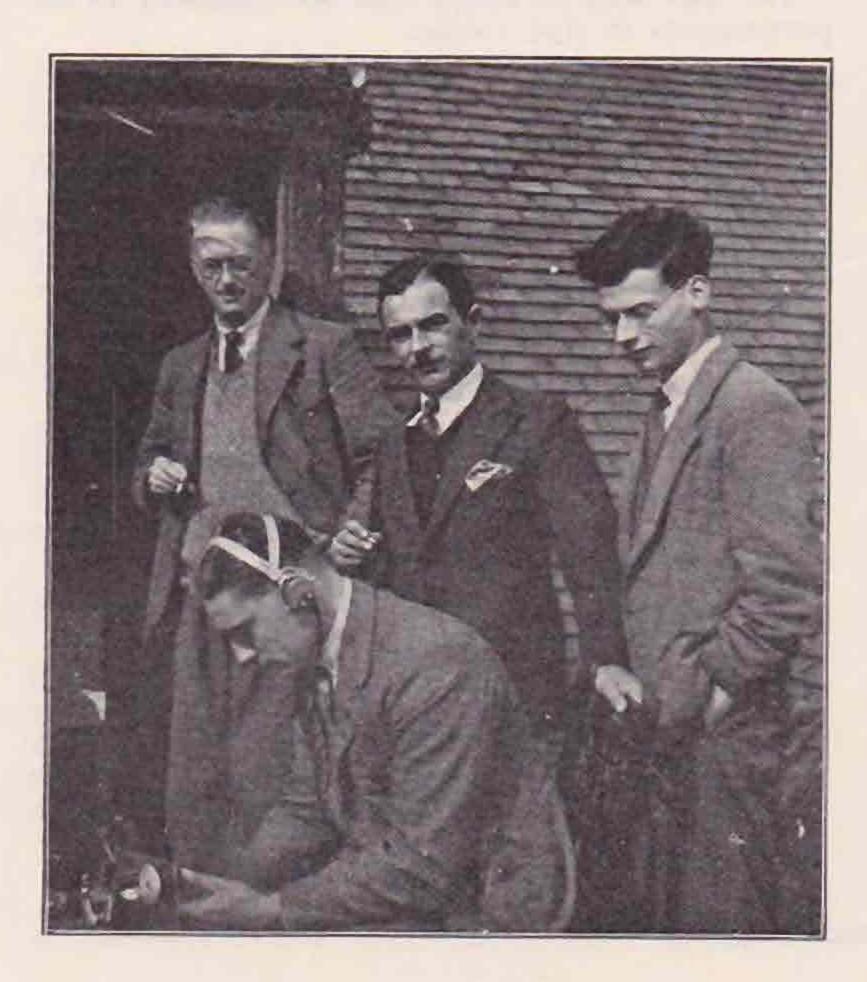
THE WESTINGHOUSE BRAKE & SAXBY SIGNAL CO., LTD., 82, YORK ROAD, KING'S CROSS, LONDON, N.1.

LONDON DISTRICTS HOLD 56 MC. FIELD DAY.

THE first organised London Districts field day took place on Sunday, September 25, when attempts were made to effect two-way contacts on 56 mc. between fixed and portable stations situated in outlying districts of London.

The stations concerned were G6UT, located at High Beech, near Loughton, Essex. G6CL located at "The Orange Tree," Totteridge Lane, Herts. G6YK located on the roof of the G.E.C. works at Hammersmith, Middlesex, and G2NH located at New Malden, Surrey.

Predetermined schedules were arranged; the four stations transmitting hourly from 09.00 G.M.T. at 15-minute intervals.



District 14, at High Beech. G6UT, G6LL, G6TX, and G6FY.

The outstanding station was G6YK, whose signals were received at good strength throughout the day at the other three locations. G6YK also had the distinction of being the only station to receive the other three transmissions.

G6CL was partially successful in effecting twoway contact with G6YK and effectively contacted G5SA of Highgate. Signals from G6CL were also received at G6UT, but no signals from this station or from G2NH were heard either at the portable QRA or at Friern Barnet.

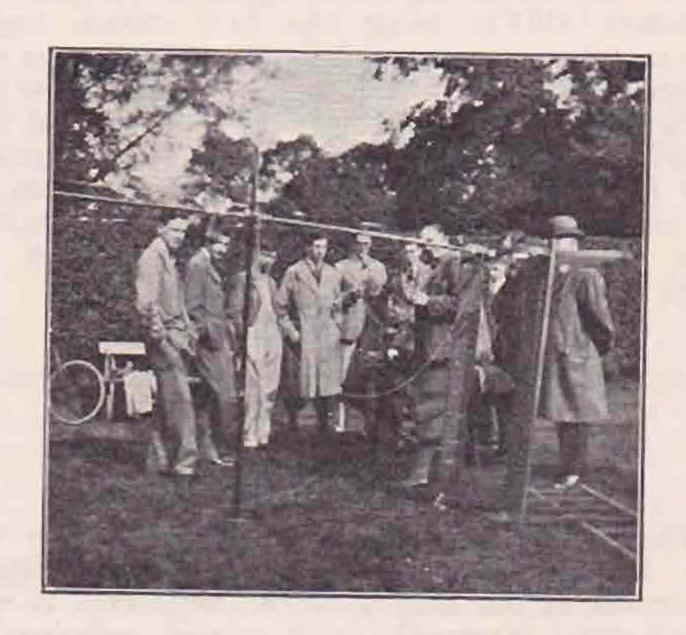
G6UT heard both G6YK and G6CL, but did not locate G2NH, although strong fone signals from G6NF (Streatham), 20 miles distant, were received. G6YK not only received all other District stations, but heard G5KH, G6NF and G5CV. G6CW (Banstead, Surrey) turned in the most interesting

log of all. With a rapidly constructed receiver, he logged G6YK, G2NH, G6NF, G5CV, G2BY, G5KH and possibly G5SA.

The apparatus used at the North London station was built exclusively by the D.R. (Mr. S. Buckingham, G5QF), and consisted of a push-pull transmitter and super-regenerative receiver. The transmitter was attached to the centre of five lengths of collapsible "Kumbak Tennis" pole, whilst the aerial was a copper tape half-wave centre-fed type. Tests were made with the aerial in both vertical and horizontal planes. Power was supplied from a 200-volt 50-mas M.L. converter, whilst CT25X valves were used as oscillators. The input throughout the tests did not exceed 5 watts. Buzzer modulation was used, but in future tests a valve modulator will be employed in order to raise the pitch of the note above the super-regeneration background of the receiver.

The receiver was a standard throttle controlled Super-Regenerative type, with the band spaced over 180° of condenser.

The equipment at G6YK was of a similar nature, but the antenna arrangements were entirely novel. A half-wave aerial was erected on the roof of the G.E.C. building and two feeder lines, 180 ft. long, of constant impedance were brought down to the basement, one feeder being used for receiving purposes.* LS6 valves in push-pull, giving an input power of about 60 watts, were employed.



District 12, at Totteridge.

Aerial System.

Signals from this station were logged up to 24 miles by G6GZ, who had a portable receiver erected on his car, which toured Surrey in the morning and arrived at G6CL late in the afternoon.

It was noted that neither G6GZ or G6CL could log G6YK after 14.30 G.M.T., although a contact between G6YK and G2NH was established in the evening.

^{*}See Mr. Exeter's article, "56 mc. Aerial Systems," in this issue.

The equipment at G6UT consisted of a push-pull transmitter using two LS5B's with 500 volts on the anodes. Various aerial coupling arrangements were tried, but no QSO's resulted. G6NF, however, is believed to have heard this station during one series of tests.

Preliminary tests were carried out during the preceding Saturday afternoon, and R9 signals were obtained on a moving car up to six miles. Greater range could undoubtedly have been obtained had time permitted.



Receiving Gear at District 12. G6CL Operating.

During these tests, the station was heard by G5SA at Highgate. All tests were on telephony.

On the receiving side, greater success was obtained, G6YK being the first station logged. His signals were a consistent R8. G6CL was next logged at R5, but, owing to the extremely low note of this transmission, it was difficult to read him. G6NF was a consistent R8 both on CW or telephony, and for his extremely low input of 12 watts was the outstanding signal on the band. The receiver was an ordinary super-regenerative, with one state of L.F.

No other stations were received, as quite a lot of time was spent in testing various methods of coupling the transmitter to the aerial.

The station was erected on the roof of the "King's Oak" at High Beech, in Essex.

The equipment at G2NH was a similar type of transmitter to the others, namely, push-pull. Input about 8 watts. The antenna system is interesting, as he was using his normal 66-ft. aerial, coupled with two untuned quarter-wave feeders.

The receiver was the conventional superregenerative, with one stage of L.F. amplification. He worked G6NF and G6YK and heard G5CV, G5IS and G2BY.

Numerous other stations took part in these tests, notably G6NF, whose gear and radiating system are very similar to G2NH's, except that his feeders are tuned with a series condenser.

The logs sent to G6UT will be circulated to all participants in due course.

Next Test.

It can definitely be claimed that these tests were the most successful ever held on this band, and for that reason it is proposed to hold another series on Sunday, October 23, when it is hoped that everybody who is interested will make an endeavour to be on the band with either transmitter or receiver. It is only in this way that we can mark down the limits of communication on this band.

It is not proposed to have definite schedules on this next occasion, but a fixed starting time of 10.00 G.M.T. After this hour, stations will endeavour to be transmitting as much as possible until 15.00 G.M.T.

It is hoped that many more QSO's will result from this arrangement.

If all stations taking part in these tests will send their logs to G6UT, as soon as possible after the tests, he will arrange to circulate them in budget form. In this way, co-ordination may be obtained and the results known to all participants in as short a time as possible.

Key Thump Filters.

The type of key filter used in connection with the Low-power Crystal Controlled Transmitter described in the May T. & R. BULLETIN is quite satisfactory inasmuch as it causes sufficient lag both on make and break to prevent thump interference in neighbouring receivers. It is sometimes found, however, that a small residual click at " make " still persists, which increase of inductance does not cure. This appears to be due to a slight H.F. disturbance set up by the spark at the contacts at time of make. Reduction of capacity, or increase of series resistance, is, of course, not permissible, as thump at break would then be introduced. The best cure appears to be to insert two H.F. chokes (say, high wave slab coils out of the junk box) in the leads connected to the contacts. This applies both to direct keying and to keying by relay.

QUARTZ

OSCILLATING LENSES

PLANO-CONVEX - 3/-

BI-CONVEX - - - 2/6

A. C. B. SMITH, BRYN RODYN, COLWYN BAY.

CONTACT BUREAU NOTES.

By H. C. PAGE (G6PA).

HARDLY like to write these notes this month, after my serious lapse last month. Owing to the extra work entailed by my week away from home, and my efforts to make up for lost time, I was unable to post the Notes in time for publication. Anyway, I must beg your forbearance for my lapse.

It is rather late now to talk about Convention, but I must take this opportunity to say how pleased I was to meet so many of you at Olympia, and at

Convention.

The next piece of news is a little out of date, but may be of interest to the 28 mc. groups. F8OL reports hearing W5AHA calling CQTEN on August 22. F8OL is working on 28700 Kc. each

day at 1300 G.M.T.

The Fading Groups Group Manager has forwarded me a short article from G5KU dealing with Short Wave Scattering and Echo. This article is rather too long to reproduce in the Fading Groups section, but, as it is of considerable interest, I propose to include it under this section. Several photos of signals with tails, etc., have been sent me as well, and I am forwarding these to H.Q. in the hope that they may be considered definite enough to print. Below you will find what G5KU has to say.

This month I have a very interesting log from G2FN, better known as XU2UU. He has been working on 28 m.c. a good deal, and I think that some excerpts from his log will be of interest to

most of the 28 m.c. groups.

Once more I must appeal to the QRP Group Centres to get in touch with me. Since I last asked them to do so, I have had only one report, and that did not

come from a G.C.

G50Q has been doing some work with G6ND, the results of which are very interesting. G50Q is situated at Tunbridge Wells, and G6ND at Stirling, in Scotland. G6ND started with an input of three watts, and was received at R 6-7. With .4 of a watt he was R4. with .25 of a watt he was R3, and with .05 of a watt R1-2, but QSA5 all the time. Using 10 volts at half a milli-ampere, he was 42-3, while with 5 volts and no perceptible reading on the metre he was just audible. The frequency used was 7125 Kc., the sked being held at 1400 B.S.T. each day.

That, I think, concludes my remarks for this month. The winter is now almost upon us, and anyone wishing to join one of the various groups should get into touch with the Group Manager

concerned as soon as possible.

28 MC. Work.

G6VP Group Manager.

It's certainly gratifying to notice the increased interest now being taken and to find that "DX," or at least "out of England," work is being done by different parts of the country. Group IA under G5MP has soon got going, and G5FV must surely be congratulated upon his work, all the more so when we remember that he is new to the band. There are still two vacancies in the Group. It is desired to enrol one active transmitter and one

BRS man, so don't hesitate. Write either to G5MP at 48, Earlsfield Road, Hythe, Kent, direct, or to me. Group IF has also taken a new lease of life, with the inclusion of new members, and 1C is going just as surely as ever.

I wish to point out that dormant members are nolonger to be tolerated in any group, and their places will be taken by more interested and less blasé workers. No doubt there is less "kick" in working Europe on ten than there was in working South Africa or W9, but I can assure everyone that it's probably more difficult to do so now.

We are also getting changed ideas about the "time" and skip on this band, and at present it

seems as if anything were possible.

Here follows the Group work.

Group 1A.—G5MP Group Centre has logged HAF4D, HAF8B, FM8IH, F8EK, F8WK, OK2LO. He is using a 16½-ft. vertical windom and is getting .4 amps. into it with 35 watts input. The feeder length has to be about ½λ though for this efficiency.

G5FV worked HAF4D and HAF8B on July 31, and F8OD on August 10. During this contact, his signals were copied for an hour by an Italian listener IOO35, QSA4, R4, at 20.50 B.S.T. G5FV twice raised F8GQ, but QSC on account of the late hour spoiled the QSO. The aerial used for this fine work is a 4/2λ 33-ft. roof and 33-ft. down lead. In addition, he has logged FM8IH and harmonic of OK2MA.

BRS780 is working on single valve frequency changers, coupled to the Broadcast receiver, but complains that the oscillator has to be worked in

almost a super-regenerative state.

G5IB in his first week on the band worked HAF4D on the 15th, using only 270 volts to an LS5, and was reported R3. He has logged FM8IH consistently and also D4BPA, D4BIT, F8XF, F8BS, F8OD, G6VP and G6HP. His QRA is Tenterden, near the Kent Coast, so that his reception of French and London stations points to a negligible skip on the band at present. His receiver is an O.V.2 Reinartz, but he finds that Rheostat control of reaction gives less frequency change.

Group 1C.—G6VP Group Centre has got his new RX working well on the band. This is an all A.C. and completely free from any induction pick-up or modulation. It might be described as a modification of the G6QB and G6HP single valves, and thanks are given to these hams for kindly bringing their RX's to VP's for trial.

The modification lies in the use of one stage of R.C. The valves in use are an AC2HL and an MH4. The anode resistance is of the potential divider wire wound type, 100,000 Ws in ten slots. The coupling condenser is a .0005. Listening has now become a pleasure again, as static-Q.R.M., etc., have diminished to an extraordinary degree, and the absence of transformer hiss is remarkable. By the use of a home-made, pre-set, variable tuning

condenser it has been possible to cover the dial with the band, and the slight frequency change on the reaction is utilised to get still finer tuning.

A monitor stage is also incorporated on the same cabinet. It has not been found necessary to screen either the L.F. or monitor stages. The screens were made and tentatively fitted, but as no gain was observed they are not in use. The only contact this month has been with HAF4D on July 8, again using the 20-metre harmonic, whilst the stations heard are G6HP, G6WN, G5MP (on 14 mc.) calling test 28 mc., HAF8B, HAF4D, FM8IH and numerous 14 mc. harmonics of both ham and commercial stations. It would appear that VP's harmonic is regularly heard on the Mediterranean vide reports.

G6WN.—Although the operators have been away for half the month they have again an excellent log. Commenting on the reception of their signals by G5LT at Sheffield, they state that the only parallels so far seem to be when G5ML was heard in London and G6HP in Clacton; yet this month G5IB heard both HP and myself on the Kent Coast, and I have had reports from Paris. The skips or lack of skip are worthy of note. The stations worked were HAF4D, G6HP and FM8IH. The ham heard: FM8IH on July 16; CT1AY and UO3WB on the 19th; HAF4D on the 20th; CT1AY, EAM, CT1GA, CT1HC on the 28th; and during August, EAM on the 13th; Rome 1RJ, F8WK, EAM, and FM8IH on the 14th. G's heard:

G2FN 28MC REPORT. PLYMOUTH. RECEIVER O-V-I.

Hours of Weath			S	TATIONS LOG	GED.		T20 - 12	General
Date, 1932.	Observa- tion. G.M.T.	Weather.	Commercial.	Amateur, 28 M.C.	Harmonics, Amateur.	Stations Worked.	Fading.	Con- ditions.
June 11.	1630-1830	Fair.	EAM, LCJ, R-S phone and two others.	Nil.	Nil.	Nil.	Bad. Irregular.	Bad.
June 12.	1645-1800	Fair.	EAM, R-S Phone.	Nil.	Nil.	Nil.	Slight.	Fair.
June 26.	1430-1745	Fine.	EAM, R-S Phone.	HAF4D, HAF8B, UN2GL, D4BIT, PAODA.	EAR223.	HAF4D, UN2GL, D4BIT, PAODA.	Slight. Irregular.	Good.
July 3.	1305-1550	Overcast, Unsettled.	Nil.	Nil.	Nil.	Nil.		Bad.
July 16.	1600-1800	Overcast, Unsettled.	Nil.	Nil.	Nil.	Nil.		Bad.
July 17.	1450-1620	Cloudy, Fair.	LCJ-LCP.	Nil.	Nil.	Nil.	Bad, Rapid.	Bad.
July 30.	1800-1900	Fair.	EAM, R-S Phone, and 3 others.	F8SI	Nil.	Nil.	Slight.	Good.
July 31,	0815-1100	Rain.	FYQ, FXN, EAM, R-S Phone and 3 others.	HAF4D, HAF8B, FM8IH.	Nil.	HAF8B FM81H	Slight. Irregular.	Good.
	1340-1500	Unsettled.	Nil.	Nil.	Nil.	Nil.		Bad.
	1635-1900	Cloudy, Fair.	R-S Phone.	HAF4D, HAF8B, D4BPA.	Nil.	HAF4D.	Bad. Rapid.	Fair.
Aug. 14.	1030-1245	Rain.	FYQ, LCJ, R-S Phone, and 2 others.	FM8IH.	Nil.	FM8IH.	Bad. Irregular.	Poor.
	1405-1835	Overcast, Unsettled.	EAM.	HAF4D.	Nil.	Nil.	Bad, Rapid. Irregular.	Bad.
Aug. 21.	0750-1200	Rain.	LCJ, EAM, R-S Phone.	HAF4D, HAF8B, HAF3B? FM8IH.	Nil.	HAF4D.	Slight. Irregular.	Good.
	1250-1400	Rain.	R-S Phone.	HAF4D, HAF3B. OK2SI.	D4AAR.	OK2SI	Slight.	Good.
	1610-1800	Fair.	R-S Phone.	D4BPA, UN7GL, OZ7T.	Nil.	D4BPA, ON7GL, OZ7T.	Slight.	Good.
	1945-2115.	Cloudy, Fine.	EAM, 1BF, R-S Phone.	HAF4D, D4BIT.	Nil.	D4BIT.	Slight.	Good.
Aug. 22.	2020-2115	Overcast.	R-S Phone.	HAF4D, HAF8B.	Nil.	HAF4D.	Nil.	Good.

5SR, 6VP, 2BY, 2BM, 5OJ, 6CS, 2XA. These are the only two reports from this group, holidays, no doubt, being responsible. Next month, please, without fail!

Group 1F.—Group Centre BRS25 writes that he has been reorganising the group and is keen to get it 100 per cent. The following members are in his group, although one or two seem to be dormant or dead. He takes this opportunity of publishing the list of members, and in this case it is desired that the dead ones should at once notify the Centre and make room for more interested members. Maybe some are too dead to do even this. Hi!

The list reads: C2CX who is QRL we know and excused ipso facto. G2DZ, What about it om? G5CN active; 2BZZ ditto; G6HP, G2OA active;

2BHK and G2OI (?) active both.

A budget letter has been restarted and, definitely, it's up to you to support it. It can't be interesting unless you all report. And, personally, I have BRS25's assurance that he will keep me posted of what support you are giving him.

BRS25 has restarted listening after the holidays, but the only readable signal so far heard has been

HAF4D at 18.43 G.M.T., August 15.

2BHK has heard: July 7, HAF8B, UO3WB, OK2CC; July 16, FM8IH; August 17, HAF4D, HAF8B, FM8IH; August 19, HAF8B, UO3WB, D4JPC, D4BIT, FM8IH, ON4JJ, F8PZ, SP3OM, F8TV; July 20, HAF4D; July 21, FM8IH; August 10, F8BS, HAF8B, D4BPA, F8OD, D4BIT, F8GQ, FM8IH; August 11, FM8IH. Also the following commercials: EAM, IRR, HBO, HBL, IRJ and E1AX.

G6WN was the only G fundamental heard.

2BHK has been testing circuits, and finds that push pull T.P.T.G. is the best, although series Hartley runs it close in efficiency. He has heard via HAF4D of the great interest and activity on 28 mc. of hams in that country, and, apart from the numerous G QSO's 4D has had, he has besides worked PA, D, F and SU6HL on June 19, and wonders whether any G heard 6HL at 12.50 and 16.55 G.M.T. on that date. Or LU6DG at 17.15 G.M.T.! He points out a small error in the last notes: "With reference to the statement that 2BHK thinks that G5SY's opinion of the real 28 mc. season is wrong, etc," he said in his report that "the results over the past five weeks certainly seem to bear out that G5SY's contention that our conception of the 28 mc. season is at fault, etc."

G2OA has made his first contact on 28 mc.—
that was with G2OI at Manchester, changing an
indoor 45 ft. long and 15 ft. high to his TX aerial
49 ft. 6 ins. long and 36 ft. high. This at once made

OI's signals audible.

G5CN has been on the Continent, and will give results of his work in proper form next month.

2BZZ has also been away, but has heard IRJ and G2OA.

September Report.

We all missed C.B. Notes last month, and it should serve as a reminder to us of the work that others are doing for us; and, lest we grouse, I am sending in the August M.S.S. again, and if room can be found they may appear after all. Anyway, 28 mc. is quite healthy again and, as you will see, good useful work is being done. I will pass on to the group reports without further analysis.

Group 1A.—G5MP Centre reports that he has logged signals on the band during the rain and mist, and his conviction that the band was essentially a fine weather one has been shaken. He is in touch with W hams, who wish to co-operate, so if interested write to him. He had an R5 report from a German listener.

G5FV has worked HAF4D again, also OK2SI. He has heard HAF3D and been reported QSA 5R7 by HAF3VF. The transmitter is a 14 mc. C.O.-FD-PA. A 100-watt PA is in course of construction.

G5IB worked HAF4D twice, also D4BIT and FM8IH with only 7 watts input. He had an R5 report from a German listener.

2ARM has a TPTG outfit, together with COFDPA and awaits his full ticket. HAF4D and OK2SI have both been received.

BRS780 has been in hospital. We all wish him

a speedy recovery.

Group 1B.—G5SY. Centre has been very active and in touch with all his members. As a result, the group seems quite healthy again, and, as it contains possibly the pick of the 28 mc.'s hams, we shall, no doubt, have some very interesting inter-

group rivalry before long.

He suggests that we should devote a certain fixed time per month when we should all be at the RX simultaneously, and not transmitting. In this way, some rather mooted points concerning reception might be explained; for instance, the question as to "super selectivity" of the reflection, i.e., the signals being received by some stations and yet not by others—locally and equally efficient. (This certainly appeared to be the case—vide the reception of ZS4M's signals some two years ago.— G6VP.)

G5SY has both a push pull TPTG with two LS5B's and 35 watts, and also a muted PA from CO-FDFD to a DETISW with about 70 watts. He says he has had little luck so far with RX, although from car pick-up this latter seems quite good. He has heard ZS4M's 14 mc. harmonic R 3/5. Seemingly the only one to hear this. (Super selectivity of reception?) He asks whether 28 mc. will be good up to 200 miles this winter. His forecast of European conditions this summer was correct.

G6LL is at his receiver once more and thinking of using his transmitter again. Both G6WY and G5ML are members of this group, and G5SY awaits their reply as to whether they wish to continue

in the group or not.

Group 1C.—G6VP Centre has no contacts outside G to report, but has been heard in HAF, Russia, and DE (Germany). The new transmitter is not yet completed. The stations heard tally practically exactly with those heard locally, although in this case no new ones have been heard.

G6WN have again a fine log, although they have not had as much time as usual. They have worked HAF4D three times, also UN7GL once, besides, of course, local G's. They have had reports from four German stations. They have heard: OZ7T, HB9S, HAF4D and 3D, besides numerous G fundamentals and harmonics.

Group 1F.—BRS25 Centre has been listening every week-end, and for some short period every evening, and has a fine log of DX signals. On

August 16, HAF4D; August 17, HAF4D, D4LQH, F8PL, HAF8B; August 21, HAF4D, FM8IH, HAF3D, D4BPA, OK2SI, OK2MA, UN7GL; September 4, HAF4D, besides commercial harmonics.

A correspondent writes that the Albonico Palmi, Italy, heard test 10 DX de G5FV R4 QSA4 T4 on August 10.

The following G stations have been heard lately in France:—G6WL, G5FV, G6YC, G5LT, G6AX, G5UC, C2XA, G2FN, G6VP and G5VL. Possibly some are harmonics.

BRS25 had the pleasure of meeting with one exception, all his members, and this has resulted in renewed activity.

G6HP, although he has not published his work (not reported) until now, has, nevertheless been doing some excellent work on 28 mc. He has worked this month HAF8D, HAF8B, FM8IH, and D4BAN. He has heard UN7GL, F8TV, FM8WK, FM8CQ, CT1AA, OZ7T and D4BIT, besides which he has had numerous G QSO's. He is using 220 watts Xtal control to one T6ID, but hopes to have two in push pull before long. The whole station has been rebuilt, but he is not yet satisfied with the output of the FD's on 28 mc. A Pentode is to be tried.

2BHK.—Excellent reception work again. He has heard:—August 14, FM8IH; August 15, F8WK, HAF4D, EAR233; August 16, HAF4D; August 17, HAF4D, D4?ZH, OR1KU, HAF8B; August 21, HAF4D, FM8IH, OR2SI, OR2MA, UN7GL, OZ7T, D4BIT, HAF8B; August 22, F8WQ, HAF4D, HAF8B; September 4, HAF4D.

In answer to BRS25's question in the Budget as to whether the reception of HAF4D from 09.32 to 18.36 G.M.T. on August 21 was exceptional, 2BAK states that on June 26 the same station was heard working from 09.00 till 17.00 G.M.T., and that on several occasions he has heard HAF stations for periods of four to five hours. He states that OK2MA is on 28 mc. from 16.00 to 18.00 M.E.T. and F8TV all day Saturdays and Sundays, also every evening after 18.00 G.M.T.

G2OA has been on holidays and visited several London stations (to their mutual advantage VP!). He has heard no DX, but G2II 14 mc. Harmonic at 40 miles was almost as strong as his fundamental QSA5R5. He questions the assumption that a push pull TPTG does not produce harmonics. In fact, his own has been heard in Germany. He is attempting to "lock" his present TPTG.

G5CN has been on holidays, the remainder of his time being spent on building a super regenerative receiver for Liverpool gang field day.

2BZZ sends in a nil report. Awaiting his full licence.

G2DZ has everything ready. He will be cc. on 28600 kc., using a DETI as PA with "as many watts as it will stand on 28 mc." Hi!

This concludes the group reports, and I think it certainly does show the interest that 28 mc. is again claiming. No doubt the Convention has done much towards this. With one exception, I had the good luck to meet all centres, and can foresee much useful work in the future.

Fading, Blindspotting and Skip.

Group Manager, G2ZC.

Owing to holidays, etc., I have very little to report these last two months, and so will make my notes brief.

Group 2E have sent in a report which I have forwarded to our Contact Bureau Manager, as it is of general interest, but too long to include in my own notes. It outlines the method of observation to be used by this group in conjunction with an

oscillograph.

Sample photographs are sent, which show fading, scatter, etc., and if a few of those could be published in the Bulletin, it would show all R.S.G.B. members that our signals are not the simple oscillations that we may think them to be. In one of them, a single "dot," taking 1/16th of a second's exposure, not only shows the start and finish of the "dot," but also a decided scatter and echo. I trust the G.C. of 2E will be able to let the Bulletin have a few samples, with explanations, for publication, as such would be of interest to everyone.

Groups 2B and 2C have very little of note for publication, but the former are discussing different types of fading and suggested causes thereof, and the latter group are discussing how earthquakes can effect wireless waves. As both groups have only started their respective discussions, there is

nothing of note to publish.

Some of 2B seem to think that the physical part of an earthquake upsets the magnetic field of the earth, but it is too early yet to pass any comments

as being facts.

2D have been concentrating on W2XAD, and noticed that a period of exceptionally dry weather, with a highly charged atmosphere, occurred at the first part of the month (July), and produced a poor signal strength, but the latter end of the month developed "wetness," with a rise in signal strength. Atmospherics were bad on the BCL bands and the 7 mc. band, yet were absent on 14 mc., the cut-off frequency of static being about 12,000 kc.

It was noted that there was very little lightning, but considerable thunder with the local thunder-

storms.

G6HR sends an answer regarding the electrical effect, so far as radio goes, to a question asked by one of the members of 2B, and this will be sent round 2B.

In Group 2A, 2AWJ becomes G6RP, and BRS589 replaces G5NL, while the monthly discussion of theory is being dropped in favour of observation work.

For observation of the eclipse, 2A co-operated with the French Air Ministry (FLJ, on 9,230 kc.) in the special transmissions sent out from this station.

(Information reached me too late to publish the nature of these transmissions for the benefit of others.—G.M.)

Ultra High Frequency Work.

G6XN. Group Manager,

There has been rather a scarcity of reports during

the last two months, probably due to holidays and heat waves.

The importance of using a balanced circuit for 5-metre work does not seem to be generally realised. Work at G6XN has indicated the superiority of circuits of the balanced Colpitts type, both for transmission and reception, and apparatus of this

type was described in the "Bull." of November, 1930. If the valve capacities are drawn as an integral part of any circuit for high-frequency use, lack of balance will be obvious, except in the case of the Colpitts circuit, and a few special cases, e.g., the Ultraudion or Hartley circuits given a valve with a suitable ratio of interelectrode capacities. This condition may be obtained effectively on any set by connecting a small variable capacity, say, 2-10 μμ F., between earth and grid or plate as required.

At $2\frac{1}{2}$ metres there is little to be gained by trying to achieve a balanced circuit. It is better to concentrate on simplicity, cutting down masses of metal and lengths of wires to an absolute minimum. Most of the tuning inductance may well be in the

valve itself!

Super-regeneration is a separate problem, and I hope to say more about it in a later report. It will at least (in the opinion of the G.M.) mask the

inefficiency of quite a dud receiver!

G2KB has got an oscillator working down to 1½ metres, using a series-tuned Ultraudion with debased Shortpath valve. On 56 mc. he has replaced his current-fed, half-wave, vertical aerial by a voltage-fed one, and states that directional effects are different.

G2KB and BRS77 took a 56 mc. receiver to G5ML—nearly 15 miles—and signals from G2KB

were heard at R2.

G2CZ sends an interesting report on work done. He is using 3½ watts input to a push-pull T.N.T. circuit, with an indoor ½-wave aerial and grid modulation. He has worked duplex telephony with G5VH, signals being R7-8 at one mile.

2BHX is active on 56 mc., with a very compact

2-valve super-regenerative receiver.

2 M.C. Work.

G5UM, Group Manager.

Group 10A has been entirely re-established, with new members, G2WS, Leeds, G2YI, Wickford, Essex, and, it is hoped, G6ZH, Devizes, together with three of the original members, G5RX (Bacup), G6FO (Newport) and G5UM (London) as Group Centre.

Several 2 mc. matters are occupying the attention of the group, and, while the final schedule of experimentation has not yet been completed, particular interest is being manifested in the ever-preents problem of suitable aerials for the band. Various different types are being tried out by some of the members, and, in addition, G6FO hopes to be able to carry out some tests with a half-wave system, if the necessary G.P.O. permission for the use of 264 feet of antenna length is forthcoming.

Members of Group 10A are anxious to commence 2 mc. schedules with amateurs in any part of the country. Special attention is drawn to the excellent conditions prevailing between 6.30 and 8 a.m., during which period increasing numbers of amateurs are operating on 2 mc. The station of the Group Manager will be working during these hours on

most mornings on 1,740 kc.

The question of launching another 2 mc. group has been raised, and all amateurs wishing to embark on serious organised work on the band, either on general subjects or on specialised subjects—such as telephony, QRP, and so on—should get in touch with G5UM, at 17, Eastwood Road, London, N.10, who will effect contact between interested parties.

Antenna Group.

G2OP, Group Manager. The G2BI aerial seems to have interested a good many members, and I have received so many letters, for which I am very grateful, that I have been unable to answer many of them personally, owing to holidays and business pressure afterwards. I shall welcome reports from anyone who cares to try this system, and so far all reports have been excellent. Those who have not had any luck have in every case not followed out the instructions given. I will deal with two typical examplestaking the diagram in the August Bulletin, one made the top approximately 67 ft. and the length EDB also about the same length; the result obviously was that both AB and EDB tried to take control and the P.A. refused to keep locked. The top should always be of the 33 to 34 ft. variety. Someone suggested that accurate tuning of the system may be done by clipping a lamp across a few inches of the centre of the top and tuning for maximum brilliance. I have definite proof that this should not be done, as, although accurate with some systems, it is definitely misleading. Another point of great importance is that, after the transmitter has been tuned without the aerial attached, it should not be retuned when the aerial is attached. If the whole thing is nicely balanced, it should not be possible to retune, and the increase in plate current is merely the draw of the aerial. This draw can be controlled by the position of the tap on and should be normal for the tube without overloading it. If the balance is not quite perfect it shows that, owing to local conditions, the formula does not quite meet the case, and it is then best to tune the transmitter without the aerial and leave it alone after tapping the aerial on. With a little patience and experience it is quite easy to get the arrangement working and to get most satisfactory results. G5UC rigged up the arrangement vertically, and one would naturally expect that the figures given might not stand owing to the proximity of earth to one end. However, he got excellent results and is entirely satisfied, but it is still possible that a better formula may yet be found for the vertical variety. Someone who ran a Neon tube along the top is of the opinion that it seemed brighter at the end nearer the feeder tap than at the other end.

The dark evenings, when much experimental work is done, are now near at hand. Will any of those members of the group who cannot undertake antenna experiments please inform the G.C., and will anyone who is interested, can do experimental work, and is not in the group, please let me know or get into touch with G6GV?

Television Group. G.C., G5CV.

Group 11A Reports were received from 5AW, 5GJ, 2BFOand BRS869.

We are glad to welcome to this group G6KT,

who is working in conjunction with 2BFO.

Following the interesting discussion on L.F. chokes raised last month, 5AW sends some interesting mathematical dope on their construction and design.

Activity here at 5CV has again been curtailed owing to business QRM, but I can give a few details

about the construction of experimental photoelectric cells from old valves which are "gettered" with barium or magnesium.

Carefully heat a heavily "gettered" part of the glass bulb in one spot only, over a gas flame. Continue until the glass becomes clear at this spot and then allow to cool.

The "getter," which volatilises on heating, will condense on the relatively cool anode and act as a light-sensitive surface.

The plate of the valve is the cathode when connected as a P.E. cell, and the filament is the anode. Sometimes the grid connected to either plate or filament is an advantage.

Satisfactory results have been obtained with the following valves:—P.M.14 (the screen grid is the cathode), P.625A. and D.E.5B.

When connected to the input of a low-gain three-stage R.C. amplifier, the audible frequency obtained by interrupting a beam of light from a 60-watt bulb by means of a revolving serrated disc was clearly heard. The cell voltage used was in the neighbourhood of 200 volts.

I hope to give further details soon. It would be interesting to hear the reports from other members of this group who have tried this.

Short Wave Scattering and Echo.

The reception of S.W. Stations when inside the skip distance area is associated with the re-transmission of the signal as it passes through the Heavy-side Layer, in a similar manner to the illumination received by a searchlight beam when it passes through the air or a cloud of particles.

The rapid formation and dissipation of Ionic clouds and/or similarly with patches of non-ionised gas is the usual explanation of the cause of scattering while the effect in most marked at the point where the ray in the layer has just been bent over, begins to bend down to earth again.

The effect of scattering is, of course, a wobble-fade on a distant signal or a tail to a signal received primarily by ground wave. This tail on a nearby transmission is usually at an interval of a few mili-seconds and hardly perceptible by ear, although the scattering may be sufficiently strong to

give an unusual signal strength on a station which normally skips the receiver at the particular time observed.

Also, as the signal makes several layer to earth reflexions during a few thousand miles range, it is possible that a reasonable echo is heard due to scattering from the layer far away from the first reflexion, the signal then returns in the opposite direction, from the point of scattering.

It is therefore interesting to observe when "hollow" or "echoy" signals occur—without taking account of possible echo of a definite long period due to the signal reaching right round the world—and compare this effect with natural conditions at the time, especially sun-spot phenomena, magnetic phenomena and the barometric gradient over the path of the signal, coupled with reception conditions for other stations transmitting in the opposite direction to the station observed.

The question of round-the-world echo is also interesting, and when the effect is noticed it should be observed whether the echo fades in sympathy with the main signal and whether stations on the opposite side of the globe are well received, as would be expected when a signal is able to encompass it.

SCHEDULE.

Observation on commercial stations, etc., from 1300 kcs. to 16000 kcs.—such stations as IRJ, GMM, GLH, DGZ, HBO, HBJ, etc., give excellent echo at times—and comparison of echo results with reception of JNA, WIK, etc.

W2XAD can be taken as a standard to state type of fade by, although, if possible, other W stations should be stated.

LOG: Time and description of hollowness or echo found on the European station observed.

LOG: Fading on main signal.

LOG: Fading on echo and whether independent of main signal.

LOG: Conditions for reception of DX.



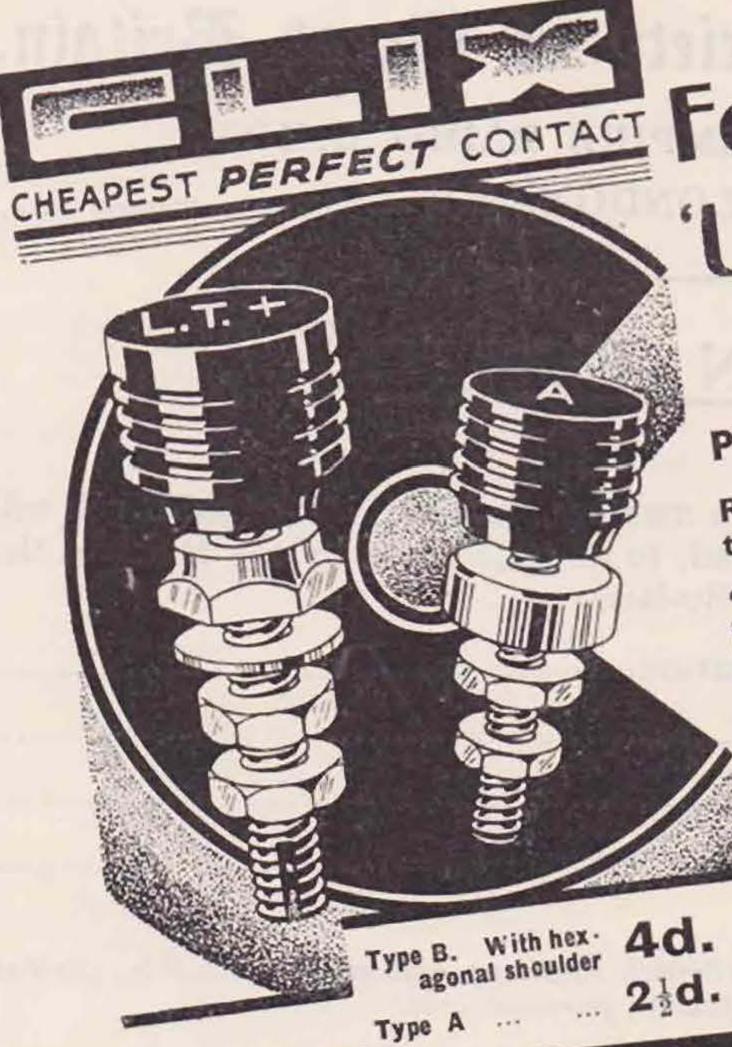


Two typical examples of signals with tails.

GC will endeavour to measure echo periods, etc., on Cathode Ray Oscillograph each day.

Logs of observers to be sent to G.C. on first of each month for insertion of solar phenomena, barometric phenomena (unless already inserted by observer), and any echo time data.

Logs will then be circulated in 2E for discussion, etc., during the following month.



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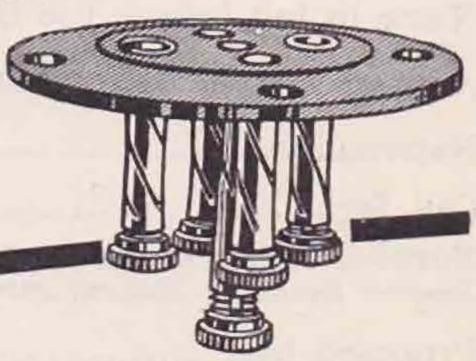
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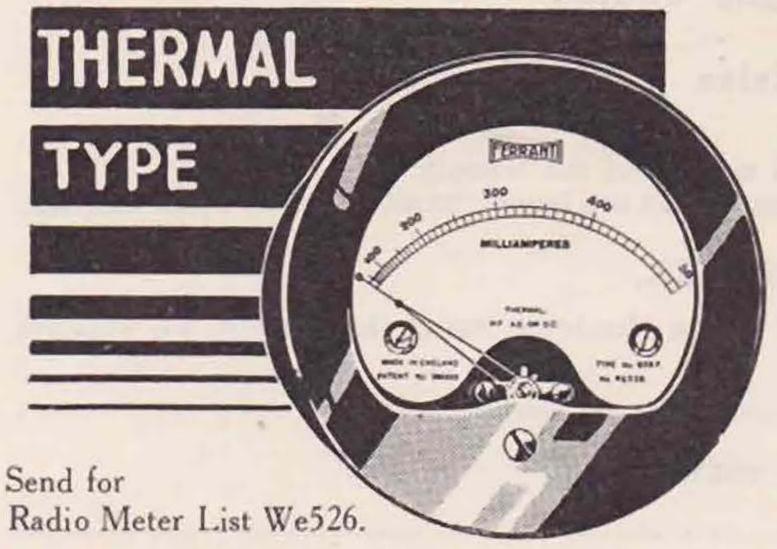
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Range	meters. Price.	Ran
The second secon	£5 6	0 0-1
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0-100	£3 10	0 0-2.
0-250	£3 10	0 0-5
0-500	£3 10	0-10
0-750	£3 10	0 Proj

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	 w.		 £2	15	0
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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 we 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 person to whom they are known. Such persons should be householders, and should state profession and length 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 Radional 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 operations and arrears which may be due by me at that period, be free from this obligation of the contraction o
Witness my hand thisday of (signed)
SUBSCRIPTION RATES.
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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. Certificates 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 OPPICE LIER ONLY

Approved by Council.....

HIC ET UBIQUE.

The R.S.G.B. Tests—(continued from page 103). filing of results at H.Q. after the last date for entry. Of course, it is impossible to accept late entries and such circumstances are a matter of regret to all. We ask all competitors, therefore, to see to it that the rules are complied with and to see that results and logs are posted in good time.

Finally, we ask everyone to enter the tests with that true spirit of sportsmanship so closely allied

to amateur radio work.

Long Distance Flights to South Africa by Fairey Monoplane.

We have been advised by the Air Ministry that arrangements are being made for a long-distance monoplane flight from Cranwell, England, to Cape Town, South Africa, which will commence between November 9 and 15, or, failing this, between December 9 and 15, 1932.

We have been invited to co-operate again with the Air Ministry by arranging for prior publication in this journal of information regarding the flight.

Ordinary messages received from the aircraft should be posted to the Head of Signals, Air Ministry, London, W.C.2, whilst information concerning distress signals should be telephoned immediately to Holborn 3434, Extension 383 or 370, or otherwise by the quickest means available. Arrangements have been made with the G.P.O. to regularise the passing of these messages to another party, but members are warned that they must not be divulged to the Press or to any person other than officials of the Air Ministry.

Prior notification of the commencement of the flight will be given to Headquarters. London or provincial members desirous of assisting may therefore make enquiries at any time between

10 a.m. and 6 p.m. on the days stated.

Full details are as follows :-

Route: Cranwell, Berre, Tunis, Duala (Cameroon Mountain), Boma, St. Paul de Loanda, Walfish Bay, Cape Town.

Call Sign: GEZAA.

Wave-length: 8,900 kc. (33.71 m.).

Transmission from the Air: Every two hours at even hours, commencing 06.00 hours G.M.T., or first even hour G.M.T. after flight has commenced. Transmissions to take the following form: CQ CQ CQ v GEZAA GEZAA GEZAA Position (repeated three times) A.R.

Transmission in Case of Forced Landing: In the event of a forced landing being imminent, the aircraft will transmit the following: SOS SOS SOS v GEZAA GEZAA GEZAA, followed by the

position of the aircraft.

After landing, transmissions will be made during the first five minutes of each hour and should take the form: CQ CQ CQ v GEZAA GEZAA GEZAA Position (information repeated for five

minutes).

Notes.—The range of the transmitter is approximately 1,000 miles. Selected stations should maintain continuous watch for signals whilst the aircraft is within this range. The times during which it will be necessary to keep watch can be calculated from the speed of the aircraft, which,

under normal conditions, will be 90-100 m.p.h. The flight will commence at 06.00 G.M.T.

The aircraft is equipped with transmitter only and is unable to receive.

A Silent Key.

Amateurs throughout the world will join with us in mourning the untimely death of Mr. G. W. Salt (VS2AF), of Selangor, who for many years had represented our interests in the Federated Malay States.

Mr. Salt was lost over India during a flight back to England on leave, where preparations had been made to accord him a very warm

welcome during Convention.

His passing has left a big gap in the ranks of the pioneers of amateur radio and particularly amongst those who were instrumental with him in linking the Home Country with the Malay States in years gone by.

QSL Section.

In spite of the fact that notice has been given in these columns on several occasions, we are still receiving cards from reporting stations to be forwarded through the A.R.R.L. In order to remove any doubts which may exist, we propose to repeat the list of countries for which the A.R.R.L. acts as QSL agents, and we hope that BRS and AA stations will make a note of the list and refer to it when sending off the next batch of cards. Here are the countries: -All districts of U.S.A. and Canada: CM, HC, HH, HI, HR, KA, K4, K5, K6, K7, NY, OM, RX, TI, VO, YV and X. The ban which the A.R.R.L. have placed on cards for the preceding countries refers, of course, only to report cards from listening stations, and cards sent as a result of a QSO will go through as usual.

J. D. C.

SOCIAL NOTES.

Visit to Rugby.

On the Saturday afternoon of September 17 a large party, numbering nearly sixty, was to be seen at the Hillmorton station all eager to see just how the "commercial" is designed and maintained.

Let us start with the arrival of the visitors. Most of them came by cars from Birmingham, Warwick and Coventry, some dozen or so cars, almost forming a fleet, and unloaded their human cargo at the main entrance to the transmitting hall. Several cars did not stop, but returned to Rugby railway station to collect the eleven London and Surrey members who were travelling up by train and those from Rugby who remained behind to welcome them.

Two parties, one of about twenty and one of about forty, were conducted through the power and transmitting buildings by the engineers in charge. The smaller party had the better time, as they had more time and the engineers had not such a hard task in answering a smaller number of questions. The larger party was continually bombarding the engineers with questions, seeking information about their charges.

We first saw the check room, where all the records are made and kept of the outgoing traffic, then the main long-wave transmitter hall where GBR was in full swing. Here we were able to see small receiving valves in the tuning fork circuit doing their share of the work along with their bigger brothers, who handle hundreds of kilowatts. Amazement was expressed when someone noticed the aerial ampmeter registering 730 amps. "going up the spout," as someone remarked. GBV and GBT, the telephony station, were also inspected, and then the huge generators that supply the anode voltages, two of them generating eighteen thousand volts in series, then the smaller ones supplying the filament and grid bias voltages. From there we went along to a much smaller building housing two short-wave beam stations. This was where the members felt more at home and the engineers were hard put to in answering the countless questions on the circuits, method of coupling, and the thousand and one things that go to make our game interesting. Next we were all shepherded together to have our photographs taken, then we set out for quite a route march to the new building which has provision for nine beam and one long-wave stations. Already in this building there is installed five of the beam stations, which, so the engineers told us, take about three minutes to start up when the signal is given. Here, again, we found it a "hams' paradise," with large mercury vapour rectifying valves, racks of spare valves, and various forms of transmitter coupling circuits and a novel way of push-pull with coupling to the feeders. It consisted of two coils in series in the tank circuit broken with three variable condensers also in series and the feeders taken off each side of the centre one.

In this building there is a map of the station showing the positions of the many and various aerials and the type used. It was while we were travelling to and fro around the station that we were able to discuss the various systems used.

Around six o'clock we were all beginning to feel a little famished, so we took leave of the station and packed ourselves in the cars and made our way back to Rugby. On arrival at the White Heather Tearooms we found G2KB and BRS77 had arranged a splendid spread for us. It did not take long for the plates to empty, and after G2ZW, in a speech, thanked G5VM and G6WN for organising the trip and G2KB and BRS77 for their fine arrangements for the visit and tea. G6WN was called upon to reply, and said it was a pleasure to be in the party and able to bring some support from London and the south. Also he hoped this would be only one of such combined trips.

Following this, some of the party left for home, while about forty accepted the invitation of G2KB to visit his station, for which we thank him. On the return journey to Rugby station most of the party packed themselves into the six cars, and it is doubtful whether cars have ever been so badly overloaded.

As the train steamed in at the platform, to take the southern party home, it was found that G5MA was missing. The party was told to entrain hurriedly, and as it steamed off to a siding to be coupled to the London train MA was seen, still on the platform, and everyone thought he would be left behind. The train, however, came back to the platform and he was able to join it.

After waving the London party off the Birmingham gang left to wend their way home, tired, but with the thought that they had spent a pleasant time among the stalwarts of Hillmorton.

R.N.W.A.R. NOTES.

Considerable progress in connection with the Reserve was made during September. The task of segregating applicants into temporary districts was accomplished, and a decision reached to call together all interested persons living within the London area.

Two evenings were set aside for these meetings to enable as many as possible to be present.

On both occasions the chair was taken by Commander Saunders, R.N. (Secretary, R.N.W.A.R. Committee), supported by Mr. J. Clarricoats (Honorary Secretary, R.S.G.B.). The opening meeting held on September 14 at the Admiralty was attended by about 30 applicants, whilst about ten others were present at the second meeting held on the following evening.

The following decisions were reached:-

- (1) Procedure exercises will be transmitted from the Admiralty via Cleethorpes GYB on Monday, Wednesday and Friday evenings at 22.30 G.M.T. A wave of 3,325.9 metres (90.2 kc.) will be used.
- (2) Facilities for Morse practice will be available on Tuesday and Thursday evenings at the Admiralty.

It is anticipated that the official Handbook will be available early in October. This will contain the enrolment form and regulations covering all matters relating to the Reserve. Immediately the enrolment forms are returned to the Admiralty, steps will be taken to issue Reserve call signs to members possessing transmitting licences. The London District will then be divided up into units composed of members living in the same locality.

Regular schedules will be arranged and returns made to the Admiralty.

In connection with the provinces, arrangements are in hand to commence operations in Birmingham and Bristol during October and November, whilst other centres will be organised as soon as suitable personnel is found to carry on the work.

The Scottish Districts will also commence work in the near future. Mr. Wyllie, G5YG (Honorary Scottish Manager, R.S.G.B.), was in London during September, and was able to put forward suggestions to the Admiralty authorities which should permit of an early start being made in the Glasgow and Edinburgh districts.

Messrs. Morton (Gi5MO) and T. P. Allen (Gi6YW) are also in touch with the Admiralty, and, as a result, strong support is expected from Northern Ireland.

Arrangements have been made for further meetings of London members to take place at the Admiralty at 7 p.m. on Wednesdays, October 12 and November 23, when a cordial welcome will be extended to all R.S.G.B. members who have not yet signified their intention to join the Reserve.

All correspondence in connection with the R.N.W.A.R. should, in future, be addressed to: Commander L. Saunders, D.S.D., Admiralty,

Whitehall, S.W.1.

Council have pleasure in announcing that Mr. Weber (G6QW) has decided to carry on as County Representative for Gloucester. His address is: 2, Balmoral Road, St. Andrews, Bristol.

* * *

With reference to the Rules for 1932-1933 tests, Council have decided that the Channel Isles and the Isle of Man shall be considered on the same basis as other countries in the British Isles outside England. This applies to the 1.7 and 3.5 mc. contest.

Contest Points.

Points for contacts with the Channel Islands and the Isle of Man will be counted as shown below: Between

C = 4 71 S = 4.44		
England and the Channel Islands		2
England and the Isle of Man		2
Scotland and the Channel Islands		2
Scotland and the Isle of Man		1
Wales and the Channel Islands	***	2
Wales and the Isle of Man		1
Northern Ireland and the Channel Isl		2
Northern Ireland and the Isle of Man		1
I.F.S. and the Channel Islands		2
I.F.S. and the Isle of Man		1
Channel Islands and the Isle of Man		2
hese refer to the 1.7 and 3.5 mc. contes	ts onl	y.

Points for contacts with Asia in the 28 mc. test will count 7 points.

Reception Tests.

Further tests have been arranged, and dates and periods are given below. In addition to the N.V.I.R. (Holland), D.A.S.D. (Germany) and U.S.K.A. (Switzerland) are now sponsoring these tests. Fresh participants will find detailed information relating to the procedure to be followed on referring to the May issue of the BULLETIN. Logs should be sent to T. A. St. Johnston, 28, Douglas Road, Chingford, E.4, by November 24. The log budget is then circulated to all participants.

PE	RIODS AND BANDS.	SERIES No. 1	1.
Test	Date.	Period.	Band.
Letter.	1932.	G.M.T.	Mc.
A	Sat., Oct. 29	22.00-23.00	14
В	Sun., Oct. 30	07.00-08.00	28
C	Sun., Oct. 30	08.30-09.30	3.5
D	Sun., Oct. 30	10.00-11.00	1.7
E	Wed., Nov. 2	20.00-21.00	7
F	Sun., Nov. 6	07.00-08.00	14
G	Sun., Nov. 6	08.30-09.30	7
H	Sun., Nov. 6	19.00-20.00	3.5
I	Fri., Nov. 9	22.00-23.00	28
J	Sun., Nov. 13	09.00-10.00	1.7
K	Sun., Nov. 13	11.00-12.00	3.5
L	Sun., Nov. 13	22.00-23.00	7
M	Thur., Nov. 17	22.30-23.30	1.7
N	Sun., Nov. 20	11.00-12.00	28
0	Sun., Nov. 20	15.00-16.00	14

W.B.E. CERTIFICATES.

The following additions to the list published in our last issue should be made:—

1931. G. Edwards, G2UX.

1932. Capt. G. C. Wilmot, ZD2A.

Madrid.

We have much pleasure in announcing that Mr. Arthur Watts (G6UN), Acting Vice-President, was present at the Madrid Conference as a member of the I.A.R.U. Delegation during the last two weeks in September. He reports very favourably upon the sympathetic interest and kindnesses shown to him by the various British, Colonial and foreign delegates, and, whilst it is too early to publish details of the decisions reached, we trust that the way has been paved by Mr. Watts and Mr. Warner for a successful amateur issuance out of the Convention. Mr. Watts will give his report in the next issue of the BULLETIN; meanwhile, we believe we are voicing the views of every member of the Society when we say, "Thank you, OM, for all you have done."

W.A.C. Certificates.

We are advised by the A.R.R.L. that the Island of Barbadoes is considered as being attached to the South American Continent, whilst the Panama Canal Zone is in the North American Continent.

Several members applying for W.A.C. certificates have been puzzled on these two points, and we hope the above ruling will clear their difficulties.

APPARATUS REVIEWED.

Messrs. Ferranti, Ltd., send us particulars of their A.C. mains units. These are made in all sizes from the type E2 giving 120 volts, 15 m/a. suitable for three-valve sets, up to the E4, giving 240 volts, 70 m/a., and a 5-amp. and 1-amp. circuits for heaters and output valves, for large sets, and superheterodyne receivers. As usual with Messrs. Ferranti's leaflets, full technical data and information is given regarding the choice of unit and the application to the set for which it is intended. Another leaflet from the same firm deals with the inductor type of loud speaker made by them, and the various styles of mounting in which it can be obtained.

Exide Batteries.

Exide accumulators are so well known to all radio amateurs that reference to their good qualities appears almost superfluous. Not only are they much used for filament heating and also H.T. in sets, but they are of course much in evidence in every field where accumulators are required. One of the most recent installations is that of the radio transmitting station of the Automobile Association at Heston Airport. This station specialises upon weather forecasts which are given nine times daily,, between the hours of 9.30 a.m. and 6.30 p.m. The officer in charge of this station (Mr. J. Herbert) invites reports from listeners upon the transmissions and any suggestions regarding same.

Messrs. Lectro-Linx, Ltd., send us a very complete illustrated set of pamphlets showing the many gadgets they manufacture of interest to radio workers. These comprise their well known plugs, terminals and socket connections. As so many sets fail in efficiency due to poor or faulty connections, the use of these accessories will make an excellent cure for these ills and remove that element of doubt which often arises regarding connections when looking for a fault.

QRA Section.

Manager: M. W. PILPEL (G6PP).

NEW QRA's.

G2AM.—A. PERL, 18, York Road, Hove, Sussex.

G2GO.—L. B. Flagg, La Seconda, Bloomsbury Lane, Timperley, Cheshire.

G2JA.—A. D. Stenning, 48, Woodfield Avenue, North Wembley, Middlesex.

G2MG.—C. C. MILLAR, "Arndene," Bearsden, near Glasgow.

G2QW.—F. H. Walters, 43, Westcombe Avenue, West Croydon, Surrey.

G2QZ.—J. R. MILLER, 11, Forty Avenue, Wembley, Middlesex.

G2VV.—J. N. Roe, 28, Wellington Road, London, W.5.

G2XS.—H. W. Sadler, "Redways," Wootton Road, Gaywood, King's Lynn.

G5BH.—A. V. Simpson, 27, Milnrow Road, Roch-dale, Lancs.

G5BR.—G. L. Brownson, 13, Redbourne Avenue, Church End, London, N.3.

G5IU.—L. W. Humphreys, 23, Blandford Road, St. Albans, Herts.

G5LC.—L. Cooper, 3, Summer Avenue, Summer Gardens, East Molesey, Surrey.

G5OK.—W. J. COYLE, 106, Tankerville Drive, Leigh-on-Sea, Essex.

G50Q.—E. F. Baker, "Hilldene," Wilman Road, Tunbridge Wells, Kent.

G5SG.—E. A. Springett, 21, St. George's Square, London, N.W.1.

G5TX.-Portable station of G5TZ.

G5VU.—S. W. P. HENTON, 127, Eltham Road, West Bridgford, Notts.

G5YU.—C. F. SCRUBY, 15, Hatherley Road, Sidcup, Kent.

G5ZQ.—W. G. P. BRIGSTOCKE, 6, The Terrace, Ryde, Isle of Wight.

G6AI.—39, Swinburne Avenue, Broadstairs, Kent. G6GQ.—D. Robertson, Tighnabruaich, Killin, Perthshire, Scotland.

G6HD.—T. L. HERDMAN, The Grove, Kingswinford, Dudley, Worcestershire.

G6IC.—J. H. HARGREAVES, 26, Kingsgate, Bridlington, Yorkshire.

G6ID.—Sergeant D. A. MACDONNELL, The Drill Hall, 38, Mason Street, Edge Hill, Liverpool.

G6IH.—J. C. G. Kealy, 5, St. John's, Bedford Road, Kempston, Bedford.

G6IX.—Portable station of G6IW.

G6JI.—J. W. Ismay, 6, Douglas Avenue, Walthamstow, London, E.17.

G6KQ.—J. B. Wormall, "Sandycroft," St. Albans Road, Bulwell, Notts.

G6KV.—A. R. Dellbridge, "Normanhurst,"
High Road, Laindon, Essex.

G6MF.—M. H. Munroe, 1, Paisley Avenue, Edinburgh.

G6ML.—L. E. G. GROSVENOR, 1, The Crescent, Walsall, Staffordshire.

G6NA.—H. C. Spencer, 1, Shepherd's Hill, Stoughton, Guildford, Surrey.

G6ND.—R. MILLER, The Boards, Denny, Stirling-shire, Scotland.

G6NJ.—A. E. Dyson, Raggan House, Branstone Road, Burton-on-Trent, Staffs. G6QU.—A. EATON, 68, Heywood Road, Prestwich, Manchester.

G6RL.—R. F. LOOMES, 14, Nursery Close, Wickham Road, Shirley, Croydon.

G6WQ.—A. C. Webb, 10, Aberdour Road, Good-mayes, Essex.

G6YG.—Portable station of G5YG.

2ACR.—J. A. S. Wright, 9, Eastbank Terrace, Appleby Road, Kendal.

2AOB.—G. W. A. DUMMER, 77, Elms Road, London, S.W.4.

2AOY.—L. C. Heddon, 4, Cawley Road, London, S.E.:9.

2AQW.—P. M. CARMENT, 36, Westholm, Golders Green, London, N.W.11.

2BKT.—W. D. GILMOUR, 8, Rockmount Road, London, S.E.19.

2BOM.—E. H. TREVERTON, 37, Sefton Park Road, Ashley Down, Bristol.

EI2F.—G. REYNOLDS, 7, Charlemont Mall, Portobello, Dublin, I.F.S.

The following are cancelled: G2AV, G2XW, G5IV, 2ABC, 2ABT, 2AGT, 2AQU, 2ATK, 2AVY, 2BPH, 2BRR, 2BUS, 2BZZ.

New Members.

HOME CORPORATES.

L. FRYER (G2FR), 2, Murray Villas, Heugh Road, Portpatrick, Wigtownshire.

F. F. Warner (G2RA), 220, Folly Lane, Swinton, Lanes.
E. W. V. Butcher (G5AN), 16, Manor Gardens, Purley, Surrey.

H. Field (G5IR), 62, Chertsey Road, Woking, Surrey.
F. E. Rogers (G6OA), 16, Silversea Drive, Westcliff-on-Sea.
A. H. Bruce (2AXA), 15, Oldhill Street, London, N.16.

W. E. Page (2BOU), Garth House, 17, Green Lane, Letchworth, Herts.

B. J. Brown (2BYT), The Wick, Finghing Loe, near Colchester, Essex.

G. W. Wilson (BRS939), Castlesleads, Dalkeith Park, Dalkeith, L. Greck (BRS940), 27, Harden Place, Edinburgh.

J. Wilson (BRS941), 12, Edingley Avenue, Sherwood, Nottingham.

W. Sharkey (BRS942), 27, Rossville Street, Londonderry. E. H. Clarke (BRS943 ex A), "Woodstock," Hawkinge, Folkestone.

F. G. R. Palmer (BRS944), 4, Valebrooke Avenue, Sunderland, A. W. Wells (BRS945), 74, Queen Anne Avenue, Bromley, Kent. G. S. Dee (BRS946), "Dimbula," Eversley Crescent, Osterley Park.

J. P. Styles (BRS947), 2, Spring Terrace, Liss, Hants.
J. Haigh (BRS948), 2, Greenock Terrace, Armley, Leeds.
D. C. Phillips (BRS949), 3, Lime Walk, Willow Bank, Denham,

Bucks.
C. Phillips (BRS950), c/o Imperial and International Commis-

sioners, Electra House, Moorgate, E.C.4.

F. G. Kay (BRS951), 62, Sydney Street, Chelsea, S.W.3.

H. K. Mawer (BRS952), 44, Moorland Road, Weston-super-Mare, Somerset.

D. A. Feldman (BRS953), 30, Ashworth Road, Maida Vale, W.9. B.ff Offley-Shore (BRS954), 16, George Road, Edgbaston, Birmingham.

G. A. Spencer (BRS955), 47, Newry Road, St. Margarets-on-Thames, East Twickenham, Middlesex.

E. S. Wilson (BRS956), 18, Argyle Road, London, N.12.
S. E. Smith (BRS957), 76, Gordon Avenue, St. Margarets, Middlesex.

R. T. Ward (BRS958), 3, Highfield, Exmouth, Devon.
T. W. Spencer (BRS959), 122, Station Street, Burton-on-Trent, Staffs.

F. C. DAY (BRS960), 3, Houblon Road, Richmond, Surrey. E. T. Leighton Hare (BRS961), 17, Park Road, Southborough,

Tunbridge Wells.

S. Lawton (BRS962), 1, Ford Street, Dukinfield, Cheshire.

J. B. Inglis (BRS963), c/o Davie, 51, Marchmont Road, Edinburgh 10.
A. Maxwell (BRS964), 1, Mountjoy Terrace, Musselburgh,

Scotland.

H. W. Miles (BRS965), 35a. Nightingale Lane, Bromley, Kent.

H. W. Miles (BRS965), 35a, Nightingale Lane, Bromley, Kent. E. W. Morris (BRS966), 28, Blackburn Avenue, Bridlington.

K. Panton (BRS967), 92, Victoria Avenue, Hull.
H. Hamey (BRS968), 8, Queen Square, Luton, Beds.
A. E. Davis (BRS969), 110, Cob Lane, Bournville, Birmingham.

F. J. Camm (BRS970), 8-11, Southampton Street, Strand, W.C.2. J. H. Collins (BRS971), 3, Tyisaf Road, Ystrad, Rhondda. C. E. Clarke (BRS972), 24a, Hill View Gardens, Finchley Lane,

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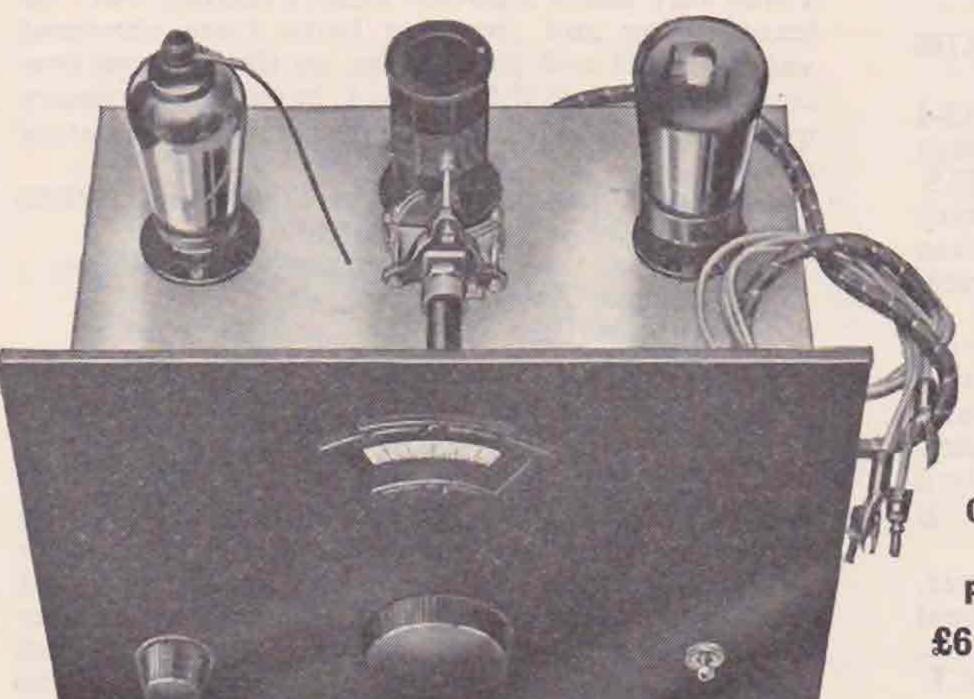
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G. S. B. Horrocks (VK6GS), Harvey, Western Australia. J. B. Leibbrandt (VQ4CRK), Box 440, Nairobi, Kenya.

Mg. Hla Aung (VU2AC), 103, Pagoda Road, Rangoon, Burma. T. P. Gateley (VU2FW), Electrical Engineer, C.P.W.D., New Delhi, India.

Julio Prieto (X1AA), Avel Uno 43, Tacubaya, D.F., Mexico. L. M. Mellars (ZL1AR), 20, Rangitoto Avenue, Remuera, Auckland, N.Z.

C. Wilson (BERS132), District Judge's Chamber, Police Court, Singapore, S.S.

B. D. GARNIER (BERS133), Kataboola Estate, Kotmale, Ceylon. E. A. HASKELL (BERS134), H.M.S. "Royal Sovereign," c/o G.P.O., London,

J. M. Bradley (BERS135), Mackinnon, Mackenzie & Co., Calcutta. G. Henderson (BERS136), Gold Coast Railways, Sekondi, West Africa.

D. Badley (BERS137), c/o S. & T.C., King's African Rifles, Kitale.

J. C. Osborn (BERS138), Post Office, Hazelgrove, N.S.W., Australia,

H. B. Ganni (BERS139), 97, Lewis Street, Rangoon, Burma.

E. IRVING (BERS140), 915 Eighth Avenue, Antigo, Wisconsin, U.S.A.

R. W. W. SINDLE (BERS141), Dunally, Galaha, Ceylon. J. Fleurbaey (FRS20), Kunsts'r 127, St. Amandsberg (Ghent).

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.

B.E.R.U. Contest.

The Hon. Editor, T. & R. BULLETIN.

Dear Sir,—Just a few comments re the last B.E.R.U. Contest:

I was interested to learn that Mr. De Cure (VK3WL) has never been able to hear the West Indies; this just confirms my side of the question. I think you will be surprised to know that since I have been on the air I have never heard any stations in Asia or Australasia and only on one occasion have I heard one in Africa, this being Algiers (CN). Also, I have never received any reports from Africa or Australasia and only twice from Asia. The details of these two reports are submitted herewith :-

Stn. Call. QRA Date. Signal Report.

AR8RMF Deir-ez-Zor, ...

6.9.31 QSA 3 QRKR6 Syrie BERS25 Khormaksar,

British Arabia 14.9.31 ,, 3 ,, R3-4 Another interesting phenomenon is that although no difficulty is experienced in working all the U.S. districts, except the sixth and fifth, it is a very difficult matter indeed to work any of the Canadian stations, and although I have heard "VO" several

times I have been unsuccessful in a QSO. I might mention here that, due to the severe QRM from thousands of W stations, coupled with unequalled QRN which prevails in these parts almost all the year round, my station is worked solely in the 14 m.c. amateur band, although it is only a matter of minutes to change over to 7 m.c. if

required. Finally, during the first four months of the year, the band is almost completely dead; an occasional European is heard about R2/3 around 1200 G.M.T., and a few U.S. at R4/5 about 18 to 2000 G.M.T. Then, towards the end of April, things begin to look up; Europeans can be heard at times R5 at 2000 G.M.T., but with heavy QSC and not consistently. By the end of May, however, conditions are positively improved to Europe, the G stations coming over at steady R5/8 QSA 5 (except for QRM). This continues throughout the summer right up to the middle of October, and then quite rapidly all European signals start failing.

You can see therefore, that, as Zone I is our most reliable Zone, if the contest is held in February, it is only with great difficulty that any QSO's can be

made.

Of course, I expect each zone thinks they are the worst off, but really, it is rather hopeless trying to compete against zones which can QSO so many

different zones with such apparent ease!

In closing, I wish to thank you and all at headquarters for the time, trouble, and energy expended in organising these contests, which I am sure are enjoyed by all who take part and do so much to stimulate interest in amateur activity throughout our vast Empire.

THOS. A. ARCHER Op. VP2YB (ex V1YB).

Ham Spirit.

To the Editor of T. & R. BULLETIN.

Dear Sir, -I cannot imagine why 2BZZ suggests that there exists no ham spirit for the BRS man. He surely cannot think that ham spirit is shown by the mere exchange of two QSL cards. I wonder if he knows what ham spirit is? True, when a BRS sends a transmitter a report, the OM should have the courtesy to answer it in the usual way; but one receives so many useless reports, worded as, for instance, "Ur fone recd QSA 5, R7, fb quality. PSE QSL."

No, OM, ham spirit is something which does not distinguish between the transmitter and the mere

BRS man.

I have met many hams in Belgium, France, Germany and Great Britain, and, although they knew that I was not a transmitter, they went out of their way to show me that they were blessed with a good dose of ham spirit. I operated a station in Cologne for 12 months, and, as regards ham radio, they were the happiest I have ever spent. I was very much a novice when I started, but the transmitting and receiving hams there showered various hints and tips on me, so that I have now convinced the P.M.G. that I have the necessary qualifications to work TX gear with a radiating aerial.

Perhaps I had a good deal of luck as a BRS man-I doubt it !- Yours faithfully,

IVAN PERLSTEIN (ex BERS95).

52, Königin Augustastrasse, Berlin, W.10. 22.10.32.

To the B.R.S.

To the Editor, T. & R. BULLETIN.

Dear Sir, -With reference to 2BZZ's letter in September "Bull." complaining that "the amateur outside the British Isles does not apparently want the co-operation of the B.R.S., and has neither the courtesy to acknowledge a report," I feel prompted to relate my experience as one of the oldest BR members. During the last couple of years or so, my listening has been confined to the 28 mc. band, and I must say the acknowledgments

received to reports sent on signals on that frequency have been practically 100 per cent. Covering the whole period from 1925 to the present day, I have kept a careful record, and of 1,039 reports sent to stations situated all over the world, 650 QSL cards have been received, and in many cases accompanied by appreciative letters, photos of stations, etc.

One must bear in mind that BR stations are now very numerous and increasing daily, and I imagine that the majority of them are listening on the 7 and 14 mc. bands. It is my opinion that amateur transmitters abroad are possibly being inundated with reports from these stations nowadays. Whether the reports are useful to them or not, they probably find that it is more than they can reasonably afford, both in time and money, to acknowledge them all. I do not for one moment think that it is want of courtesy on their part.

If BR stations would confine their reports more to stations they hear working on the less-frequented bands—and then only report in cases where they feel satisfied it is likely to be of some service to the transmitting station—I feel certain the acknowledgments received would reach a higher percentage, and, in any case, the BR stations would have the satisfaction of knowing that they were doing more useful work, which is really the thing that matters. -Yours faithfully,

T. A. ISERBYT (BRS25).

STRAY.

VU2FX is now QRT, but wishes to inform all concerned that he is slowly getting rid of all Contest OSL cards.

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Eclipse of the Sun (Contd. from page 111).

us have a report as to what actually happened, as this expedition hoped to establish some theory about the formation of the Heaviside Layer by the

neutral particle radiation of the sun.)

G5VQ, observing over several days, found that 14 mc. was unaffected, but that 7 mc. was seemingly influenced, in that south European stations were very loud indeed, but both bands became dead by about 22.00.

G6KU observed 1.7 mc. band, and, though he gives a very full report, including WX, temperature variation, static, etc., can find no difference from normal.

G6GQ observed HAT, and also noted WX, etc. He gives a very carefully prepared graph (nearly 8 ft. long) giving readings in seconds of time, which, together with the report, shows that, although fast and slow period fades were noted, nothing unusual can be reported on.

G6CT found 14 mc. dead before, during and

after the éclipse.

G6ML observed XGR, and noted that signals on the day of the eclipse were R4 against the usual R7 at 19.00.

BRS589 noted eastern commercials maintained good strength, but that commercials around 10 mc. had pronounced hollowness between 18.30-20.30.

G6RP observed FLJ (9,230 kc.), XDA (14,635 kc.), WKO, PLR, JNA, YVO (16,440) and VIB, and sends a carefully prepared report. XDA, JNA and YVO showed the same type of character, dropping strength from about 17.50 and again rising in strength by about 21.20. WKO remained about constant, as did PLR. VIB (17,720 kc.) was heard R5 at 21.02 on the day of the eclipse, but had not been heard previously or since.

G6MB and G6ML also observed FLJ (see G6RP, above), and, although signal strengths vary evenly in the three reports, the reports show a rise in strength between 18.10 and 18.40, with maximum at 19.40, and then a falling off, till at 21.40 onwards none could identify FLJ. G6MB noted (at 19.40), when FLJ had attained maximum strength, that the station had developed hollowness, with slight

echo.

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NOTES and NEWS



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). (West Riding, 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.) 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), "Donbar," Birchy Barton Road, Exeter, Devon.

DISTRICT 7 (Southern). (Berkshire, Hampshire, Surrey.) Mr. E. A. Deadman, 63a, Kingston Road, New Malden, Surrey.

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 1 (North-Western).

These being the first Notes since the Convention, I should like to remind members in Lancashire to take notice of the new C.R.'s address, and to forward to him the usual monthly report of activities, to that he receives them on or before the 20th of the month.

The field day turned out to be a very great success from many points of view, although the two parties did not make contact with each other. It is fully reported elsewhere.

Since the last-mentioned event several members have decided to get going on 56 mc., and I should like as many members as possible, especially BRS men, to have a shot at this band, since it is our intention to endeavour to arrange a chain of stations on this band as far round the district as possible, so that everyone can be kept up to date with news, etc., and possibly reduce the number of letters written by the officials of the district.

From Cheshire I get the encouraging news that more activity is taking place, and quite a number of stations have reported this month. The band most used is the 14 mc., and 56 mc. is slowly gaining ground. Two members have left us for London,

DISTRICT 10 (South Wales and Monmouth). (Monmouth, Glamorgan, Breconshire, Carmarthen, Cardigan,

Pembroke.) MR. A. J. E. FORSYTH (G6FO), "St. Aubyns," Gold Tors, 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. DISTRICT 16 (South-Eastern). (Kent and Sussex).

Mr. H. A. M. Whyte (G6WY), Killiney, Worsley Bridge Road, Beckenham, Kent. DISTRICT 17 (Mid-East).

(Rutland, Lincoln and E. Riding.) Mr. A. E. Livesey (G6L1), Stourton Hall, Horncastle, Lincs. 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.

G5BR and 2AOB; best of luck, OM's. The monthly meetings in Manchester and Liverpool are still being held on the first and third Wednesdays, and we should be very pleased to see more members and friends present. G6JN is giving the next talk at Manchester, so please do your best to be there and support your C.R.!

DISTRICT 2 (North-Eastern).

Sheffield.—Monthly meetings have started again. Fourteen members turned up (keep it up, OM's). Every third Tuesday at 7 p.m., at the Angel Hotel, Sheffield. There is very little to report again this time. 2BXW is busy with Morse, as he has great expectationsi for a full licence in the near future. G2AW is running a weekly Morse practice, otherwise has nothing special to report. 2BAF finds push-pull very FB. I hope there is more to report next month.

DISTRICT 3 (West Midlands).

Congratulations to 2ATK, 2BUS and BRS858 on obtaining their full tickets: they are now G6ML, G6NI and G6HD. G5YP, of Nottingham, is welcomed to the County of Staffs.

On Saturday, September 17, a party of 54 from this district went to Hillmorton, Rugby, to visit the G.P.O. Radio Station. We were joined there by eleven members from London. As with amateurs, changes seem to be the order of the day with the Post Office engineers. Some of our party who had been there during the past year found many improvements and alterations, and we were told that further alterations were contemplated, but owing to the "Financial Axe" having descended they were in abeyance. Even the very ORO member present had to admit he was QRP when he saw 730 amps. in an antenna system. G6NF was very interested in the various frequencies employed, and we were all impressed with the methods of maintaining constant frequencies and the general station layout. On leaving there, 53 of us went to Rugby for tea. G2ZW thanked G2KB, BRS77 and G5VM for arranging the visit, teas, etc., and G6WN for organising the visit of his party from London. A large crowd then went to see G2KB's station; he is to be congratulated on his compact TX, and great interest was shown in his 56 mc. TX and RX. At 8.20 p.m. a move towards the railway station was suggested as the London gang had to catch the 9 p.m. train, and we then found that 32 people had difficulty in getting into five cars, when someone thought the DR's car would hold seven in the back, four in the front and one on the running board, and that was how we went to the station. One of the party got lost, but luckily he was found before the train left. So ended a most happy and successful outing, and my thanks are extended to all who attended, and particularly to those providing cars for transporting the gang.

Reports have been received from G2WN, 2BTW, BRS780, G5BJ, G5ML, G6XQ, G6KI, G5TL, G2PD, G5NI, G5YY, G5UW, G6DL, G2ZW.

DISTRICT 4 (East-Midlands).

Nottinghamshire.—The Nottingham monthly meetings are now resumed again and are held on the second Saturday in each month, time and place as usual. The county loses two members—G2XS to Norfolk and G5YP to Staffs. Sorry to lose you, OM's. New licences in and around Nottingham are held by G6CD, G6DS, G6FP, G6KX and G6KQ. Congratulations to G5VU now in Nottingham complete with OW! The C.R. holds a crystal register for the county and members are urged to consult it before purchasing a new crystal in order to avoid local QRM.—G2IO, C.R.

Leicestershire.—I have only received reports from three members this month; several others are active but have not reported. In future only those reporting will be mentioned in these notes. G6GF has at last received his 50-watt permit after a long wait and has worked the following countries, using that input to a Western Electric type 211 valve :-LU, VP, VE and several W's. Has been on sked with VP2MR, who is QRP again for a short time owing to a burn out in his generator. G5VH has received a report on his 7 mc. sigs. giving him R7 in VK, his input being 71 watts. Is working on 14 mc., using CO-TPTG and has worked VE1, SU, W1 and W2, using 10 watts input. BRS884 is active on 7 and 14 mc., and sent in a very FB report of his observations during the eclipse. G6 IO has spent most of the month testing aerials, and at the time of writing is testing a 67-ft. Windom on 7 mc., and has received good reports from most

of Europe, the TX being CO-FD-PA with an input of 6-10 watts. During the evening of the eclipse four stations made observations on the 7 and 14 mc. bands, but noticed no change in conditions between 18.00 and 23.00 B.S.T., the 14 mc. band being dead the whole period.—G6JQ, C.R.

DISTRICT 5 (Western).

I am glad to report, and I know the membership will be pleased to hear, that Mr. Weber (G6QW) has now intimated his willingness to continue as C.R. for Gloucestershire. We look forward to another successful year. Another successful field day was held on September 11, but although many got quite near the hidden transmitter on Minchinhampton Common, only two actually discovered it hidden in a cave. The location can be judged from the fact that the aerial used was a 100-ft. vertical. The two successful competitors came from Gloucester and Birmingham. Tea was served to 50 at the Hill Grove Guest House, Woodchester, after, and it was proposed, and unanimously agreed, to hold an additional field day on Sunday, October 16. The Wiltshire letter budget has proved to be so good and so popular that several contributors have joined in from other counties and districts, and with the forthcoming activity on 56 mc., it should prove even more interesting than last year. I hope that several new two-letter call signs will soon be heard from Oxfordshire, and I look forward to a good report from their C.R. each month. The date of our District Conventionette was announced last month; make a careful note of it so that next time we shall see over 100 present. The new wireless year has started, and I wish everybody good DX and the best of luck.

DISTRICT 6 (South-Western).

Reports are again rather few and far between this month, but a new letter budget has been started, which it is hoped will produce some really good results. 5WY is using the Ultraudion circuit and reports some excellent contacts on very low power. He has also been reported from VQ4. He will shortly be back on CC, using a PT4 as CO, DO24 and T6ID. 5QS is at the moment up on 7 mc., and is carrying out some experiments there of which more anon. 6RP is on ultra QRP, and some good work has been done, although conditions appear to have fallen off lately. 5SY has nearly WAC again this month, and has several times worked W6 during the early evening. 5QA has been rather busy on business matters, but has managed to QSO LU, CX, PY, and of course the usual crowd of W's and VE's. 6XB, of Redruth, has now got thoroughly going again, and certainly seems to get the DX when there is any going. BRS836 reports conditions as not so good on the 14 mc. band. What about trying 56 mc., OM? Will all members please note that the letter budget mentioned above will only be circulated to those who contribute regularly and have done so to these reports.

DISTRICT 7 (Southern).

District No. 7 wishes to take this opportunity of thanking Mr. Drudge Coates (G2DC), its D.R., for the year just past, for the excellent work that he has put in on its behalf. G2DC has been an indefatigable worker on the district's behalf, and we all hope that his overseas stretch may be long deferred so that he may remain in the district with us.

Two events of outstanding interest have been held this month. On September 4 the monthly area meeting was held at G2DC. After meeting at 2 p.m. the gathering split up into car parties to travel to different parts of Hampshire and Berkshire to listen for the 56 mc. transmitter operated at G6GS, of Guildford. Excellent results were obtained by all parties, and a new district 56 mc. record was set up by G6GZ, who heard the transmitter at a distance of 20 miles air line. After a very successful afternoon, the meeting again gathered at Farnborough, and were entertained to tea by Mrs. Drudge Coates, the usual "ragchew" following in the evening. On the way home several of the Surrey members paid station visits to G6NK and G5LC.

On Sunday, September 18, a party of ten visited the aircraft radio station at Heston, G6VP, G5CV, G6JP, G6WN, and the famous G6JP-G6YK 56 mc. aerial on top of the Osram valve works, which necessitated a climb of 120 steps, but was well worth it. We thank all the hams for their hospitality, especially G5CV, who entertained us to tea, and to G6WN who provided the necessary before the wet and dreary journey home. Those present on this outing were G2MR, G2DZ, G2YD, G2BM, G2DC, G5MA, G6GZ, G2BQX, G6NK and G2NH.

Please don't forget that the area holds a monthly meeting on the first Sunday of each month at different QRA's. Drop a card to your C.R. for further information.

Also, G6GZ runs a combined district letter budget, which is open to any society member who cares to contribute. Letters are required by the 15th of the month, and the writer can assure everybody that No. 7's is a most interesting budget from a technical viewpoint and is not merely a DX chronicle.

DISTRICT 9 (Home Counties).

Nothing of any great importance to comment upon this month. A large number of reports are to hand, including the following:—G2AF, G2DQ, G2LZ, G2WG, G2HJ, G2QJ, G5VS, G5VT, G5VQ, G6CT, G6IF, G6KT, G6KV, G6QO. Crystal grinding with G2AF is in full swing and several, including G5QV, are trimming things up for the R.N.W.A.R. two-wave transmissions. These will give added zest to our hobby and make it particularly interesting. New permits have been granted and several requests have been received for 3.5 mc. band. The OM of the sea G6WI has now berthed his ML in winter quarters and will probably be QSO again shortly. Reports from each C.R. should reach me by 20th. Please note.

DISTRICT 10 (South Wales and Monmouth.)

With the approach of the season, activity in the district is re-commencing as the inertia induced by the summer wears off, and it is hoped that, by the time this appears, a meeting will have been held in Cardiff and the letter budget put in circulation once more.

I should say that the non-appearance of these notes and the budget for the last two months has been due to the fact that most members seemed either to be away, rebuilding, or simply digging the garden, so that I took the opportunity of saving some space in the BULLETIN.

The district was represented at Convention by 2AKG, 2ANN, 2BJH, 2BRA, BRS727, BRS766 and your D.R. It was an excellent show and reflects great credit on HQ. In this connection, I should like to draw the attention of all active and serious members, whether transmitting or otherwise, to the R.N.W.A.R. scheme, full details of which have been published in the BULLETIN. At the same time, it should be understood that it is of no use going bald-headed for it, as very definite obligations and responsibilities rest upon those who join. The scheme can only be a success if members enrol with the full intention of backing it. Failure due to slackness will be a serious blow to the prestige of the Society in official quarters, more especially as the authorities are particularly keen to make the whole undertaking both interesting and successful.

I am glad to report that ex-2ANN, of Tredegar, will be going on the air in Cardiff with a two-letter call. He is the first transmitter-member of the Society in that city.

I should also like to welcome as new members in this district 2BJH and BRS907, while with great regret I have to record that G5LP, of Ebbw Vale, has found it necessary, for personal reasons, to give up amateur radio altogether. I am sure that those members who know him will realise that we are losing one of our most useful transmitters and a very good ham.

The representation of the district has been altered slightly in that the Merthyr area is now under the wing of G5FI, of Cefn Coed, the C.R. for Breconshire.

I should be glad if all members will report regularly from now on to their respective C.R.s, a full list of whom appears on p. 66 of the Bulletin for August.

DISTRICT 12 (London North).

The 56 m.c. field day held at Totteridge was quite a success. Contact was made with G6YK and G5SA, using an input of between 4 and 5 watts,; the sigs. were also heard by G6UT. There were about 11 members present, and the weather kept fine after raining up till 10.15 a.m. Arrangements are in hand for holding monthly meetings during the coming winter and promise to be better than previous years. I hope to be able to publish dates in a future issue.

The district welcomes a new transmitter, G6YH.

DISTRICT 14 (London East).

By the courtesy of Imperial Communications Co., Ltd. (Marconi Co.), District 14 were able to organise a visit for the benefit of Convention visitors to the well-known "Ongar Radio" station at North Weald, and about 30 members were transported in cars kindly lent for the occasion. All were greatly impressed by the completeness of the self-contained plant, the general layout and the high-class quality of the gear. As G6TX remarked, "H.F. was being churned out in hundreds of amperes at radio frequency by oil and water-cooled bottles and poured down drain pipes to feed the antennæ systems." All thanks are due to the three engineers detailed to conduct the parties. Our last meeting was held at the QRA of G5GZ at Ilford, and an interesting informal discussion took place, the subject being R.N.W.A.R. Congratulations to 2AOA, ex BRS817, who now holds an A.A. licence. Members of the District took part in the recent 56 mc. London Districts Tests, the station being erected on the top of the "King's Oak" Hotel, at High Beech. Details of the tests will be found elsewhere. The next District meeting will be held at 28, Douglas Road, Chingford, on Tuesday evening, October 25.

DISTRICT 15 (London West and Middlesex).

The last monthly meeting held at G2BY was not very well attended, but this was due in the main to the miserable evening, and it was no encouragement to anyone to travel. However, I was pleased

to see the visitors from Surrey.

Saturday evening, October 22, has been fixed for the next, and this will be held at my address. I was very pleased to see two new members at the last one, and hope we shall see some more at the next. If you hear of any, will you invite them along?

Seven reports have been received this month, and it has been decided to carry on with the letter budget as in the past. To this end, please forward

me your letters by the 20th of the month.

I was very pleased to find the Surrey people spending a Sunday touring the area, and hope we shall soon be able to visit them in their stations.

Most members seem to have found conditions on the ether rather erratic, but even so DX has been worked.

Reports from G2BY, G5CV, G5PQ, G6RS, G6WN and 2BXM.

DISTRICT 16 (South-Eastern.)

G2IG reports that 56 mc. activity is very strong throughout Kent, and the following stations are active on this frequency: -G2IG, G6XO, G5OQ, G2JH, 2BAV, G5IB, 2BRT, all apparently with success. G500 heard G2LZ on 56 mc., a distance of about 40 miles, and is wondering whether it was some kind of super-heterodyne reception of 1.75 mc.

2BSV is now on a cruise in the Mediterranean with a portable RX and is now BERS116. All stations desiring reports should write to E. Vaughan,

H.M.S. Shropshire, c/o G.P.O., London.

G5 JZ complains that no stations in Sussex have reported, and therefore I am appealing to Sussex hams not to be so slack and give some support to your new C.R., who is doing his best. Tell him you are active, and try and stir some interest up in your Society. G5JZ is very anxious to arrange a 56 mc. field day, in Sussex, and I think that it is just the place, there being so many downs about.

DISTRICT 17 (East Riding of Yorks.)

An unusually successful field day was held on September 18, near Bridlington. The portable transmitter G6IC, manned by G5VO, G6OO, 2BJG and BRS896, operating at 3.5 mc., was hunted by cars containing G2QO, G5KD, G2KM, G5FV, 2ARM, BRS738 and BRS859.

One party located the transmitter in 30 minutes with four observations, the other in 60 minutes with two observations. After tea a second, but less

satisfactory, test was made.

The feature of the day was the abolition of frame aerials. The receivers were totally screened and employed a short length of horizontal, insulated wire, which was rotated in a circle about the receiver by a member of the party until loudest signals were heard.

Much interest is being shown in 28 and 56 mc. G5VO and G6OO work regular phone schedules on 56 mc. over eight miles. G5FV, 2ARM and BRS's 738 and 859 co-operate on 28 mc.

2ARM and 2AVN await full call-signs. G6WP, G2KM and G2QO report active.

The first of the new area meetings will be held at

Hull on September 25.

G6HK does not seem to have got into his "stride," as he sends no reports. However, G6HK, G5LQ and G5IX are active. G6LI is active on four bands and conducting 28 mc. tests. G6NO is inactive because there is nobody to cooperate with him. What about it, fellows?

The Lincolnshire area BRS and AA letter budget is being held up by some inconsiderate person, who will, perhaps, be kind enough to strike out his name on the list if he is not sufficiently interested.

Conditions are picking up on the higher bands, and I shall be glad to hear from those who propose to do some serious work on 3.5 mc. this winter.

Those interested in 1.75 mc. should communicate

with G6HK.

SCOTTISH NOTES.

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

General news has been scarce since the September notes were written, and consequently on this occasion our demand on Bulletin space is small.

"D" District held its first seasonal meeting on September 14, when there was a very large attendance at Mr. Rowden's QRA. The opportunity was taken to nominate Mr. Rowden's successor for 1933, and Mr. French (G6FN) was unanimously elected. He takes over from Mr. Rowden on January 1, and I am sure will receive full cooperation from the members.

Mr. G. Wedderspoon (VU2JB), who is at present in Edinburgh, is being kept in close touch with the members, and is finding a new Edinburgh from a

radio standpoint.

"C" District is scheduled to hold its first meeting in Dundee on September 28, when Mr. Sturrock's successor will be nominated. In this instance the new District Officer will take over at once, as Mr. Sturrock desires, through pressure of business, to be relieved immediately. Mr. Sturrock, until his spare time became a negative quantity, served the District well for a number of years, and considering the small amount of encouragement he received at times, did well by his District.

Word is still awaited from "B" District relative to the date of its visit to G5YG, which visit is intended to inaugurate the season in that District.

"A" District meets on September 28, and judging by the numbers who have signified their intention of attending, a shoe-horn is going to be

necessary to get the party into G5YG.

This month two of Scotland's earliest transmitting amateurs have decided to come to life again, and have joined the Society. The first is Mr. J. Dow, of Blantyre, who was the original G5WV, and later VO5NTA, and the second, Mr. Tennant, who owned a licence in the dim and distant era prior to 1924. Personally, I am gratified at the re-awakened interest of these "old timers," and can promise at least that the "lonely furrow" will no longer be theirs.

A further arrival in "A" District is Mr. Geo. W.

Watson (ex-VEIJC). Mr. Watson has also joined up, and I understand will be taking out a "G"

licence at an early date.

Two of our "AA" members have during the month been granted full licence facilities. They are 2AHZ, Mr. M. H. Munroe, 1, Paisley Avenue, Edinburgh, whose call sign is G6MF and 2BNU, Mr. R. Millar, The Boards, Denny, Stirlingshire, whose call is G6ND.

Two further new licences are likely to be issued in a few days, so that the increase to our transmitting personnel for the month is most satisfactory.

G2FR, Mr. L. Fryer, who was mentioned in last month's notes, has joined the Society, and his QRA is 2, Murray Villas, Heugh Road, Portpatrick.

Council's announcement regarding the R.N.W.A.R. has been received with much interest, and when more definite information is available, it is thought that there will be a ready response.

The writer was privileged to attend Council meeting of September 21, and would desire to make formal acknowledgment of his pleasure at being present, and also of the cordial reception he received from Mr. President, Mr. Clarricoats and the members of Council.

The following new crystals have to be added to the Crystal Register:—

G2FR, 7,150 kc.; G6JX, 7,146 kc.; G6MF, 1,840 kc. and 7,164 kc.

Channel Islands.

By G5OU.

Absence of notes during the past months has been due to holiday QRM, but now these are over activity in this section is very pleasing. Much interest is being shown in 56 mc. Conditions have been fair, despite very bad static at intervals. We have a few prospective members, and hope to be in full swing as winter draws on. Those reporting activity are: 2BCS, 2BYO, 2BDP, G5OU, BRS775.

No. I District-Field Day.

Sunday, September 11, being the day appointed, nine of the Liverpool gang duly assembled outside Exchange Station at 10 a.m. Two cars, a lot of gear and food, also much happy optimism is the recipe for a good field day! The weather was not kind to us (it had rained steadily from 5 a.m. to 9 a.m., but the sun by 10.20 a.m. looked as though sun-spots had not completely obliterated it, although it remained cloudy and very windy all day). A detour was made via Huskisson Dock in order that we might pick up an old friend, one Mort Borow, of U.S.A., who has visited us many times before and can truthfully be now called "one of us."

From the dock we proceeded to Belmont, a small village near Bolton, where, after a wait of some twenty minutes, the Manchester gang, headed by G2OI, met us.

It was then agreed as per plan that Liverpool proceeded to one part of the moor and Manchester to another, about three miles distant, according to indications on a map very kindly supplied by the Bolton Corporation, from whom it had been necessary to obtain permission to use the site. Later it transpired that our map reading was much at fault, as the Manchester lads were warned off by a bailiff, who pointed out that they were on Liverpool Corporation land! They were, however, informed that

it would be in order to carry on. This mistake in map reading was responsible for the failure of the two gangs to get into communication, as the distance between was three and a half miles, and with three lots of high ground intervening.

Each individual group, however, had good results; the Manchester gang received good fone at R5 over a distance of five miles, using a two-valve Rx (straight) and a short aerial in the roof of a car. The Tx was a very neat affair, about 8 ins. by 4 ins. by 4 in., made by G2OI, who worked into the small hours of Sunday morning to finish it. It was a conventional T.P. untuned grid arrangement using two LS5B's in push-pull, with a Cosmos SP55R as modulator. The Tx aerial was current fed at centre, and consisted of two copper tubes. They also used two super-regenerative Rx's with success.



The Liverpool gang also used a push-pull Tx with SP55R's, running at 200 volts, 50 mills. The modulator was also an SP55R, and after one or two tests a speech amplifier was added, which greatly improved the percentage of modulation. Several antenna systems were tried, after the mast had been erected, which consisted of the two supporting poles for a badminton net, tied together. The first was a Zepp., but it was not too good, so it was cut and made into a wave and a quarter tapped on to a tuned tank. This was rather better, but not good enough, so a quarter wave counterpoise was added. The final arrangement being, after much more cutting, a full wave tapped on to a tuned tank.



It was then decided to send G5CN for a walk with the Rx, accompanied by two other members of the party, carrying batteries and aerial, while G2OA and G2RV talked into the "mike." The results were quite good, as readable speech was obtained in a hollow a mile away, using a two-valve super

AT YOUR SERVICE!

You read the "Bulletin" because you are a member of the R.S.G.B.; therefore you must be keen on Short-Wave work, both Transmission and Reception. But are you able to get all the information you want? How to make that RX perk on five metres and what to do about modulating a CC outfit? How to put up an aerial which is "correct" theoretically and the way to set about getting a two-letter call?

This is where we come in! We exist to provide not only information required in connection with BCL work, from P.A. equipment and Radiograms to catswhisker receivers, but also all the dope you are wanting to become either a transmitter or a more proficient one. We don't try and sell you gear (unless you cannot get it yourself) but we do offer you dependable, unbiassed and lucidly written technical information on anything connected with Radio.

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Charges: 3/- per query; four or more, 2/6 each.

Questions involving elaborate treatment are quoted for by return, while diagrams and sketches, executed by a Draughtsman, are included when necessary.

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NOTE.—This business is controlled by a Transmitter whose call is familiar to most R.S.G.B. members.

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Plain Coil for 3.5 mc., 7 mc., or 14 mc. - - - 4s. Od. each.

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3 Pin Coil Base, for use with above coils, 2s. Od. each.

High Power Type (for use in P.A. Stages).

These coils are wound with 1 Copper Tubing, and are suitable for use in Power Amplifiers with up to 500 Watts input. The outside diameter of the coils is 31, the ends of the coil being flattened and drilled for connection to stand off insulators. Each coil is cellulose lacquered.

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TRANSMITTING CONDENSERS.

We have obtained a final supply of the Marconiphone .00013 mf Double spaced transmitting condensers, advertised in the May "Bulletin." Secure yours while they last.

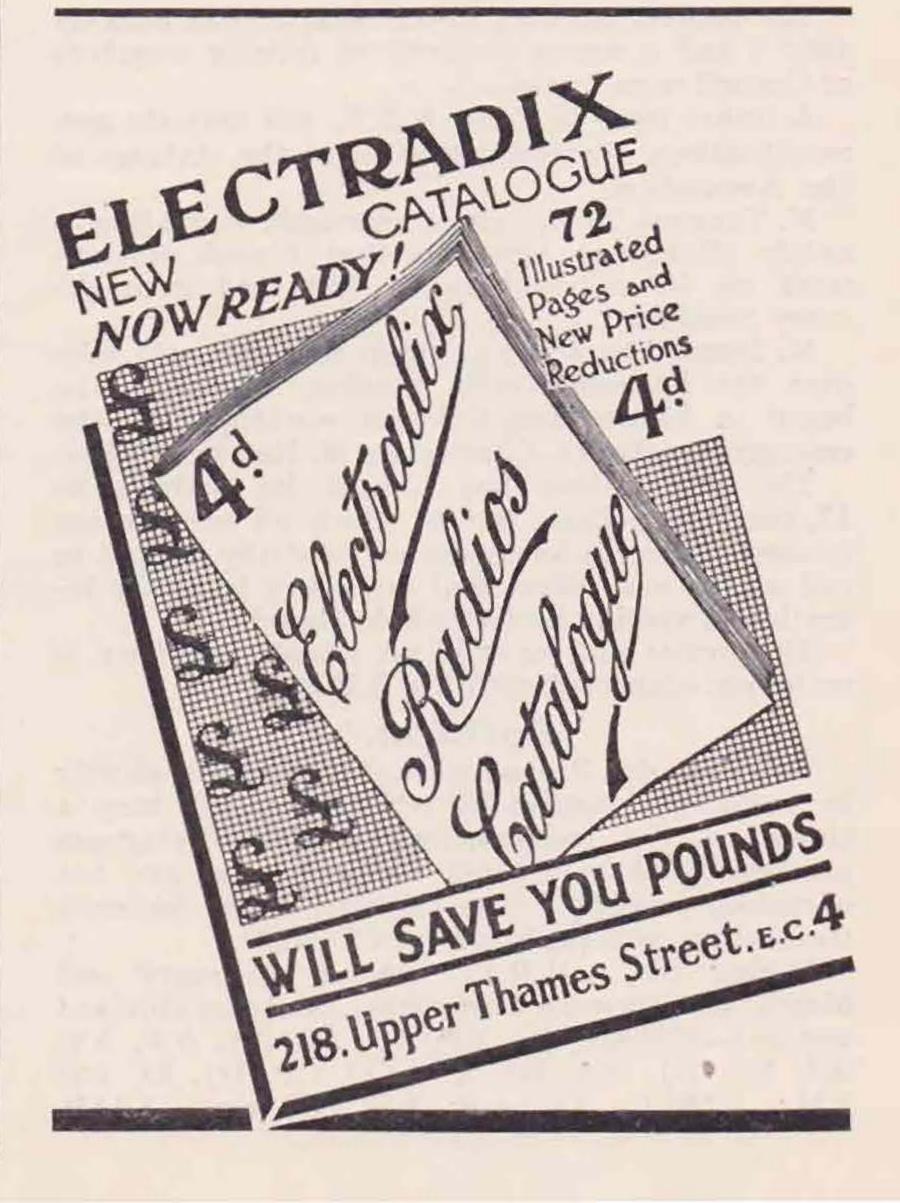
Price 3s. 3d. each. Two for 6s. Od. post free.

NOTE

If you have not got a copy of our latest Quartz Crystal

List, drop us a post card to-day.

THE QUARTZ CRYSTAL CO. (G2NH & G5MA), 63a, Kingston Rd., New Malden, SURREY, Eng. Telephone: MALden 0671.



without any L.F. amplification, and no aerial! In fact, the Rx worked better without an aerial. The final location was completely obscured from the Tx by the brow of a hill and a thick belt of trees. Most of the crowd were rather surprised at this, as it would appear that trees, although heavily earthed bodies, are not in any way detrimental to the passage of 56 mc. waves.

The Manchester gang carried out some very nteresting radiation experiments with the aerial of their Tx in different positions, and there was a definite peak of signal strength when the aerial was

vertical.

During the Liverpool gang's operations, a slightly amusing interlude was caused, while G5CN was on his wanders with the Rx, by an obvious BCL enquiring if we were transmitting, as he had an idea of going home to listen to us! When he was told that we were working on 5 metres, he nearly collapsed, and said, "That was very low, and he didn't think his set would go down to that wave."

An instructional day came to a close at the "Wright's Arms," in Belmont, with a general discussion on the results achieved, when all were agreed that for a first attempt it was pretty good

despite dud map reading!

In Liverpool Area, it is now proposed to establish a chain of 56 mc. Tx's and Rx's for inter-station working during the winter, the chief object being to get the outfit as small as possible consistent with efficiency.

Finally, our thanks are due to those who so kindly provided their cars for use as "charabancs."

EUROPEAN NOTES.

FRANCE.

The general meeting of the R.E.F. was held on July 3 and a strong majority of retiring members of Council were re-elected.

A future issue of Radio R.E.F. will indicate new modifications modernising some of the statutes of

the Association.

M. Tourrou, 28 m.c. group manager, would like to notify all foreign amateurs that French stations work on 10 metres between 0800 and midnight every Sunday.

M. Borne, the 3.5 m.c. group manager, will take over the Parisien Traffic Section, which will be heard in France and Colonies working with the emergency network, directed by M. Bastide (F8JD).

The organisation has altered its address to 17, rue Mayet, Paris, 6^{me}, at which all services are located. Foreign amateurs are cordially invited to call at the new offices and are asked to notify intention of visiting by letter beforehand.

The former address at 19 rue Claude-Vellefaux is

no longer connected with the R.E.F.

Portugal.

The Rede dos Emissores Portugueses will shortly be building a station by which they will keep a check on the transmissions of the Portuguese amateurs, and call those to book who are not operating properly. The call sign of the Society's transmitter will probably be CTIREP.

During the A.R.R.L. tests in February and March, the following Portuguese amateurs obtained results:—CT1AA, AC, AE, AQ, AS, AT, AW, AY, AZ, BG, BJ, BX, BY, CB, CO, CP, DJ, EC and EM; CT2AE, AN, AR, AW, BJ and CT3AB.

CT1AA was heard 55 times on 7 mc. during the first period and 20 times during the second period. He was the only CT amateur to be heard in W6 district on 14 mc.

The R.E.P. is being represented at the Madrid Conference by Snr. David Pires, a Post Office engineer, forming part of the Portuguese delegation to that Conference.

Calls Heard.

BRS822, 63, Tennyson Road, Small Heath, Bir-

mingham: From June to August.

14 mc.: sulaa, sulec, su6hl, su6sw, ve1bt, ve1bv, velcy, veldl, ve2bg, ve3he, ve3ij, ve3wa, vp2mo, vq4crf, vq4crh, vq4crl, vs7gt, vu2cs, xzn2b, xzn2c, yi2dc, yi6bz, yi6wg, zs6y.

By G6YL, Miss B. Dunn, Felton, Northumber-

land, April-August, 1932 :-

7 mc.: sxlaa, vk2jf, vk5aw, vk6gf, yi6wg,

zl2ci, xg5uw, xzn2a.

14 mc.: ve1bm, ve1bt, ve1ck, ve1dh, ve1dt, ve1dw, ve2cx, ve2dl, ve3bk, ve3he, ve3qs, ve3wa, vp2ja, vp2mr, vp2pa, vu2an, vu2bg, vu2lt, vs3ac, vs6ae, vs7gt, yi2dc, yi2fk, yi6bz, yi6kr, yi6wg, xv1wq, xzn2a, xzn2c.

XG5YH—GLZF:

Off Cape Palos, August 2, 7 mc.: g5np, g5sz, g6wq, g6yv, g6db, g6us.

XG5YH:

Gibraltar, August 3-16: 7 mb.: G5np, g5yv, g6du,

g6jf, g6py, g6zr, gi5qx.

14 mc.: g2bm, g2dh, g2dz, g2zp, g2zq, g5pl, g6ba, g6cw, g6db, g6fn, g6gs, g6nk, g6vo, g6vp, g6zq.

By BERS, 74 Quetta.—14 mc.: g2by, 2fn, 2ol, 2zp, 2zq, 5fv, 5ku, 5np, 5pl, 5vl, 6gf, 6np,

6vp, sulaq, sulec, velbv, vu2cs.

Stray.

Mr. I. N. Walker (G5JU), 414, Fishponds Road, Bristol, would be glad of reports upon his transmissions. He is on the air at 13.45 to 14.00

Saturdays on 28,700 kc.

W9GFZ will be transmitting on 28.1 mc. from 16.00 to 21.00 every Saturday and Sunday during September and October. Five minutes on and five minutes off. Power 150 watts. He will appreciate reports.

G2GS on his return from holidays finds a number of QSL cards reporting alleged transmissions from his station. He begs to tender his sincere thanks to his unknown operator for the valiant work done on his behalf, and begs him to send a complete list of the calls made, so that he can bring his log book up to date.

Referring to the article upon "Radio and the Upper Atmosphere" in our September issue, the name of the author was inadvertently omitted. He was Mr. R. Pollock G5KU.

VK7JK (J. E. Heine) is now VK3JF. His address is 89, Alma Road, E. St. Kilda S2, Victoria, Australia, and he will send all QSL cards owing to G stations shortly.

VQ4CRH (W. E. Lane Nairobi, Kenya Colony) would welcome reports upon his signals received in this country.

Empire



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. Todd (VS7GT), District Engineers Bungalow, Nuwara Eliya, Ceylon.

Channel Islands .- H. J. Ahier (G5OU), Lansdowne House, 45a, Colomberie, St. Helier, Jersey, C.I.

Egypt and Sudan.-E. S. Cole (SUIEC), Haking House, Abbassia, Cairo, Egypt.

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.

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

Fortgranite, Baltinglass, Co. Wicklow.

Irish Free State.—Col. M. J. C. Dennis (EI2B),

Malaya.—T. G. Laver (VS3AC), Government Electrical Power Station, Johore Bharu, Johore, Malaya. Newfoundland.—Rev. W. P. Stoyles (VOSMC),

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 (ZEIJG), Salcombe, Plumtree, Southern Rhodesia.

Australia.

By VK2HC. July-August.—There is nothing to report on

either 28 or 56 mc. On 14 mc. there is little activity, the North American stations are fair only, from 05.00-07.00 G.M.T., and there is no sign of any other DX. The 7 mc. band is patchy for local work, with not much variety in DX. North Americans can be contacted any time from 08.00-14.00 G.M.T., and in the early mornings 17.00-19.00 G.M.T. weak European signals are getting through, but are not as yet workable.

During the past week (August 14-20), full moon, local work on 3.5 mc. is the best for some time, but high-speed fading is in evidence. From September 17 to October 2 an all-Australian Relay Contest will be held, organised by the A.R.A. (N.S.W.). The W.I.A. are holding an amateur exhibition in Melbourne next month, and the closing date is September 17.

In my last notes, I omitted to congratulate VK4GK upon winning the Australian award in the BERU contest; apologies, OM, and all the best from everyone.

Jamaica.

Amateurs have at last been recognised officially, and transmitting licences can be secured. Several hams are now on the air, and are anxious to work English stations. VP2DD has been in contact with Birmingham. VP2NH, VP2CC and VP2MK are anxious to contact home stations. Transmissions are Morse on 20 metres.

The most convenient time would be 22.00 G.M.T. weekdays, and almost any time earlier than this on Sundays. Saturday afternoons possibly 20.00 G.M.T.

Northern India and Burma.

By VU2AH.

August.—Darjeeling reports that conditions are good on both 7 and 14 mc.

Europeans are particularly easy to work on 14 mc.

At Upper Topa (Murree Hills) 7 mc. is good in patches, with occasional heavy QRN. Nothing doing on 14 mc.

VU2LJ (Assam) reports that QRN is R7-8 on 7 mc., and, although there appear to be plenty of stations working, the signals are generally unreadable. QRN R4-5 on 14 mc. Signals very poor, only one DX station, OH, having been heard.

VU2AH (Sind) complains of excessive QRN and fan QRM on 7 mc. Impossible to work on this band. Conditions on 14 mc. very poor, but seem to be improving. Most of the sigs. heard have been harmonics of 7 mc. stations. 28 mc. is lively, but only fans and cars heard.

BERS74 (Baluchistan) wishes to thank the organisers of the Contest for his Zone 8 certificate. He reports that conditions on 14 mc. are very patchy, but has logged a fine batch of DX stations, including one VE and one YM. Quetta experienced an earth tremor at 04.15 I.S.T. (22.45 G.M.T.) on August 26. Nothing doing on 28 and 56 mc. immediately after the tremor.

All stations complain of raw AC QRM from AC, AU and/or KA.

VU2GD has suggested a fund for supplying filters to the R.A.C. gang!

Things in general are looking up in this district. It is believed that many hams are commencing to brush the monsoon mud off their transmitters in preparation for the winter season.

Ceylon and South India.

By VS7GT.

August.—Conditions generally remain as reported last month and work has been confined to local contacts.

VV2JP reports the 14 mc. band as dead and the 7 mc. band little better. He agrees that conditions have never been worse on all bands. VS7PK is now stationed in South India, and we hope to hear him soon under a VU call. Mr. Spindler, of Kolar, is re-starting and awaits his call-sign. Mr. Dashwood, of Nanu-Oya, is applying for his ticket and hopes to be active shortly on QRP cc.

VS7GT is now temporarily QRP 8 or 10 watts to final amplifier of an interesting low-power outfit consisting of AC/HL as c.o., AC/Pen as F.D. and PX4 as PA. With the arrival of gear a 25 watt outfit will be built utilising A.C. mains. The above low power outfit can be recommended for very good H.F. output.

Canada.

From VE2BB (via G5VL).—DX conditions during August were quite good, many contacts having been made with G stations and other countries in Europe. VE1BV was QSO with SU9CH and SU6HL. The latter promised to get Iraq stations to look out for VE signals around 17.30 G.M.T. So we are hoping to qualify for these WAC certificates. Some notes upon the eclipse will follow later.

British West Indies,

By VP2YB.

September.—VP2MO and VP2MR are both active and are doing well. BRS845 reports hearing the former at R8 to R9 during the eclipse. Conditions remain good to Europe and U.S.A., but QRN increasing.

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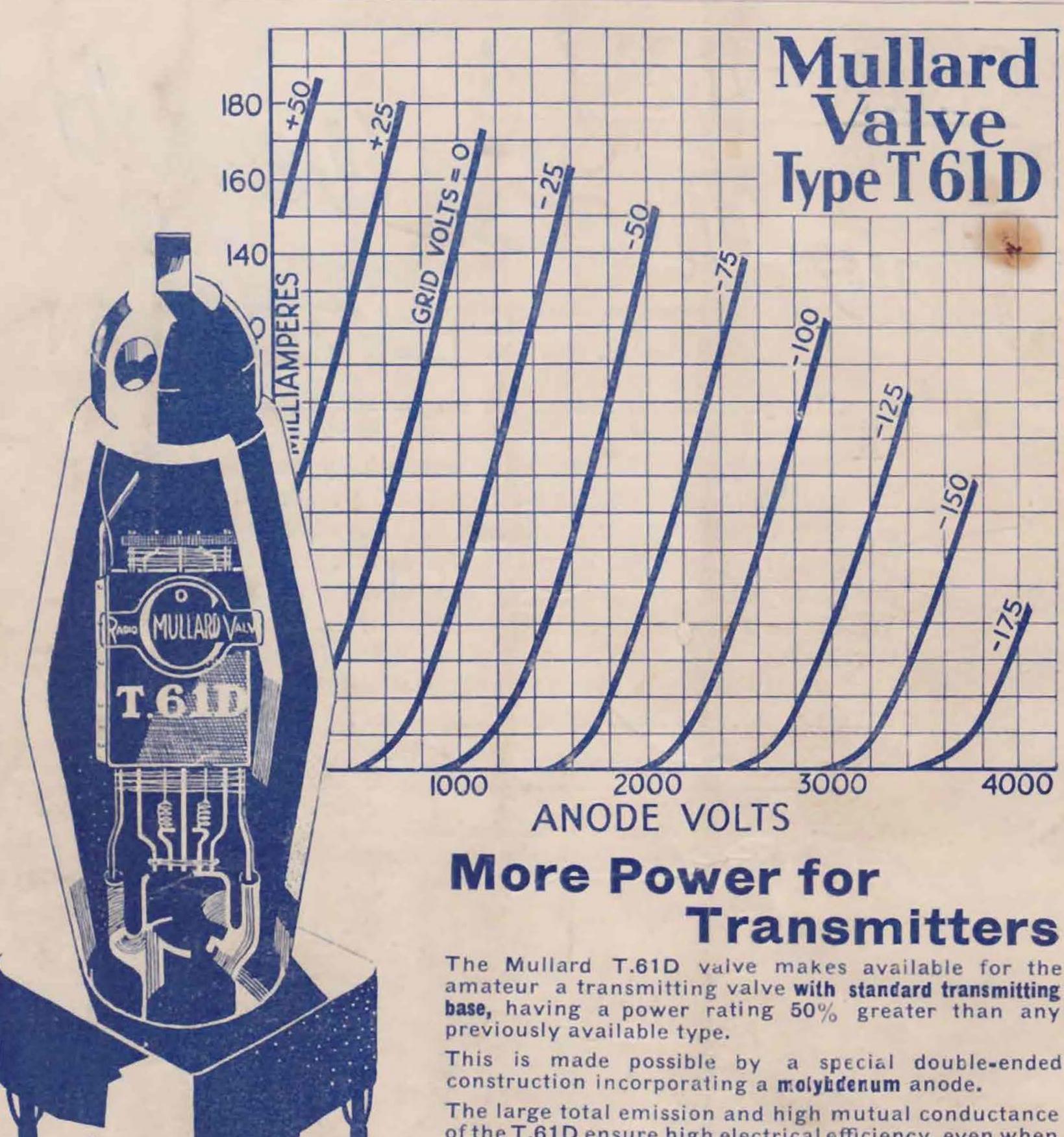
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