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NOVEMBER 1948
VOLUME 2 · NUMBER 12

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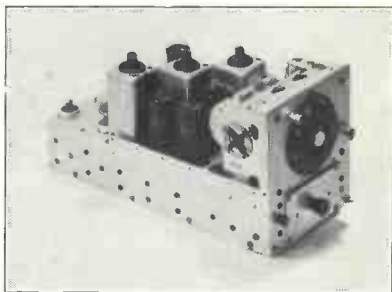
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THE SHORT WAVE LISTENER

A MONTHLY MAGAZINE FOR THE LISTENING AMATEUR

VOLUME 2

NOVEMBER 1948

NUMBER 24

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EDITORIAL

Survey

This issue completes Vol. II of the *Short Wave Listener*, and it hardly seems two years since we offered No. 1 of Vol. I as the first (and still the only) periodical in the world exclusively devoted to the interests of SWL's.

It is for us first of all to say how much we value and appreciate the solid support of our readers and our good friends in the Trade—for, as we have said before, under modern conditions no publication worthy of its readers can exist without the steady backing of paid advertising space.

As a post-war foundation, the *Short Wave Listener* still suffers (and as far as we can see will continue to suffer for a long time to come) from straitened resources in the matter of paper. Most readers are aware of this, and understand that it is only by regulation that we are unable to offer larger issues.

Within these artificial limitations, the last twelve months have proved not unsuccessful for the *Short Wave Listener*; the various sections of the paper, now well established, have gained steadily in support, and we feel we can claim that our regular news-feature articles are by far the best of their kind in contemporary radio journalism. They are widely quoted and, by certain of our less-favoured contemporaries, slyly copied.

In another direction, we are particularly glad to have been able to help so many readers through the Radio Amateurs' Examination, to which we have given a great deal of space during this past year. In the result, it is clear that these efforts have been well rewarded.

It is with quiet pleasure and some modest satisfaction that we of the *Short Wave Listener* look back upon twelve months of steady endeavour—knowing that we have done our best, believing that we have succeeded in pleasing most of our readers, and hoping that we shall continue to enjoy your support.

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Hotting-Up the O-V-O

Suitable Circuit, with Values

Part II

by THE OLD TIMER

(Having discussed the general requirements in our September issue, he now gets down to the details of design.—Ed.)

IT seems that quite a number of our readers who regularly use big superhets are beginning to take an interest in the O-V-O and its possibilities. In some cases this is because they have already heard so much on their "big job" that they feel there are no thrills left for them; in others it seems to be that they are somewhat sceptical of the claims for the single-valver and would like to investigate the possibilities for themselves.

Last time I expounded at some length on the major requirements; this time, I want to show how to set about filling some of them. So I am deliberately starting off with the simplest possible case—an O-V-O using a single triode of the 6J5 type. This is a little set that has been my own stand-by for a very long time, and I have always prided myself (or, as some will doubtless say, kidded myself) that I can hear with it anything that I can find on my commercial superhet, which is normally an old and faithful HRO.

Now, I am aware that my first heading last time was "Noise Level," and that I said thereunder that a good tetrode or pentode would give a better signal-noise ratio than the best triode. I still believe this, but I am inclined to suggest that newcomers to O-V-O technique should start with a triode; they can then change their ideas with little more trouble than the addition of another lead or two to an octal valveholder. I have no complaints about the sig-noise ratio that my 6J5 gives me; but I realise that a slight improvement could probably be brought about by changing to a 6SJ7, 6J5 or an EF50.

So, after that, we will take in turn these headings one by one and consider them in the light of the two diagrams reproduced herewith.

Selectivity

This highly desirable quality is not particularly controllable in an O-V-O

except in so far as the tuned circuits are concerned. They must obviously have a reasonably high Q—although the reaction control supplies most of that for us! But the coils are wound with No. 18 gauge wire, spaced one diameter and placed on good formers—a commercial ribbed type with a six-pin base. The aerial coupling coil is not too tightly coupled (see Table for details) nor is it particularly large. So the grid circuit is very lightly damped and the adjective "low-loss" is not a misnomer.

Reaction Control

This is achieved by the use of a perfectly straight series-fed circuit, the reaction condenser being of $.0001 \mu\text{F}$, with a slow-motion drive. A 10,000-ohm resistance is used in addition to the normal RF choke, with a filter circuit consisting simply of a further $.0001 \mu\text{F}$ (fixed) condenser to earth from the junction between them. This seems to be a complete cure for any tendency towards a "ploppy" reaction control, provided that the HT voltage does not exceed 60.

Threshold Howl

This is essentially a reaction-control fault, and the previous remarks apply to it also. This set just does *not* howl, and

COIL TABLE

Band	Aerial Turns	Spacing from Grid Coil	Grid Turns	Spacing from Reaction Coil	Reaction Turns
28 mc	3	$\frac{1}{4}$ in.	5	$\frac{1}{4}$ in.	3
14 mc	4	$\frac{1}{4}$ in.	7	$\frac{1}{4}$ in.	4
7 mc	6	$\frac{1}{4}$ in.	14	$\frac{1}{4}$ in.	7
3.5 mc	10	$\frac{1}{4}$ in.	25	$\frac{1}{4}$ in.	12

Note: All coils close-wound with No. 18 enamelled wire, on formers of $1\frac{1}{2}$ -in., $1\frac{1}{4}$ -in. or $1\frac{1}{8}$ -in. diameter.

never has done, and it is safe to put this down to the general characteristics of the reaction control circuit.

Hand-Capacity

The front panel is of aluminium, and so is the chassis. The condensers are all mounted directly on the front panel, with which their spindles make good contact, but both the band-spread and band-set condensers have their moving plates also directly connected to the appropriate terminal (3) on the coil-base. This, likewise, is earthed on to the chassis by a very short lead. The reaction condenser's

moving plates may be connected to this same point.

If any hand-capacity effects are present (which they are not in my set) it must mean that the entire chassis and panel are "live" at RF, which similarly must mean that the aerial and/or earth lead have worked out at an unfortunate length for the frequency on which the trouble occurs. Never overlook this possibility when you are assailed by hand-capacity effects, by the way! With a certain aerial which I sometimes use myself, even my HRO is susceptible to hand-capacity on the 28 mc band—and so badly that grasping the headphone lead causes a signal to creep almost out of audibility. This can instantly be cured by two measures: either change the aerial or retain the troublesome one and remove the earth lead, and all is well.

With a straight set, however, there is no doubt that the best preventive measure against hand-capacity is to keep the tuned circuit compact, with *direct* wiring between the coil and condenser. Never rely on the chassis-cum-panel to act as an earth return for these two, or you will almost certainly run into trouble.

Slow-Motion Control

A good slow-motion dial, many types

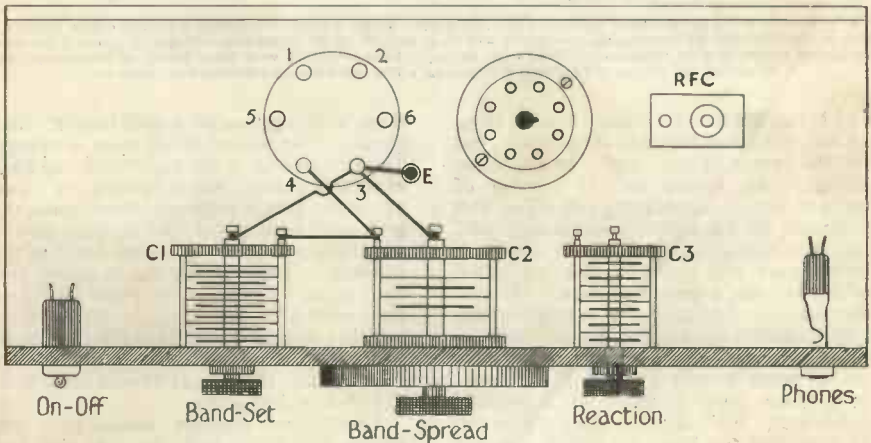


Fig. 2. Suitable parts layout. In plan view.

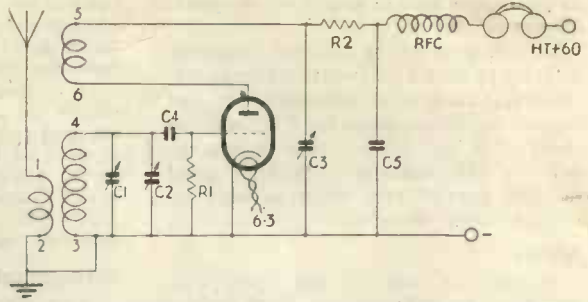


Fig. 1. Circuit of the basic O-V-O, which our contributor is discussing in detail.

TABLE OF VALUES

Fig. 1. Reacting Detector Circuit

- C1 = .0001 μ F variable.
- C2 = 20 or 25 μ F variable.
- C3 = .0001 μ F variable
- C4 = .0002 μ F
- C5 = .0001 μ F
- R1 = 2 meg.
- R2 = 10,000 ohms
- RFC = Standard short wave receiving type.

of which are available these days, should be fitted to the *band-spread* condenser. All that the band-setter needs is a good sharp pointer which enables you to set it accurately to the position required for each band. With the values chosen for these two condensers I manage to spread each of the amateur bands over 100 divisions on a 180-division dial. It is easy, by reducing condenser size still more, to give yourself an even bigger spread, but I am rather doubtful whether it is an advantage

to make your area of search, so to speak, too great.

Slow-motion on the reaction condenser will also be found well worth while, as it is the precise control of this condenser, just beyond oscillation point for CW, and just short of it for 'phone, that makes the 0-V-0 a DX receiver. Without good reaction control you might as well try using a crystal detector.

Aerials

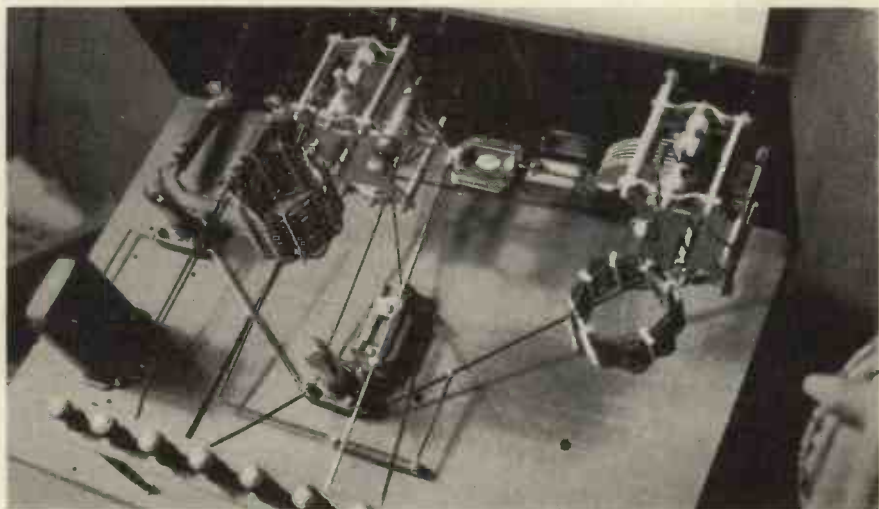
If you are one of the types who specialise in one amateur band only—

cut-and-try. Don't take my coil figures too literally, and experiment with different windings at different degrees of spacing from the "top" end of the grid coil.

It is usually considered desirable to couple the aerial in at the *bottom* end of the grid coil, but it is so essential, with a straight set, that the reaction coil should be in this position that we must relegate the aerial coupling coil to the other end. Don't make the coupling too tight and this won't matter seriously.

Arrangement of Coils

Note that when you are putting your



The home-built 0-V-1 at the station of 6HM, Col. Clair Foster, Mount Carmel, California, in his day one of America's best-known amateurs. By the way, the photograph was taken in 1925, so the wiring plan and general layout is not what we should regard as 1948 technique! Those were the days, when new trails were being blazed on wavelengths like 45 metres and the use of an official international prefix had yet to be introduced for amateurs.

and if you are it is practically certain to be 14 mc—you may possibly use a dipole, cut for the centre of the band. In this case, disregard my figures for the number of turns in the aerial coupling coil. You will probably need a coil of two turns, pretty tightly coupled. If you try to cover all bands you will probably use an aerial which is "just a length of wire." In this case see to it that the aerial is well erected, well insulated, clear of surrounding objects, and so on. And you may also derive some benefit by tuning the aerial coil, either with a series or a parallel condenser; it all depends upon the length of wire and the band on which you are using it, so it is essentially a matter of

three windings on to a coil former, they should all be wound in the same direction. The first one on is the aerial coil, the ends of which correspond to points "1" and "2" in the circuit diagram. Next comes the grid coil, with point "4" nearest to the aerial coil and point "3" at the finish of the winding. Then comes the reaction coil with point "5" nearest to point "3," and the anode end, point "6" at the far end. In other words, if you have a former with your three windings on it and the ends sticking out, those ends should read 1, 2, 4, 3, 5, 6 in that order.

The layout diagram shows only the wiring associated with the grid coil and its two tuning condensers—just to rub in,

once more, the importance of making this short and direct. I have shown an octal valve holder simply because of my own 6J5, but if you use a 2-volt battery valve or an EF50 or what-have-you, just juggle the position and orientation of the valveholder to give the shortest possible RF leads to the coil-holder.

Sundry Points

Some listeners who wish to cover only the amateur bands seem to think that the greatest efficiency can be obtained by using an enormous number of turns on the coil and a minute condenser for tuning purposes, avoiding the use of a parallel band-setter altogether. This, in my opinion, is a mistaken policy. A very high L/C ratio such as this tends to produce instability, and the increase in efficiency is very questionable. In a superhet, yes, by all means! But in a reacting detector, there is no particular benefit. Don't forget that the high-Q effect of the tuned circuit is very largely due to the negative resistance introduced by means of reaction.

On the other hand, don't go to the other extreme, so that you use a huge band-setter and find yourself listening on 14 mc

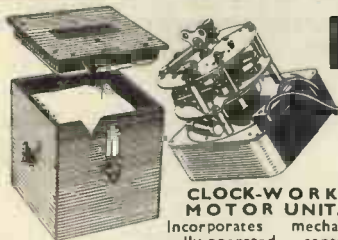
with a coil that would comfortably tune to 28 mc!

How to Use It

If you are new to single-valve reception, you probably need a warning not to expect too much in the way of signal-strength; but, likewise, don't put up with a set on which you have to strain your ears to hear anything at all. The noise level as you cross the oscillation threshold should be quite clearly and comfortably audible, and any signals that you are going to hear will be louder than that!

Don't be ham-handed. Search slowly and always keep pace with your tuning control by bringing up the reaction control to the necessary point. It should not need much readjustment, but it is impossible to design a set in which it can be left entirely alone.

If signals seem very strong but selectivity is poor, use slacker coupling for your aerial winding; conversely, if everything seems terribly sharp but weak, try tightening it a little. This type of set is essentially a "tailor-made" one which you will have to play around with to suit your own requirements, and once you have everything just right you will be well rewarded.



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Two-Metre Converter

Practical Design for the SWL

Part I

Described by

E. J. WILLIAMS, B.Sc. (G2XC)

(While many readers exploring the VHF's have obtained satisfactory results on five metres by modifying ex-Service receiving equipment, that is not quite so easy nor as satisfactory on the 145 mc (two-metre) band. Accordingly, we asked G2XC—well-known contributor of "The VHF Bands" in our Short Wave Magazine—for the best and quickest answer. Here it is.—Ed.)

THE construction of a converter for use on the 145 mc band is not such a difficult task as may be thought. Success depends mainly on (a) the choice of valves and components suitable for the frequency; (b) careful layout, to keep all leads (especially those connected to tuned circuits) as short as possible, and (c) rigid construction.

Without the last two points being strictly observed the circuit discussed here can produce very disappointing results, for there will be instability, difficulty in holding signals and modulation hum. On the other hand, with careful construction none of these troubles appears and the converter is as easy to handle as one on 5 metres. With the original converter T9 signals appear as T9, drift is negligible, the RF stage is perfectly stable, and background noise is low. Amateur signals on two metres have been received from 200 miles distance on CW and S9 'phone from 130 miles, using the converter as described in conjunction with a 4-element beam.

The Circuit

Nothing really unusual is incorporated, as will be seen from Fig. 1. The RF stage is a 6AK5. Bias is obtained from the HT supply to enable the cathode to be earthed. This simplifies the wiring to the rather small button base of the valve. Cathode bias could be used if preferred. Capacity coupling is employed to the mixer, a 954 acorn, the RF/mixer tuner being ganged. The oscillator is a 9002 in a Colpitts circuit, with separate tuning control. This circuit is easy to adjust. In fact it doesn't need adjustment! An RF choke is included in the live side of the 9002 heater and noticeably improved the purity of the oscillation.

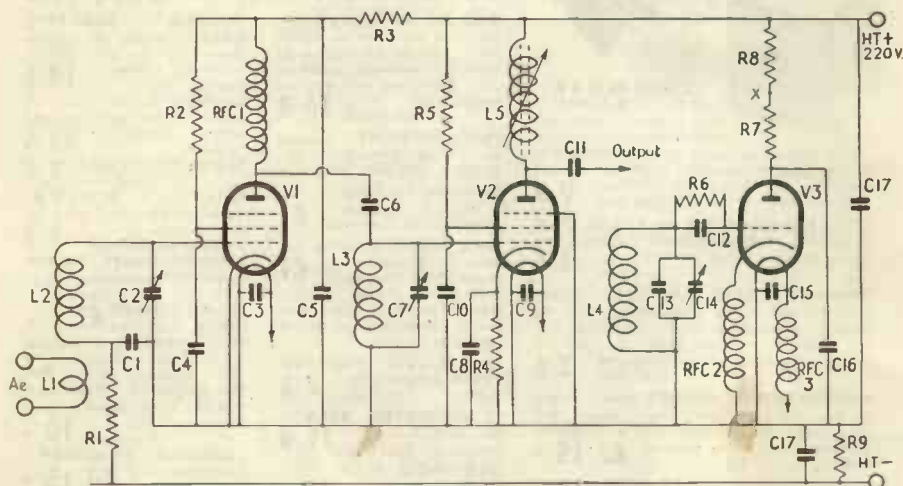


Fig. 1. Circuit of the G2XC Converter complete. There is no direct connection between oscillator (V3) and mixer (V2) it being found that sufficient stray coupling exists for the required oscillator injection. The working details and the design of the unit are fully discussed in the text. (Suppressor V1 should be earthed in this diagram).

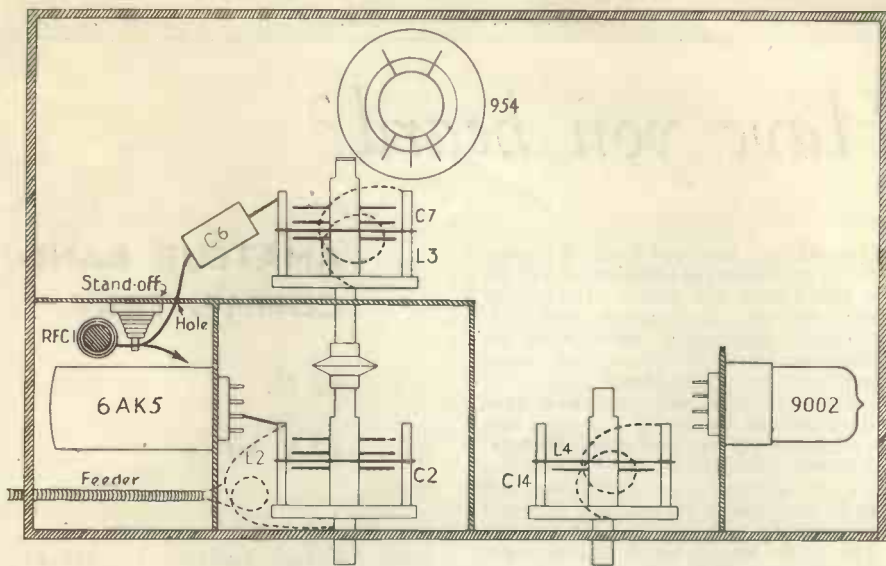


Fig. 2. The general RF layout, plan view. Though this is a suggestion only, it is based upon the original model and constructors would do well to follow it.

No connection is made between the mixer and oscillator, injection depending on stray coupling between the two circuits. This minimises pulling of the oscillator frequency when the mixer tuning is varied and at the same time avoids loading of the oscillator. A voltage stabiliser may be included in the supply to the oscillator, in which case it is connected between the point marked X and chassis—but results are good without it.

Constructional Notes

Fig. 2 gives the layout of the original receiver. Panel and chassis are of 16-

gauge aluminium, and the panel should be made as rigid as possible to avoid hand pressure during tuning causing slight capacity variations between coils and earth. A backing of $\frac{1}{8}$ -in. bakelite may be found desirable to maintain the panel quite firm.

The RF stage is screened except at the top, which is left open and enables adjustments of the tuned circuit to be easily made.

The 6AK5 is mounted horizontally and arranged so that the grid terminal is uppermost and as close as possible to the stator terminal of C2.

Terminals 3 and 7 are therefore nearly horizontal, as shown in Fig. 3, and a wire is joined from 3 to 7 via the centre spigot and anchored to the valve holder fixing screws at each end. Terminal 2 is also joined to 3. A piece of thin brass, approx. $1\frac{1}{2}$ in. \times $1\frac{1}{2}$ in., is then soldered to this horizontal earth line across the valve holder. After the other connections to the valve holder have been made this piece of brass is bent to form a screen over the anode, screen grid and live-heater wiring.

Without this screen (or some similar arrangement) the 6AK5 will oscillate when the RF and mixer circuits are both tuned to the same frequency.

TABLE OF VALUES
Fig. 1. The G2XC Two-Metre Converter

	C1 = .0003 μ F
	C2, C7 = 15 μ F Raymart (see text)
C3, C4, C8, C9, C15	= 500 μ F
C5, C16	= .001 μ F
C6	= 20 μ F
C11	= 180 μ F
C12	= 50 μ F
C13	= 5 μ F
C14	= 5 μ F variable (Raymart MC5DX)
C17	= .001 μ F
R1	= 100,000 ohms
R2	= 20,000 ohms
R3	= 2,000 ohms
R4	= 2,200 ohms
R5	= 150,000 ohms
R6	= 25,000 ohms
R7	= 4,700 ohms
R8	= 11,000 ohms
R9	= 70 ohms

Coils, valves and chokes, see text.

Part II will follow next month.

Have you heard?

Once again it has been a record month, as far as enthusiasm is concerned—and the DX hasn't been bad, either. The pile of correspondence has reached the most formidable dimensions, representing an almost astronomical number of man-hours—and the Calls Heard . . . ! Observant readers will doubtless have noticed that the number of lists fitted into our allotted three pages averages about 55; this month, after sending down the chosen 55 to the printers, your Scribe was left with 75 lists mutely reproaching him and almost keeping him from the DX !

The Calls Heard which appear were chosen chiefly with a view to giving all the newcomers a look in. Several old-stagers' lists have therefore been sadly passed over; but where they have sent in more than one I have tried to use *one* of them, at least. But with such a selection to choose from, one thing is certain—every list that transgresses the rules goes OUT at the first sorting.

Set Listening Periods

The 14 mc period, as usual, was lively and attracted lots of attention. The lists speak for themselves, and there was obviously not much wrong with conditions that morning. The previous afternoon on 28 mc, however, was practically a washout as far as home listeners were concerned. As a matter of fact the only list received from England was from W. J. C. Pinnell (Sidcup), who logged ZC6XY and SHF1X, both on 'phone ! But two lists were received from overseas, by Air Mail, which I thought was a pretty good effort. The first, from Capt. J. B. Lievens in the Suez Canal Zone, consists almost entirely of Africans but, surprisingly, includes J9ANZ, LU3AX, TI2OA and VU2BU. The second was from Steve Mann (Westbury, N.Y.), who logged CN8EK, HI6EC, VP2GJ, 5AS, VQ2DH, ZE2JA, 2JI, ZS3D, 3G, 8A and numerous "ordinary" ZS's. Thanks and congratulations to these two overseas listeners for getting their lists across in time, and also to W.J.C.P. for representing the Homeland !

That was bad luck about 28 mc, because for a large percentage of the time it has been very lively indeed, as the General

AMATEUR BAND COMMENTARY

by the

DX Scribe

Lists will show. Practically the whole world has been available, and the ZL 'phones have been really spectacular on some mornings. The W6's and 7's burst through on odd occasions, but conditions have more often favoured the W4's, 5's and Central America.

The Marathon

Those 1948 scores keep climbing steadily, the top all-round scorers to date being N. A. Phelps with 40/193, D. W. Bruce with 40/186 and A. Baldwin with 40/183. With over two months left (and they should be good months at that) there is no doubt that one or more of these DX-hunters will top the 200 mark before the end of the year. Who could have said, one or two years ago, that it was possible to hear 200 countries *in one year* ? It just shows that in spite of our occasional grouching the DX conditions have been at a truly marvellous level.

Do we want a 1949 Marathon ? I cast the suggestion to the DX fraternity to see what they will say. If we don't run one, I will promise to keep enthusiasm stirred up with various odd competitions. If we *do* want to start all over again, I will likewise look after that.

Polar DX

A. M. Norden (London, N.W.11) says that VE8MA gives his location as 80 deg. N., 86 deg. W., and claims to be the nearest amateur station to the North Pole. He has also logged SM8SW, who is in Novaya Zemlya and therefore not too far from the Pole, either.

D. W. Bruce (Eltham) collected HR1MB and FF8FP on 28 mc 'phone. On 14 mc his best 'phones were C3EA (Formosa),



Station G4HC, Colchester, Essex. Though on a DC mains supply, AC power is obtained from a 400-watt rotary converter. The Tx is 6V6-807, the modulator uses P/P 6L6's in the output, the Rx is an HRO, and the aerial is as described in a pre-war issue of our *Short Wave Magazine*.

KL7SW (Aleutians), J2ATC (Airborne), W9RZI/KG6, ZP3CM and UH8KAA. On 14 mc CW he found KB6AD, MP4BAB (ex-VS9ET?), PK4VD and scores of VK's and ZL's. He heard some very nice DX on 14 mc during the 28 mc SLP! Finally he says that at 0700 on September 26, the 7 mc band was full of ZL's, W6's, W7's and PY's.

Two queries from N. F. Clarke (Sittingbourne): the full call of a station signing ??9OW, giving QTH as East Manchuria; and is VK5RN in Zone 29 or 30? Two more for Puzzle Corner, from G. Cole (London, N.21): CP5D and XCIAG—who, or what?

7 mc DX

K. J. Foskett (London, N.W.2) answered my appeal for 7 mc Calls Heard with a terrific list. Unfortunately it has had to be held out, on account of its vast length and the fact that at least three-quarters of the stations were East Coast USA. But others therein were CM8XW and some CO's, KV4AA, KZ5AX, several PY's, PZ1FM, VO4AF and

VP4TR. (Yes, I did say 7 mc!) Thanks, K.J.F., and sorry the list isn't there to speak for itself.

Some New Ones

E. J. Logan (Hertford) mentioned last month that EZ7CW had given his QTH as Stuttgart, although he was using the Saar prefix. He has now received a QSL from him (which I have seen) complete with Saar stamps on the envelope, giving QTH as "near Saarbrücken." Unfortunately that it can't count as a new country because he is undoubtedly a pirate.

Incidentally the official German amateur stations, which will be licensed with the prefix "DL", are still not on the air, and all the "DA", "DK" and other pirates continue their activities. This news comes from the fountain-head, in Germany.

Several listeners have reported hearing KC5J on CW—he is YR5J. YR5J used to be read as KC5I but has evidently been studying the code and can now be read properly!

M. Davies (Llanbyther) heard KV6AG working a W station and would

ZONES HEARD LISTING

Listener	1948		Post-War	
	Zones	Countries	Zones	Countries
'PHONE and CW				
N. A. Phelps (London, N.10)	40	193	40	205
D. W. Bruce (Eltham)	40	186	40	199
A. Baldwin (London, N.11)	40	188	40	195
M. E. Bazley (Birmingham)	40	181	40	182
L. Collis (Banstead)	40	167	40	179
W. S. Hall (Otford)	40	165	40	182
O. A. Good (Oswestry)	40	164	40	188
C. S. S. Lyon (Liverpool)	40	164	40	182
J. C. Pinnell (Sidcup)	40	153	40	167
R. S. Stott (Upminster)	39	165	39	165
L. N. Goldsbrough (Wirral)	39	159	40	182
F. N. Baskerville (Southport)	39	132	39	132
R. A. Hawley (Goostrey)	38	154	39	177
J. W. Jones (Birmingham)	38	145	39	160
E. P. Watts (Norwich)	37	131	39	162
A. Studley (Hartley)	35	125	35	125
A. W. Robertson (Cranford)	35	124	36	141
D. W. E. Powell (Wilton)	35	106	36	117
J. E. Hoskins (London, S.W.11)	35	94	35	109
D. A. Pullon (Colechester)	35	87	37	108
N. A. S. Fitch (London, E.10)	34	114	35	123
D. I. Crane (Sidcup)	34	107	34	107
J. G. P. Butler (Portsmouth)	33	116	35	124
'PHONE ONLY				
E. J. Logan (Hertford)	39	140	39	169
D. W. Bruce (Eltham)	38	145	38	163
B. Needham (London, W.11)	38	135	38	139
R. A. Hawley (Goostrey)	37	134	37	160
L. Collis (Banstead)	36	136	36	148
A. Bannister (Manchester)	36	133	36	141
D. L. McLean (Yeovil)	36	132	36	148
L. N. Goldsbrough (Wirral)	36	128	37	149
D. Kendall (Potters Bar)	36	128	36	132
M. Graham (Harefield)	36	128	36	128
O. A. Good (Oswestry)	36	126	37	140
G. Brainshaw (Belfast)	36	126	36	135
R. Baldwin (London, E.17)	35	124	35	124
J. B. Lucas (Suez Canal Zone)	35	127	35	127
J. W. Deane (Trimpley)	35	120	35	120
F. W. Inley (Dundee)	35	115	35	115
R. S. Craig (London, E.10)	35	130	35	130
K. B. Toms (Gresham Wood)	35	108	35	108
C. S. S. Lyon (Liverpool)	35	140	35	140
F. L. Rogers (London, N.W.1)	35	118	34	118
G. P. Watts (Norwich)	35	138	35	138
K. S. Harvey (Thornton Heath)	35	115	34	115
A. W. Robertson (Cranford)	35	126	35	126
A. R. Wybrow (London, S.E.22)	35	102	35	102
D. W. E. Powell (Wilton)	35	100	35	108
J. E. Hoskins (London, S.W.11)	35	106	35	106
N. A. S. Fitch (London, E.10)	35	100	35	100
L. Sheehy (Gambay)	35	100	35	100
D. G. Martin (Chesham)	35	100	35	100
L. Corder (Hadleigh)	32	116	35	116
M. Graham (Harefield)	32	107	35	107
H. C. Cooley (Manchester)	31	100	35	100

very much like to know where he is. So would I—any offers, please? ZK2AA on 14 mc. CW is being logged all over the place; on the mornings when he is audible one usually hears VR2BD and ZK1AS as well, and FO8A (Tahiti) has also been heard.

O. A. Good (Oswestry) logged an ET3 station who was badly jammed, and would like to know whether there is an ET3AN? Then one day he tried his hardest to identify a station sounding like XPIM (?) on 14015 CW, working strings of W6's and W7's.

O.A.G. has been doing well during the past month with Asiatic stations like H1IAA, 1AB, 1WH, J2AAL 5LQK, 9ABW, lots more 9's, W7KMV/Iwojima, one or two KA's, several KG6's and KX6AF—all on 14 mc 'phone, and all in the afternoon or early evening. W2WMV/C9 in Manchuria was also heard on 'phone. O.A.G. describes KX6AF as the most consistent DX 'phone he has ever heard. Other nice ones mentioned in a long bulletin are VE8MA, VK7AZ on QRP, VP3MCB on 'phone, ZDIBD ('phone, 14395 kc). On CW there were FE8AB, KP6AA, UL7BS, VP8AD and VR2BD. In short, quite a good month up Oswestry way.

A. R. Wybrow (London, S.E.22) is a newcomer to the list with 34 Z and 102 C, 'phone only. His additions during the month were CVFY, AR8BC, KL7IP,



SVIRX is now home from Greece and operating under call G3FNJ. This is the equipment (and its operator) when he was on the air as a "rare DX station," an experience which he relates in the October *Short Wave Magazine*

ZS3F, J9AKP, PZ1M, HH1AB, EL7A, VP9G, and a couple of "queers" in the form of AG2AD and YT4AX.

From Overseas

Capt. J. B. Lievens (Suez Canal Zone), sending in a 28 mc SLP list to which I have already referred, says that an Egyptian summer and static are not a great help to short-wave listening. He objects to "drying out" earphones every few minutes! He finds the best signals out there are from ZE1, VQ2 and VQ5, all of which are in short supply in the U.K. J.B.L. suggests that a list of Pacific Islands, with their prefix, "country," group and Zone would be a good thing—we'll get to work on this.

Steve Mann (Westbury, N.Y.)—also an SLP competitor—says he has been a "regular and devoted reader" for about a year and an active SWL since 1938. He uses an HQ120X and preselector and is situated in a small suburban town 23 miles east of N.Y.C. He listens to 'phone only on 28 and 14 mc, and has *confirmations* from 125 countries in 34 Zones. The best pulled in recently have been VP8AD (28340), FO8AA (14305), KP6AA (14250), ET3AF (14390) and ZD3A. He would very much like to hear of VQ8 activity as he could use Zone 39! Like-

wise any information on the habits of FT4, MD4, ZC1 or AR8 would be appreciated. In case anyone would like to write, his QTH is 125 Ward Street, Westbury, L.I., N.Y., U.S.A.

A letter is to hand from the Rev. D. D. White, an old reader now resident in Buenos Aires. He does not find short wave listening easy down there owing to traffic, electrical machinery and overpowering QRM from local amateurs. Of course CE's, OA's, ZP's, CX's and CP's are now practically "locals" for him, but he finds that G comes in the DX class at present.

Hobby or Obsession?

Our old friend Bob Craig, who once wielded a key in VU but now listens in London, S.E.1, returns to an old subject and tells us he has had a "summer recess," which he finds rather unusual among Amateur Radio enthusiasts. Why, he asks, are about 75 per cent. of radio amateurs practically morons on any other subject but radio? He derived great pleasure from hearing a certain amateur say that he must close down because he wanted to listen to Massenet on the Third Programme—a proof that one, at least, appreciates something else in life! Of course in many respects he is perfectly right; it is easy to

DX QTH's

AC3NC	P.O., Sangtok, Sikkim.
C3EA/C3	Sgt. Al Hattlested, AAG Nanking, APO 90, c/o PM, San Francisco.
CT3AA	Beco Chao da Loba 8, Funchal, Madeira.
E8AAO	Apertado 22, Villa Cisneros, Rio de Oro.
ET3AE	R. Newberg, Box 145, Addis Ababa, Ethiopia.
FO8A	Tahiti Radio Club, Papeete, Tahiti.
HP1BR	Bob Rowley, Box 1098, Panama, R.P.
HZ1A	c/o British Civil Air Mission, Taif, Saudi Arabia.
OA4AP	Cesar Bentes, Box 538, Lima, Peru.
OY8LA	Box 35, Thorshavn, Faeroes.
PJØX	H. J. Schrier, Naval Base, Parera, Curacao, N.W.I.
PK4PQ	Box 222, Soerabaja, N.E.I.
VQ4ALF	Box 3024, Mombasa, Kenya Colony.
VR2BD	RNZAF, Laucala Bay, Suva, Fiji.
VU7AF	Surjit Singh Majlithia, Indian Ambassador, Katamandu, Nepal.
W3LYK/ Antarctica	APO 912, c/o PM, San Francisco.
XZ2TT	28 Windermere Road, Rangoon, Burma.
ZP3CM	M. Zibatowsky, Rio Blanco c Independencia, Asuncion, Paraguay.

allow Amateur Radio to prey on one until all other subjects go right out of true proportion.

For myself, I have always felt (since I learned this small bit of sense) that radio is a marvellous servant but a most obnoxious master; a good hobby but a wicked obsession. If you find it assuming the latter role, snap out of it quickly before it marks you down as a future candidate for a "nice quiet home." There are some types who go flat out at their short-wave radio all through the winter, but drop it completely for outdoor pursuits in the summer—not a bad way of doing it.

Now some more news from the Home Market. For instance, T. W. Jones (Birmingham) collected VP8AD, VP8AM, VR2BD and ZK2AA on 14 mc CW, and VK3MC, ZL2FI, 3GU and TA1AV on 7 mc CW. ZL3GU is active on 7 mc most mornings.

A. Studley (Harrow), who held the call G5TD many years ago, has heard from the GPO that a new call is on the way; so after all these years off the air he will be returning. He says that as an SWL he knows only too well the pleasure that a

QSL confirming a worth-while report can give, and he will welcome DX reports when he starts up again.

N. A. S. Fitch (London, E.10) is now using a 6AC7 preselector, "part of the family superhet" and a BC-453. It takes a while to fit it all up, as he says, but the selectivity is terrific. On this Mighty Wurlitzer he has been listening on 28 mc, where he was rewarded with FF8FP, HH3B, TA3FAS, VQ4CUR, ZD4AB, ZS3G and ZP7FA. On 14 mc he collected AP4B, C3EA (Formosa), C7TY, ZD2RGY and many other nice ones.

R. Bastin (Coventry) has also heard C3EA/C3 and forwards his QTH. E. Morris (Romford) suggests that if anyone hears W6UVD (Hermosa Beach, Calif.) they might like to send him a card, because he says he has worked 60 G stations and has not had a single card in return for one of his. He sent a QSL to E.M. by Air Mail—a letter, as he's out of cards at present!

R. Baldwin (London, E.17) has been a SWL for many years but has just written his first letter to us. He normally listens between 0630 and 0800 but manages to squeeze in a few periods around 1600 and 1700. The result appears in the 'Phone Only list as 35 Z and 124 C, but as he has a two-element rotary going up for 28 mc a rapid increase is to be expected! F. K. Earp (London, S.W.11) is another newcomer to these columns, and some Calls Heard from him appear in that section. He uses a 1-V-2 and plays with various aerials.

Super-DX

Very hard to say what "super-DX" is these days, as the super-DX of yesterday has become the routine of to-day. For example, once upon a time KX6AF was a "plum," if ever there was one; now, people are describing him as consistent and easy to receive, and one can imagine them passing him over, having heard him so often. What shall we do about all this (until our old enemy "conditions" does it for us?). I suggest *more listening on the LF bands*, and, particularly, keeping a watch on 3.5 mc in the early mornings this winter. There's still a kick in a W6 or a ZL on that band which even a KX6 or a KP6 fails to produce on 14 mc.

D. L. McLean (Yeovil) contributes AR8BM, ZC1AZ, ZD1BD, 1SW, 2RGY and ZS3F (all 14 mc) and FF8FP, J3KBE, 9ANZ, KL7OJ, PK4DA, VP2GJ, 5AR, YS1AC and W7ILE/KX6 (all 28 mc). All stations on 'phone. He has found 28 mc

"patchy" but marvellous at times. D.L.M. says that W3NCV/TA1 was a Maritime Mobile (s.s. *South Star*) and therefore does not count as a country. He and R. A. Hawley (Goostrey) have both heard G3CBP/MM (Persian Gulf). R.A.H. also mentions ZKIAS and VR2BD (14 mc CW), and adds that he does not like the idea of this "Letter of the Month" Contest. You will remember that you are supposed to be hunting out "K" stations during the month of October. R.A.H. would like a *monthly* Countries and Zones Heard contest.

QSL's or Not?

It seems that very few listeners are in favour of any contest based on verifications. R. A. Hawley makes the point that one may hear a "rare" country during a contest, and may already have reported that station and had his QSL. In that case he's not going to bother to send another, and so you lose a point. N. A. Phelps (London, N.10) adds that any such contest would let loose floods of SWL reports, with the result that some of the "only-active-station-in-the-country" people would be deluged with reports and would have to stop QSL-ing altogether.

Please don't think that I am in favour, either! I merely threw out the suggestion. Personally, I feel that listeners only claim to have heard such-and-such a station for their own satisfaction, and there isn't even any of *that* if they haven't really heard him.

The Russian Zones

K. Parvin (Thornton Heath) has made a noble attempt to straighten out the Zones of the UA stations, and presents the following result:—Zone 16: Most UA1's, including Archangel; Zone 17: Most UA9's plus UA1PA and UA1KEB at Amderma; Zone 18: UA9KOA and ØKAA, ØKBA, ØKSB, ØKTU, ØOA, ØPA, ØSF, ØSG, ØSI, ØUA, ØVB, ØVC; Zone 19: ØAT, ØFG, ØKFA, ØKFC, ØKGA, ØLC, ØKQA; Zone 40: 1KEC and 1KED (Franz Josef Land).

He comments on ZS2MI (Matron Island), which has just been "passed" as a new country and is in Zone 39. Look out for that one! "Queeries" from K.P. are TR5VD and ZY1S. He also heard FB8AS being called by an HC one morning, and wonders whether there really are any FB8's on the air. And he mentions a rumour that TI8RB is on Cocos Island; I can squash that one, since from here I

can see his card on the wall and the QTH is Box 61, Puntarenas, Costa Rica.

Other news from K.P.'s very "meaty" letter is that CE7ZA is on Greenwich Island (South Shetlands Group); CE7ZB is at Discovery Bay; VK3NR will shortly be VK9NR on Norfolk Island; VR2AZ/VR1 is now believed to be VR1B; EA8AO is Rio de Oro, not Canary Islands. Thanks, K.P., for all this useful information.

Shorts

Condensation now being necessary, we will operate with "quickies." L. Shearlaw (Camberley) forwards a letter received from W4LKP in reply to a 3.5 mc report—he was considerably shaken by it! A. Bannister (Manchester) doesn't like the idea of listening for "K's" this month and would like something a bit more active. As he says, interest is bound to fall off in "Zones Heard," so many people having already heard most of them. Query from him—PE1BE? E. Nottingham (York) has added five new countries on 28 mc and one on 14, and would like a Top-Band "Countries Heard" Marathon. Many others think this a good idea, and I will certainly lay it on for the New Year, if not before.

T. W. W. Dearlove (Frimley Green) heard a VK7 saying that they in Tasmania hope to be recognised as a separate country again soon. . . . J. M. Graham (Glasgow) finds W6's and W7's on 28 mc



"... Blow, Mr. Forthgasper, the world is waiting ..."

too numerous to list. He also, however, logged KX6AF, ZD1BD, W7KMV/Iwo and ZP7FA. . . . E. A. Parkinson (Leeds) is another who has heard the mysterious ZY1S (working W8HGW). . . . D. G. Martin (Cheltenham) listened for just over an hour on 3.5 mc during the month, and collected W5, W6 and WØ—not wasted time. He also rounded up most of the other available DX on 14 and 28.

H. M. Graham (Harefield) says he can't make his old 1-V-1 work as it did in pre-war days, and that he is "simply staggered" by some of the best lists received. He, together with many others this month, logged "HZ56D," who is an American airborne over Saudi Arabia. This call-sign was heard several months ago, but vanished until recently.

B. J. Tyson (Sheffield) says that G6AJ/AP is definitely in Pakistan, and is near Karachi. B.J.T. is in agreement with the others, both as regards QSL's in contests and the 1.7 mc Counties Heard idea. F. W. Lindley (Barnhill, Angus) wonders whether the 28 mc SLP really was "flat" or whether it was his receiver, just resuscitated after the summer months. He will already know the answer to that one!

L. N. Goldsbrough (Wirral) has been off the air for some time but has produced himself an 11-valve double-super, built round the BC-453. He has logged some nice DX, including VU4AC (Laccadive Islands)—and he is expecting his ticket one of these days. . . . C. S. S. Lyon (Liverpool) is now G3EIZ, but wants to continue behaving like a listener in spite of it! He has heard VP2LA on 3.5 mc (running 20 watts to an 807), and most of the 14 mc DX including W4DGW/KJ6.

D. W. E. Powell (Wilton) was all set to listen to the 3.5 mc QRP Contest but was unfortunately interrupted. He, too, wants to see some interest stirred up in 1.7 mc activities. A. Baldwin (London, E.11) logged 15 counties during a Field Day and has heard 25 altogether on 1.7 mc.

The support for the QRP Contest was very small indeed, judging by the particulars received. M. Harrison (Darlington) submits a log of 119 stations in 50 Counties, and A. Frost (Thornton Heath) comes up with 52 stations in 30 Counties. Everyone else maintains a discreet silence. So I am pretty certain in my mind that we shall have to treat 3.5 mc as an early-morning DX band from now on, and that our "inter-G" work will take place on 1.7 mc.

I must just conclude by apologising to several readers whose letters have been unavoidably left out this time—but the post-bag really was tremendous and space is limited. Many thanks to all of them, and also to all those senders of Calls Heard who were confronted with the House Full notice this time. Don't stop writing, please!

Set Listening Periods, October and November

October 30, 2000-2200 GMT—14 mc CW and 'Phone.

October 31, 0900-1100 GMT—28 mc 'Phone only.

November 27, 1500-1700 GMT—28 mc CW and 'Phone.

November 28, 0700-0800 GMT—3.5 mc CW and 'Phone (DX only).

During the week-end October 30-31, there is one leg of a worldwide DX Contest ('Phone only) going on, so anything might happen. But please stick to the rules, as given at the head of the Calls Heard page, and only log the "wanted" stations.

Next month's closing date is November 2, first post. So it's a very tight squeeze again, and please post off your SLP lists on the Sunday if you can. Address everything, as usual, to DX Scribe, *Short Wave Listener*, 49 Victoria Street, London, S.W.1. Good Hunting and 73!

THE R.1116—CORRECTION

In the circuit diagram on p. 325 of our October issue, there should be a 1 megohm resistor between grid of V6 and GB—1.5v, and the earthy end of R31 should go to the top end of the secondary winding of T2. Fortunately, as the Rx is ready-built, these small mistakes will not in any way affect its performance!

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CALLS HEARD

Please note the following simple rules for sending in lists of Calls Heard :

- 28 and 14 mc : No Europeans, No USA except W6 & W7
No VE except VE5, 6, 7 & 8.
7 mc : No Europeans.

Arrange logs in the form given here, with (a) prefixes in alphabetical order, but not repeated; (b) numbers in numerical order and repeated as part of the call-sign; (c) call-signs in alphabetical order. For example:—VK2GW, 3CP, 4UL, VP1AA, 6CDY, YQ3HJP, 4EJT, W6ENV, 7VY. Please underline each prefix, keep each list to one band, and, in short, make your lists exactly like those below, except that the more space you leave, the better.

SET LISTENING PERIODS

14 mc

Sept. 26, 0800-1000 GMT

M. Davies, Rhoswlyn, Llanybyther, Carmarthen.

CN8AB, 8EN, CTIRD, HC2RA, HK4DF, ISIAEW, PY6CO, VK2IC, 2VS, 2NG, 3ADR, 3ASW, 3AWN, 3HG, 3RE, 3FP, 3ZL, 5RN, 6MW, 6KW, 8AZ, WSHHG, YS3PL, ZL2BO, 2CA, 4CA, ZB2A. (Rx: R-107.)

W. J. Willis, 17 Alfred House, London, E.9.

PHONE: CN8EN, PY6CO, VK2US, 3ADR, 3IC, 3LN, 3SV, 3ZL, 5RN, ZB2A.
CW: HC7KD, UA1BV, UC2CD, UR2KAE. (Rx: Eddystone 504.)

F. W. Lindley, 22 Panmure Terrace, Barnhill, Angus.

CW: KL7IT, LX1B, UA1BV, 3HI, UB5KAF, UQ2AB, UR2KAE, VK2BO, 2BT, 2CL, 2EO, 2JN, 2ZH, 3APA, 3KB, 3VI, 4CG, 4UL, 5AF, 5FL, 5FN, 5JS, 6NL, 7KB, 7LZ, W5BK, 5FNA, 5KTD, YR5I, ZL2LB, 3AF, 4DF, 4DU. (Rx: 0-V-2.)

D. I. Cruse, 9 Woodlands Avenue, Sidcup, Kent.

PHONE: CN8AB, 8EN, VK2US, 3HF, 3LN, 3ZL, W5HHT, ZB2A.

E. Dommett, 38 Yonder Street, Ottery St. Mary, Devon.

PHONE: EA9AI, HK1DZ, PY6CO, VK2ACX, 2AWN, 2DI, 2GA, 2NG, 2SV, 2US, 3ADR, 3BM, 3HF, 3HG, 3HW, 3JE, 3LN, 3ZL, 5RN, 6KW, 6MW, 6NL, 7AZ, YS3PL, ZB2A, ZLICD, 2BT, 3FV, 3MH, 4GA. (Rx: RME 69.)

L. Shearlaw, Kaduna, Frimley Road, Camberley, Surrey.

PHONE: CN8AB, VK2US, 3ADR, 3HF, 3HX, 3LN, 3RE, 5RN. (Rx: R.208.)

N. A. S. Fitch, 79 Murchison Road, London, E.10.

PHONE: ISIAEW, VK5RM, ZL2BT, 4GA.

CW: PY1DG, VK4FH, ZD2RGY, ZL4BP. (Rx: 12 valve, double super-het.)

A. R. Wybrow, 54 Lordship Lane, E. Dulwich, London, S.E.22.

PHONE: CN8AB, 8EM, HC2JR, HK4DF, PY6CO, UB5KAA, VK2ALS, 2UB, 2US, 3ADR, 3ASV, 3AWN, 3HF, 3LN, 3RE, 3VO, 3WO, 3ZL, BOH, 6KW, 6MW, 7AJ, W5HHT, YS3PL, ZL4GA. (Rx: AR88LF.)

T. W. Jones, 56 Cuckoo Road, Nechells, Birmingham.

CW: KL7IT, 7LG, TG9JK, UA9KOG, UG6AB, VK2PX, 4FH, 4UL, 5FL, 5JS, 5RK, W5BK, 5FNA, ZBIQ, ZK2AA, ZL2LB, 2QM, 3CT, 4DU. (Rx: V55R.)

Edwin Nottingham, Lyndhurst, Upper Poppleton, York.

PHONE: CN8EN, VK2US, 3ADR, 3ASV, 3AWN, 3HF, 3JE, 3LN, 3VO, 3WU, CZL, 5RN, ZL2BT, 4GA. (Rx: Eddystone 640.)

A. W. Robertson, 149 First Drive, Cranford, Middx.

PHONE: VK2JE, 2UF, 3AFB, 3NL, 3HF, 3WU, 4KS, 5RN, W5HHT, ZB2A, ZL4GA.
CW: EA9AI. (Rx: Mains 1-V-1.)

A. M. Norden, 9 Leaside Crescent, London, N.W.11.

PHONE: VK2US, 3AWN, 3HF, 3LN, 3ON, 3WU, 3XZ, 3ZL, 5RN, 6SW, 7AZ. (Rx: Phillips' BC 7-V-Super.)

A. Baldwin, 28 Wallwood Road, Leytonstone, London, E.11.

CW: CZ2AC, KL7IT, SU1KK, UA1BV, 3AS, 3TD, UB5KAA,

UQ2AE, VK2BC, 2EO, 2ZF, 3DO, 3KY, 3TX, 3VJ, 4FH, 5DT, 5KO, 5LG, 7KB, 7OM, W5FNA, ZBIAS, 1KQ, ZCIAA, ZD2RGY, ZK1AB, ZL1LU, 4BP, 4DU.

PHONE: ISIAEW, VK3ZL, W5HHT, ZB2A, ZD1AU. (Rx: Hambander with Preselector.)

D. W. Bruce, 39 Dunkery Road, Eltham, London, S.E.9.

PHONE: CN8AB, 8BV, 8EN, FA3BF, 3GZ, VK2ACX, 2US, 2XL, 3ADR, 3AM, 3AWN, 3HF, 3LN, 3RE, 3WU, 3ZL, 5RN, 6MW, W5HHT, ZL2BT, 4GA.

CW: KB6AD, KL7IT, 7UM, SU1KK, TG9JK, UF6AK, UQ2AE, 2AF, UR2KAE, VK2AFC, 2ML, 2NB, 2PV, 3MC, 3TX, 3VD, 3VI, 4EL, 4FH, 4HM, 4UL, 5AE, 5LG, 5OU, 6JB, 6SA, W5FNU, 5LTW, ZBIAS, ZL1GM, 2LB, 2QM, 4BP, 4DU, 4DV, 4HW. (Rx: 1-V-2 TRF.)

J. R. Cooling, 337 Princess Road, Manchester, 14.

PHONE: VK2US, 2VP, 3AWN, 3LN, 3HE, 3ZL, 6KW, W5HHT, YS3PL, ZB2A. (Rx: Marconi CR100.)

N. A. Phelps, 17 Leaside Mansions, Fortis Green, London, N.10.

CW: CN8MZ, EA9AI, FA8BG, KL7IT, 7OL, UA9KOG, UQ2AB, VK2BC, 2BT, 2CL, 2FC, 2PX, 3APA, 3BJ, 3VJ, 4EL, 4FH, 4LM, 4UL, 5AF, 5CE, 5KO, 2RO, 6SA, W5FNA, ZBIAS, 1KQ, ZD2RGY, 2L1AL, 1TG, 2GO, 2LX, 3FA, 4BP. (Rx: 1-V-2 TRF.)

G. P. Watts, 62 Belmore Road, Thorpe, Norwich, Norfolk.

PHONE: VK2ALQ, 3GE, 3HF, 3VO, W5HHT, YS3PL, ZB2A, 2E.
CW: EA9AI, UA1BV, UB5AU, 5KAB, UC2CD, UF2KAB, UQ2AE, VK3KY, 3XU, 4FH, 4LW, 5AF, 5BZ, ZL4BP, 4DU. (Rx: Hallcrafters S20.)

J. Bagshaw, Sunlea, Saltash Road, Callington, Cornwall.

PHONE: CN8AB, 8BK, 8EN, FA3GZ, HC2JR, LU5AE, VK2AL, 3ADR, 3ASV, 3HF, 3JE, 3KN, 3LN, 3ND, 5QI, 6MW, 7AZ, ZB2A, ZL3MH. (Rx: SX24.)

W. J. C. Pinnell, 40 Melville Road, Sidcup, Kent.

PHONE: CN8AB, 8EN, FA8BE, VK2NO, 2RE, 2US, 3HS, 3RW, 3ZU, 6KW, W5HHQ, ZL2BT.

CW: UI8AJ, VK3APA, 5FL, 5JS, 5RD, W5FNA, 5LVD, ZL2LB, 4DV. (Rx: V55R with Pre-selector.)

D. Heaton, 1 Jer Lane, Horton Bank Top, Bradford, Yorkshire.

PHONE: FA3GZ, HC2JR, HK4DF, VK2US, 3HF, 3JA, 3LN, 3WU, 3ZL, 3ADR, 3AWF, 5QI,

5RN, W5HHT, YS3PL, ZB1AM, ZB2A, ZLAGA. (Rx: 14-Valve Double Superhet.)

D. Garrard, Ceaque, 17 Hill House Road, Ipswich, Suffolk.

'PHONE: CN8AB, 8AV, W2KH, 2US, 3ADR, 3AJR, 3BO, 3GE, 3HF, 3JN, 3NW, 3RE, 3WU, 3ZL, 5RN, 6KW, 6MW, 6RI, YS3PL. (Rx: BC-342-N.)

H. M. Graham, 28 Park Lane, Harefield, Middx.

'PHONE: CN8AB, EA9AI, FA3FB, 8BE, HK3IR, LU2BB, OK2XF, PY6CO, VK2SW, 2US, 3BM, 3HF, 3HG, 3HW, 3LN, 3ZL, 5RN, W5HHT, ZB2A ZL2BT. (Rx: Murphy A122.)

GENERAL

3-5 mc

F. K. Earp, 33 Lavender Terrace, S.W.11.

'PHONE: LU9AF, PY7AN, WICMF, 1MZ, 1FJK, 1HM, 2TUP, 2ANZ, 2KSM, 2MGA, 2FBO, 3BNH, 4BYN, 2AUG. Sept. 16-17, 0515-0545 GMT. (Rx: 1-V-2.)

D. H. Dell, 92 Cranston Road, Forest Hill, S.E.23.

'PHONE: G2DYM, 2MI, 3AAL, 3DKS, 3DV, 3FW, 3JW, 3TN, 5XM, 6WF, GC5OU, GW3BRI. Oct. 1-2. (Rx: 0-V-1 Battery.)

D. G. Martin, 65a Winchcomb Street, Cheltenham, Glos.

'PHONE: WICNO, 2BIG, 2KQG, 3BJ, 3BWH, 4DCN/2, 4JGU, 4MMW, 8MZL, 8VDS, 9BLX, 9DOD. (Rx: Eddystone 640, 0600-0645 GMT.)

28 mc

H. Alford, Sunny Mead, Berrow, Burnham-on-Sea, Somerset.

'PHONE: AP2F, CX2CL, 2CS, FF8FP, HC2OA, 2OT, HH3VE, HK4AD, 4AR, HR1MB, KP4AC, 4KJ, 4ES, 4HX, LU3DH, 5BO, 9EV, M13BC, OQ5AB, 5BR, 5CL, 5HL, 5LL, PY1GO, 1HW, 1IK, 2CK, ST2AM, 2FU, TA3FAS, W6OBM Port TA, TG9AD, 9RV, UBSKAG, VK2ALQ, 2EQ, 2RH, 3OK, 3RV, 5KL, VQ2R, 2AP, VP3TR, 6CDI, VQ2DH, 4CUR, 4HRP, 4NSH, 4SC, 5WCP, 5VPS, VU2CR, W1PPH/MM, 2LDH/MM, 4JGZ/MM, 5CTX, 5EHR, 5ISW, 5IZN, 5JIF, 5KGX, 5KHN, 5MVF, 5NDA, 5NU, 5UJ, 6CJZ, 6DMN, 6FZL, 6IR, 6NIG, 6POE, 7UPR, ZB1AG, 1AK, 1FK, 1IL, 1IS, ZD4AH, ZLICD, 1GI, 1HA, 1KJ, 1KN, 1MD, 1OF, 1ON, 2BN, 2IF, 2JB, 2LM, 2QS, 2TS, 2UJ, 3AW, 3AY, 3GN, 4AO, ZS1DD, 1FH, 5DS, 6Q. (Rx: 1-V-1.)

J. Loader, 5 Highwood Road, Parkstone, Dorset.

'PHONE: CE1AN, CO2OM, CX4CS, HK3AB, 4AR, KG6DO, KP4ES, LU3AA, 3BQ, 3DH, 9EV, MD3MB, OQ5AB, 5BA, 5LL, PY1JP, 2CK, 2OK, ST2AM, 2JR, 2MP, TG9CK, TI2OA, VP2PR, 3TR, 5AR, 6YD, VQ2JC, 2IT, 4ERR, 4FC, 4HRP, 4SE, V57PW, 7W, W6AGM, 6AOR, 6CAY, Y6DEK, 6KUL, 6NHY, 6OBM, 6OZH, 6PCK, 6POZ, 6RAP, 6REH, 6RX, 6UPP, 6WLO, 6Y1Y, 6YWQ, 7ILE, 7RWT, 7UPR, ZB1E, 1FK, 1L, ZC6XY, ZE1JO, ZP7FA, ZS1B, 1BV, 1CN, 1AX, 1EO, 1DH, 1FD, 1K, 1KH, 1P, 1T, 2AQ, 2AZ, 2CI, 2DW, 2DY, 3G, 5BS, 5DS, 5VX, 6AG, 6DW, 6FD, 6IJ, 6KF, 6LF, 6LK, 6LW, 6Q, 8A. 4 hours 1700-1900 GMT. (Rx: RF Unit Type 25 into 1-V-1.)

A. Bannister, 58 Demesne Road, Manchester 16.

'PHONE: AP2AF, 2F, 2FS, FF8FP, HC2OT, HLIAY, 1BL, HR1MB, HS1SS, HZ1AB, J9AMZ, KG6DO, 6DW, KP4ES, LU3DH, MD4JG, OQ5AR, 5BA, 5BL, 5CL, PY2CS, ST2AM, 2FU, 2MP, 2RL, TA3FAS, TG9RV, UBSKAG, VK2EQ, 3CP, 5KL, 7AZ, VP4TO, 6CDI, 6YV, VQ2DH, 2JC, 2JT, 4CUR, 5PDD, V57PW, W2EJV/PK3, 2WMV/C9, 6OBM/TA, YS1AC, YV5ABE, ZB1AH, IE, ZE1IE, 1JO, ZS1B, 1EQ, 1FD, 2AS, 2DY, 5U, 6KF, 6Q. (Rx: Marconi P.22.) 10 hours.

F. K. Earp, 33 Lavender Terrace, London, S.W.11.

'PHONE: AP2F, CE3DH, 4BP, 4CA, FF8AD, HR1MB, J4AAK, 9ACD, 9AMZ, KA1FH, KG6DW, LU3AA, 4DP, 6ES, KP4AS, OQ5KE, PY1FR, 2KP, ST2AM, TG9RV, VP3JM, 4QZ, 4TAI, VQ3PCQ, 5PBD, V57DW, TS, VK2JP, 2DS, 2EQ, 3RV, 6RU, VE6RL, 7KH, W2LDH/MM, 6CZH, 6RVH, 6FHW, 6EVR, 6OGN, 6DWS, 6JRA, 6AOT, 6WHO, 7UBR, 7AFS, W4KMC/KG6, ZB1FK, 1AK, ZD2JK, ZE2JG, 2JO, ZL1KN, 1JO, 1HA, 1MD, 2BE, 2BM, 2FY, 2JB, 3AW, 3HZ/P, 4AO. (0830-1030, 1500-1730 GMT.) (Rx: 1-V-2.)

N. A. S. Fitch, 79 Murchison Road, London, E.10.

'PHONE: AP2F, 2G, 2R, MD3MB, PY2CK, PZ1RM, ST2AM, TA3FAS, VK2AFE, 3OK, 3UJ, 6HL, VP6YB, VU2CQ, W6YTT/MM, 0OLU/MM, ZD4AB, ZL1BW, 1CD, 1GI, 1GZ, 1HA, 1HJ, 1KJ, 1KN, 1MB, 1ON, 2BE, 2BN, 2FY, 2JB, 2LV, 2QS, 3DS.

CW: VK3OP, 4VP, 5VJ, 6PJ, W0AIX/MM, ZL1AF, 1AX. (Rx: Mains 1-V-1). (0900-1100 GMT, 4 hours.)

G. P. Watts, 62 Belmore Road, Thorpe, Norwich, Norfolk.

'PHONE: AP2G, 4B, CE2TC, CO7GM, CR9AG, CX4CS, FF8FP, HC1FG, HLIAR, HZ1AB, J2RJF, 3KBE, J9ANZ, KG6AD, 6AO, 6DW, KP4AY, 4CI, 4ES, LU3DH, 5BO, 7FA, MD4JG, OA4AB, OQ5AB, 5BA, PK4BA, PY1FR, 2CK, ST2AM, 2FU, TA3FAS, UBSKAG, VK5BH, 5KL, 5LC, 5RV, 6HL, 6KW, 6MU, 6PJ, 6RU, 6ZX, 7AZ, VP3TR, 4TO, 5AS, 6CDI, 9G, VQ2DH, 2JC, 2JT, 4CUR, 4HRP, 5PBD, V56AE, 7PS, 7PW, 7RF, VU2CQ, 2CR, ZCIAZ, 6XY, ZE2JA, 2JK, ZLIHJ, 1OF, 3DS, 3JO, 3LE, ZS1KH, 6B, 6EB, 6KF. (Rx: S.20 and Converter.)

D. L. McLean, 9 Cedar Grove, Yeovil, Somerset.

'PHONE: AP2E, 2F, 2G, 2R, 4B, CX3AA, 4CS, HLIAR, 1AR, 1AY, 1BB, 1S1AEX, J3KBE, 9ANZ, KG6AAF, 6BV, 6DO, 6DT, 6DW, 6EL, KP4AC, 4CU, 4ES, MD4JG, OQ5HL, PY1GO, ST2AM, 2FU, 2JR, 2MP, UBSKAG, VK2ASN, 2BZ, 2LG, 2RH, 4CS, 5KL, 6HL, 6RU, 6WU, VP6CDI, 9G, VQ4CRE, 4ERR, V57PW, VU2G, W1PPH/MM, 2LDH/MM, 3NKS/MM, 5AXI/MM, 7RNT/MM, 0IAX/MM, 0OLU/MM, W7ILE/KX6, ZCIAZ, 6LA, 6XY, ZD4AB, 4AH, ZLICD, 1DW, 1GI, 1HA, 1KG, 1KJ, 1MD, 1OF, 1ON, 2BM, 2LV, 2QS, 2UJ, 3AY, 3DS, 3HC, 3HZ, 3JO, 3KA, 4CN, ZS1SE, 2AZ, 2DY, 5MX. (Rx: AR88LF.) 6½ hours, 0945-1145 GMT.

T. W. W. Dearlove, Lattices, 138 Coleford Bridge Road, Primley Green, Surrey.

'PHONE: CE2CC, CN8BB, 8BK, CO7GM, CX4CS, EL7A, FF8FP, HC1FG, HH2BL, MD3ML, OQ5AB, 5AR, 5BA, 5CL, 5LL, OX3GE, VP3TR, 5RS, 6CDI, V57RW, 7RF, VQ2DH, 2JC, 2JT, 4HRP, 4KTH, 4NSH, 4SC, W1PPH/MM, W5AXI/MM, YV5AC, ZD1AH, 4AB, ZE1JO, 2IG, 2JK, ZP7FA, ZS1BV, 2AG, 2DY, 3J, 5BS, 5ES, 6DH, 6EB, 6IH, 6JL, 6LW. (Rx: CR100.) 10 hours, 1600-1800.

A. O. Frearson, 66 Wheelwright Rd., Erdington, Birmingham, 24

'PHONE: CM9AC, CN8EK, FE8AB, HC1FG, HK4CO, LU3DH, OA4AK, OQ5AR, 5BA, 5BL, 5ML, PY1JP, ST2AM, TA3FAS, TG9RV, VK2AFE, 2RH, 6HS, 6ZX, VQ2AP, VQ2DH, 2ICJP, 4HRP, 4HRT, 4ST, 5PBD, V57PS, 7PW, VU2CQ, W2LDH/MM, 5AXI/MM, 6OBM/TA, 0IAX/MM, YV4AM, ZCIAZ, 6LA, 6XY, ZS1B, 1BV, 2CI, 2DY, 6JI, 6Q. (Rx: National HRO Senior.)

G. Cole, 6 Devonshire Gardens,
London, N.21.

'PHONE: AP2R, CN8BK, 8EI,
8EK, CR9AG, 9AD, HC3OT,
HR1MB, HZ1AB, J2HYS, 2RG,
KG6DO, KP4ES, OQ5BA, PY1IK,
TA3FAS, VK2FP, 2LQ, 2OT,
2QA, 2TY, 3CY, 3NP, 3PG, 5KG,
5LC, 5RV, 6PJ, 7AZ, 9GW,
V02P, VP6CDI, VP9AG, 9G,
VU2CR, W2SIK/PM, W5AXI/MM,
W7KMV/Iwojima, W7RNT,
ØIAX/MM, ZB1AH, 1AK, 1S,
2BE, ZCIAB, 1AZ, ZD4AH,
ZL1GW, 2BE, 2JP, 3LE, 3LR,
ZS1AZ, 1BV, 1EO, 1KH, 2AS,
2DX. (Rx: 0-V-0.) 0800-0900
and 1600-1700.

R. L. Bastin, 101 Aldermans Green
Road, Coventry.

'PHONE: CX4CS, HZ1AB,
KG6DO, KP4ES, KZ5TD, ST2AM,
TA3FAS, WA1AA, W5CCO, 5VY,
5AXI/MM, YV4AM, ZB1AH,
1AK, 1E, 1FK, 1L, ZL3AY. (Rx:
Hambander.) 4 hours, 1330-1430
G.M.T.

Edmund Wicks, The Nook,
Riversdale Road, Bournemouth

'PHONE: AP2FR, CX4CS,
HC2OL, KP4ES, OQ5BR, 5BA,
TA3FAS, TG9RV, VS7EW, 7PW,
W6BOM, 6CBB, 5OZH, 6RL,
ZB1FK, 1AK, ZC6XY, ZS5DS,
6U. (Rx: Hambander with Pre-
selector.) 1830-1930.

A. W. Robertson, 149 Firs Drive,
Cranford, Middlesex.

'PHONE: CR9AG, CX4CS,
HZ1AB, LU3AA, 3DH, OQ5AR,
5LL, PY1FR, ST2AM, VK5KL,
6AS, 6HL, VP4TI, 6YB, VU2CO,
2BG, YS1AC, YV1AU, ZC6XY,
ZL1BR, 1BW, 1GI, 1HJ, 1KJ,
1KN, 2AN, 2BE, 2BM, 3DS. (Rx:
Battery 0-V-1.)

B. J. Tyson, 139 Weswick Road,
Sheffield 8, Yorks.

'PHONE: AP2E, PY2CK,
VK2EQ, 5KL, 7AZ, VU2CQ,
YV4AM, ZB1AH, 1AK, ZL1KJ,
1KN, 1ON, 2FY. (Rx: Eddystone
640.) (1006-1144 GMT, 19 Sept.)

D. C. Barton, 13 Brangwyn Drive,
Withdean, Brighton 6, Sussex.

'PHONE: AP4B, F88FP,
HL1AR, HZ1AB, J2HYS, 2RLK,
3KBE, 9ANZ, KG6DW, KP4CI,
4ES, PZ1RM, TG9RV, VK6AP,
6ZK, 7AZ, VP4TZ, 6CDI, VS8AE,
7JF, 7PS, 7PW, VU2CQ, W6O8M/
TA/P, 7KMV/Iwojima. (Rx:
Eddystone 640.)

14 mc

O. A. Good, 1 Western Drive,
Oswestry, Shropshire.

'PHONE: AP4B, W4JUC/C1,
W2WMV/C9, HL1AA, 1AB, 1WH,
HZ1AB, J2AAL, 9ACN, 9AKC,
9ANZ, KA1AF, 1AL, KG6DE,
6DI, W9RUZ/KG6, KX6AF.

CW: UAØPA, UI8KAA.
UL7BS, XZ2AA. (5 hours, 1330
1530 GMT.)

'PHONE: HC1FG, 7KD, HPILL,
KH6CT, 6GS, KL7SW, 7UM,
W3FOJ/KL7, W6DWX/KL7,
VE5SJ, 8MA, 8MI, VK4UL,
4WF, 5TR, 7AJ, 7AZ, 7JB,
VP2AG, XE1AC, ZL1HK, 2BT,
3HC, 4GA.

CW: VEBAM, VR2BD. (7 hours
0700-0800 GMT.)

J. E. Smith, 27 Braundton Avenue
Sidcup, Kent.

'PHONE: CE1AM, FY8BG,
HC1FG, 2KQ, HK1DZ, 1FQ,
3LR, KH6CT, 6GF, 6GS, KL7QO,
KP6AP, LU2BB, 4CN, 6AJ,
OØ4AI, TG9AG, VE8MI, 8MA,
8OH, VK2AGW, 2AHA, 2ALO,
2DN, 2HF, 2IC, 2KT, 2NG, 2NO,
2NS, 2SV, 2ADR, 3AGU, 3ALM,
3AW, 3AWN, 3BZ, 3DD, 3EE,
3EV, 3HF, 3HW, 3JD, 3JE, 3JT,
3KN, 3LN, 3OP, 3RE, 3TA, 4DO,
4JU, 4KS, 4WF, 4WN, 4WU,
5RN, 7AJ, 7AZ, VP6MO, XE1AC,
YN5YS, YS3PL, YV5AS, ZD1MD,
ZD2RGY, ZLICD, 1KR, 2BT,
2DV, 2GX, 3FL, 4FO, 4GA. (Rx:
8 Valve Home Broadcast.)

Capt. J. B. Lievens, R.E., Canal
Zone, M.E.L.F.

'PHONE: AP4B, 4E, CN8AN,
8BV, CO2DO, 2RO, EK1AD, 1MD,
ET3AE, FT4AF, 4AI, 4AP, H' 2KJ,
HPILL, J9ANZ, KG6DP, KH6BM,
LU4CN, MDIA, 4JG, M13BC,
OØ4BM, 4M, OX3GE, PYACT,
6CW, 7BT, 7QG, TA3FAS,
T12UMB, VB5KAG, 5KGA,
VK2JD, 2NO, 2NS, 2QQ, 3ADI,
3JT, VO2FL, VQ4ERR, 4NSH,
VS7PV, VV2BH, XE1AC, 1BC,
YN1LB, YS1AP, 2AM, ZC6JL,
6XY, ZD1SW, ZE2IG, ZL2BT,
2CV. (Rx: National HRO.)

R. W. Norfolk, St. Mary's Hospital,
Tattingstone, near Ipswich.

AP4B, 4L, C1CH, CE1AM, 3AT,
CN3RP, 8EG, CO2RR, CT1PW,
EK1AD, 1MD, ET3AB, FA9RS,
8WS, F88FP, HC1FG, 2OA,
HK3BI, HR1MB, HZ1AB, IS1AW,
J2AAR, 2AHA, 5LQK, KA1CH,
1FH, KH6GS, 6LS, KL7IT,
KP6AE, KX6AF, KZ5WG, LU4BH,
7BH, MD1L, MF2AA, OØ4AI,
4M, OQ5KL, OX2QM, 3GE, 4BD,
PK2WI, PY1FR, 1IK, 2CK, 2CT,
ST2AM, SUIJX, SVØAG,
TA3FAS, TG9AG, TI2OA, UA1BE,
1KFF, 3DA, UR2KAA, UBSKAG,
VE7AJN, 7WP, 8BC, WK1FH,
2AQJ, 3FA, 4VD, 5RN, 7AJ,
VO1F, 2BD, 4X, 6AD, VS2BU,
7PS, W6KV, 7OZC, XE1AC, 1CQ,
1UE, 3AF, XG6AJ, YN1CA, 1HC,
YV5AY, ZB1AM, 1AN, 2A, 7AD,
ZC1AL, 6JT, ZD2KY, ZE1JM,
2IN, 2JQ, ZL1CA, 1CD, 1KA,
1PD, 4FA, ZP7FA, ZS1CN, 2X,
4H, 5FY, 6FT, 6XY. (Rx: Sky
Champion. 0700-0800 and 2000-
2100.)

D. W. Bruce, 39 Dunkery Road,
Eltham, London, S.E.9.

'PHONE: AP4B, C1CH, 3EA
(Formosa), 7TY, H' 1AB, HZ1AB,
56D (Airborne), J2ATC (Airborne),
2NZI, 5LQK, 9ABW, 9AKG,
9AMZ, 9ANZ, KA1AI, IUSA,
W9RZJ/KG6, W6TWX/KL7,
ST2GH, UH8KAA, VK2AGU,
2BM, 2US, 2XG, 3ADR, 3LA,
3LN, 4VD, 6RU, 7AZ, VQ4SC,
VS1CW, 7EP, VU2BH, 2LS,
ZD1BD, 1SW, 2RGY, ZL2BT,
3FL, ZS3F.

CW: AP4A, 5B, CR6AI,
CT3AA, J2AAL, 2RLK, KL7IT,
MP4BAB (Dakhan), PK4VD,
VK3ND, 3WX, 5FH, VS1CX, 6BD,
(Rx: 1-V-2 TRF. 8½ hours, 1700-
1900 GMT.)

Dennis H. Lucy, 11 Hereford Avenue,
East Barnet, Herts.

'PHONE: J9ANZ, KH6DU,
6IJ, 6JQ, KP4CL, LU4CN, 7AZ,
PY1ACQ, 1DY, 1FR, 2CK, 4BU,
4IC, 4JP, 7CG, 7WH, ST2FU,
VE7CL, 8MI, VK2CW, 2FH, 3EE,
3JD, 3JE, 3LA, 3LN, 4DL, 7AZ,
VLSA, VPSAR, VU2GB, W6EZF,
6PKH, 6TLO, ZD1BD, ZLICD,
2BE, 2BT. (Rx: R1155A un-
modified.)

E. A. Parkinson, 8 Hawthorn Drive,
Rodley, Leeds.

'PHONE: HC2KQ, HK1DZ,
KH6GS, KL7M, OX3MG, PY2JU,
T12FG, VE8MA, VK2AGW,
2ALO, 2BT, 2NG, 2NS, 2OO,
2SV, 3AWN, 3BH, 3BZ, 3FE,
3JD, 3JE, 3JT, 3ND, 3PA, 3RE,
3TS, 4JU, 5RN, 7AZ, ZL2BT,
2BZ, 4FO. Rx: Eddystone 504.
3 hours, 0700-1755 GMT.)

J. Bagshaw, Sunlea, Saltash Road,
Callington, Cornwall.

'PHONE: AP4B, C3EA, 7TY,
CX1VD, FA8Z, 16DD, J9ANZ,
KG6DE, LU4BW, PY1FR, 4IK,
6CO, 7QF, 7QG, VK2AGU, 2XG,
3JT, 4VD, 7AZ, YV1AN, ZC6UN,
ZD1BD, 1SW, 2RGY, ZS1CZ, 3F
(Rx: SX24.) (1600-1800, 2000-2200
GMT.)

D. W. Waddell, 25 Hillfield Place,
Nantwich, Cheshire.

'PHONE: CE1AM, 2AX, 2BQ,
3CT, CO7CX, HC7KD, J9ANL,
KP4CL, OØ4M, SHFIX, ZC6XY,
ZP3CN.

CW: CE1AU, 3CB, 3HQ, 5AW,
CM2AZ, 2SW, 6AH, 8DL,
CO2MO, 6AJ, CT3AA, ZX1BZ,
EPIJ, HH2JD, 3L, HK1GH, 3FF,
HP1BR, KP4AZ, 4FH, 4FP, 4HX,
4KD, KV4AI, KZ5BE, 5CE,
OØ4AP, 4BG, 4CO, OQ5AV,
PJØX, PZ1FM, 1NB, 1OY, 1WX,
TG9JK, TI2EXO, 2KP, UA6IA,
6LJ, 6UC, UØ6BM, VE6DG,
VP1AA, 3JM, 4TZ, 5AX, 6CDI,
VQ4SGC, VS9AN, YV5ABX,
5AEY, ZO2RGY, ZP3BL. (Rx:
Modified R.1155A.) (2100-2300
GMT.)

PSE QSL

The operators listed below have informed us that they would like SWL reports on their transmissions, in accordance with the details given. All correct reports will be confirmed by QSL card. To maintain the usefulness of this section please make your reports as comprehensive as possible.

- AP2N 95 Depot Lines, Karachi 3, Pakistan. Operating 'phone and CW on 14020, 14100 14122 and 14274 kc, at 1800-2200 GMT.
- CT0K Roosevelt Road, Tientsin, China. 'Phone and CW on 14050, 14350, 28050 and 28200 kc, operating 0900 and 1600 GMT.
- CTIRM 27 R. Dr. Couto Jardim, Vila Vicosa, Portugal. Signals and callings of stations heard calling CTIRM in 3-5, 7 and 14 mc bands.
- CT3MN Mario de Sousa Portela Ribeiro, S. Martinho, Funchal, Madeira. 14 mc 'phone, operating 0800-0900, 1200-1400 and 1800-2359 GMT.
- CX6AD 3905 Boulevard Artigas St., Montevideo, Uruguay. Reports on 14013, 14075, 14156-6, 14266 kc 'phone and CW, 2000-0300 GMT.
- EI3W Glenflesk, Ardarausha, Limerick, Eire. 3-5, 7 and 14 mc 'phone and CW 2100-2359 GMT.
- EI9T Capuchil Friary, Ardnhuire, Cashelmore, Co. Donegal, Eire. Operating 'phone on 3627, 3698, 7080 and 7254 kc.
- G2DHY 63 Lewisham Hill, London, S.E.13. Reports on all 59 mc 'phone and CW transmissions.
- G3CAT 6 Moss Close, Plmner, Middlesex. Reports from I, VK and VU on VFO-controlled 28400 kc 'phone, operating 1700-2200 GMT, and weekends.
- G3CFR 28 Solent Road, Southbourne, Bournemouth, Hants. 145296 kc 'phone and CW, at 1800 GMT.
- G3CTR 29 Aspinden Road, London, S.E.16. QSL's all reports on 3520 kc, 7025 kc 500 miles, 14050 kc 1000 miles, 1 watt CW, 2100-2300 GMT.
- G3DAG 8 Penington Road, Beaconsfield, Bucks. 14096 kc CW, 2000-2330 GMT, and at weekends.
- G3DKS 115 Norwood Road, London, S.E.24. Reports outside U.K. on 3515, 3700, 1850 and 1900 kc CW and 'phone. 1800-1930 and 2130-2300 GMT.
- G3DPT 103 Merryhills Drive, Enfield, Middlesex. 7077 kc CW, operating 2000-2230 GMT daily.
- G3DWW 115 Bushey Road, London, S.W.20. Reports on 1767.5 and 3535 kc CW, QRP, 2000-2230 GMT.
- G3NB 337 Locking Road, Weston-super-Mare, Somerset. Call being pirated consistently on 14 mc CW; reports wanted to try to locate this pirate.
- G3OV 32 Dilston Grove, London, S.E.16. QSL all reports on 1818 kc 'phone, 3550, 7030 7090, 14060 kc CW, QRP, 2000-2200 GMT, and weekends.
- G5WC 101 Central Hill, London, S.E.19. Reports from Asia on 14 mc CW and 'phone.
- G8DL 14 Mudeford Lane, Christchurch, Hants. 145-9 mc 'phone and CW, 1800 GMT onwards.
- HLIAR E. Carson, 4th. Ord. M.M.Coy., A.P.O. 901, c/o P.M., San Francisco, California, U.S.A. 28 mc 'phone, operating 0900-1500 GMT.
- 11AHO 53 Suffragio Street, Trento, Italy. 14, 28 and 56 mc 'phone, during periods 0600-0900, 1200-1400 and 2000-2359 GMT. Reports on modulation depth and quality.
- 11AQX rada Guardiella 3, Trieste, Italy. Reports on modulation of 14152, 14280 and 14350 kc 'phone, operating 2000-2359 GMT.
- 11AV Via A. Carriarra 11, Genova-Quarto, Italy. 30, 60 and 144 mc 'phone, 1800-0100 GMT.
- KP4EO Fort Buchanan, San Juan, Puerto Rico. Requests reports on 7 and 14 mc CW, and on 28 mc 'phone, operating at 1115 and 1615 AST.
- KZ5EL Box 367, Howard Field, Panama Canal Zone. Operating 'phone in the bands 28500-28650 and 27160-27430 kc, 2100-2359 GMT daily.
- LU3EB c/o Av Alvear 2750, Buenos Aires, Argentina. 7100, 14250 and 28400 kc 'phone.
- OA4AF General Canevaro No. 436, Lima, Peru. Requests reports on 'phone operation on 14132, 14168, 14322, 28264 and 28336 kc.
- OK1QO 12 U. Tenisu, Praha XVII, Czechoslovakia. Operating CW on 7008, 7014 and 14028 kc, at 2300-0200 GMT. Give details of QSB and Wx.
- OK2HX Postbox 21, Slezska Ostrava, Czechoslovakia. VFO-controlled 3-5 and 60 mc CW operation.
- OX3SF G. Rasmussen, Kangerdlugssuak, Greenland. VFO-controlled 3-5, 7 and 14 mc CW.
- OY31GO I. Olsen, Thorshavn, Faeroerne, Faroe Islands. 14 mc CW, 1300-1500 GMT Sundays.
- SM5FI Apelgatan 16, Norrkoping, Sweden. 'Phone and CW operation in 3-5, 7, 14 and 28 mc bands, and on 51160, 59040, 58640 and 113400 kc.
- ST2AM RAF Station, Khartoum, Sudan, M.E.F.A. 28180 kc 'phone, 1130-1730 GMT, and at weekends.
- VE1NO 330 Morris Street, Halifax, Nova Scotia, Canada. QSL's all reports on VFO-controlled 'phone and CW transmissions, 2200-0200 GMT.
- VE2KE 37 Lapointe Avenue, Valleyfield, Quebec, Canada. VFO-controlled 14 mc 'phone and CW.
- VE2NV/VE3AKG Room 612, 63 Sparks Street, Ottawa, Canada. 14 mc CW, operating 2200-0400 GMT.
- VE6PP Rev. McGrane, Lac La Biche, Alberta, Canada. 3-5, 7, 14 and 28 mc 'phone and CW, 0600 GMT.
- VE7SW 97 Cook Street, Victoria, British Columbia, Canada. Operating 14007, 14028, 14108, 28014, 28056 and 28216 kc 'phone and CW.
- VK2AIU 18 Washington Street, Bexley, Sydney, Australia. Operating 28 mc 'phone, during period 0900-1300 GMT, also at weekends.
- VK2ALO 35 Moxon Road, Punchbowl, N.S.W., Australia. 14 mc 'phone. 0630-0830 GMT.
- VK2BC 61 Knowles Avenue, North Bondi, N.S.W., Australia. Requests reports on 14 mc CW, operating 0900-1200 and 1600-1930 GMT.
- VK3JP 5 Scotts Parade, Ivanhoe N.21, Victoria, Australia. 14 mc CW, operating 0730-0815 GMT.
- VK4CZ Deane Street, Charters Towers, Queensland, Australia. VFO-controlled CW in band 14000-14150 kc, at 0400-0700 and 0900-1200 GMT.
- VS6AL P.O. Box 541, Hong Kong. 'Phone and CW on 14100 and 28200 kc, also VFO, 1200-1500 GMT.
- W4KKD 3145 Pine Tree Drive, Miami Beach, Florida U.S.A. QSL's all comparative reports on 14285-14295 kc 'phone, operating 0001-0800 GMT.
- W0P9Y 2701 E. 7th Street, Sioux City, Iowa, U.S.A. Operating 28 mc 'phone, afternoons GMT.
- XE1QE P.O. Box 1980, Mexico City, Mexico. 50056 and 144063 kc, and VFO-controlled 14 and 28 mc 'phone and CW, at 0100 GMT, also weekends.
- YV8AD J. M. Franchi, Creole Petroleum Corp., Caripito, Edo Monagas, Venezuela. 7, 14 and 28 mc 'phone and CW, VFO, 1930-0330 GMT.
- ZL1GW c/o Power Station, Arapuni, New Zealand. QSL's 100 per cent, reports on 28180 and 28240 kc 'phone, operating 0630-1000 GMT.
- ZL2GH 785 Childers Road, Gisborne, New Zealand. Requests reports on VFO-controlled 14 mc CW, operating 0600-0900 and 1700-2100 GMT.
- ZL3CX 4 Mona Square, Ashburton, New Zealand. Nightly operation on 28155 and 28252 kc 'phone.
- ZS1EC Hinxton, Sawkins Road, Mowbray, Cape, South Africa. 14 mc CW, 1400-1800 GMT.
- ZSSFE P.O. Box 101, Durban, Natal, South Africa. VFO-controlled 7 and 14 mc CW, at 1530 GMT.
- ZS6B P.O. Box 2876, Johannesburg, South Africa. 14 and 28 mc 'phone. VFO-control, at 1500 GMT.
- ZS6DJ Box 5328, Johannesburg, South Africa. Requests reports on VFO-controlled 7, 14 and 28 mc 'phone and CW, operating 1900-2300 GMT.
- ZS6JV c/o Magistrate's Office, Brits, Transvaal, South Africa. 14 mc 'phone, 1400-1900 GMT.

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2 1/2 a.	2in.	Thermo	5/-	1 m/a.	3 1/2in.	M.C.	15/11
20 a.	2 1/2in.	M.C.	7/6	500 ua.	3 1/2in.	M.C.	18/6
40 a.	2in.	M.C.	7/6	20 v.	2 1/2in.	M.C.	5/9
25 a.	3 1/2in.	M.I.	2/11	15 v.	3 1/2in.	M.I.	7/6
500 ua.	2 1/2in.	M.C.	7/6	150 m/a.	2 1/2in.	M.C.	6/-
				5,000 v.	4 1/2in.	Electrostatic	50/-

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SECTIONAL WHIP AERIALS. Seven sections which plug into each other making an Aerial 14 ft. long, a steel wire runs through the centre to stiffen. Thinnest section 1/2" in diameter, thickest section 1" in diameter. Weatherproof Green Enamel. ... each 3/8 Insulated Bases ... each 2/6

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A Kit of Parts to build a 6-valve (plus rectifier) receiver, covering 16-50 metres. Medium- and Long-wave bands. Valve line-up, 6K8, 6K7, 6Q7, 6J7, two 29A5 in push-pull. Metal Rectifiers are incorporated for H.T. supply. Output impedance is for 3 and 15 ohms. The latest Weirite Coil Pack incorporating Iron Dust Coils is used, making construction and alignment extremely simple. A pick-up position on the wave-change switch and pick-up terminals is provided. A complete kit, including valves, but without speaker or cabinet. Chassis size, 14" x 6". Overall height, 9". Price, £10/18/6, including Purchase Tax. Wired and tested, £12/10/-. Suitable loudspeakers are the GOODMANS 10" 6-watt P.M. at 47/6, or for superlative reproduction, the Goodmans 12" P.M. at £6/15/-.

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with Illuminated Glass Dial. All parts including Valves, M/C Speaker and instructions. 3 valves plus Metal Rectifier. 200-557 metres and 700-2000 metres. 200 to 250v A.C. or A.C./D.C. mains. State which is required. Size, 10" x 6" x 6", 47/7/6, including Purchase Tax.

NEW 1948 MIDGET SUPERHET RADIO KIT

with Illuminated Glass Dial. All parts including Valves, M/C Speaker and Instructions. 4 valves plus Metal Rectifier. 16-50 metres and 200-257 metres. 200 to 250v A.C. or A.C./D.C. mains. State which is required. Size, 10" x 6" x 6", 48/5/-, including Purchase Tax.

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 - 46 Auto 50v, 100v, 150v, 230v, 100w, 4 1/2" x 3 1/2" x 2 1/2" ... 12/6
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 - 50 12v 70a, 7" x 7" x 8". An ideal Transformer for ground heating or welding. ... 60/-
 - 51 350-0-350v 60ma 6-3v 1a 6-3v 2-5a 12/6
 - 52 250-0-250v 60ma 4v 1-5a 6-3v 2a 12/6

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The latest **EDDYSTONE** production The '670' **MARINE RECEIVER** SPECIALLY DESIGNED FOR PERSONAL CABIN USE

The Eddystone '670' receiver is primarily intended for personal use on board ship, and in view of this has been designed for operation on either AC or DC supplies of from 100 to 110 volts or 200 to 250 volts. Particular attention has been given to the performance of the receiver on the short waves as for long periods these will often be the sole medium for broadcast reception. The '670' complies with safety regulations and careful attention has been paid to the insulation throughout. The circuit is a 7 valve superheterodyne, tuning from 10 to 51.7 metres and 110 to 575 metres. A high grade internal speaker is used, which can be disconnected and headphones substituted to avoid disturbing sleeping personnel. The receiver is robustly constructed and suitable for service in the tropics. A mains filter (Cat. No. 732) is available for reducing interference from ship's electrical plant. The Eddystone special ship's aerial (Cat. No. 731) ensures high efficiency, and this together with the mains filter are valuable accessories.

The Eddystone '670' Receiver is at present available for Marine Export and Overseas Markets only.

Price : £37 10s. 0d. (ex Works)

Mains Filter : £2 10s. 0d. Aerial : £2 12s. 6d.

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B6 350-0-350v, 80mA, 6.3v, 4A; 5v, 2A; upright mounting, 36/-.

A4 as B4 above but half-shell mounting, 30/-.

A6 as B6 above, but half-shell mounting, 30/-.

Output Transformers, heavy duty for Push-Pull 6L6 and PX4; output 3, 8 and 15 ohms, 18/-.

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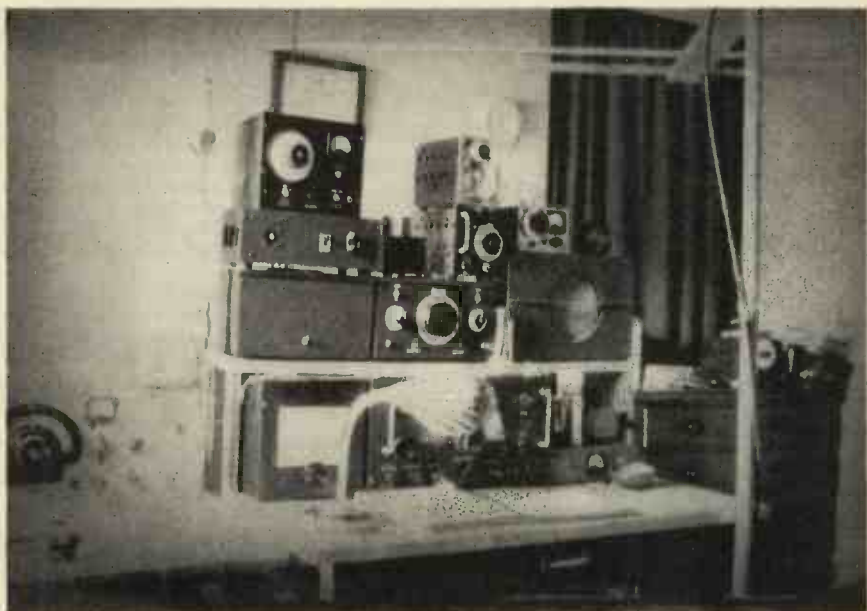
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SWL STATIONS

No. 16

ABOVE is a view of the station operated by R. F. Lyddon at The Green, Kingston, nr. Taunton, Somerset. Except for the modified R.1481 and the RF unit Type 27, both of which cover the 50-65 mc band, all the gear is home-built.

To the bottom left on the operating table is the 28/58 mc converter, using 6AK5 RF, 9003 mixer, 9002 oscillator, with plug-in coils; output at 7.3 mc is into the main receiver, a 13-valve superhet covering 400 kc to 23 mc in four bands, with electrical band-spread on 7, 14 and 21 mc. Supplies are obtained off a power pack incorporating stabilizers for the oscillator and screen voltages.

One of the most ambitious pieces of gear in the station is the frequency meter/monitor, in the centre position on the top shelf. It incorporates a 100 kc oscillator (SP61), a 1.5-3.0 mc VFO (SP61), and a 6SN7 multivibrator locked at 10 kc; in addition, the CO and VFO sections each feed into a separate buffer stage (SP61). All or each of these oscillators can be switched in with a 4-pole, 3-way switch. The crystal frequency is checked against WWV, and the VFO (switched in 12 bands)

allows frequency measurement to better than 80 parts in a million.

Another interesting unit is a VHF signal generator/monitor/grid dip meter covering 45-150 mc by means of silver-plated plug-in coils. The oscillator is a 9002, modulated at 1000 cycles by a 6SJ7 in a phase-shift oscillator circuit; a 6SH7 is used as the meter amplifier, and a 6SN7 as audio amplifier after the 9002, which becomes a diode detector when HT is removed from it.

A 33-ft. aerial is matched into the main receiver with a 6J6 pre-amplifier in a cathode-coupled circuit; a wide-spaced 58 mc beam, complete with remote indicators, is coupled to the modified R.1481 through a CV66 grounded-grid triode.

As might be imagined, the immediate objective at this very fine SWL station is a transmitting licence—and R.F.L. has gone about things in the right way by providing himself, first, with all the equipment likely to be required to enable signals to be checked properly. Besides which, he is to be congratulated on the design and home construction of so much excellent equipment.

The VHF End

Two-Metre Comment—Individual Reports—November VHF Contest—Calls Heard

by A. A. MAWSE

OUR hopes, expressed in last month's *Short Wave Listener*, of seeing some 145 mc Calls Heard have been rather in vain. Only one list, from W. H. Pierce (Reigate Hill) has so far come to hand. He turns in a very fine log—see Calls Heard. But perhaps the constructional details of a converter for the new band, given by G2XC elsewhere in this issue, will encourage more of you to "have a go." Two-metre transmitting activity is certainly on the increase, and in London and the South-East half-a-dozen or more stations are to be heard most nights; in all, some 40 or 50 stations appear to be active in southern England.

To assist in the initial tests of receiving equipment a list of some of the more active 2-metre stations is given herewith. The 145 mc band provides SWL's with a great opportunity to help the transmitters and we are confident that their reports will be valued highly. Especially is this so if you live in an out-of-the-way part of the country where there is little or no 2-metre activity. You may not hear *much*, but anything you *do* hear will probably be headline news.

The week-end of September 25/26 produced the best two-metre conditions so far. At midnight on the Sunday all signals in southern England, from almost any distance, were S9 *plus* and rock steady. G2BMZ (Torquay) was heard working G6DH (Clacton) at about 220 miles, while G5BY (Bolt Tail, Devon) was a very fine signal in London. The 145mc transmitting DX record is already at 287 miles, G5BY and G6OS (Hull) being the joint holders.

A Two-metre Beam

For those wanting data for a 2-metre beam, the following may help; measurements are correct for a 4-element array on 145 mc.

1st Director	36.3 in.
2nd Director	36.6 in.
Coupled Element	38.4 in.
Reflector	40.5 in.
All spacings	16.3 in.

It is recommended that the elements be made of $\frac{3}{8}$ in. duralumin tube. The feeder can be connected to the coupled element by the folded dipole method (see *Short Wave Listener*, May, 1948, page 181), in which case, the "broken" element should be spaced $1\frac{1}{2}$ ins. (centre-to-centre) from the "unbroken" element, and made of tubing one-half the diameter of the latter. Do not forget to allow for the end pieces of the folded dipole when measuring out its length.

The beam should be erected outdoors and as high as possible, especially if you are in a screened locality. Some recent tests we made with this beam showed that there was a difference of 2 S-points between its performance when mounted in the roof space and when outdoors at exactly the same height.

T9 on 145

A point to watch for those building converters for 145 mc using self-excited oscillators on their fundamental frequency is to ensure that the heater volts are well up. Our own experience during the last few weeks has been that as soon as the mains voltage drops (which it frequently does) the notes of incoming signals deteriorate to T6. Late at night when the power station usually supplies a few surplus volts the notes are T9. Just to make certain, we borrowed a Variac and tried running the volts up and down, and sure enough that was the trouble. The

TWO-METRE ACTIVITY LIST

London and the South-East

G2AJ, 2AXG, 2CIW, 2MC, 2MR, 2NH, 2UJ, 3FD, 4CG, 5IB, 5MA, 5NF, 5US, 5WP, 5XA, 6DH, 6LK, 6PG, 6VX, 8DV, 8KZ, 8SK, 8TS.

South Coast

G2BMZ, 2XC, 3CFR, 3DEP, 3EIL, 3RI, 5BY, 5TZ, 6WT, 8DL.

South Midlands

G2AOK, 4AP, 5RP, 5TP, 8DM.

Midlands

G2AK, 2ATK, 3ABA, 3APY.

North

G2IO, 2OI, 3DA, 3MY, 5CF, 5GX, 5MO, 6BX, 6OS.

Scotland

GM2DI, 3EDQ, 5VG, 6KH.

Northern Ireland

GI2HML.

Continent

ON4FG, PA0PN.

THE SHORT WAVE LISTENER VHF RECEIVING CONTEST

INFORMATION

This Contest is being run in conjunction with the VHF Transmitting Contest organised by the *Short Wave Magazine*. Entrants in the transmitting contest are required to exchange RST, reference number and QTH. Each contestant allots himself a 3-figure reference number, different for each band, which remains unchanged for that band during the period of the Contest. This reference number (say, 342) is sent before the RST or QS report, in the following manner: 342RST569, or 342QS57 in case of a 'phone report.

RULES

SWL SECTION

- (1) The period of the Contest will be Friday, November 12, 1800-2359, clock time; Saturday, November 13, 1200-2359; Sunday, November 14, 0900-2359.
- (2) Points will be claimed for reception of British Isles stations only, using the 58-5-60 mc and 145-146 mc bands.
- (3) Stations may be logged on either 'phone or CW.
- (4) (a) For full points, SWL's must log correctly call sign of station heard, call sign of station being worked, and RST, reference number and QTH given by station for which points are claimed. RST's given by the SWL receiving are *not* required.
(b) If this full information is received from both ends of one QSO, full points may be claimed on both stations.
Full points will be as follows:—
Stations up to 25 miles (Zone A), 1 point.
25-50 miles (Zone B), 2 points.
50-75 miles (Zone C), 3 points.
75-100 miles (Zone D), 5 points.
100-150 miles (Zone E), 8 points.
150-200 miles (Zone F), 12 points.
200 miles and over (Zone G) 20 points, plus five points for each additional ten miles of distance; proportions of these additional 10-mile distances will not count for points in proportion.
- (5) Reduced points may be scored for the reception of stations in Zones C to G heard calling CQ, or from whom the complete information required by Rule 4 is not received. These reduced points will be as follows:
Zones C and D, 1 point.
Zone E, 2 points.
Zone F, 4 points.
Zone G, 6 points.

No reduced scoring is permissible from Zones A and B.

Note: All distances are to be reckoned as between SWL receiving location and station logged, not between transmitting stations working one another.

- (6) Stations may be logged *once* on each band for points.
- (7) Point-to-point distances will be taken from the Ordnance Survey "Ten-Mile" Map of Great Britain, or calculated from the National Grid References when these are known.
- (8) Results should reach us, addressed A. A. Mawse, *Short Wave Listener*, 49 Victoria Street, London, S.W.1., by November 22, 1948, latest, set out as follows:
(a) Separate logs for each band covering period of the Contest, showing only calls claimed to count with time of reception, reference number, RST and QTH given by transmitting station, call of station being worked, distance, Zone and points claimed. The total score claimed for the band should be stated at the end of each log.
(b) The combined total of points claimed.
(c) A short description of equipment used and general notes on impressions and experiences of the Contest.

Results of the SWL Section of the Contest in full will be reported in the January, 1949, issue of the *Short Wave Listener*.

9002 we are using actually likes very slightly over 6.3 volts to give its best "pseudo-crystal" output. One wonders how many of the rough notes emanating from the Type 27 units are due to the same cause. But, of course, there are other things which produce bad notes:

Individual Reports

The only readers reporting reception of signals on 145 mc are E. Nottingham (York), who has heard G6BX and G6OS at about 40 miles or so and finds them much weaker than on 58 mc, and W.H.P.

as already mentioned. Unlike most people, with E.N. car ignition noise is worse on 2 than on 5 metres. He finds a 6J6 pre-amplifier better than an EF54 on 145 mc from the point of view of signal-to-noise ratio.

On the other hand, W. H. Pierce remarks that he is having no trouble at all with the Rx, which is very stable—largely due, he suggests, to the stabilised HT supply. It is a 6AK5 RF, 954 mixer, 955 oscillator arrangement, with the RF stage tuned, and shows no signs of drift. W.H.P.'s troubles lie in another direction, with

aerial matching, and for the present he is using a two-element beam only. He also notes that certain transmitters must have rather poor receivers, as they miss replies to their CQ's, and come on CQ'ing again; weak 'phones who do not identify on CW are frequently heard.

Amongst those giving much thought to the 145 mc reception problem is R. L. Bastin (Coventry), who sends in his first list of 5-metre Calls Heard. He is hoping to reach the Counties Heard list before the 58 mc band is lost to amateurs, and at the same time he is doing some VHF propaganda amongst the Coventry SWL's. R. M. James (Chatham) has got into the Counties list, but complains of the lack of 5-metre activity except for the two Sundays September 5, and 26. He is ready to start on the 145 mc converter and has a 2-element beam up already.

In Scotland, J. McCrindle (Kilmarnock) has also found five metre activity low. He is hoping some of his local ticket-holders can be persuaded to provide a signal on two, as otherwise he will be able to do little on that band. He may be unduly pessimistic, as there is good reason to believe that when conditions are good tropospheric DX on two metres may exceed that on five. However, the co-operation of a local transmitter is always very useful for getting the Rx really "perking."

G. E. Magrow (Dawlish) goes to the top of Counties Heard with his total of 36 in

the bag—the new ones were G4GR (Newport, Mon.), G5BD (Mablethorpe, Lincs.), GW4OS/P (Flintshire), G3MY/P (Derbyshire) and G3MA/P (Herefordshire). G.E.M. says that he has not been able to put in the usual spells on the Rx, and his best days were September 5, 9, 14 and 26, with the 14th outstanding when PAØPN was heard. September 4 was the only day showing spor-E. Conditions were very good again on the 26th, when GW4OS/P was RST-599 at 1002. G.E.M. is not yet quite settled on two metres, but has heard his locals, G2BMZ and G6WT.

T. B. Atkins (Stretton Sugwas, Hereford) writes for the first time; he runs a Type 26 into a Sky Buddy for five metres, with a two-element beam, and has a 145 mc converter under construction. T.B.A. is in one of the remote areas, with very little local VHF activity; however, he hopes that the Hereford club will shortly have a call on five metres.

H. J. Tyson (Cheddar), with a fixed steel-element dipole in the roof space, sends a nice list of EDX heard during August. He has a Type 26 into an RCA AR77E. M. Taylor (Tooting) has a Type 27 working somewhere near 145 mc, but so far has not definitely located the band. May we recommend the method outlined in the September and October issues of the *Short Wave Listener*? We used it ourselves and when the Rx was switched on at zero hour on September 1, there was G6LK calling G2XC, without any searching being necessary at all.

VHF CALLS HEARD

TWO METRES

W. H. Pierce, Canon Gate, Reigate Hill, Surrey.

G2AJ, 2AJ/P, 2AXG, 2CIW, 2FMF, 2IQ, 2MR, 2NH, 2UJ, 2XC, 3BPM/A, 3CQ, 3FP, 4DD, 4CG, 5AA, 5DT, 5IB, 5KH, 5OO, 5PY, 5RP, 5TP, 5TZ, 5US, 5WP, 5XA, 6LK, 6OT, 6PG, 6VX, 8DM, 8GX, 8KZ, 8SK, 8TL. (September 1-October 8. Rx: 6AK5 RF, 954 Mixer, 955 Osc. IF 18 mc. Aerial: 2-element rotary beam.)

FIVE METRES

G. E. Magrow, Sherwood, Exeter Road, Dawlish, S. Devon.

G2ADZ, 2AJ/P, 2AOL, 2CIW, 2FKZ/P, 2HLF, 2JL, 2KF, 2KG, 2KI, 2LC, 2MR, 2NH, 2OI, 2RY, 2UJ, 2XC, 3AAT/A, 3AEU, 3AGA, 3AHB, 3APY, 3BLP, 3BWS/P, 3CFR, 3DZI, 3EHY, 3KX/A, 3MY/P, 3WW, 4CG, 4GR, 4IG,

4LU, 4MR, 4NT/P, 4RO, 4WP, 5BM, 5BD, 5DF, 5HN, 5JM, 5LC, 5MA/P, 5MQ, 5OJ, 5RP, 5RS, 5UJ, 5US, 5WP, 6CJ, 6FB, 6KB, 6LK, 6NB/P, 6NK, 6OS, 6SC, 6UH, 6VX, 6XM/P, 6YU, 8JB, 8LY, 8QZ/P, 8TS, 8UZ, 8WC, GW4OS/P, 5SA, GC8OK. Tropospheric. PAØPN.

G. V. Haylock, Lewisham Hill, London, S.E.13.

G2MR, 2NT/P, 2ZV/P, 2LC, 2KI, 2BZ, 2NH, 2UJ, 2MI, 2CIW, 2AGK/P, 2BRR, 2ATK/P, 2DHV, 3FP, 3MA/P, 3BHR, 3BLP, 3BWS/P, 3CWW, 3ABA, 4KD, 4GR, 4NT/P, 4RO, 5MA/P, 5CD, 5RS, 5MI/P, 5WP, 5BM, 6SM, 6NB/P, 6SC, 6ST, 6CB, 6KB, 6XM/P, 8WC, 8QB/P. (September 26, 1948.)

R. L. Bastin, 101 Alderman's Green Road, Coventry.

*PHONE: G2AJ/P, 2ATK, 2FXK, 3ABA, 3BLP, 3IS, 5PP,

6FK, 8KL, 8VN. (August 10-September 29, 1948. RF Type 27 with Hambander.)

R. M. James, 1 West Drive, Maidstone Road, Chatham, Kent.

*PHONE: G2AJ/P, 2AOK/P, 2CIW, 2FMF, 2XV, 3BTC, 3BWS, 3BWS/P, 3CGQ, 3MR, 3OY, 3WW, 4KV, 4LU, 4NT/P, 4RO, 5UM, 5VT, 5WP, 6JK. (September 4-October 2. T27 into 1-V-2 Mains. Aerial ½-wave dipole.)

M. Taylor, 159 Coteford Street, Tooting, S.W.17.

*PHONE and CW: 50-100 miles: G2XC, 3WW, 4AP, 5BM, 5JU, 5RP, 6KB, 8WC.
100-150 miles: G3APY.
150-200 miles: G2ADZ, 3HW/P, 4LU. (August 26-September 5 RFU27 to 11V. Super. 3-el. rotary beam.)

Five-Metre Counties Heard

Starting Figure, 10

G. E. Magrow (Dawlish)	36
R. Rew (Birmingham)	35
P. J. Towgood (Bournemouth)	34
W. H. Pierce (Reigate)	33
G. Elliott (Chard)	29
L. C. Blanchard (Coulsdon)	28
D. Parker (Huddersfield)	21
A. H. Onslow (Hove)	19
M. Taylor (Tooting)	19
B. and D. Kendall (Potters Bar)	17
G. V. Haylock (Lewisham Hill)	17
N. Harris (Cheam)	16
D. T. Bradford (Denham)	14
D. L. Courtier-Dutton (Herne Bay)	13
W. S. Hall (Oxford)	13
A. J. Slater (Southwick)	12
F. H. Herridge (Balham)	11
R. M. James (Chatham)	10

The Club Contest

The VHF Listeners Club Contest in September produced an entry of 10, and so we are encouraged to organise a similar event, open to *all* SWL's, for November. Full details appear in this section, and may we urge you here to set out your logs *exactly* as requested in the rules. It makes the checking so much easier. And please send in an entry even if you think your score small.

The Club contest was won easily by G. E. Magrow (Dawlish) whose score far exceeded that of any other competitor. Full details of the results obtained by all competitors have been sent to members in the VHF Listeners Club circular.

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QTH's Wanted

The addresses of two members of the VHF Listeners Club have been mislaid, so will P. Bagshaw and G. Cole, the members concerned, please accept our apologies and also let us have their addresses?

In Conclusion

There has been a marked falling off in listener VHF activity this month, no doubt due to the end of the EDX season and the low level of five-metre activity resulting from the migration of the VHF transmitting men to 145 mc. This gives good reason to hope that as soon as the 145 mc convertors get going the letters will start pouring in with 2-metre news. The address is A. A. Mawse, *Short Wave Listener*, 49 Victoria Street, London, S.W.1, and the latest date for next month is November 5.

READER SUPPORT!

From SWL W. F. Kehler, in Germany, we hear that his copy of the *Short Wave Listener* circulates to 53 readers! It seems that this reader-circle was formed in March with 17 SWL's, and has now grown to an average of 53 in six months. The trouble is, of course, that, due to currency problems, German nationals are unable to obtain British periodicals in the ordinary way.

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FIELD'S

435 Stratford Rd., Sparkhill, Birmingham, 11

MONTHLY
COMMENT

DX

by

R. H. GREENLAND, B.Sc.

broadcast

Just two years have elapsed since the *Short Wave Listener* came into being. On this memorable occasion may I take the opportunity of greeting all my many correspondents. To all those who, month after month, have supplied new facts relating to short wave broadcasting: Thank you all for your invaluable assistance; and to those whose letters appear in my post-bag for the first time (and there are a number this month), we welcome you and hope your associations with short wave radio will be profitable and lasting. Our experience shows that it can scarcely be otherwise! We hope we may be pardoned for mentioning just one of our new correspondents by name. He is C. J. Fern of Lihue, Kauai, in the Hawaiian Islands, and we trust that he will continue to send us more interesting items, such as this month's story about Radio New Zealand.

Australasia

The hot news this month is that Radio New Zealand is on the air at last. The channels at present in use are ZL3, 11780 kc, and ZL4, 15280 kc, from 0700 to 0900 daily; our advice to our readers is to try ZL3! The inaugural broadcast was made on September 27, when the Rt. Hon. Peter Fraser, Prime Minister, made the opening speech, in which he said: "Our purpose is to give an accurate account of life in this country." Another speaker was the Hon. F. James, who said: "As Minister of Broadcasting I send our most sincere wishes from New Zealand. I hope you are going to like us."

A third Cabinet Minister spoke on behalf of the Maori race, who, he said, believe in a common understanding between the nations. In this programme we heard the sound of the turbulent and majestic Hooker Falls, the gurgling of a thermal spring, and an excellent contribution by New Zealand's National Orchestra. For future broadcasts, listen on Sundays at 0730 for a topical feature

*World-wide reception of
Short Wave programmes*

entitled: "New Zealand—Pacific Playground," or if you like music, listen on the same day around 0745 to the native songs of the Maori people.

The identification will be: "You are listening to Radio New Zealand, the short wave division of the New Zealand Broadcasting Service," and the pre-opening signal is a series of bird-like notes, presumably the call of the kiwi.

Radio Australia is as reliable as ever, particularly at 0700 on VLA6, 15200 kc, and VLB3, 11760 kc. J. A. Cooke (Luton) receives from them a monthly magazine, and has been mentioned three times in their Mail Bag given at 2130. Well done! In the Australian Home Service, VLH5, 15230 kc, was logged at 0630 on September 15. The local time was given—half-past four—then came Big Ben and Radio News Reel from London. In Western Australia, Perth, represented by VLW5, 9610 kc, is on the air daily, 1030-1600 and 2200-0145, and by VLW3, 11830 kc, 0330-1015; Sundays: 0200-1015. VLQ3, Brisbane, 9660 kc, with the Queensland viewpoint, may be heard 2000-1400 daily.

C. J. Fern (Hawaii) thinks that FK8AA, Noumea, New Caledonia, is working on 6005 kc only, on the schedule 0730-1000 (or later), and 2400-0100.

Asia

Quite a lot of news is to hand about radio stations situated on the Philippine Islands, and much of it comes from R. Iball (Langold, Notts.). In the first place, he has received a verification from the elusive KZBU. The card has a red border and the call-sign KZBU printed in yellow; "CEBU Calling" is overprinted on the call-sign. The frequencies given are 1250

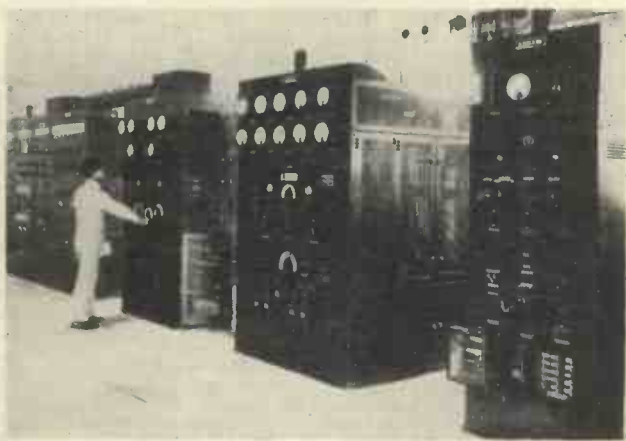
kc (medium-wave) and 6100 kc, and the aerial is a Vertical-L; the Chief Engineer, Nino Pancito, was obviously delighted to receive a report from England, judging by his profuse thanks. The address is: Philippine Broadcasting Corporation, Comercio Street, Cebu City, Cebu, Philippines.

R. Iball logged Manila I, The Voice of America station on 11890 kc, at 1345 on September 7 with an English talk, and he mentions that KZRH, Manila, 9640 kc, has been heard weakly around 2200. There is, apparently, another Philippine Broadcasting Corporation station, with the call-letters KZOK; the frequency is 2000 kc.

Radio Malaya, which is the local broadcasting service operating in Singapore and Kuala Lumpur on short wave, uses the following frequencies: 4825 kc, 6135 kc, 7200 kc and 6025 kc, according to R. Iball, who has received a card signed by J. Credington, Director of Engineering, Department of Broadcasting, Singapore. The Blue Network programme is relayed from 0130 to 1530 by the 7200 kc transmitter. In the nearby island of Sumatra, Radio Indonesia in Medan operates daily on 6741 kc from 0930 to 1530. All announcements are in Javanese. C. J. Fern informs us that The Voice of Free Indonesia has settled down on 10850 kc, with relays on 11125 kc (Soerakarta), and very irregularly on 9355 kc. Radio Macassar has, apparently, a second channel at 5030 kc.

There is news that HLKA, Seoul, Korea, has moved to 7990 kc for the broadcasting period 1030-1400. It can be identified by the English direction: "This is KBS, the Korean Broadcasting Station."

Again, C. J. Fern mentions a new North Korean transmitter on 7775 kc with dictation speed news beginning at 1400. He considers that the new Nanking Overseas Service on 15105 kc, call-letters XGOA, is the best ever from this centre, and he gives another Japanese broadcaster to add to our list. This is at



The Nazaki transmitting station. Japan.

Sapporo, and normally uses 6005 kc, except from 0200 to 0240, when it changes to 9535 kc. C. J. F. gives Soviet Mongolia as the latest tit-bit. This country uses 8330 kc from 0900 to 1500, and after 2300 daily. It has also been logged on 5265 kc.

In the island of Ceylon, Radio S.E.A.C. provides the best reception in this country. H. L. Poulton (Atherton, Lancs.) was once billeted no more than half-a-mile from the transmitter there and sends us the following technical information: It is the Marconi SWB-11 Major, consisting of a Franklin oscillator, four stages of FD's and two of PA. The last FD stage employs four 807's in a bridge; the first PA is a DET19 and four are used in a bridge in the final, the output being 10 kW. The transmitting station is located at Ekala, fifteen miles from Colombo. The studios in the residential quarter of the city are housed in a building which was originally a civilian bungalow. On September 18 the writer logged ZOH, Colombo, on 4900 kc at 1630, when the time was given as: "10 o'clock." After thirty minutes of dance music came the announcement: "This is Colombo, Ceylon. We are now closing down until 10 o'clock tomorrow morning. Goodnight, Everybody, Goodnight." This, of course, is the local station in Ceylon.

Earlier on the same day, India's Prime Minister was heard giving a special talk on Hyderabad over VUD5, 15190 kc. R. Iball logged A.I.R. stations one morning

at 0330! The News in English was audible on six frequencies, namely: 21510 kc, 17830 kc, 15350 kc, 15290 kc, 15190 kc and 15160 kc. R.I.'s latest is ZNT18, operating on 19210 kc and heard Saturdays, testing around 1445. This

station is operated by Cable and Wireless, and is located at Amman, capital of Transjordan. Dr. T. B. Williamson (Harpenden) advises us that the Sharq-Al-Adna transmitters now operate from the island of Cyprus; they are: ZJM5, 6170 kc; ZJM6, 6790 kc; ZJM7, 11725 kc; and another working in parallel on 9645 kc.

TABULATED SCHEDULES

I. Hong Kong Broadcasting Station.

Transmitters: ZBW 845 kc; ZEK 640 kc; ZBW3 9520 kc.
ZBW transmits English programme; 0430-0600 and 1030-1500.
ZEK transmits Chinese programme; 0430-0600 and 1030-1500.
ZBW3 transmits ZEK programme; 0430-0515; 1030-1130; 1300-1500.
ZBW3 transmits ZEK programme; 0515-0600; 1130-1300.

Basic Schedule for ZBW3:

Sundays:	0230	English Church Service	0330	English broadcast.
Weekdays:	0430	English broadcast.	0500	News in English.
	0510	Local weather report and forecast.		
	0515	News in Mandarin.	0530	News in Cantonese.
	0545	News in Swatow.	0600	Close down.
Wednesdays and Fridays only: English Children's programme at 1000.				
Weekdays:	1030	English broadcast.	1100	London relay—News.
	1115	English broadcast.		
	1130	News and Commentaries in Chinese languages.		
	1215	Chinese programme.		
	1300	London relay; News in English.	1305	Local weather report.
	1306	English broadcast.	1500	Close down.

II. Radio Saigon, French Indo-China. English Service Schedule.

Frequency: 11780 kc

Daily.

	1st. Transmission:	0045-0100.	News.	3rd. Transmission:	1330-1430.
	2nd. Transmission:	1000-1045.			
Monday:	1000	News.	1330	Last Week in Indo-China.	
	1015	Last Week in Indo-China.			
	1020	Light Music.	1335	Classical Music.	
	1040	Listeners' Letter Box.	1400	News.	
			1415	France Today.	
			1420	Dance Music.	
Tuesday:	1000	News.	1330	Inside Hollywood.	
	1015	South-East Asia Chronicle.	1345,	French Songs.	
	1030	French Songs.	1400	News.	
			1415	South-East Asia Chronicle.	
			1420	Dance Music.	
Wednesday:	1000	News.	1330	ABC of Composers.	
	1015	Talk for Women.	1400	News.	
	1030	Dance Music.	1415	Dance Music.	
Thursday:	1000	News.	1330	Talk on Indo-China.	
	1015	Talk on Indo-China.	1345	French Songs.	
	1030	French Songs.	1400	News.	
			1415	Editorial.	
			1420	Dance Music.	
Friday:	1000	News.	1330	Musical Requests.	
	1015	Inside Hollywood.	1350	Listeners' Letter Box.	
	1030	Dance Music.	1400	News.	
			1415	French Songs.	
Saturday:	1000	News.	1330	Topical talk.	
	1015	French Standpoint.	1340	Dance Music.	
	1030	English Songs.	1400	News.	
			1415	Editorial.	
			1420	Dance Music.	
Sunday:	1000	News.	1330	Short Play.	
	1015	Literary Talk.	1345	Dance Music.	
	1025	Dance Music.	1400	News.	
			1415	Dance Music.	

Radio Levant, Beirut, 8032 kc, has an English broadcast daily 1600-1640, with the News at 1600. Kol-Yisrael, Tel Aviv, 6835 kc, broadcasts throughout the day as follows: 0245-0330; 0500-0515; 0830-1000; 1100-1115; 1430-1830; with English from 1730 to 1745. In Iran, EQB on 6155 kc is operating 1730-1830; from EPB, 15100 kc, there is a daily broadcast in the evenings 1845-1930, with an English version from 1910 to 1920.

Africa

From the Dark Continent we have news of Leopoldville from three correspondents—R. K. Astley (Caterham, Surrey), L. W. Lewis (St. Leonards-on-Sea) and R. Patrick (Coventry). The former logged OTC2, 9767 kc, as did the last-named, during an English programme from 2030 to 2145. He gives the frequency as 9745 kc, but L. W. Lewis has received a folder-type card which gives the channel as 9767 kc; the address is: Radiodiffusion National Belge, Leopoldville, Belgian Congo.

L. W. L. recently logged the elusive CR4AA, Praia, Cape Verde Islands, around 2300; the frequency is now 5895 kc. J. C. Catch (South Shields) heard CR6RF, Benguela, 8080 kc, at 2015, closing at 2100 with the Portuguese National Anthem. Dr. T. B. Williamson says this one announces as: "Radio Club do Angola" and is probably located at Luanda. He also gives CR6RG, Dondo,

8242 kc, heard several times 1830-2030, and CR6RH, Sa de Bandeira, 9230 kc, with direction: "Radio Club do Huilla" and Portuguese announcements.

L. W. Lewis reports Omdurman with its usual Friday programme in English on 13320 kc at 1730. In the 31-metre band, it appears to have settled on 9550 kc after much roving! R. Patrick logs Radio Algiers at 1900, presumably on 9570 kc, with Arabic music, and has just received their card. It is blue on one side, and the following address is given: Radio Algérie, 10 Rue Hoche, Algér, Algérie.

Egypt, with SUX on 7865 kc, is now on the air regularly from 1530 to 2130 or later.

North America

The World-Wide Broadcasting Foundations stations WRUL, 15290 kc; WRUW, 17755 kc, and WRUX, 21460 kc, which are non-commercial in character, have been well heard. European listeners should tune in to WRUL from 1900 to 2215. L. W. Lewis has had a letter verification from WGEX, Schenectady, 17880 kc. It contains a list of frequencies in use for AFRS programmes from 1900 to 2200. They are: WRCA, 15150 kc;

WBOS, 15200 kc; WNRX, 21730 kc; and WGEX as above.

R. Iball (Langold, Notts) logged KRHO, Honolulu, 17880 kc, with its United Nations programme on September 22. The call was noted at 0845. L. W. Lewis caught OXI, Godthaab, Greenland, with a weak signal on 5942 kc at 2200; this is a most difficult one to log!

Latin America

South Americans, as usual, have been prominent during the hours of darkness.

Uruguay—R. Iball mentions CXA6, Radio Electric, heard on 9620 kc at S5; J. C. Catch has on several occasions logged CXA19 on 11835 kc. At 2300 there is a five-minute Spanish News, and this is undoubtedly the best-received Montevideo station during the past few months. R. Patrick heard CXA30, 6035 kc, with an interval signal of some twenty musical notes in ascending scale and the direction: "Radio Nacional de Montevideo."

Chile—The call: "Santiago, Chile" as given by CE622, 6220 kc, was heard very plainly by J. C. Catch at 2330. The announcer was a woman.

Argentina—Here we have LRM, 6180 kc, also logged by J. C. C., who recorded the call on the quarter-hour; it was: "LRM, LRM, Radio Aconcagua, Mendoza, Argentina." His other Argentinian was LRA1, 9690 kc, logged at 2330. The call was followed by a series of pips, two long and one short repeated three times, then four short. The Spanish News followed until 2345. J. C. C. mentions that PZH5, Paramaribo, was heard on 5750 kc at 2245; it was thus operating off its listed frequency.

Brazil—ZYC8, 9610 kc, has been S9 most nights, according to R. Iball. He logged Radio Jornal do Commercio on September 18 at 2040 on an approximate frequency of 11820 kc. L. W. Lewis has a letter verification from the Ceara Radio Club, Caixa Postal 222, Fortaleza.

Their transmitters are: PRE9, 1200 kc; ZYN6, 6105 kc; and ZYN7, 15165 kc, the latter two each on 5 kW power. The schedule is: 1000-1500; 2030-0300.

Venezuela—The writer logged YVKO, 5019 kc, with Big Ben half-hour chimes at 0322½ on September 15. The station gave closing Spanish announcements and the Venezuelan National Air at 0330. YVIRG, Cabimas, 6150 kc, was logged by J. C. Catch at 0130, when, after a

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The 50-kW RCA transmitter for VLC, Radio Australia, with monitoring equipment and control desk in the foreground.

call, which read: "Hatchay Erray Ah; La Voz de Lempira en Tegucigalpa, Honduras, Centro America." Mention was made of the medium-wave frequency, and it closed, as usual, with a long National air. On September 18, YSUA, San Salvador, 6250 kc, with an S9 signal, was logged closing at 0500 with clear directions in Spanish.

British Honduras—ZIK2, Belize, 10598 kc, begins its daily transmission at 1830 with the News; it is heard only weakly in the United States, and one source mentions that it is on the air for only thirty minutes.

trumpet fanfare, it gave its clear direction: "Radio Cabimas, Republica Venezuela."

Ecuador—The morning of September 15 provided three good signals. HCJB, 12455 kc, was tuned in at 0337 to the strains of "O! Come All Ye Faithful." (Shades of Christmas!) HCIVT, La Voz de Tunguragua, Ambato, 7000 kc, gave waltz music and closed at 0400, whilst HC2RL, Quinta Piedad, Guayaquil, 6635 kc, after a programme of operatic airs closed down with the Ecuadorean National Anthem at 0410.

Guatemala—W. A. Rowston (Grimsby) was astounded when he heard TGWA, 15170 kc at 1845, and he has since received a verification card for this achievement. This was certainly super-DX! The frequencies given on the card are: 9685 kc, 11760 kc, 15170 kc and 17800 kc, all working with a power of 10 kW.

Nicaragua—Here, Radio Managua, HTX1, 8320 kc, has been audible until 0800, when it signed off with the popular dance melody: Managua, Nicaragua. A new one in Managua is reported to be operating on 6300 kc.

Honduras—HRN, 5877 kc, closes at 0400 with the call in Spanish and a vocal version of the Goodnight Melody. HRA, 5940 kc, was recently logged at 0355 with

West Indies—L. W. Lewis logged ZNS2, Nassau, Bahamas, 6090 kc, at 0315 on August 26; VPO3, Bridgetown, Barbados, 10605 kc, at 2100; VRR⁵, Stony Hill, Jamaica, 12050 kc, at 0100; FG8HA, Pointe-a-Pitre, Guadeloupe, 7448 kc, at 0015; and FNRI, Fort-de-France, Martinique, 9700 kc, at 0045. Quite a good bag!

Europe

As from October 9, "Sweden Calling DX'ers" is scheduled as follows: (1) 0715 on 6065 kc and 9535 kc; (2) 1500 on 10780 kc and 15155 kc; (3) 0100 on 6065 kc and 9535 kc; the first two are on Saturdays, the third early Sunday mornings.

L. W. Lewis gives news of Eire, contained in a letter to him from Radio Eireann, The Castle, Dublin. The short wave outlets are: 9595 kc (News at 2210) and 17840 kc (News at 1730). The power is $1\frac{1}{2}$ kW. L. W. L.'s verification from EAJ7, Radio Madrid, Sociedad Espagnola de Radiodifusion, Avenida Jose Antonio 32, Apartado 745, Madrid, was for Radio Mediterraneo, Valencia on 7037 kc. The schedule is: 1200-1500; 1900-2330. W. E. Dobeson (BM/EABC, London W.C.1) handles reports for Spanish broadcasting stations, including, of course, Radio Nacional de Espagna.

ALL TIMES GIVEN IN THIS ARTICLE ARE GMT EXCEPT WHERE STATED

J. C. Catch hears SVD2, Athens, Greece, on 15345 kc at 2300 with S9 signals! R. K. Astley has received Radio Andorra's massive card in acknowledgment of reception on 5980 kc. R. Patrick logged Radio Monte Carlo, 6035 kc, and has received a booklet from them, with wording in French and pictures of the studios, aerial and transmitter.

Finally, L. W. Lewis has had a reply from the Societatea Romana de Radio-difuziune, Str. General Berthalo 41, Bucharest, referring to their 9250 kc channel. Other frequencies in use are 6175 kc and 11900 kc (English News at 1900). They would be very interested to know if their stations can be received in other parts of England and Scotland, and asked L. W. L. to make enquiries.

Late Extras

An interesting letter from T. W. W. Dearlove (Frimley Green, nr. Aldershot) mentions that he has heard broadcast transmissions between 28 mc and 30 mc. On one occasion, around 1630, there were six in number, including programmes in Spanish and one in English from the United States. The writer has logged some of these, but assumed that they were harmonics of stations of lower frequency. However, other readers may be able to find a solution to this problem.

The latest postbag brings an imposing array of new material, some of which will, regretfully, have to be held over until the December number. Here are the salient features.

Dr. T. B. Williamson (Harpenden) sends us another excellent batch. He hears HLKA, Seoul, 7935 kc often, from 2100 to 2200; the usual programme

schedule is: 2100, Sign on; piano music: 2130, three ascending chimes and call: "Korean Broadcasting System HLKA" followed by news in Korean: 2135, March, followed by light music. T. B. W. heard oriental music on 7950 kc on August 30; the station closed at 1730 and he thinks this may be Afghanistan. He gives several new Latin Americans. YV8RB, 3470 kc, is a new station at Maturin with slogan: "Radio Monagas." Nicaragua has YNZZ, Managua, on 6464 kc; it uses the call: "Radio Mundial." HOQQ, 6140 kc and HORT, 6060 kc are new ones in Panama City. The latter uses the call: "Radio Balboa" at 0445.

R. Patrick (Brighton) logged PRA8, Recife, 6010 kc, with an English programme at 2300 on September 5 (Sunday). J. C. Catch has just received their verification; the address is: Radio Club de Pernambuco, Estudios E Escritorios, Av. Cruz Cabuga 394, Recife, Pernambuco, Brazil. R. Patrick mentions CQM4, Bissau, 7943 kc, received very well most evenings at 2230.

D. Branham (Chorlton-cum-Hardy) hooked VP4RD, Trinidad, 9630 kc, at 2340 with a programme dedicated to a local fire brigade, and finally, R. G. York (West Croydon) logged KZRH, 9640 kc, on the evening of September 8; the local time was quoted as "5.41" (S8).

Dr. T. B. Williamson says that KZRH is usually two S points stronger than HLKA, which is a good guide for those of us who want to hear this tantalising Korean broadcaster! And so, till next month. Letters to reach us not later than October 29, addressed to: R. H. Greenland, *Short Wave Listener*, 49 Victoria Street, London, S.W.1.

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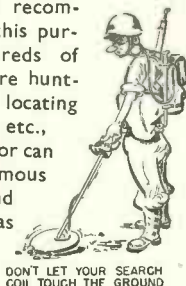
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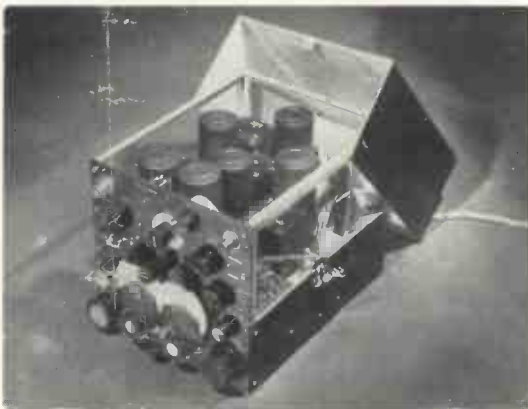
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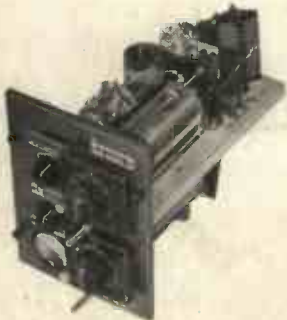


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