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JANUARY 1947
VOLUME 1 · NUMBER 3

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THE SHORT WAVE LISTENER

A MONTHLY MAGAZINE FOR THE LISTENING AMATEUR

VOLUME I

JANUARY 1947

NUMBER 3

Conducted by the Staff of
The Short Wave Magazine.

EDITORIAL

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Reporting

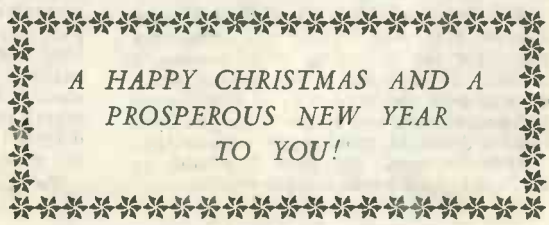
One of the resolutions helping to give a lot of people the happy new year to which they hopefully look forward would be in regard to QSL'ing. It should be "I will never do any rubber-stamp reporting."

A good example of rubber-stamp QSL's is a series of cards hastily filled in to W 'phones coming over at S9 *plus* during a Sunday afternoon and working G's in strings. All those W's know all about how their signals are being received across the Atlantic—they are busy collecting swell reports from all the handles they can raise over here!

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Yet thousands of such cards are sent off every week, clogging the lines of communication of the world's QSL systems and finding in due course a last resting place in someone's incinerator.

How much more useful and satisfying is it to exercise care and discrimination in reporting, and to find a station calling and calling again without reply, and to send the operator (*direct* if the QTH is known) a full report on his transmission. Such reports are always appreciated and are much more likely to bring back a QSL.

The other important point is the routing of the card. Always send it direct if the QTH is known; if not, send it to the addressee's own QSL Bureau, direct. Only when both these QTH's are unknown should the home Bureau be used—and remember that no QSL Bureau on earth can guarantee the delivery of every card!

SYSTEM IN YOUR LISTENING

AN EXPERIENCED SWL DISCUSSES LOG-KEEPING

CAN you find out in a moment when was the last time you logged OM2IOU without wading through pages of log-book? Is your information so efficiently tabulated that you can discover that UYP in the 31 m. band used to broadcast on such-and-such a frequency? If an unusual signal pops up at 22 degrees on your dial, can you fix instantly its (almost) exact frequency?

The SW listener will find that there is far less head-scratching and feverish hunting through back-number pages of data—and far more efficiency and general satisfaction with his hobby—if he conducts his listening along the lines suggested here, developed during the last few years of contact with short wave activities.

Systematic Logging

The first essential is an efficient logging system—tidy, well set out and containing space for the recording of all necessary details. It is worth while taking some trouble over the log-book, as it will save you endless time and bother when you have filled a dozen or more pages with entries.

Here is how my own log-book is arranged, with some sample entries:—

comment on prevailing conditions—covering, for instance, average strength of the multitude of W's heard but not necessarily logged. This, of course, will not need to be repeated with each entry, but should be amended when conditions are noticed to be deteriorating, improving or otherwise varying.

As an aid to easier recognition, BC stations can be entered in red ink.

This, then, is the system for noting the day-to-day performance of stations, for the purpose of sending reports, or simply as a general record.

The Station Record

Now, it will be pretty obvious that in a week or two you will have so many entries in the book that it will be fairly tricky to sort out the half-dozen or so records of one particular station. And when you want to send out a report to a station, covering perhaps 10 or 12 transmissions—as it should, to be useful—over a period of a month or more, the business of compiling it by sorting out the various entries from the mass will be quite formidable.

To cope with this, a loose-leaf book is

Call	kc or mc	Date	GMT	Item or Clg/Wkg	QSA	R	QSB	QRM	Wx	Remarks
0Q5BL	28	17/10	1553	CQ	5	7	5	Nil	Fine	No. Z's
ZE1JB	28	19/10	1540	G5CP	4	5	Nil	ZSIT (fone)	Fine	Bad QRN
VLA4	11770	20/10	2118	"Bitter Sweet" Music	5	9+	7	Nil	Mild	W's and S. American strong

In the "Item or Clg/Wkg" column should be entered programme heard in the case of a broadcaster, and the station called or worked in the case of an amateur. Under "QRM" should be entered (by the recognised symbols) not only the severity of the QRM but also the type and call-sign(s) of interfering station(s), if known.

In the last column any other comments which might be worth noting should be recorded, such as QTH and power used, if mentioned by the operator. This space can also be used for making a brief

needed. Separate pages are allocated to each country, and every time a new station is logged it is recorded in the loose-leaf book on its appropriate page. In the cases of countries like G, W and VE, with their many amateur stations, it is recommended that separate pages be allotted to each district (i.e., a page for W1, W2, and so on).

Thus, each station appears only once, and the dates of subsequent entries in the log-book are entered in the appropriate column. An example of a sheet of this kind appears on the next page.

BELGIAN CONGO

Call	Location	Band or kc	Dial 1	Dial 2	First Heard	Also Logged	Remarks
0Q5BL	Indotville	28	14	22	24/9	Sep 25, 27, 28 Oct. 3, 7, 13, 21	
OTC5	Leopoldville	17770	40	11	15/9	Sep. 18, 23, 29 Oct. 1, 5, 8, 10, 17	QSL'd 25/10

Well, you can see how much simpler things will be. You can tell at a glance how many times a particular station has been logged, and, when compiling a report, the dates recorded in the loose-leaf book will enable you instantly to locate each entry in the log-book. As in the log-book, BC stations should be entered in red for easier identification.

Frequency Check

Another arrangement used is a simple but highly effective method of rapidly ascertaining the frequency, exact to within a few kc, of an unknown signal popping up on one of the short wave broadcast bands.

You need some graph paper, divided into tenths. Write the frequencies covered by the particular band, allowing a rise of 10 kc per line, vertically up the left-hand side of the paper; horizontally, along the bottom of the paper, write your band-spread or vernier dial readings, allowing a variation of one degree per line.

Now, when, for instance, VLA4, 11770 kc, is logged at 20 degrees on your dial follow the 20 degree line upwards on the graph until it cuts the 11770 kc line, and put a blob there and write the call VLA4 alongside.

Do the same with the other stations you have logged, and then join up all the blobs with a line. The resulting picture should be a straight line or a gentle curve.

Now, when you get an unknown signal coming up at, say, 40 degrees on your dial, all you have to do is to follow the 40 degree line up until it cuts the line joining the blobs, then read along to the frequency column on the left, and that is the approximate frequency of your unknown station. Consult your station list and you are entitled to suspect that such-and-such is the unknown station.

Writing about it makes it all sound a bit complicated, but it is really perfectly simple, and almost invariably accurate provided that you take your dial readings correctly and put your blobs in the right place!

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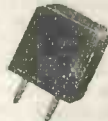
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BAND-SPREAD FOR BEGINNERS

WHAT IT MEANS AND HOW TO GET IT

by

L. H. THOMAS, M.B.E. (G6QB)

Assistant Editor, The Short Wave Magazin.

NEWCOMERS to short-wave reception are usually rather mystified by the apparent intricacies of short-wave receivers, which are much "tamer" to-day than they were fifteen years ago, but nevertheless still seem poles removed from ordinary broadcast receivers.

The main difference between a good short-wave receiver and a good broadcast receiver lies in the controls—not only their layout but the way they work, and this difference is due mainly to the requirement known as "band-spread."

Before the short waves burst in upon radio—and they did cause quite a revolution—most receivers were tuned by sets of plug-in coils. The tuning condenser, built in the set, would suddenly find itself connected across quite a different amount of inductance and therefore operating on another wave-band. Obviously, by choosing the size of the condenser and the number of turns in the coil, absolutely any band of frequencies in the spectrum, however short, long, wide or narrow, could be made to spread over the 180 degrees of rotation of the condenser.

Tuner Design

Nowadays, however, commercial sets no longer use piles of plug-in coils; most sets are switched for various wave-bands, which we have to accept as they come. The average broadcast receiver, for instance, will cover roughly 1000-2000 metres on the top range, 200-550 metres on the middle range, and sometimes, if it has short-wave reception provided, it will dart from 16 to 50 metres on its third range. There are better schemes available—many of them—but let us look at this typical example.

Nothing could be more misleading than wavelength figures. A complete ignoramus could look at them and say "this set covers a range of 1000 metres on long waves, 350 metres on medium, and only 24 metres on short; its tuning must be very difficult on the long range." It is easy to laugh at this fallacy now, but people really did talk like that once! In truth, it's the kilocycles that count, and if we examine the frequency

ranges, we find the set covering roughly 150 kc on long waves, 1000 kc on medium waves, and 14000 kc on short waves. In other words the tuning of the short-wave range is nearly 100 times as difficult as on the long waves, and 14 times as difficult as the medium waves.

Now imagine someone using that set for listening to amateurs on the 7 mc band. With his total short-wave range of 14000 kc, he is interested only in a band 300 kc wide—about one-fiftieth of the total scale length! What an inefficient proceeding it would be to do that, when it is possible to take any required band and "spread" it over the entire scale.

Need for Band-Spreading

So this shows the necessity for some form of band-spreading. It is fortunate that short-wave stations are not just spread at random over the many thousands of kilocycles available, but are grouped into bands of frequencies. From 50 metres down, for instance, we have the following: 49-metre broadcast band; 40-metre amateur band; 36-metre shipping band; 31-metre broadcast band; 25-metre broadcast band; 24-metre shipping band; 20-metre amateur band; 19-metre broadcast band; and so on. We are not going to discuss the possibility of band-spreading over *all* of these, but will assume that you want either the amateur bands or the broadcast bands, and that you possibly want to go in for refinements such as direct calibration of your dials.

Henceforth, to avoid a muddle, we stop talking of "metres" and deal only in megacycles and kilocycles. Let us take, first, the easiest case. You are building a simple 0-V-1 receiver with some four-pin plug-in coils, tuned by a variable condenser of about .0001 μ F. These coils will probably cover ranges like these: 500-9000 kc; 8000-15000 kc; 12000-25000 kc. Arbitrary figures, but they will do. You want to select the amateur bands from these ranges—first, the 7 mc band, from 7000 to 7300 kc; and second, the 14 mc band, from 14000-14400 kc. Each

of these, on your existing condenser would cover only a very few degrees of the 180° available.

Obtaining Band-spread

Simple! You procure a condenser of about one-tenth of the size—00001 μ F (or 10 μ F), connect it in parallel with your main tuning condenser, give it a very nice slow-motion dial, and now you can do anything. Set your newly-acquired band-spread dial at minimum, plug in your first coil, increase your main condenser setting until you come to the high-frequency edge of the 7 mc band (7300 kc) and then, instead of proceeding up that dial, take over and tune on the small condenser, which will spread out the 300 kc of the amateur band over quite a lot of degrees.

That is band-spread—that's all! So next you mark the dial of your main condenser (now called the band-setter) at the point corresponding to 7300 kc, and to cover the 7 mc band hereafter you merely swing it to that mark and do all your tuning on the band-spreader. Now you can take the next coil, put your band-spreader to zero, tune up slowly on the band-setter until you reach 14400 kc, and then cover the rest of the journey on the band-spreader.

There should be no more mystery for you on "Why band-spread?" once you have tried it for yourself. And note that with that method you can spread *any* band you are interested in. You can take a broadcast or shipping band and do exactly the same trick with it. In fact, all you have to do is to calibrate your band-setter dial (always with the band-spreader set at zero) and then you can stop where you like on it and know that as you increase the capacity of the band-spreader you are, so to speak, subtracting kilocycles from the reading.

This is the very simplest form of band-spreading, but still one of the most efficient. Many communications receivers employ it; if they are multi-stage jobs, even with wave-change switching, it can still be done. Your band-setter is a big ganged condenser and your band-spreader is a smaller ganged one in parallel with it. In practice, too, this works out very well, and some types even get away with calibrating both dials and making them read accurately.

Although a domestic broadcast receiver and a communications receiver may at times seem poles apart, the main differences are quite simple. The latter has the additional refinements of (a) band-spread,

THE AMATEUR BANDS

Following are the bands now open for amateur operation:

1715-2000 kc	10 watts (A) and (B)
3500-3635 kc	25 watts (A),
3685-3800 kc	150 watts (B)
7000-7300 kc	25 watts (A), 150 watts (B)
14000-14400 kc	25 watts (A), 150 watts (B)
28000-30000 kc	25 watts (A), 150 watts (B)
58500-60000 kc	25 watts (A) and (B)
460.5 mc	5 watts (radio control of models only)
2300-2450 mc	25 watts (A) and (B). FM permitted.

"A" licences are all three-letter calls issued post-war, and are for CW operation only; licensees in this category are not normally allowed the use of telephony and full power till they have had twelve months' experience. Class "B" licensees are holders of reissued pre-war two-letter call signs, and are allowed the unrestricted use of CW, MCW and 'phone with power as given above.

(b) greater selectivity in the IF section, (c) a BFO or beat frequency oscillator for CW reception, and (d) a metal cabinet! There is nothing magic or mysterious about a communications receiver, and many of them make very fine broadcast receivers indeed.

Other Methods

There are, of course, other methods of band-spread. One common one, known as "mechanical band-spread" is really cheating; it simply uses a very high-ratio slow-motion drive to make you think you are spreading the band. If it comes off successfully, then there is nothing against it, but some of them do not. The other common electrical means consists, instead of using a small tuning condenser in parallel with the main dial, of tapping the one and only condenser across a small part of the tuning coil. This is effective but limits the portions of the band that can be spread. A coil that tunes 14400 kc to, say, 9000 kc with the condenser right across it, can be tapped in such a way that the condenser only covers the band 14400-14000. The very high L/C ratio obtained by this means increases the efficiency considerably, but of course tends to lead to instability as well.

Yet another method is to switch a very small condenser in series with the main tuning condenser. This, also, necessitates coils that are of suitable size to bring the desired band within range—they must

start somewhere near the right setting on the main condenser, or the band-spreader, when switched in, will not give the amateur band wanted.

In general, the almost universal method for home-constructors' use is the first one mentioned—the use of a small parallel variable condenser. It is no trouble, it is efficient and it is very readily understood by the rawest beginner. True, if you are making an ambitious superhet it will necessitate the use of two ganged condensers and a good deal of playing with trimmers, but if you are the type that builds such a set, you will most probably know what you are doing in any case.

For the absolute beginner, for whom this article is really intended, a 0-V-1 or 1-V-1 receiver with a nice band-spreading condenser and (most important) a really good slow-motion dial on it, will bring in the world on the amateur bands. No gang condenser will be necessary, even for a 1-V-1 receiver, because you do not really need the bandspread on the RF stage tuning control. It is the detector that needs it, and the RF stage can be pulled along into step just as easily on its main control as on a parallel band-spreader. If you *do* gang the two main controls, however, then it will probably be worth while to use a two-gang band-spreader as well, although not essential if the band covered is very small.

Suit Yourself

You can do a lot to suit your own requirements. Take that receiver you are using now; tune in, say, the 14 mc band on it. Find the high-frequency edge of the band. Connect a very small variable condenser across your present control; re-set the latter downwards slightly to compensate for the small extra capacity connected across it (even with the new condenser at minimum, of course); and now see how many degrees the band covers on your newly-installed condenser. If it only covers 50 or 60 degrees, try a smaller one or rip a plate or two off the one you have. Get the band to cover as nearly as possible the entire scale movement. It is well worth it, and if you have not previously experienced the ease of band-spread tuning you will be amazed at the amount of space apparently occupied by the band.

You will even imagine that signals are stronger, because they will be farther apart and you will have the effect of being able to scrutinise each one nicely instead of whizzing through a tightly-packed mass of them.

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A final note: If you are interested in the amateur bands only, you will not need even another slow-motion dial. Take the existing one off your large tuning condenser, put it on your new small one, and give the original condenser just a plain knob and a pointer. You will merely have to set the pointer to the spots marked "7", "14", "28" on your various coils, and all your tuning can be carried out on the band-spreader.

GET THE DIRECTION RIGHT!

A great circle map of the world, centred on London, is an extremely useful adjunct to the station and yields a lot of interesting information. It is not till you have one that you find the right bearing for Western Canada is about 320 deg., or 40 deg. west of north, that Singapore and Hobart (Tasmania) are on the same line and bear 80 deg., or 10 deg. north of east, from London, and that the bearings for the northern and southern tips of New Zealand change by no less than 60 deg. when looked at from London!

Webbs of Soho Street, W.1, do one of these maps, and the Admiralty have recently issued their chart No. 5085, which also gives the true bearing and distance from London of any point on the earth's surface. The latter is available only from agents for Admiralty charts—in the London area, J. D. Potter, 145 Minorities, E.C.3.

CONSTRUCTIONAL DESIGNS

We have a number of constructional articles planned for future issues, covering various aspects of short wave reception—receivers, frequency meters, measuring equipment, and the like. In the main, our constructional programme will be arranged in such a way that those following it will find themselves in possession of equipment suitable for installation in an amateur transmitting station, should they wish eventually to take out a licence.

At the same time, we know that a large number of our readers are not necessarily interested in becoming transmitters themselves, though that is often the result of much listening on the amateur bands! It is, however, happily true that much in the way of equipment required in the wider field of amateur transmission is also necessary in the best receiving station.

CORRESPONDENCE

As readers may imagine, we now receive a very large mail, which is as welcome as it is gratifying. To help us in dealing with it, correspondents to the *Short Wave Listener* are particularly asked to be sure to address their letters to the section or department concerned both on the envelope and the letter itself, and to write to different sections on separate sheets.

The departments are Editor (General), Advertisement Manager (advertising matters only), Circulation Manager (subscriptions, back numbers and Reader Circle only), DX Scribe ("Have You Heard" and "Calls Heard"), R. H. Greenland ("DX Broadcast"). The Editor's share of the bag covers everything else!

The address for all correspondence is *The Short Wave Listener*, 49 Victoria Street, London, S.W.1.

The Editor Wants

- ★ Photographs of SWL stations, with brief descriptive notes.
- ★ Short articles on practical problems connected with DX reception.
- ★ Photographs of short wave broadcast stations the world over.

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TAYLOR 1175

Have you heard?

ANOTHER excellent month, both for conditions and for the interest shown in this feature, as evidenced by the contents of readers' letters. More and more "new blood" continues to show up, which is a very good thing, but the old stagers don't seem to be losing interest, which is even better.

Last month's 28 mc SLP received greatly improved support, although that for 7 mc was almost a wash-out. The lists for 28 mc are very creditable indeed, and it seems to us that some of those receivers have been getting a good spring-clean since their owners discovered that they

BY THE DX SCRIBE

were not so hot on the higher frequencies. That, by the way, is one of the direct benefits of Calls Heard and SLP's—it does give you some standards to which to work!

Several readers have suggested that the SLP's, fixed at four hours or so, are too long, and that we should try something very much shorter. N. A. Phelps (Fortis Green) goes into it in some detail, and points out that not only is a four-hour period too much like hard work, but that those who can't be on for the whole four hours will be somewhat diffident of sending in their logs, for fear they do not show up too well compared with the others. As he says, "At sea it is generally acknowledged that the operator's efficiency drops very rapidly after 3½-4 hours, and searching and logging amateur stations is, in my opinion, more strenuous than watch-keeping at sea!"

He also reminds us that in the "good old days" the SLP's were sometimes set for 'phone or CW only—another excellent scheme to which we shall return. For the results of this discussion, see the new SLP setting at the end of this article.

M. D. Lipscombe (Steafood) thinks that it is impossible to find a time for an SLP which is acceptable to everyone, and he suggests, as a way out, more of them per month. That, unfortunately, is not possible, because the SLP's have to be (i) a sufficient number of days *after* publication to make sure that everyone knows about them, and (ii) a sufficient number of days *before* the next issue to

AMATEUR BAND COMMENTARY

give time to get the logs in. This, in practice, ties them down to a possible period of some five or six days only. He makes some other excellent suggestions about dividing up the Calls Heard lists into different times of day, so that people can see what is coming in, and when.

That would be ideal, M. D. L., but, believe your Scribe, the Calls Heard lists are far too complicated already for the

liking of the staff members who have to get them into the right shape to go to the printers. If everyone would do as they are asked, things would be much easier in this respect, and we could go in for more variation.—

Calls Heard

This leads on to a little sermon on the subject. We are now receiving rather more Calls Heard lists each month than we have space to publish, and the result of this, from next month on, will be that only those that come in strictly in accordance with our requests will be used. Out of this month's very large pile of lists, we find that about 30 per cent. are excellent (meaning fit for sending straight to the printers); another 30 per cent. are pretty good (requiring some blue-pencil work and general straightening); and the remainder simply have to be completely re-copied. And if anyone knows of a more temper-wearing job than copying out long lists of Calls Heard, and getting them in the right order, we should hate to hear of it!

So please take this as a Final Intimation of the way we should like them sent in:

- (i) They should look exactly like the published lists. This means name and address at the top; 'Phone or CW; then the list; and particulars of the receiver and aerial, if you want to give them, at the bottom.
- (ii) If you scrutinize the published lists carefully, you will find that the

prefixes are in alphabetical order ; they are *not* repeated, but the *numbers* are. The times we have to go right through a long list, squeezing in the figure before each callsign, is unbelievable !

(iii) Omissions : Last month we said we would have to leave out all W1, W2, W3 and W8 calls. We have had to add W4 to this, to cut the lists down to reasonable length, and in future we shall cut the 9's as well. So this means that all lists for 14 and 28 mc should include USA stations only from W0, W5, W6 and W7 districts. This, of course, does not apply on the 7 and 3.5 mc bands.

(iv) One side of the paper only, please ; and well spaced out—double-spaced, if typewritten. It helps us a lot if you give yourself plenty of room.

In case this seems a lot to remember, it all boils down to this : Lists should look just like the published ones ; well-spaced, however ; one side of paper ; no W1, 2, 3, 4, 8, 9 on DX bands.

The good ones will go in—the bad ones just won't stand a chance !

Mobiles

And now to business. One interesting development that is on the increase is the number of "Maritime Mobile" stations—nearly all of them W's, signing a call like W3KIF/MM. This particular station was the *s.s. White Falcon*, off Trinidad, coming through nicely on 'phone with 20 watts input to a 6L6. R. A. Hawley (Goostrey, Ches.) reports W5IFM/MM, heard at Naples using 8 watts ; he was also received by others when off the Azores. W6QVF/MM was heard en route from Trinidad to Durban ; W3JAK/MM was last logged proceeding along the Med., bound for the Black Sea. These ships are all worth watching, as they will be in quite inter-

esting places at times—places where there are no fixed amateur stations.

R. A. H. also asks for a full list of U.S. Districts, giving the States included in each. This shall be done when we have confirmed all the information we have at present. W7 has grown somewhat, and we believe that W6 is now confined to California ; certainly Utah is now W7.

A long letter from O. A. Good (Oswestry) includes some real DX plums. He also has discovered the QTH for YP1AA (see list). In two months' listening O. A. G. has heard all W districts, seven VE districts, four VK districts, and 7 USSR prefixes. Yes, ZS numbers also refer to districts. He brings up the vexed question of counting countries ; we really shall have to produce a list, for better or worse !

Can anyone enlighten him about YN3VN, heard on 14075 kc? He was not dead sure of the callsign. As for OP2C and HU4TL . . . well ! Yet another interesting point from O.A.G.'s letter : KL7FQ (Alaska) was heard at 0700, and VE8AW (Yukon) at 1900. It seems general experience that the Alaskans are heard in the early morning but never in the evening, yet the Yukon and North-West Territory boys have been logged at both ends of the day. VR2AA (Suva, Fiji) heard S6-7 at 0900 is rather a nice one—some of these DX signals seem to come in very well up Oswestry way !



A well-known station, SUIKE, with some visitors. The receiver is an AR77. In the photograph are SUIKE (top left), EPIG, SUIMW and SUIHF.

Americans in France

Several readers who are mystified by F7 call-signs will be glad to know that they are officially allotted to U.S. amateurs on duty in France, in a similar manner to the D4 series.* F7AE is one of the best known, and O. Mason (Southend) reports hearing him operating a portable in flight between Casablanca and Paris. This was on 14 mc at 0700.

A. E. Hardman (Manchester) sends in another terrific 28 mc list of Calls Heard, and remarks that although the band is still wide open, the W6's and 7's have been scarcer, with weaker signals and more fading. (Since receiving his letter the conditions have improved somewhat, and round about December 6 there was another very good patch for the West Coast). But he has yet to hear a VK or ZL on 'phone. This is curious, but the answer may be that the best time is undoubtedly 1000-1200 on 28 mc, and at week-ends the band is somewhat crowded. On weekdays they have it all their own way; but the ZL's do not arrive nearly so regularly as the VK's.

L. N. Goldsbrough (Wirral) uses an R1155 for 14 mc, but he has brought out his old battery 1-V-2 for 28 mc. As he says, "when you get your head nearly blasted off by 'phone from VP6YB and KP4AJ, that is some band!" It is a fact that stations which used to be considered rare DX on 14 are just taken for granted as coming in like locals on 28. L. N. G. mentions RAEM who, despite his call-sign, is a Russian amateur. He is Ernst Krewkel, ex-operator of the *Chelyuskin*, smashed up by ice in 1934, and is allowed to use the ship's call-sign as his personal call, for meritorious service. L. N. G. queries FG3FP; his QTH is in the list, and he is not Guadeloupe, but French West Africa. Sorry!

R. H. Gammons (Kidlington, Oxford) retains his enthusiasm for South America, and sends a huge list of them on 7 mc, including CX4BJ, CX2CW, CX1DZ, CX4CZ and innumerable LU's. Get up on 7 mc, some of you keen ones. Another 40-metre signal queried is I6RR, heard at S8—any information, please? The 14 mc section of his letter contains such a mixture of callsigns that one begins to realise that DX no longer means anything on that band! But some of his queries are worth airing, such as LA9OAR, VA3M, LF2Q, CP3B. R. H. G. asks for a list of some of the rare stations, with their

frequencies. Unfortunately, we have found that so many of them use ECO nowadays that it doesn't mean a thing. But where we have definite information on a really good one we shall always give it. Lastly, he has evolved a nice, but unconventional, receiving aerial, and has also developed a rotating doublet for marine work which could be modified for cramped locations. He will gladly send details to anyone sending an S.A.E.—R. H. Gammons, 133 Banbury Road, Kidlington, Oxford.

J. Webb (Wolverton) is disgusted by the spread of European 'phones on 14 mc; he says that a D4, a 'batch of I's and a couple of XA's can just about wreck the entire 'phone band. We agree, but the trouble is not always due to the transmitters, but rather to short-skip conditions. These boys will fade out one of these days. At the same time there are some grim cases of over-modulation and spreading to be heard on occasions.

J. W. finds 7 mc still a shambles, with the commercials at the LF end as well as the broadcast at the HF end. It certainly is pretty grim still, but give it another month or so and it will probably look more like an amateur band.

Though our contributor may be unable to reply direct to all letters received from readers, he welcomes a large volume of incoming mail. In general, queries and all other matters of DX interest raised by SWL's will be dealt with in "Have You Heard . . . ?" Thus, readers will in effect receive a reply in print.

Correspondence, addressed DX Scribe, "The Short Wave Listener," 49 Victoria Street, London, S.W.1, should reach us not later than the 5th of the month for notice in the issue dated the month following. Calls Heard lists should always be sent in as early as possible.

Will readers please make a particular note that the DX Scribe is responsible solely for "Have You Heard . . . ?" and Calls Heard. He should be addressed only on subjects directly connected with DX reception on the amateur bands.

M. C. Pavely (Catford) queries EK1MT, 14 mc—this is probably EK1MD, Tangier (see list). VP2GB is on Grenada, B.W.I. M. C. P. warns readers against QSL'ing OX1BC at APO 55, New York. He has had his card returned marked "No such APO." This was the QTH we were given, but it seems to have misfired.

R. J. Feilden (Eton) and several others query SHF1. This station is quite genuine, and his QTH is listed herewith.

(* See page 60, December Issue "Short Wave Listener"—Ed.)



OZ2N, Esbjerg, with a simple 10-watt transmitter, 1-V-2 receiver and HT from an eliminator.

M. Harrison (Durham) brings up an interesting point in an aside, in which he says "DX has been rather poor this past month, or perhaps I am becoming hardened to it." That rings true! One can just assume that conditions are poor when they have fallen off slightly, oblivious of the fact that the whole of the world is still there for the listening (but with a little more trouble). The fact really is that with the general conditions prevailing this year, the expression "DX" has very little meaning on 14 and 28 mc, compared with what it used to imply in the years before the war. M. H.'s list shows that he was not missing much, in any case, with the accent apparently on South and Central America. Nice lot of VE6, 7 and 8, too.

1.7 and 3.5 mc

L. F. Worssam (Loughborough) has become interested in 1.7 and 3.5 mc, and there seems to be a trend in this direction by DX-sated readers. It is a complete relaxation and also very interesting.

J. E. Alfrey (Chiswick) also writes at length on 3.5 mc, for which he has built up an 0-V-1 with a collection of old components. His list of Calls Heard on the band speaks for itself, and for the "old parts." Those who can't resist the lure of DX can still indulge in it on that band; if it palls, there is plenty of interesting local stuff for the asking. Remember, too, that SWL reports are usually more welcome on 1.7 and 3.5 mc transmissions. A report from 200 miles on the latter band may be far more

pleasing and surprising than one from 2000 miles on 14 or 28 mc.

QSL's Received

We had hoped to publish a short paragraph under this heading each month, but co-operation from readers has been responsible for killing the idea! This month we have received so many lists of "QSL's Received" that if we were to publish them it would look rather like the new edition of the Call Book—so there's nothing for it but to say thank you very much and leave them out. Sorry!

To compensate, however, we have introduced a "QTH's Wanted" section, which we hope will produce results in the "DX QTH's" list the following month. We are omitting callsigns that are too flagrantly "phoney."

The Russian Districts

Here is the latest available information on the Russian amateur districts, most of it supplied by Russian amateurs when in QSO with them.

UA1, UN1	Leningrad District, Lake Onega, etc.
UC2	White Russia (Minsk, etc.).
UQ2	Latvia
UA3	Moscow district.
UA4	Volga district.
UB5, UO5	Ukraine.
UA6	North Caucasus (Rostov).
UD6	Azerbaijan (Baku).
U18	Turkomen (Tashkent).
UA9	West and Central Siberia.
UA0	Eastern Siberia and Polar Regions.

Set Listening Periods, December

We may as well take advantage of the Christmas holiday, but we think that

DX QTH's

CE3AE	Box 1544, Santiago, Chile.
CN8BA	Le Cret, Rabat, French Morocco.
CR9AG	J. J. Alvares, G.P.O., Macao, Asia.
EK1MD	Milton Ramsey, Radio International, 34 Rue Goya, Tangier.
EL5B	Mike Cywan, A.P.O. 194, P'master, N.Y.C.
F7AE	1252 A.A.F. Base Unit, A.P.O. 194, P'master, N.Y.C.
FG3FP	P.A.A., Dakar, French West Africa (A.P.O. 194, P'master, N.Y.C.).
HZ1AB	J. P. Anderson, A.P.O. 788, P'master, N.Y.C.
KH6GF	Kailua, Oahu, Hawaii.
KP6AB	Palmyra Island, c/o Fleet Post Office, San Francisco, Calif.
J3HRP	Signal Corps, Kyoto, Japan: A.P.O. 301, P'master, San Francisco.
J9AGT	A.P.O. 239, P'master, San Francisco.
LU1ZX	Yacht <i>Gaucha</i> , c/o Radio Club of Argentina, Buenos Aires.
SHF1	University of Technology, Gothenburg, Sweden.
VE8AW	Box 76, Whitehouse, Yukon, Canada.
VE8NW	East Arctic Patrol, Ottawa. (Stn. at Clyde River, Baffin).
VK30P	Box 2099 S, G.P.O., Melbourne.
VO2D	Phil Gugliotta, Fort Pepperrell, St. Johns, Newfoundland.
VP5HN	British Army H.Q., Jamaica, B.W.I.
VQ3TOM	P.O. Box 457, Dar-es-Salaam, Tanganyika.
VQ6GH	c/o BM/CXND, London.
VQ8AB	Box 155, Fort Louis, Mauritius.
VS9AR	Aden Command Sigs., M.E.L.F.
VU2AF	c/o Post Office, Jealgora, India.
VU2AP	Lt. R. S. Craig, 10th Gurkha Rifles, Alhilal Camp, Kangra Valley, Punjab, India.
VU2AR	R.A.F. Yelahanka, Bangalore, India Command.
VU2FQ	c/o S.P. Wireless, Sitapur, U.P., India.
VU2OK	c/o Inspector Adams, Head Police Office, Bombay, India.
W3KIF/MM	U.S. Tanker <i>White Falcon</i> : 100 Montgomery Avenue, Bala, Pa., U.S.A.
W8SIR/VP9	Lt. Dave Fugman, A.P.O. 856, P'master, N.Y.C.
XZ2LR	No. 2 F.E.U., R.A.F. S.E.A.A.F.
YP1AA	Rumanian Ship in Black Sea (Q.S.L. to Messrs. Ashman, The Minerva Club, 28a Brunswick Square, London, W.1.)
ZB2B	P/O Glass, R.N., Gibraltar.
ZCIAR/ZC6	Box 360, Cairo, Egypt.
ZC6FP	R.A.F. Aqir, Palestine, M.E.L.F.
ZSSG	433 Long Market Street, Maritzburg, Natal, S.A.
ZS6GV	7 Chapman Road, Germiston, S.A.

readers would wish to avoid Christmas Day itself, for obvious reasons! So here they are:—

- December 26, 1500-1600 GMT—28 mc 'phone.
- December 26, 2200-2300 GMT—3-5 mc 'phone.
- December 28, 1600-1700 GMT—14 mc CW.
- December 29, 1100-1200 GMT—28 mc CW.

Logs for these periods, Calls Heard lists, and all letters dealing with "Have You Heard?" should be addressed to the DX Scribe, *Short Wave Listener*, 49 Victoria Street, London, S.W.1, to reach me not later than January 2. Please read back in this month's "Have You Heard?" for details of how to list Calls Heard—it will definitely be the survival of the fittest this time!

Acknowledgments to all those who have written this month; it would be grand to be able to acknowledge them all separately, but quite impossible. Please accept your Scribe's thanks for all your Christmas wishes, and here are his, in return: Happy Christmas, Prosperous New Year, and—Good Listening!

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DX FORECAST FOR JANUARY 1947 (All times GMT)

	14 mc	28 mc
NORTH AMERICA : East and Central USA, Canada, Newfoundland, etc. West Coast	1400-0930 1500-1800	1100-1700 1500-1800
CENTRAL AND SOUTH AMERICA :	2100-0700	1100-2100
AFRICA : North of Cancer South of Cancer	All day 1500-2200	0900-1600 0900-2000
ASIA : West of 75° E. East of 75° E.	All day 1000-1800	0800-1900 1000-1600
OCEANIA : Australia and New Zealand Dutch East Indies, Malaya, Philippines, etc.	{ 1000-1300 1700-2100 1300-1800	0930-1200 0900-1300

NOTE.—The times given above are the most likely periods during which signals may be expected from the parts of the world indicated. Under unusual conditions, signals may be heard outside these times.

THE SHORT WAVE MAGAZINE

The *Short Wave Magazine*, our parent publication, is a 64-page monthly entirely devoted to Amateur Radio. Articles in the November and December issues included Grounded-Grid Technique, First Steps on Five, Crystal-VFO Mixing, the End Fed Single Wire Aerial, a 150-watt Push-Pull PA, More on the EF50 TRF Receiver, Voice-Operated Send-Receive Switching, Constructing a Wooden Lattice Mast, Plastics and Amateur Radio, and Readers' Half-Guinea Ideas.

In addition, a large number of short news items of Amateur Radio interest appear each month.

Regular long news features are "DX Commentary" and "Five Metres," now established as the most informative, authoritative and up-to-date articles on their subjects appearing in print to-day. Sections of the *Short Wave Magazine* are also devoted to new G QTH's (upwards of fifty are published each month), Calls Heard, Club News

QTH'S WANTED

CP3B, CR4BK, CW109, HP2CA, HU4TL, OP2C, PK3MB, ST2AM, UC2AB, UO5VW, VA3M, VQ3HJP, YV7AA.

and Station Descriptions. G9BF, who is our MLCCEB-001's elder brother, has gained quite undeserved popularity with his own articles on how not to do it.

The *Short Wave Magazine*. Edited by Austin Forsyth, O.B.E., G6FO, and published on the first Wednesday of each month, price 1s. 6d. Subscription (12 issues), 20s. post free, copies despatched direct on publication day. Write: The Circulation Manager, The *Short Wave Magazine*, Ltd., 49 Victoria Street, London, S.W.1

QSL BUREAU RULES

- (1) Use of the Bureau is open only to readers who obtain either the *Short Wave Listener* or the *Short Wave Magazine* from us on direct subscription.
- (2) The Bureau can only handle cards for amateur stations (as distinct from broadcasters), but is prepared to accept cards for amateurs throughout the world.
- (3) Cards should be forwarded to us in fully stamped envelopes addressed QSL Bureau, *The Short Wave Listener*, 49 Victoria Street, London, S.W.1. The words "QSL Bureau" must appear in the address.
- (4) When sending the first batch of cards, enclose three stamped self-addressed envelopes of a suitable size for return QSL's.
- (5) All such return envelopes must be marked "QSL Bureau" in the top left-hand corner.
- (6) No communications of any kind, other than the cards, return envelopes and certain printed forms that will be supplied to users, should be contained in packets addressed to the QSL Bureau.
- (7) Cards inwards to the Bureau can be forwarded as frequently as may be desired. Cards outwards to Bureau users will be cleared fortnightly.

CALLS HEARD

Please arrange all logs strictly in the form given here. Note, in particular, that the prefixes must be in alphabetical order, and that the number but not the prefix must be repeated with each call sign (e.g., W1AZ, B1CR, 1CQL, 2DY, 2EF, etc.). The call signs, after the number, must also be in alphabetical order. Where listening has been on more than one band, a separate list should be sent for each band, under the appropriate heading. In other words, study the layout of the lists below, and make yours exactly like them.

GENERAL

28 mc

C. Stiddard, 28 West Mall, Clifton, Bristol 8.

CN8DA, FA8DX, I1XX, KP4CE, K4VGD, VE1BF, 1NX, 2AJ0, 2DD, 2FA, 2OG, 2WF, 3AIU, 3AKK, 3AQB, 3BBH, 3BDB, 3BLN, 3BTL, 3FU, 3JJ, 3JV, 3LB, 3LC, 3MT, 3TW, VP6MR, W0INI, 00RA, 0RKM, 0SNF, 5BUZ, 5HYT, 9BMH, 9BZM, 9FHZ, 9FSM, 9IAG, 9KOK, 9KVE, 9LF, 9NWM, 9ONT, 9PBY, 9ROQ, 9VLG, XAEJ, ER, ZB1AB, 1E, ZE1JB.

L. N. Goldsborough, 29 Brook Road, Sheffield 8.

FA8DX, KP4AJ, 4CN, 4CU, VE3QA, 3ZL, VP4TK, 6PC, 6YB, 6ZI, W5DZR, 5JKA, 9COK, 00MG, Y12CA, ZB1AB, 2A. (Receiver: 1-v-2, with indoor aerial.)

R. A. Hawley, Torvrey, Brookfield Crescent, Goostrey, Ches.

'Phone: CN8BA, F7AA, F7AE/In Flight, FA8DX, J9AAK, 9AAR, 9ANA, KP4AJ, PK1AW, SU1AZ, 1CX, 1HF, 1RP, 1SG, UA1AA, VE4FU, 4IS, 5EA, 6RG, 7AJN, 7ER, 7KH, 7KX, VP6YB, 9R, VS9AB, VU2AQ, 2LR, W5DGD, 5FMA, IFM/Marine, 5IRO, 5ODH, 5GCS, 6BDV, 6EJC, 6HO, 6IDY, 6LR, 6LVW, 6NWQ, 6PUA, 6RZQ, 6SUF, 6UZA, 7JB, 7DTB, 7IYW, 7FLQ, 9ACO, 9ARX, 9BDG, 9BVS, 9CKP, 9CMC, 9ECC, 9EHZ, 9EAP, 9EOP, 9EHI, 9FB, 9FRV, 9FXB, 9GRN/W3, 9HB, 9HRV, 9MAP, 9MO, 9HOE, 9NWN, 9NCT, 9OJN, 9MVT, 9QHR, 9QUV, 9ROQ, 9RPG, 9VEK, 9VOK, 9VOJ, 9WUC, 9WNO, 0VZH, 0BXG, 0CCS, 0CSU, 0CVN, 0EOY, 0FNF, 0FNF, 0KML, 0NFM, 0POY, 0RKM, 0RLO, 0RG, 0SAC, 0SNF, 0VUZ, 0WSB, 0YKX, VK2IF, GL, 3AHB, 3BO, 3BW, 3CP, 3JD, 3KX, 5JP, 6KW, 6RU, XE1GE, XZ2DA, 2DN, 2YG, 2YT, YR5V, 5X, YP1AA, ZB1E, 1AB, 2A, ZS1AX.

CW: UA1AF, 9CR, VQ2GW, VU2LJ, VK2AHD, 5DR, 5MP, 5WG, VO4L, W0KYF, 0RIA, 0ZTF, 6EBB, 6EX, 6KLI, 7GUA, 9KRK, 9NMI.

F. A. Herridge, 95 Ramsden Road, London, S.W.12.

CW: CN8HM, 8MZ, CR7AD, FA8WH, FM8AC, PY1GJ, 2OE, PZ1RM, TF3A, TG9JK, UA1AF, 3BK, 3KBC, 9DP, UBSKAE, VE1EP, 1FB, 1IO, 1SY, 2AX, 2GA, 2YH, 3ACS, 3AGC, 3AJA, 3AUN, 3AU0, 3AUV, 3BBH, 3BFZ, 3QB, 4RO, 5OC, 6AO, VK2OE, 3MC, 3OP, 5KO, 5MP, 5NR, 6FL, VO4L, VQ2GW, W2IUO/MM, W3JAK MM, W4AAO/KP4, W5ADZ, 5BBR, 5CEW, 5DBE, 5EWZ, 5EYV, 5KC, 5KMD, 5KYR, 5LDF, 5LGS, 6ALO, 6BHR, 6ENV, 6EXQ, 6IWS, 6JZP, 6KRI, 6LFC, 6LDQ, 6LEE, 6LXY, 6MI, 6NIF, 6PUZ, 6QNM, 6RBQ, 6STA, 6WLY, 7ERA, 7PEV, 9AEH, 9AND, 9BDU, 9BVV, 9CHF, 9CND, 9DDG, 9DTB, 9ELG, 9FHF, 9GUH, 9HCT, 9IU, 9IUV, 9JYF, 9KAJ, 9KDI, 9KGG, 9LNM, 9OZO, 9REX, 9RKP, 9ROF, 9RSJ, 9SBB, 9TDL, 9UZZ, 9VEJ, 9VZM, 9WCE, 9WZO, 9YFV, 9YNB, 9ZPT, 0BO, 0BTD, 0CRY, 0DGH, 0GUS, 0JY, 0LJT, 0MPW, 0NJP, 0NUJ, 0NUJ, 0NVZ, 0OTV, 0RIA, 0ZTL, 0ZUA, ZS1CN, 6GA, 6IH.

Alfred H. Sommer, Waffenplatzstr, 3, Zurich, Switzerland.

VE1NX, 7AJN, 9AB, W6ABU, 6IDY, 6PCK, 9IOC, 9MWM, 0RGT, 0ZIL, ZB2A.

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

'Phone: FA8B, 8DX, KP4AJ, LU3EQ, SU1HF, 1KE, 1RT, VE1BF, 1OR, 1PB, 1QS, 2LU, 2NK, 2OS, 3XG, 4FU, VK3IG, W0CPO, 0FC, 0GYU, 0LJT, 0KJM, 0KMI, 5HGR, 5KAU, 5LCM, 5LVD, 6AOT, 6MUZ, 6OHA, 7FXO, 9BBC, 9EOC, 9GLM, 9GRF, 9HLA/4, 9JVV, 9KFH, 9KOJ, 9LT/0, 9OCW, 9OKC, 9QUV, 9ROQ, 9VEK, Y12CA, ZB1E, ZL4AO. (Receiver: 0-v-0.)

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

'Phone: CN8BA, G5KW/HZ, KP4CM, SU1CX, 1HF, 1RC, 1SG, UA1AB, VO2N, 2X, VS9AB, W5AHA, 5FXD, 5HVP, 5HYT, 5IHW, 5JPX, 5QH, 6IDY, 7DTB, 7ILL, 7JPN, 9F1J/0, 9ROX/0, 0BDO, 0DMQ, 0JEO, 0KQJ, 0LTE, 0VAT, 0YUQ, XZ2YT, Y12CA, ZB1AB, 1E, 1L, 2A, ZS1AX, 1P, 1T, 6GV.

A. E. Hardman, 14 Burtinshaw Street, Cross Lane, Gorton, Manchester 18.

KH6AR, KP4AJ, 4CM, 0Q5A, 5BL, PK1AW, PY2QK, PZ1A, 1RM, SU1CX, 1JG, VE3ACL, 3AKK, 3AIU, 3AQV, 3ATT, 3BBH, 3BDY, 3BEL, 3EI, 3FU, 3QB, 3QL, 4RO, 6EY, 6JJ, 6SR, 6TM, 7AJN, 7EL, VP6MR, 6YB, 6ZI, VQ3EDD, VU2AQ, W5AMJ, 5CTP, 5EGU, 5EHM, 5EOH, 5GBS, 5GFR/1, 5HAT, 5HHT, 5HYT, 5JJA, 5KBP, 5KZ/7, 5KVN, 5KVZ, 5KYJ, 5LDH, 5LGH, 5LGS, 5LVG/4, 5LPG, 5LSH, 5LWV, 6AOT, 6AQP, 6ERT, 6IDY, 6LI, 6MLA, 6NGK, 6OSH, 6PCK, 6PDB, 6SRJ, 6UZZ, 6VFF, 6VFR, 6VZT, 7BJS, 7BXX, 7DTB, 7FTO, 7HVK/3, 7HZE/6, 7ILL, 7IWW, 7IYW, 7JJI, 7LY, 7PBD, 0AGL, 0AQQ, 0AWI, 0BLX, 0CLN, 0CSR, 0CVN, 0DBC, 0DMQ, 0FCR, 0FIK, 0FKX, 0FNF, 0JGL, 0JBO, 0JCB, 0JGQ, 0JWI, 0KA0, 0KKR, 0KML, 0LQW, 0MAD, 0NFM, 0NKK, 0NNI, 0NQM, 0ORE, 0POY, 0QIG, 0RGT, 0ROK, 0SKA, 0SKZ, 0TQV, 0VSK, 0VUZ, 0WFO, 0WTZ, 0YDD, 0ZB, 0ZRA, 0ZSP, Y12CA, ZE1JB, 1JX, ZS1AX, 1BV, 1P, 6GV. (Receiver: 1-v-1.)

J. M. Graham, 2 Kelvinside Terrace West, Glasgow, N.W.

'Phone: CN8BA, 8BB, EQ2L, FA8DX, HH5PA, HK3BI, 4AX, KH6AR, KP4AJ, 4BI, 4CU, 0A4F, 0QAS, 5BA, 0X1B, 1S, 1Z, PY1MK, 2QK, PZ1A, SU1CX, 1HF, 1JG, VE1AK, 1BF, 1DY, 1ET, 1FG, 1MA, 1NX, 1RA, 2AB, 2GA, 2LC, 2NK, 2OG, 2SH, 3AEL, 3AIU, 3AJS, 3AKK, 3AQB, 3AXW, 3AZT, 3BBN, 3BCO, 3BDR, 3BDY, 3BKL, 3FU, 3HI, 3OO, 3TW, 4FU, 4RO, 6J, 7AJN, VP4TK, 6YB, 9F, VQ3AWL, 3TOM, V57AW, 9AB, VU2CO, 2LR, WSIFM/Marine (Red Sea) 6 AM, 6BCK, 6IDF, 6IDY, 6ITH, 6LI, 6MBD, 6OPQ/Marine, 6POZ, 6QZ, 6SHW, 6SKZ, 6SPB, 6SRJ, 6SUM, 6VBQ, 6WUI, 7CJU, 7EWV, 7FLD, 7FLQ, 7IJJ, 7JUV, 9BDT/VP4, XZ2DN, 2YT, Y12CA, ZB1AB, 1E, 1L, 2B, ZE1JB, ZS1T, 5BS, 5BZ, 6AA, 6DW, 6EJ, 6FN, 6JB, 6RK.

H. Christopher, 55 Spring Gardens, Anlaby Common, Hull.

'Phone : W5FXD, 5JWJ, 9AJQ, 9EKQ, 9QUV, 9UUR, ØKML, ZB1AB.

A. Frost, 18 Beechwood Avenue, Thornton Heath, Surrey.

'Phone : CN8BA, FA8DX, NY4AB, OQ5AR, 5VP, PK1AW, PZ1A, 1R, SUIHF, IKE, TG9RC, TI2RC, VE1AK, 1BF, 1BI, 1BW, 1BQ, 1CM, 1DR, 1FS, 1GO, 1HI, 1MA, 1NX, 1RA, 1TA, 1QS, 2BDR, 2DD, 2GA, 2HS, 2OG, 2RD, 2UC, 2VL, 2XC, 2XQ, 3ACL, 3ACP, 3AEP, 3AIU, 3AMM, 3ANS, 3AOB, 3ATT, 3AUH, 3AVB, 3AXN, 3AY, 3AYE, 3AZI, 3AZT, 3BBH, 3BBN, 3BBX, 3BBY, 3BCO, 3HI, 3KE, 3LB, 3MP, 3OZI, 3RU, 3QL, 3QO, 3RU, 3TW, 3TY, 3VDY, 4FU, 4RO, 5EA, 7AEZ, 7AJN, VK3AHB, 3BW, 3GG, 3JD, 3KX, VO2N, 6L, VP6YB, 9F, 9Q3EDD, VS9AB, VU2FM, W5AEW, 5ALA, 5FMA, 5GUS 5HVP, 5IFM/Marine, 5IRO, 5JPX, 5JZF, 5KC, 5KPL, 5KSH, 5LET, 5LGS, 5LPG, 6ALW, 6AOT, 6EJC, 6HNW, 6IDY, 6MLA, 6NGB, 6NNR, 6PCK, 6PDB, 6POA, 6SEX, 6SHW, 6GUA, 6VJQ, 6VLH, 6WGO, 6WNN, 7DTB, 7EMP, 7HDY, 7ILL, 7PBD, 9BMH, 9CXY, 9DDM, 9DVM, 9DWP, 9EAP, 9EFP, 9FV, 9FDV, 9FGS, 9FHZ, 9FRV, 9FXB, 9GSX, 9GUU, 9GZI, 9HAS, 9HZE, 9JFB, 9KHO, 9KOK, 9LF, 9LQR, 9LTE, 9LVI, 9MO, 9MXD, 9OXD/6, 9OKC, 9QNT, 9QTC, 9RBI, 9RNX, 9RPG, 9SOX, 9UEM, 9UTO, 9UUR 9VZM, 9ZHX, ØAIV, ØASO, ØBAB, ØBDQ, ØBMQ, ØBRK, ØDMQ, ØFGR, ØFNF, ØFP, ØFUV, ØGWM, ØIXM, ØJOL, ØKJG, ØKML, ØKOJ, ØMKE, ØMKF, ØNFM, ØNIP, ØNNI, ØORE, ØPHR, ØPOY, ØVSK, ØVUZ, ØWIP, ØYID, ØZDM, ØZEF, ØZIP, ØZJB, ØZOS, ØZTL, XE1GE, XZ2YP, YI2CA, ZB1AB, 1AC, 1E, 1L, 2A, ZL4AO, ZS1CN, 1P, 6GV.

14 mc

C. Stiddard, 28 West Mall, Clifton, Bristol 8.

FG3AP, LUIZX, 3AQ, SVIGY, VE2QQ.

M. C. Pavey, 85 Callander Road, London, S.E.6.

CO7CX, EA9AI, HH5PA, KA1CB, LUIJG, 7EZ, OA4M, PZ1A, 1G, TI2OA, VE8ME, 8MQ, 8NW, VK2AGU, VP2GB, 9F, VQ4ERR, VS1BV, 7FF, W5LEF/KL7, W6OCA/J3, W7HRV, W8SIR/VP9, W9BNB/KL7, XU1YO.

A. Cumming, Broadcroft, Broad Lane, Lympington, Hants.

CE1AO, 1AU, 2CD, 2DW, 3AE, 3CG, 4BP, 5AN, CO2KO, 7CX, 8BL, 8MP, CX2CO, EA1D, 9AI, EK1AD, 1MD, EL4A, 5B, 6H, FASAZ, FG3GP, FT4AI, HH2PB, HK3AG, 3BG, 6AB, KA1SS, KP4BG, 4VJ, LUIAG, 1FC, 1ZX, 2ER, 3AQ, 4AG, 4BH, 4DG, 4HI, 4XA, 5AE, 6AJ, 6KE, 9MA, OA4M, 4S, OX1A, 1AS, 1Z, 2K, 2MJ, 3L, PY1GY, 1HG, 1HP, 6AG, 6AI, 6CQ, 7AN, 7AT, 7DI, PZ1J, 1L, SUICX, SV1GY, TAIT, TI2FC, 2OA, 2RC, UA1KB, VE1ET, 1GE, 1GG, 1MZ, 1PB, 2BE, 2DD, 2OG, 3HC, VK1MD, 2AKF, 3VD, 7CW, VO2AD, 4M, 4P, 6G, 6H, 6K, VP2GE, VS1BV, VU2FA, W5HUU, W8SIR/VP9, W9CAC/TF, XE1AC, YI6T, YV4AM, 5AB, ZB1AB, 1L, 2A, ZD4AB, ZP5AV.

B. R. Greenwood, 40 Duffryn Terrace, New Tredegar, Mon.

CE1AI, CO2CF, CX2AX, 2CO, EL5B, ET3Y, FG3FP, HH5PA, HK3BB, J3HRP, 9AJT, LUICE, 1ZX, 4HA, 4GI, 6AG, 6AJ, OX1Z, PY1HB, 1KC, 2HY, 7AT, 7VE, 9AT, TI2AV, UA1KBA, VE4BA, 4BR, 4EG, 4LK, 5BA, 8EG, 8MQ, VK2AGW, 2KW, 4NU, 4RI, 6UY, VP4AM, 4KI, 6KX, VQ4ERR, VS1AD, VU2HI, W5GPT, 6BZE, 6BQR, 6ITH, 6RS, 6RVU, XE1CB, 1HC, XU1YY, YVSABE, 5AC, YP1AA, ZD4AB, ZL3KX, ZS1AN, 1CN, 2BJ, 4H, 5KQ, 6AG, 6BV, 6GO, 6GV. (Receiver: RI155, with indoor aerial.)

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

CW : CN8BK, 8MAR, CM2BA, 2SW, EK1AZ, HP2CA, KP4AN, 4BK, PY1BH, 2KT, UA1AA, 1AL, 3KBC, TF3A, VE1FN, 1KF, 1RR, 1TR, VK7LA, VS4AR, WØJRI, ZS1CT, 2X, 4AE, 5B, 5BZ, 6GO.

'Phone : CN8BA, EA1D, OX1A, 2MJ, SUICX, SVIGY, TI2OA, VE1GG, 2AF, VO6F, 6G, VU2JD, VQ4ERR, ZS6GV. (Receiver: 1-v-1. Aerial, 30 ft., 20 ft. high.)

J. E. Alfrey, 45 Russhall Avenue, Bedford Park, Chiswick, W.4.

'Phone : CE3CK, 3DW, 4AI, CN8AB, 8BA, 8MA, 8MB, CO7CX, CX1VD, 2CO, 3BL, EK1MD, HK3AF, 3BI, LU3AQ, 6AJ, OX2MJ, PY1HP, PK1BK, TI2OA, 4JG, VE1GG, 1HI, 1MZ, 3AHV, 4AC, VK2AGU, VO2X, VP2GB, VS7FE, W9JPF, 9RUK, YP1AA, YV5AN, 5AC, ZB1AB, 1E, 1L, 2A. (Receiver: SH5 with indoor aerial.)

R. A. Hawley, Torview, Brookfield Crescent, Goostrey, Ches.

'Phone : CE3CE, 3DW, CN8MB, CO2CO, 7CX, EK1MD, F7AE/In Flight, HK3BD, LU3AQ, OX1Z, 3BC, PY1HB, TI2FC, 2PA, UA1KBA, VE8NQ, VK6RU, VO2AD, 6G, W2RHE/F7, 4DSY, 5BGT, 7JHW/W1, 9BNB/KL7, 9KYM, 9MPV, ØCSU, YV5ABQ, ZB2A, ZSXBJ, 2X.

CW : CN8AB, 8MB, 8M1, FA3LO, HP2CA, LU3BL, ØK2LM, UA1AA, 1KB, W51YF, ØOUH, ZB2A, 2B.

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

CW : CM2NW, 7AA, CR9AG, CX2AD, EL3A, EP1AL, FM8AC, F08AB, HP2CA, HU4TL, KA4HW, 7HYK, 7JAT/4, KA1KCA, KP4AE, 4AN, 4AU, 4CC, 4KD, KL7AD, 7CI, 7DF, 7FO, J2AAO, 2ATO, LU1CA, 1DC, 1ZX, 2DB, 2MB, 2NL, 3AQ, 3EL, 3LD, 4BH, 4DQ, 5DB, 5WB, 7AZ, 7DJ, 8AK, 8EN, NY4CM, ØP2C, OQ5AU, 5AV, 5BR, 5BT, 5CE, 5X1BC, 3BC, 1Z, PK1HX/RI, PY1AJ, 1BC, 1DC, 1HX, 1NF, 1UX, 2CD, 2KC, 2KT, 2OE, 2OZ, 4BR, 4FB, 4IK, 4JG, 6AC, 6AG, 6AJ, PZ1AL, T6AST, T14VV, UAØKA, 9CB, UI8VA, VE4KU, 4RO, 5CZ, 6SO, 8AW, 8NG, VK2DA, 2EO, 2VA, 2ZC, 3EO, 3HG, 3HM, 3JE, 3MC, 3QI, 3VJ, 4OS, 4RC, 5FM, 5JS, VO4Q, 5Z, 6K, VP4TD, 8AI, VQ2GA, 3HP, 5JY, VR2AA, VS1AH, 7ES, 7MB, 8AA, 9AN, VU2FM, 2LJ, WØEGC, ØØHR, ØJNC, ØJRI, ØOUH, ØPV, ØUW, 5AFX, 5LKU, 5VZ, 6EBG, 6LXG, 6MLY, 7JNR, W2OUB/C7, W5KEI/C7, W2CZ/KL7, W9CNW/CP, XUAIR, YI2RH, YV5AN, 5AP, ZAD2, ZL1BY, 1DA, 1NG, 2DA, 2ES, 2MR, 3AB, 3AC, 3AZ, 3GU, 4BQ, 4CK, 4FA, ZP6AB, ZS1A, 1B, 1CI, 1CK, 1CN, 1F, 1G, 1M, 1W, 2AG, 2BZ, 2X, 4D, 5BZ, 5H, 6DO, 6GO, 6GX.

'Phone : CE1AR, 3DW, EL5B, FG3FP, KP4CF, LU4BH, OX1A, 2MJ, PY7AT, VE3AGB, 3BIE, 3HB, VO6G, 6H, VS9AR, WØWMK, 4DQH, 4IF, 4HIU, 4HIV, 4MP, 5JA, 9BCI, 9GTT, 9JP, 9WVP, YP1AA, ZB1A, ZD4AB.

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

'Phone : CN8AG, 8AB, CO2KC, CX2AX, D2AS, 2AV, 2HU, 4APG, EI3J, EK1AD, 1MD, FASAZ, FT3FT, 4AI, HB9CC, HK1DZ, 3DD, LA7K, 8X, 9D, LU3MQ, 4HI, OX1AF, 1BC, 1Z, 2MJ, PX2AX, PY2AC, PZ1G, SUICX, TI2CA, VE1EZ, 1FQ, 4GE, VO2Q, 6H, VR6F, VS9AR, W9CAC/TF, YP1AA, YR5A, YV5ABW, 5AG, ZB1AB, 1L, ZS6GU.

G. R. Haynes, 89 Ash Road, Sutton, Surrey.

CE3AB, CM2BA, CN8AU, 8BI, 8BK, 8MI, 8M2, CO2KO, CT2KO, CT2AB, CX2CO, EK1MB, EL3A, 5B, FAKF, 3JY, 8CR, GSKW/HZ, HK4AF, HP2CA, J3A AD, K7HYK, KP4AN, 4KD, 4KP, LU3LD, 6DJK, 8AD, QO5AV, 5CE, OX3WJ, 5JJ, PY1BC, 1FM, 2AY, 2OE, 6AG, VE1EF, 1ET, 1FB, 1IA, 1RR, 1TR, 1VF, 2D1, 2UJ, 3AVA, 3BER, 3FP, 3HJ, 3YZ, 7ZM, 8AW, 8MI, VK2EO, 3AE, 3HT, 6FL, VO2G, 2M, 6K, VO3HJP, VU2FM, W0PV, 7QI/KL7, 85R/VP9, XU1YR, XZ2AA, ZB1A, 1AD, ZL1BY, 2GL, 4CK, ZS1CI, 4D, 4T, 6GO, 6JI.

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

'Phone: CE1AA, 3AE, CN8AB, 8BA, 8MA, 8MJ, CO2UP, 7CX, CX1VD, 2CO, EA1D, 9AJ, EK1AD, 1MD, EL5B, F8ABV, FG3FP, FT4AI, J3HRP, K6RVL/W6, KH6CT, LU3AQ, 4H1, 6AJ, OX1Z, 2K, PK4RI, PY1HB, 2AC, 6AO, 7AT, 7DD, 7VG, 9AC, 9AE, SUIKE, SV1GJ, T12AV, 2EV, 2OA, UAIKB, KBA, VE1ET, 1FQ, 1GG, 1GP, 1HI, 1MZ, 2AF, 2BK, 2DD, 2EM, 2EX, 2GK, 2MZ, 2OG, 2PX, 2QA, 2TH, 3AHA, 3AIU, 3AKT, 3ALU, 3LZ, 3MJ, 3NZ, 4AC, 4GE, 4LH, 4YO, 7AAW, 8MF, 8MQ, 8NW, VK2AGU, 2AHA, 3BZ, VO2AD, 2AF, 4F, 4J, 4N, 4F, VO6G, 6H, 6K, VP2AT, VQ4ERR, VS1BV, 9AR, VU2AF, 2PG, WILBV/KL7, W6FFPU, W85TR/VP9, W9BNB/KL7, XU1YY, XZ2AA, Y16T, YV5AB, 5ABO, ZBIAB, 1AD, 1E, 1L, 2A, ZS1AX, 1CN, 2AF, 2BU, 4H, 6GV.

CW: CN8HM, F88CR, J3AAD, KL7CZ, 7FQ, LU8EN, OE1RA, PY1CO, TF4AA, UAIKBA, 1NP, 3AS, 3BH, 3BI, 3BK, 3GI, 3KAH, UQ2AB, VE1EK, 4KU, 4OU, 7AIG, 7BA, 7ZM, 8NG, VK2AHA, 2DA, 2EO, 2KC, 2RA, 2TI, 3CN, 3EO, 3JE, 3KC, 3UJ, 3VJ, 4KS, 7LV, VP9D, ZL1NG, 2CU, 2GL, 2PM, 3AB, 3GU, 4CK, ZS1CI.

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

J3AAB, K6CGK, 7HYK, 7QI, KAIK, 1ZU, KH6EA, 6GF, KL7CZ, 7DU, 7FQ, KP6AB, VK2ADX, 2AHA, 2CI, 2IX, 2NG, 2PX, 2VN, 2VQ, 2ZA, 2ZZ, 3AE, 3AX, 3BZ, 3CN, 3CX, 3HT, 3JA, 3SQ, 3TM, 3UJ, 3VJ, 3XK, 3YL, 3ZO, 4AMB, 4DO, 4EJ, 4HR, 4JU, 4LK, 4QR, 4RJ, 4TJ, 5FL, 5HN, 5SH, 5JS, 5NR, 6DJ, 7LJ, VR4AA, W0NWF/KG6, ZL1BY, 1CB, 1HY, 1KJ, 1NT, 1MR, 2CU, 2DS, 2FA, 2FF, 2GO, 2MR, 2QM, 3AB, 3AZ, 3CX, 3GU, 3JD, 4AR, 4CK, 4DA, 4GA, 4GM. (Receiver: 1-v-1 with 25 ft. aerial.)

J. Webb, 54 Gloucester Road, Wolverhampton, Bucks.

CE4AI, 4AT, HH5PA, HK3AD, HB9M, 9DT, 9GA, LU4BH, 4DD, 6MV, 8MC, OX1A, 1JZ, 2MI, PK2CB, 4GT, SU1CX, SV1EC, VE7SUC, 7SUT, 7SUW, VO6G, VP9B, 9F, VK1CB, 1AT, 1BZ, 2AGJ, 2AGU, 2GU, 2HK, 2JE, 2ZC, 3BZ, 3KX, 3JM, 3WC, 3ZL, 4EA, 4EK, 4GP, 6DD, 6KW, 6LM, 6LQ, VS7FF, 9AN, VU2EG, 2FY, WSDYQ, 5OY, 5YQ, 6HLI, 7FPY, 7GHI, 9AAE, 9FBA, 9THI, 9ZVO, YPIAA, VN1LB, YV5ABD, 5AC, 5AD, 6AD, ZB1AB, 1L, 2A, ZD4AB, ZL2CO, 2FA, ZS1CD, 1CI, 1DE, 6DV. (Receiver: 1-v-1).

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

'Phone: EK1AD, 1MD, EL4A, 5B, FG3FP, F7AE/Aircraft Mobile, HK3AF, 3AN, 3AS, J2ABC, 3HRP, 9AAB, 9ABF, KP4CE, LU1ZX/Marine, OX1A, 1Z, 2MJ, 3BC, PZ1J, 1W, TI2OA, 2PA, UAIKBA, VK2GU, 4JP, 7TR, VO2Q, 6H, 6K, VP2GE, 2MY, 3LF, 4TA, VQ4ERR, VS9AR, 3LF, 4TA, VQ4ERR, VS9AR, VS9AR, W5BGP, SHU, 6FTU, 9WBP/CI, XE1AC, XU1YY, YN1LB, ZB1AB, 1L, 2A, ZS1CN.

Harold Owen, B.Sc., West African Cacao Research Institute, Tafo, Gold Coast Colony.

CE3AG, CM6AH, CX1DZ, ET1JJ, FT4AE, HZ1AB, 17AA/16, J2ARO, 3AAD, QO5AV, 5BT, 5LL, PK6HA, VK2AHA, 2AM, 2ANK, 2CI, 2EO, 2OF, 3AE, 3CN, 3FN, 3KX, 3RV, 3VJ, 3ZI, 4CG, 4DO, 4EL, 4FJ, 4KS, 4PK, 4RC, 4RJ, 5RC, VP4TR, VQ2GW, 3HJP, 5JTW, VS1BJ, 1BT, 1BU, 1BX, 2BG, 7ES, 7GH, 9AN, VU2FH, 2FM, 2LS, W6VKV/16, 7AKP, 7FNK, 8NIO/7, XUINS, XZ2KM, ZB2B, ZD4AB, ZE1JS, ZL1BQ, 2FA, 2GO, 2QM, 3AB, 4CK, ZP6AB. (Nov. 1-Nov. 22. 0-v-1; aerial 100 ft., 42 ft. high, 25° slope to NW, all CW.)

3.5 mc

J. E. Alfrey, 45 Rusthall Avenue, Bedford Park, Chiswick, W.4.

'Phone: D2CK, EI7M, G2BFN, 2DY, 2DYM, 2FXJ, 2LG, 2OR, 2XQ, 3AEX, 3AGP, 3AGT, 3AX, 3FI, 3IF, 3MI, 3OS, 4BU, 5BC, 5LC, 5YN, 6BW, 6IM, 6PO, 8BV, 8PO, 8QD, 8TR, GM2IP, GW3AGB, 5TJ, 8SO, HB9FR, ON4KL, 4PLA, OZ1WT, 3HR, 8V, PA0AD, 0AU, 0OE, 0UU. (Receiver: 0-v-1, Indoor aerial.)

H. Christopher, 55 Spring Gardens, Anlaby Common, Hull, E. Yorks.

'Phone: D2CK, 2KW, EI7M, F3DI, G2AAV, 2DYM, 2FKO, 2HFI, 2JT, 2VY, 3IF, 3MT, 3YK, 5KG, 5KJ, 5OH, 5RN, 5XM, 6B, 6KJ, 6LJ, 6LL, 6NW, 8KH, 8TR, GI3JP, GM6JH, 6UU, GW8SO, HB9CX, 9FR, 9P, I1FP, 1KY, 1RZ, ON4FA, OZ5B, 6H, PA0DG, 0KM, 0LDZ, 0PM, 0WO. (Receiver: SX 24 with 75 ft. aerial.)

L. F. Worssam, Quorn Hall, Quorn, Loughborough, Leics.

'Phone: D2CD, 2CK, 2KW, 4AMX, EI7M, F3BR, 3MD, 8DW, 8PL, G2AAV, 2BFN, 2CFT, 2FKO, 2HF, 2HMI, 2KO, 2LG, 2WW, 2XQ, 3AEX, 3DV, 3IF, 3KH, 3NJ, 3PN, 3QS, 3TF, 3VM, 3YK, 4FO, 4OT, 5BC, 5KJ, 5RN, 5SK, 5WA/P, 5WW, 6LL, 6BB, 8KK, 8QD, 8QR, GI3JP, GM5YV, 6H, 6UU, GW3AGB, 5PH, HB9BB, 9DQ, 9FE, 9FU, I1FP, 1KY, 1MAS, 1VI, ON4UM, OZ2LJ, 2MU, 5B, 6A, 6TH, 6VJ, 7U, 7WJ, 7X, 8AZ, PA0AD, 0AW, 0DG, 0DM, 0HC, 0KM, 0MG, 0MM, 0OE, 0RL, 0TP, 0WO, 0WY, SHF1, WIANA, 1DDK, 2JV. (Receiver: Sky Champion with indoor aerial.)

J. M. Graham, 2 Kelvinside Terrace West, Glasgow, N.W.

'Phone: D2CA, 2KW, F3OF, 3RR, 8BO, 8NW, 8VP, 8ZO, HB9DQ, 9EN, 1ICD, 1RM, LA3G, 4O, 6X, LX1BO, ON4KD, 4YJ, OZ1TS, 2H, 2MU, 3FM, 3F, 3YL, 5AB, 5B, 6A, 7HL, 7WJ, 8CM, 8HZ, 8V, PA0AD, 0BI, 0BU, 0DF, 0GI, 0HL, 0LJ, 0MDW, 0MM, 0NG, 0NJ, 0OE, 0OM, 0PM, 0QR, 0RIL, 0UW, 0WF, 0WH, 0WM, 0WO, 0XZ, SM5OU, 5UM, VE1ET, 1FG, 2HE, VO1A, WIDHD, 1JZD, 1PC, 2CBO, 2ISX, 2PJF, 2QEM, 2RMM, 2RMY, 3CZV, 4CCP, 4IZS, 8RMX, 8UWI, 9DLV, 9GLX.

A. L. Crane, 28 Farmcote Road, Lee, S.W.12.

'Phone: D2CK, EI2P, 6J, 8F, F3RA, 3GA, G2BCX, 2BFN, 2CBy, 2CIN, 2DPZ, 2GYN, 2HF, 2HFI, 2KL, 2KO, 2LD, 2NM, 2NO, 3AAD, 3ABE, 3ACW, 3AJN, 3AFC, 3AGD, 3IF, 3JW, 3MT, 3NQ, 3PN, 3SI, 3UB, 4AP, 4BU, 4DD, 4FO, 4OI, 5BAY, 5BC, 5BG, 5GJ, 5MN, 5OH, 5YN, 5TD, 5ZB, 5ZI, 6BC, 6BW, 6HB, 6IM, 6JB, 6NB, 6NW, 6PL, 6SO, 6ZH, 6ZP, 8BL, 8LT, 8MU, 8PK, 8SK, GW2BG, 8SO, HB9F, 8KY, 1LW, 1MAX, 1RZ, OZ1U, 8RD, VE1ET, VO1I, WIDNM, 3KAE, 3BBV, XAEX. (Receiver: 0-v-0.)

SET LISTENING PERIODS

28 mc

November 30, 1500-1900 GMT

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

'Phone: D2CD, 2KW, EI7M, F3OF, G2ABN, 2KO, 2JZ, 2WW, 3FA, 3JW, 3LHU, 3NJ, 4OT, 5WU, 5XK, 6LL, 6PL, 6WM, 6ZH, 8QD, 8TR, GM6UU, GW3AGB, 8SO, HB9DQ, 9P, ON4IW, 4LJ, 4UM, OZ4AY, 4P, 6VJ, PAØLI, ØMDW, ØPM, ØRL, ØVI, SM7SU. (Receiver: 0-v-0.)

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

'Phone: VOIA, WIKKG, 2JV, 4CQS.

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

'Phone: PAØNG, VE1EI, WIARV, 1BQ, 1CTA, 1DDK, 1PCC, 1ZE, 2MKN, 3AN, 4ALK, 4DCQ, 4GJS, 4IMJ.

1.7 mc

L. F. Worssam, Quorn Hall, Quorn, Loughborough, Leics.

'Phone: G2KS, 2MI, 2NV, 2VQ, 3AB, 3AFZ, 3BU, 3PH, 3OG, 3QQ, 3TP, 4PP, 6DQ, 6ZQ, 8CZ, 8OK, 8RO, 8SR.

CW: G2FLU, 2RB, 3AR, 6AK, 6GM.

D. W. Waddell, 26 Wallfields Road, Nantwich, Cheshire.

CW: D2CD, 2CH, G2ABW, 2AFM, 2AY, 2BJY, 2BMN, 2BPT, 2BTO, 2CH, 2CPF, 2CPT, 2CWL, 2OPQ, 2DQX, 2DU, 2FGU, 2FIX, 2FLK, 2FMM, 2FSR, 2HFP, 2HW, 2IF, 2JL, 2KO, 2OG, 2OO, 2OU, 2QN, 2QT, 2RA, 2WQ, 2YY, 3AAQ, 3AFT, 3AGU, 3AHH, 3AJO, 3ALC, 3ANM, 3AOG, 3AVI, 3AWC, 3DH, 3FN, 3GG, 3IP, 3KP, 3LP, 3MD, 3MV, 3NN, 3OB, 3OG, 3PR, 3QN, 3RX, 3TM, 3TP, 3VN, 4AG, 4BY, 4CF, 4FM/A, 4GI, 4JB, 4LA, 4LQ, 5AO, 5BM, 5BS, 5OZ, 5FI, 5FN, 5FY, 5HB, 5IV, 5KT, 5MY, 5OH, 5QU, 5RI, 5RY, 5TO, 5YN, 5YS, 5ZI, 5ZX, 6AK, 6GM, 6GX, 6HD, 6KU, 6MC, 6NM, 6NP, 6QB, 6QS, 6RQ, 6RS, 6UO, 6US, 6VC, 6VD/A, 6WH/A, 6YJ, 6YR, 8BM, 8DV, 8GF, 8GG, 8LG, 8NF, 8NL, 8NM, 8OZ, 8TR, 8VN, 8WF, 8ISTK, 8M2FZT, 4HZ, 4FK, 5UT, 6J, 6LG, 6RI, 6W3BAZ, 6AA, 8WJ.

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

'Phone: G2BH, 2F1X, 2NY, 3MT, 3OG, 3OJ, 3YH, 4GJ, 5DZ, 5RO, 5UH, 6AB, 6W2BG, 4FW.

L. F. Worssam, Quorn Hall, Quorn, Loughborough, Leics.

'Phone: OQSEL, VE2AG, 3AVB, 3AZI, 3DDY, 3LB, 3QO, 3RU, W5FMA, 5HF, 5IRO, 6LI, 6TAC, 9ARK, 9CUH, 9MAP. (Receiver: Sky Champion S-2OR and 50-ft. indoor aerial.)

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

VEIAZ, 3AEP, 7AC, 7AJN, W5ESV, 5IRC, 6LI, 6MYS, 6MLA, 6NLA, 9BSG, 9ECI, 9GFB, 9HGE, 9KWX, 9CHG, 9RLX, 9SIU, ØFBC.

T. D. White, The Haven, Downs View Road, Lower Willingdon, Nr. Eastbourne, Sussex.

'Phone: VE3PW, W6OI, 9FHZ, 9IDD, 9LQR, 9MO, 9RPG, ØPOY. (Receiver: Sky Champion.)

J. M. Graham, 2 Kelvinside Terrace West, Glasgow, N.W.

'Phone: IISM, 1SR, OQ5BL, VEINX, 2OG, 3AYE, 3BBH, 3BBM, 3BDR, 5BA, 7AJN, 7MQ, VO2X, 6L, VP9F, W5GXO, 5IRO, 5JCV, 5LGM, 6AL, 6BIU, 6CG, 6E2P, 6KGZ, 6LI, 6LOI, 6MLA, 6PCQ, 6PDB, 6QZA, 6TNZ, 6VFF, 9FHZ, 9MAP, 9MO, 9QHR, 9OUV, ØAGS, ØKTR, ØOUH, ØRMW, ØZOS, XAAN, XEIGE, ZB2A, ZSIT, 5ES, 5U, 6DY, 6S.

A. Frost, 18 Beechwood Avenue, Thornton Heath, Surrey.

'Phone: PZIR, VE1FS, 1NX, 1QS, 2BDR, 2DD, 3ACP, 3AEP, 3AMM, 3AUH, 3AVB, 3AY, 3AYE, 3LB, 3RU, 3TW, 3QO, 4FU, 5EA, 7AJN, VO6L, W5FMA, 5JPX, 5LPG, 5IRO, 6MLA, 6PQA, 6VJQ, 9DVW, 9DWP, 9FGS, 9FHZ, 9GUU, 9HAS, 9HZE, 9JFB, 9LVI, 9OHG/6, 9RPG, 9ZHX, ØBDQ, ØBRK, ØKML, ØMKE, ØMKF, ØWIP, ØZJB, XEIGE, ZBIAC, ZSIT. (Receiver: Eddystone 504.)

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

'Phone: WØDDT, ØMKF, ØPOY, 5HGR, 5LVD, 6FRJ, 9DWP, 9HOS, 9KWX, 9OHG/6, 9RPG, 9VND. (Receiver: 0-v-0.)

F. A. Herridge, 95 Ramsden Road, Balham, S.W.12.

'Phone: VE2OG, 3AYE, 3AZI, 3BBH, 3BEL, 3QO, 3TW, 5EA, WØVAT, 6PDB, 9EAP, 9FHZ, 9WLS, ZSIT.

CW: TG9JK, VE2AX, 3BEB, WØBTD, ØNUN, ØSQO, ØZTL, 6EXQ, 6LDQ, 6LZQ, 9BUD, 9IU, 9KMN, 9KRR, 9LNM, 9VAG, 9YFN.

R. A. Hawley, Torview, Brookfield, Crescent, Goostrey, Cheshire.

'Phone: VEIKI, KJ, MA, OS, 2DD, 2KS, 2OG, 2UC, 2XC, 2XS, 3AEP, 3AMB, 3AVB, 3AXB, 3AXW, 3AY, 3AYE, AYO, 3BBH, 3BCO, 3BDR, 3BFK, 3OO, 3QO, 3RU, 3TW, 4FU, 4IS, 5EA, 7AJN, 7ER, 7HK, 7KX, VO2X, VP9F, WSDGD, 5FMA, 5GFR/WI, 5HF, IKD/W4, 5IRO, 5KMD, 6HO, 6LR, 6PUA, 6SUF, 6UZA, 9ACO, 9EAP, 9FRV, 9ICJ, 9NCT, 9OJN, 9QHR, 9TEQ, ØBRK, ØCCX, ØCVN, ØEOY, ØKKR, ØKRY, ØJRY, ØMKF, ØNNI, ØPIB, ØQQT, ØRNW, XEIGE, ZB2A, ZS6GO.

CW: VE2AX, 3AJA, W6EBB, KLI, 7GUA, 9KRR, NMI, QIK, ØRIA. (Receiver: Eddystone 504 with Short indoor aerial.)

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

'Phone: VE1FS, 2AX, 2OG, 3AYE, VO2X, W6LI, 6LKC, 6QZA, 9BSG, 9MAP, 9OCW, 9QUV, 9TEQ, ØPOZ, ØVSK.

L. Tombs, 31 Little Avenue, Swindon, Wilts.

VE3BDR, WØVAT, 5IRO, 9CUJ, 9LQR, 9OWV, 9VKH. (Receiver: Home constructed Superhet.)

7 mc

November 29, 2000-2359 GMT

R. A. Hawley, Torview, Brookfield Crescent, Goostrey, Ches.

'Phone: F8MQ, 8SLJ, IIPA.

CW: F8AS, G2ML, 2QI, 4QC, 6TN, LA5EA, NY4CM, VE1BV, 1FM, WIAJQ, 1AOG, 1ILB, 1PBQ, 2OPG. (Receiver: Eddystone 504 with short indoor aerial.)

I. A. Bates, 37 Craigie Road, Perth, Scotland.

CW: F3CT, G3ATX, 8VG, HB9CX, HP2CA, LA5EA, VE1BV, 2FG, VO2G, 2T, WIHNN, 1JXQ, 1NTG, 2AMT, 2ANM, 2FQS, 2HJL, 2HNN, 2KQR, 2NSA, 2PFP, 2WTG, 3AVT, 3KCG, 3VW, 4ABD, 4ADN, 4JCI, 4VPV, 8IHX, YR5B.

Alfred H. Sommer, Waffenplatzstr. 3, Zurich, Switzerland.

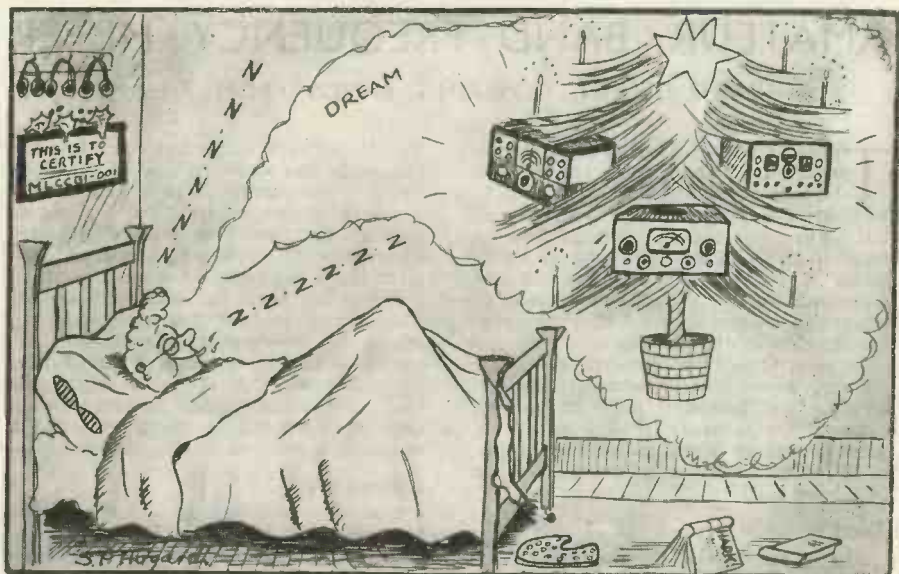
G2ACK, 2DYV, 8HW, 8ML, GM5DQ.

THE READER CIRCLE

NEW QTH's

The object of this feature is to facilitate personal contact between readers. All addresses listed are published only at the request of the reader concerned. For the present, entry in this column is strictly confined to those readers who are obtaining the "Short Wave Listener" on direct subscription from us. When applying for your subscription, please state clearly whether you wish your name and address to be entered in the Reader Circle. Publication will take place as requests are received, up to the limit of the space allowance, which will not normally exceed one page each month.

-
-
- | | | | |
|---------------------------|---|-------------------------|--|
| Aberdeen : | J. Mitchell, 282 Union Grove. | Leicestershire : | P. Johnson, 32 Griggs Road, Shelthorpe, Loughborough. |
| B.A.O.R. : | Sgt. R. Daly, 61 Depot Control Coy., R.A.O.C. | Lincolnshire : | R. Warrener, 19 Ingelow Avenue, Boston. |
| Belfast : | A. M. Levi, 33 Old Cavehill Road. | London : | D. N. Jones, 29 Pemberton Road, Harringay, N.4 ; K. H. Moores, 110 Alexandra Park Road, Muswell Hill, N.10. |
| Berwick-on-Tweed : | F. M. Moore, 10 Northumberland Avenue. | Norfolk : | H. Mower, 30 Admiralty Road, Great Yarmouth. |
| Bedfordshire : | D. Bavister, 7 Crescent Road, Luton. | Scotland : | J. Christie, 8 Dick Place, Kirkton, Burntisland, Fife ; D. Bull, 3 Greenbank Lane, Edinburgh, 10 ; W. J. Spark, 163 Berkley Street, Glasgow, C.3 ; J. R. A. Boag, 55 Trinley Road, Glasgow, W.3 ; A. Anderson, Hillcrest, Newburgh, Fife. |
| Berkshire : | J. G. Lyon, Hut C5, A Coy., Electrical Wing, R.E.M.E. Training Centre, Bailleul Camp, Aborfield, Nr. Reading ; Reading & District Amateur Radio Society, L. A. Hensford, B.E.M., 30 Boston Avenue, Reading. | Shropshire : | O. A. Good, 1 Western Drive, Oswestry ; T. L. Stevens, Sunny Cottage, Donnington Wood, Wellington. |
| Birmingham : | W. N. Phillips, 253 Aston Lane, Handsworth, 20. | Staffordshire : | R. G. Cousins, 38 Collins Road, Wednesbury ; J. H. Watt, 57 Birches Road, Codsall, Wolverhampton. |
| Buckinghamshire : | J. Hucker, 18 Uxbridge Road, Slough. | Surrey : | B. J. Blount, 5 Priory Crescent, Cheam ; J. W. Carter, Eldoret, London Road, Camberley ; E. Groves, Berwill, Mount Road, Cranleigh ; P. W. Fox, 109 Marina Avenue, New Malden ; L. Druce, 13 Nursery Avenue, Shirley ; M. F. Phillips, Admiralty Men's Hostel, Wormley, Nr. Godalming ; A. W. Salmon, 36a High Street, Godalming ; S. Macadew, Malwa, Lower Road, Great Bookham. |
| Cheshire : | W. Howarth, 16 Alfred Street, Northwich. | Sussex : | M de B. Brown-Greaves, Middle Gingers, Rudgwick. |
| Cornwall : | A. W. Tonkyn, Trewindle, Tregurra Lane, Truro. | Warwickshire : | I. T. Haynes, Hill View, Bilton Hill, Bilton, Rugby. |
| Devonshire : | E. G. Wheatcroft, 7 Mount Pleasant Road, Exeter ; L. S. Widdicombe, Ayrlea, Exeter Road, Exmouth. | Yorkshire : | D. Heaton, 1 Jer Lane, Horton Bank Top, Bradford ; J. C. Howard, 25 Edwards Road, Pye Nest, Halifax ; C. Shore, 17 Coronation Street, Greetland, Nr. Halifax ; G. Pearson, 10 Westbourne Grove, Ripon. |
| Dorset : | J. Lingford, 3 Norman Cottages, Trinity Lane, Wareham. | | |
| Essex : | E. L. Skinner, 32 Sunnyside Gardens, Upminster. | | |
| Gloucestershire : | R. C. Allwright, Witcombe Industrial Hostel, Shurdington Road, Brockworth ; E. A. J. Miles, 16 Russell Place, Cheltenham. | | |
| Hampshire : | N. L. Avery, 82 Hatherley Road, Winchester. (Tel. : Win 2904). | | |
| Hertfordshire : | R. P. Holman, 71 Cedar Walk, Hemel Hempstead. | | |
| India : | Lieut. J. M. B. Draper, Officers Mess, No. 3 Signal Training Battalion, Mhow(C.I.) India Command ; Cpl. F. Orman, GHQ Signals, India Command. | | |
| Kent : | R. V. Cooper, 118 Glencoe Road, Chatham ; D. Comtia-Dutton, Tiev-Taia, Hilltop Road, Bettings, Herne Bay. | | |
| Lancashire : | L. Holmes, Hanrog, Crag Bank, Carnforth ; J. H. Mandelson, 12 Menlove Gardens North, Mossley Hill, Liverpool, 18. | | |



MLCCBI-001, co-founder with G9BF of the League of Card Collectors of the British Isles, has his dream of Christmas. Next month, we shall be able to see whether he gets that AR88!

PSE QSL

The operators listed below will acknowledge, by QSL card, SWL reports on their transmissions:—

G2CUR Capt. V. H. Thomas, 13 Benacre Avenue, South Wigston, Lincs. 1909 kc transmissions.

G2DHV G. V. Haylock, 28 Longlands Road, Sidcup, Kent. 1825, 3580, 7200 kc CW, operating periods 1900-2300 daily. Input 7 watts; reports appreciated from any distance.

G2FUF R. W. Shefford, 6 Yerulam Avenue, Walthamstow, London, E.17. 28.3-28.5 mc telephony, operating week-day evenings and week-ends. Reports wanted from anywhere outside the London area.

G2FXA G. D. Davies, 35 Kensington Road, Stockton-on-Tees, Co. Durham. 7 and 14 mc CW transmissions, operating periods 0900-1000 and 1300-1400 most days, 0800-1600 Sundays. 7 mc reports from any distance, 14 mc outside Europe only.

G3ATL D. I. Wiggins, Dunster Lea, Rochdale, Lancs. 7 and 14 mc transmissions, reports wanted from distances greater than 100 miles North and South, and 25 miles in any other direction.

G3AWQ D. R. Hill, 81 Rye Hill Park, Peckham Rye, London, S.E.15. 7 mc CW, reports from over 200 miles.

G3VM F. W. Fisher, Keppel, Dereham Road, New Costessey, Norwich. 1.7 and 3.5 mc telephony transmissions, any distance. Operating periods 1930-2300 daily.

G4QC T. W. Carney, 9 Gladeville Road, Aigburth, Liverpool, 17. 7 mc CW, overseas reports. Home SWL's please report DX calling but failing to raise G4QC. Operating hours 2100 onwards daily, calling DX.

G8UO H. Beadle, 13 Chandos Street, Keighley, Yorks. 1900 kc, from anywhere outside Yorkshire and Lancashire; operation Saturdays and Sundays. 7152, 7166, 7175 kc, outside 50-mile radius; operation most evenings, 14146 kc, reports from anywhere.

PAORA A. Ruim, Dorpstraat 47, Oosterbierum, Friesland, Holland. 3.5, 14 and 28 mc CW on 3535, 14140 and 28280 kc, operating periods 2000-2300.

VU2AJ L/Cpl. A. Hudson, Indian Signals Corps School, Mhow, India Command. Reports from over 2500 miles on 28 mc CW and 'phone. Operating periods, Monday to Friday, 1100-1530, Saturday 0830-1530, Sunday 0400-1530. Reports should be detailed and include mention of other continents heard at the same time.

*Read the Short Wave Listener regularly—it will keep
you in touch*

AMATEUR BAND FREQUENCY METER

A SIMPLE DESIGN, COVERING BANDS FROM 7 mc UP

TO the radio experimenter, be he amateur transmitter, short-wave listener, or all-wave DX hound, a wavemeter is the most important piece of auxiliary apparatus attached to the receiver. The most useful kind of wavemeter is the heterodyne type, as the harmonics may be used for calibration of wavebands higher in frequency than the fundamental of the wavemeter.

In describing the construction of a suitable heterodyne wavemeter for the amateur wavebands, it must be pointed out that the accuracy of such an instrument is entirely dependent on the rigidity of its mechanical construction and the use of a good dial.

The Circuit

The diagram shows an oscillator circuit using an AC mains pentode. It is general to see a battery valve used in a wavemeter circuit, but the use of a heater type valve will enable better calibration to be obtained, as small fluctuation in the filament voltage of a battery valve will produce considerable alteration of the calibration.

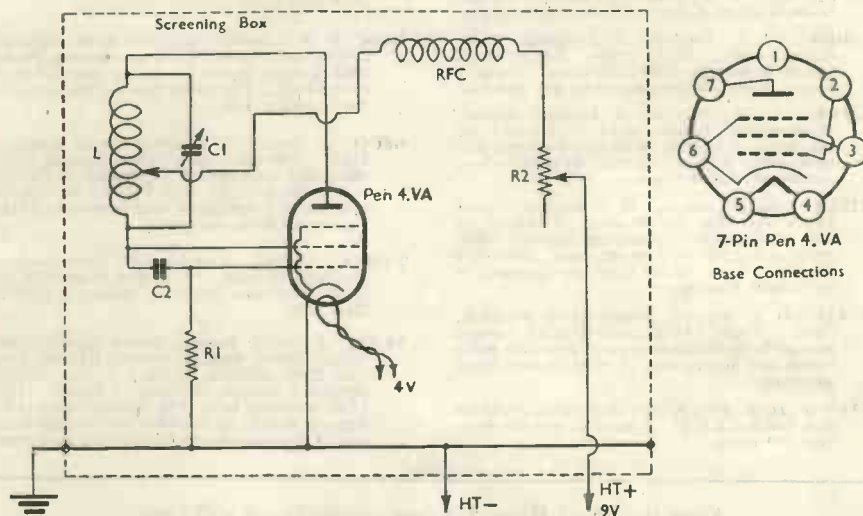
It will be seen that the tuned circuit is of

the Hartley type and is connected between the anode and screening grid of the valve. For amateur purposes it is very convenient to use a modulated tone, rather than to rely on the zero beat method of wave measurement. Hence this circuit also gives out a high-pitched whistle of about 2,000 cycles with the constants shown. The control grid of the valve is used to inject this low-frequency oscillation into the tuned circuit, the tone of the LF note being determined by the values of the grid leak and fixed condenser. Standard values have been chosen as these are easy to obtain and give out quite a suitable note.

Construction

The only component which need be home made is the coil, which consists of 26 turns of 24-gauge enamel wire wound on a 1½-in. former. A tap should be made at the sixth turn, also a couple of end turns must be spaced out, for getting the 7 mc band in nicely between the maximum and minimum of the condenser.

The wavemeter components may be laid out on a small panel and baseboard, each being about six inches square. The



Circuit of the frequency meter Though a 7-pin Mullard Pen 4.VA is recommended, the Cossor MP|Pen, Osram MPT|4 or Mazda AC|Pen will do equally well. The frequency meter should be built into a small screening box, and the LT supply can be taken off the main receiver.

variable resistor R2 is mounted on the panel alongside the tuning condenser. When a separate filament supply is used it should not be mounted on the wavemeter baseboard itself; if it is preferred heater current may be from the receiver.

One of the interesting features of this circuit is the fact that it will oscillate very strongly with a low HT voltage; a nine-volt grid bias battery will be ample. Indeed, if the voltage is too high the LF note will stop, though the valve will continue oscillating at the tuned frequency. As in this respect the voltage may be somewhat critical, a 50,000 ohm variable resistance has been included in series with the HT lead.

Any AC pentode will be found quite satisfactory, and a Mullard Pen4.VA is particularly suitable. It is important to earth the cathode, otherwise there will be a bad ripple in the modulated note.

In trying out this heterodyne wavemeter for the first time it may be found that the strength of the oscillation is too great for accurate calibration. In this case, it is best to screen the entire wavemeter in an earthed aluminium can. The condenser spindle can then be brought out by means

TABLE OF VALUES

An Amateur Band Frequency Meter

R1	2 megohms.
R2	50,000 ohms, 1-watt.
C1	20 μ F variable with good dial.
C2	.0003 μ F.
RFC	Sho.t wave RF choke.
L	Home-constructed, see text.
	Valve. Mullard Pen4. VA.

of a short insulated extension handle. This will also prevent any possible effects from hand capacity, as it must be remembered the tuned circuit is "up in the air."

Calibration

There should be little difficulty in calibrating the 7 mc band as most amateur stations are crystal controlled and frequently state the frequency on which they are working. A suitable graph should be drawn or the constructor may make his own scale on which frequency readings may be recorded direct.

In plotting a graph dial readings should be plotted against frequency in kilocycles. Each division on the graph paper should represent two kc; in this way a convenient sized graph will be obtained, and at the same time it will be possible to read accurately to one kc. The 7 mc wave-band extends actually from 7000 to 7300 kilocycles; the tuned circuit with the values indicated will cover just over 300 kilocycles,

therefore it should be possible to get the band spread nicely over the whole of the dial.

Before the wavemeter is accurately calibrated the end turns of the coil should be fixed with a dab of Secotine and the coil should be coated with collodion.



DX BROADCAST RECEPTION

Write to us with details of your reception of the really difficult short wave broadcasts. In particular, we are interested in hearing about the rare BC stations in the higher frequency bands. The receiver in use, the type of aerial, the period of reception and the announced frequency (or wave-length) of the station should be given.



BOOK FOR THE SWL

The "Principles of Short Wave Reception," a 32-page booklet reprinted from articles appearing in early issues of the *Short Wave Magazine*, is now available at 1s. 6d. from bookstalls, or 1s. 8d. post free from us at 49 Victoria Street, London, S.W.1.

Some of the chapter headings are: Fundamental Principles and Simple Circuits; Constructional Information for Two Receivers, including Aerial Design and Coupling; The Superheterodyne, and Notes on Communications Receiver Design; Short Wave Converters, and Adapting BC Receivers for SW Reception.

The treatment is essentially practical, and much data given on the construction of several different types of receiver, covering the bands down to 60 mc.

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Scotland, North England and Northern
Ireland

**All times given
in this article
are GMT.**

DX broadcast

*World wide reception of
Short Wave programmes*

ALL short wave enthusiasts will be interested to learn that Amalgamated Wireless (Australasia) Ltd. has secured a contract for the construction of sixteen new broadcasting stations in New Zealand. No information is as yet available to indicate what frequencies will be used, but we understand that one transmitter will have a power of sixty kilowatts.

In my search for VPD2, Suva, Fiji Islands (6130 kc), which has so far eluded me, I have logged one of the A.B.C. Inter-State stations, namely VLR2, Melbourne, on 48·78 m. (6150 kc), with News at 0900. You can hear this transmitter again around 1315, and also VLH3 on 31·32 m. (9580 kc), with the same programme. On Sundays, a feature entitled: "Music for Repose" is well worth your attention, and before the service closes down at 1400, you will hear a particularly fine four-minute version of "God Save the King."

Radio Australia, which caters or all external broadcasts, continues to provide excellent programmes at good strength.

In the News Reel of November 9 at 2045, we heard a recording of H.R.H. The Duke of Gloucester's valedictory speech to Australia's Federal Parliament at Canberra, through VLA4 on 25·49 m. (11·77 mc).

Here is the latest information concerning Radio Australia's transmitters:

VLA	41·21 m	7·28 mc	VLB	31·45 m	9·54 mc
VLA3	30·99 m	9·68 mc	VLB2	30·99 m	9·68 mc
VLA4	25·49 m	11·77 mc	VLB3	25·49 m	11·77 mc
VLA6	19·74 m	15·20 mc	VLB6	19·74 m	15·20 mc
VLA7	16·85 m	17·80 mc	VLB7	16·85 m	17·80 mc
VLA8	25·51 m	11·76 mc	VLB8	13·89 m	21·60 mc
VLA9	13·89 m	21·60 mc	VLB9	31·20 m	9·615 mc

These all work with 100 kW power.

VLC2	30·99 m	9·68 mc	VLG	31·32 m	9·58 mc
VLC4	19·59 m	15·32 mc	VLG3	25·62 m	11·71 mc
VLC5	31·45 m	9·54 mc	VLG4	25·35 m	11·84 mc
VLC6	31·20 m	9·615 mc	VLG5	25·25 m	11·88 mc
VLC7	25·35 m	11·84 mc	VLG6	19·69 m	15·23 mc
VLC8	41·21 m	7·28 mc	VLG7	19·79 m	15·16 mc
VLC9	16·82 m	17·84 mc	VLG9	25·21 m	11·90 mc
VLC10	13·84 m	21·68 mc	VLG10	25·51 m	11·76 mc
VLC11	19·72 m	15·21 mc			

(50 kW power)

(10 kW power)

Transmissions directed to the British Isles are:—

- (1) 0700-0815 VLB3, VLA9, VLA2.
- (2) 1500-1600 VLB9, VLA8 (to 1530).
- (3) 2030-2330 VLA4 (to 1545),
VLG9 (to 1545),
VLA4, VLB6 and
VLC10 (from 2115).

You can also listen to a sports bulletin at 0830 through VLA9. Though there is often a pronounced flutter, signals are usually quite readable. VLB8 has been logged during its Pacific service at 1200, whilst VLG7 and VLG9 can be heard opening up the Inter-State programme with: "News for the Inland and Islands" at 2000 daily.

Asia

Radio S.E.A.C. has not been so consistent of late, but the Sunday broadcasts, 1830-2030, are still coming through at good strength. Though in the amateur band, the 7·185 mc channel has provided a better signal than 15·12 mc: soon, a new frequency in the 31 m. band will be available, however. That interesting feature of the broadcast entitled "Letter from Ceylon" is not now read by the station director, for he is enjoying a well-earned leave in this country.

Experimental transmissions from Radio S.E. A.C. have been heard at good strength between 0800 and 0815 on 13·97 m. (21·47 mc).

This was in preparation for the Test Match broadcasts, in which Radio S.E.A.C. is acting as an intermediary between Australia and the BBC. The Australian commentary is picked up in Ceylon and beamed to Great Britain — an

MAIN PROGRAMMES

0030 0330	19-84 m 15-12 mc	0930-1200	19-84 m 15-12 mc
	49-38 m 6-075 mc		49-38 m 6-075 mc
0330-0430	19-84 m 15-12 mc	1200-1230	49-38 m 6-075 mc
0430-0830	19-84 m 15-12 mc	1230-1700	25-48 m 11-77 mc
	49-38 m 6-075 mc		49-38 m 6-075 mc

SPECIAL SERVICES

(Educational Transcriptions and Indian Forces Programmes)

0330-0430	25-48 m 11-77 mc	0830-0930	16-88 m 17-77 mc
	49-38 m 6-075 mc		49-38 m 6-075 mc
			25-48 m 11-77 mc (alternative)

arrangement which is giving improved reception for BBC listeners.

Radio S.E.A.C.'s normal wave-lengths and frequencies are set out above :

The following additional frequencies are available for broadcasts to Malaya, N.E.India, China and Japan : 16-88 m (17-77 mc), 31-51 m (9-52 mc).

Incidentally, Radio S.E.A.C. was heard here on 25-48 m. at 1515 on November 10 with : "By the Fireside"—a programme of orchestral works. The call can be heard at 1530, but you will not find it after the BBC's European transmission has started up on the same frequency at 1545.

Monthly Comment by

The ever-increasing popularity of the 13-metre band is again in evidence. On November 3, All-India Radio, with a broadcast in English for listeners in Africa and East Asia, was a terrific signal on 21-71 mc at 1130 : a superb rendering of Bach's Kyrie Mass in B Minor was heard. At 1730, VUD3, Delhi, 4-86 mc, has also been excellent with a talk in Hindustani.

Those who listened to the Burma Broadcasting Service (31-44 m.) at 1455 on November 17, the eve of National Day, heard the Bishop of Rangoon give a fine discourse on the theme : "Things which make a Nation," with special reference to the country of Burma.

Once again, news in English from XGNC, the "New China Broadcasting Station" has been heard at 1400. Your frequency is 9625 mc (31-17 m.). The transmitter is located at Kalgan, capital of the administrative area of Chahar in Mongolia, and it may interest you to know that this modern radio station is adjacent to a well preserved section of that two-thousand year-old rampart, the Great Wall of China.

On November 23, the "Voice of China" in Chungking was logged at 1400 with news in English, read by a man, over XGOY (announced) on 48-9 m. (6135 kc).

One interesting item referred to the forth-coming presentation in Shanghai, by the British Consul-General, of certificates granted by H.M. The King to a number of Chinese nationals for services rendered during the late war. At 1415, the following announcement was made : "This is the Chinese International Broadcasting Administration in China."

Simultaneously, XGOY on 9635 kc was giving an alternative news bulletin in English, read by a lady, but the 6135 kc transmission was by far the stronger signal. In reply to those who have made enquiries relating to ZBW3, Hong Kong, I am reliably informed that this station has recently been logged in Australia on 31-32 m. (9580 kc). The final transmission of the day extends from 1215 until 1300.

KZRH, The Voice of the Philippines, continues to radiate a readable signal most afternoons on 9630 kc. When it closes at 1600 with the time : "Twelve midnight in

R. H. GREENLAND, B.Sc.

Manila," you will learn further that the studios are located atop the Insular Life Building in that city.

"The Voice of Free Indonesia" can still be heard on 27-27 m. (11020 kc) with a news talk in English at 1615. It is understood that YHM is this station's call sign.

The regular Dutch East Indies transmitters in use are PLY, 29-8 m. (10065 kc), PMD, 37-52 m. (7995 kc), and another operates on 77-02 m. (3895 kc), but these do not appear to work on Sundays and Mondays. I have again logged PMA, 15-5 m. (19352 kc), this time on a Sunday with "Hawaiian Honeymoon" and other recordings at 1325.

Siam

Siam, or rather, Thailand, provided the listener with good DX in pre-war days, with its experimental short wave broadcasting station at Saladeng, Bangkok. This country is again on the air with HS8PD on an announced wave length of 49-67 m. (6-04 mc), though it has been logged on 49-9 m. The daily schedule is from 1200 to 1415.

In the December issue of the *Short Wave Listener* I gave details of the daily English broadcast from ODE, Beirut, Syria on

8020 kc, stating that this was three-quarters of an hour in duration. Here I made a slight error, for the transmission commences at 1545 and lasts for one hour. At 1645 you will hear the following announcement: "That brings to an end our English programme from the Lebanese Broadcasting Station in Beirut. So, until a quarter-to-six to-morrow, this is Wilfred Hendell saying Good Night to you all."

Africa

Last month I referred to a new short wave station, Radio International, Tangier, which came on the air for the first time in September 18 last. Further news has now been received from the station director, H. R. Southworth. It is claimed that Radio International is the only commercial short wave broadcasting station in North Africa.

With a power of 350 watts, it operates on 6200 kc (48.38 m.), and 1238 kc in the medium band, but from January 1, 1947, one kilowatt will be used on short waves. Broadcasts are given in four languages, namely, French, Arabic, Spanish and English, and cater for the following five countries: Tangier, French Morocco, Spanish Morocco, Southern Spain, Gibraltar. The times of transmission are:

- (1) 1200-1500 (2) 1900-2300

Reports should be sent to the following address: Radio International, 34 Goya Street, Tangier. It is hoped that photographs of this station will be available for publication at a later date.

Not far from Tangier is Algiers (if you have been there you will remember that the residents call it Alg er), with a short wave station on 11835 kc in the 25-metre band. Dance music can be heard at 1415, and a programme in Arabic precedes the news in French at 2000.

Radio Congo Belge, operating OTM2, Leopoldville, on 31.98 m. (9389 kc), is not an easy one to catch, due chiefly to continuous morse interference on this frequency. A gong at 1845 heralds the news in French, read by a man, and this is followed by orchestral music. Before the transmission ends with the playing of the Braban onne at 2000, you will hear a female announcer give concluding directions in French and Flemish.

Easier to log is the transmission put out on 30.77 m. (9748 kc) and commencing at 2200, designed for listeners in Canada and the United States. You will hear the beating of native drums, the tolling of a bell and a march before the initial announcements in French.

West Indies, Central and South America

If you are favoured with a taste of banana during the coming festive season, you might remember that it has come, possibly, from Britain's largest West Indian Colony, Jamaica.

Kingston, its capital, boasts a short wave broadcasting station, ZQI, operating on an exact frequency of 4700 kc (63.83 m.).

On a recent evening I logged this comparative newcomer at 2230 with the playing of: "Keep the Home Fires Burning," which heralded a commemorative programme featuring the gallant exploits of the British, Colonial, and Allied armies in the late war. At 2325, the transmission concluded with a sung version of: "God Save the King," followed by final station announcements.

Further listening has elicited that the station is on the air from 2130 to 2330 daily (4.30 p.m. to 6.30 p.m. local time). The call is given at quarter-hourly intervals: "You are listening to ZQI, Jamaica, on 4.7 megacycles per second."

The following is a selection from a typical programme schedule:

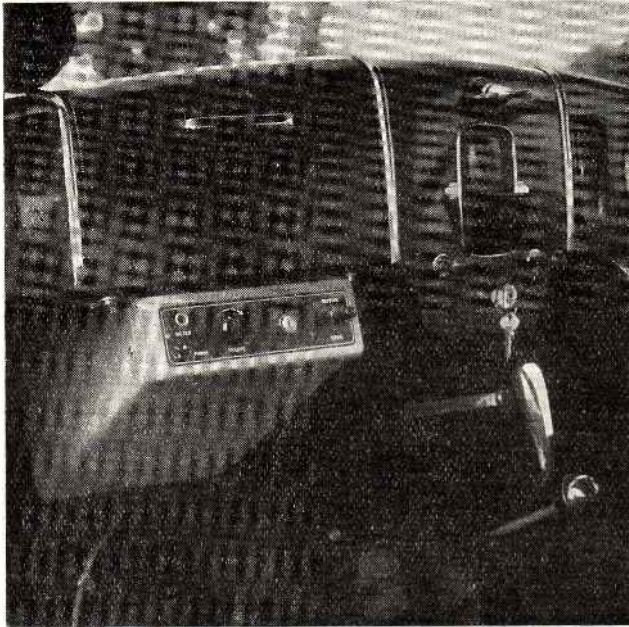
- 2130. News Headlines, followed by musical items.
- 2215. Jamaica News Letter.
- 2230. Songs of the Island.
- 2245. Feature programme, concluding with Percy Grainger's arrangement of the folk dance: "Country Gardens."
- 2300. Talk: History of some of the Caribbean Islands.
- 2315. Sports Parade. Racing results from Kingston Racecourse, reviewed by Ivan Barrow. Announcements of local forthcoming events.
- 2325. News Headlines. Birthday Greetings to residents.
- 2330. National Anthem.

In conclusion, I must warn my readers that this is not an easy station to log, primarily because the frequency is adjacent to that of a powerful CW transmitter.

Another of the Dutch colonies, also in the West Indies, operates a short wave station on 41.38 m. (7250 kc). This is PJCI, located at Willemsted in the island of Curacao. It opens at 0000 with the slogan: "Princess Juliana Sender." I have heard it with a talk in Dutch from 0015 to 0030, followed by a half-hour programme of chamber music.

Yet another station in Trujillo, capital of the Dominican Republic, has been logged. This was HIN, 48.05 m. (6245 kc), with the playing of: "Roll out the Barrel" and call in Spanish at 2345. The original verification card was a spectacular one, with palm trees, a native hut, and a map of the island of Haiti, of which the Dominican Republic forms part.

Though some Dominicans do not make



Control unit of the Eddystone police car radio installation, mounted below the facia board. The speaker is behind the grille.

an over-abundant use of their call letters, they can be identified by means of various slogans. For instance, at 2359 on November 17, from HI2T, 6485 kc, pleasing mellow clock chimes preceded the clear direction: "La Voz del Yuna." At 0015, HI2Z, 6312 kc, was identified by its slogan: "Broadcasting Nacional."

Station TGWA, Guatemala City, in Central America, can be logged during the evenings around 2015 on 19.77 m. (15170 kc).

One of its announcers speaks Spanish faster than I would care to talk in English, but you will probably hear the callsign, given in Spanish: "Aquí Radiodifusora TGWA (pronounced Tay Hay Dooble-VayAh)", and "Radio Nacional—La Voz, de Guatemala" at intervals. This is sometimes preceded by a bugle call. On November 3, at 2145, an excited commentator was heard in an "outside" sports broadcast. No English announcements have been recorded, but you should be able to identify this station by means of its frequent programmes of music played on the marimba. The verification card issued invites you to visit "The Land of Sunshine and Eternal Spring Time," where, in the capital, Guatemala City, you will see

jewels of Spanish architecture erected 'way back in the sixteenth century.

Once recently, I came across TILS on 48.66 m. (6165 kc), with news in Spanish at 2345. This transmitter is located at San José, capital of Costa Rica.

If you hear a South American station announcing in Portuguese, it will probably be a Brazilian. A programme of music, of a more serious character than is usually associated with Latin American stations, was heard at 0030 on November 16.

Baritone songs were being radiated by PRI3, Radio Inconfidencia, the Bello Horizonte State station in Brazil. Though

TEST MATCH REPORTS

Radio Australia will give running commentaries throughout each day's play, 1155-1800 AEST, in the Test series.

3rd Test, Melbourne, January 1-7.

4th Test, Adelaide, January 31-February 6.

5th Test, Sydney, February 28-March 6

0155-0810, 13.94 and 19.79 metres;
0155-0645, 16.82 metres; 0700-0810,
13.84 and 25.49 metres. These times
are GMT.

the frequency, 6000 kc, is the same as that used by ZFY, British Guiana, the dial reading was slightly lower than for the latter station, which was also audible. Incidentally, the "Voice of Guiana" is a good catch at 2330, but do not be misled by imagining it is a Canadian, for at this time it rebroadcasts the West Indian news from CKCS on 15.32 mc. At 2345, you will be informed that it is 8 p.m. British Guiana Time.

HCJB, The Voice of the Andes, in Quito, Ecuador, can be heard with its slogan: "Herald Christ Jesu's Blessings throughout the World," at 2230 on 19.33 m. (15515 kc), 24.1 m. (12445 kc), and 30.13 m. (15515 kc), 24.1 m. (12445 kc), and 30.13 m. (9958 kc). In its English broadcast at this hour on November 11, listeners heard a dramatized version of Dr. Livingstone's travels in Africa.

The new Peruvian station OAX4V, 50.4 m. (5945 kc), in Lima, has lately been logged at 0010 with clear vibraphone notes and the imposing direction: "Radio America."

CE1174, in Santiago, Chile, was heard at 2245 on November 3, with a sports commentary in Spanish. This station, announcing as "Emisora Nuevo Mundo," operates on 25.55 m. (11740 kc).

Argentina is yet another South American republic to include in your list of countries heard. The principal short wave station operates on 31.05 m. (9660 kc). At 2230, a gong signal, consisting of four vibraphone notes, precedes the call: "Aqui Estación de ondas cortas LRX (pronounced Ellay Erray Ekis), Radio El Mundo, Buenos Aires." The station is



The laughing kookaburra bird of Australia. Its call is now famous as Radio Australia's opening signal.

owned and operated by the publishers of El Mundo, which is an Argentinian illustrated daily newspaper. Radio El Mundo also operates LRX1, 6120 kc, which has been heard with call at 2230. Broadcasting hours generally are from 1200 to 0400. The postal address is: Radio El Mundo, Calle Maipu 555, Buenos Aires, Argentina.

Other stations in Argentina are active. LRR, Rosario, on 25.23 m. (11885 kc) was audible between 2245 and 2330 on November 15. On the same evening, LRS, Radio Splendide, Buenos Aires, on 32.2 m. (9315 kc), though spoiled by CW interference, was a louder signal with male and female announcers and a typically Latin American programme.

CORRESPONDENCE

We welcome readers' correspondence on the subject of short wave broadcast reception. Address R. H. Greenland, B.Sc., c/o "The Short Wave Listener," 49 Victoria Street, London, S.W.1, and post to reach us not later than the first of each month.

North America

VONH, Newfoundland, 5970 kc, has been logged at good strength after midnight. At 0005 on November 16, we listened to the story of William Dampier, English navigator and pirate of the Pacific. Reports of this station should be sent to: The Broadcasting Corporation of Newfoundland, P.O.Box ES 372, St John's, Newfoundland.

At 0001 on November 10, another old-time Canadian in Nova Scotia emerged from a welter of interference on 48.9 m. (6130 kc), with the call: "CHNS and Short-Wave CHNX, Halifax." Do you remember the original call: VE9HX, the last two letters of which indicated that it was the short wave outlet of the Maritime Broadcasting Company Ltd. in Halifax? At 0001 on November 16, CHNX gave interviews with and demonstrations by would-be aspirants to musical fame.

The International Service of the Canadian Broadcasting Corporation, intended primarily for listeners overseas, can be heard at great strength over CHOL, 25.6 m. (11.72 mc) and CKLO, 31.15 m. (9.63 mc) nightly. In "Canadian Chronicle" at 2235 on November 8, we heard Sir Robert Watson Watt, in Montreal, speaking about recent developments in radar, and on November 13, at 2145, we listened to old-timers in Alberta, giving their experiences of seventy-five

GMT	Day	Programme Titles	Wave-Lengths (See code below)
1030	Daily	United Nations Review	dfhlmnprsuwy
1100	Daily	World News	dfhlmnprsuwy
1130	Daily	Variety Music	lnpruy
1145	Daily	World News (Headlines)	dfhmsw
1215	Daily	Variety Music	bktvz
1230	Daily	Music	bklnpirtuvyz
1315	Mon. to Sat.	America Speaks (Literary)	dfhlmnprsuwxy
1315	Sun.	America Speaks	bktvz
1330	Mon. to Fri.	Personality Parade	} bfg hklmnp rstuv wxyz
1330	Sat.	Van Damme and Quintet	
1330	Sun.	Stories by Olmstead	bktvz
1400	Daily	Orchestra—Toscanini	fghmwx
1445	Daily	American News Letter	bklnpirtuvyz
1445	Daily	Orchestral Music	} klnpirtuvyz
1530	Mon. to Sat.	News of the World	
1530	Sun.	United Nations	fghmwx
1530	Daily	Comedy. J. Benny & B. Hope	} klnpirtuvyz
1545	Mon.	Radio Stamp Club	
1545	Tue. to Fri.	American Affairs	fghmwx
1545	Sat.	United Nations This Week	lnpruy
1545	Sun.	Your United Nations	} kqzt
1615	Daily	America Calling Europe	
1700	Daily	News	kqt
1830	Mon. to Fri.	America To-day	bkqt
1830	Sat.	Story, U.S.A.	acenp
1830	Sun.	Our Foreign Policy	enpru
1900	Daily	American News Letter	} kqzt
2015	Daily	News Review	
2045	Daily	Cross Section of News	kqt
2100	Daily	America Speaks (Literary)	bkqt
2115	Daily	News, Sports, Music	acenp
			enpru

Metres

31.28 (a), 25.62 (b), 25.58 (c), 25.4 (d), 25.36 (e), 19.83 (f), 19.80 (g), 19.72 (h), 19.67 (k), 19.65 (l), 19.63 (m), 19.62 (n), 19.57 (p), 19.54 (q), 16.9 (r), 16.87 (s), 16.85 (t), 16.83 (u), 16.71 (v), 16.52 (w), 13.95 (x), 13.91 (y), 13.86 (z).

years ago. What wealth of romance lay in their tales of travel in covered wagons, buffaloes, young Red Indian braves and their squaws, and the newly-founded North-West Mounted Police! This broadcast came to us via CFAC in Calgary.

On November 20, after 0001, CKRA, 25.53 m. (11.76 mc), was logged during its daily transmission to the West Indies. The feature "Canadian Chronicle" included an announcement that during the partial solar eclipse on November 23, Canadian scientists would endeavour to determine if this phenomenon causes any diminution of static on radio signals through the temporary covering of a portion of the sun's surface. Their findings will be awaited with interest by short wave enthusiasts!

The "Voice of America" English programme schedules for December are set out on the left. The service is operated jointly by the National Broadcasting Company and the Columbia Broadcasting System. Wavelengths are given first; the letter after each refers to that particular wavelength in the programme summary which follows. Only transmitters actually in the U.S. are included.

Certain of these programmes are also transmitted by the "Voice of America" in North Africa, and that at 1615 by the BBC.

In conclusion, I wish all my readers the compliments of the season, and may all proverbial stockings be filled with a varied assortment of DX.

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ACTIVE RADIO CLUBS & SOCIETIES

For the convenience of readers interested in the possibility of joining a local radio club, we shall be repeating at quarterly intervals a list of active organisations extracted from the *Short Wave Magazine* Club Register. Secretaries will be very pleased to hear from prospective members and will gladly give all information as to the Club's activities and conditions of membership. The societies given here welcome junior members and most of them have sections specially devoted to the interests of SWL's.

- ABERDEEN.** A. D. J. Westland, 17 Beaconsfield Place, Aberdeen.
ALTRINCHAM. J. G. Barnes, G3AOL, 4 Victoria Road, Hale, Cheshire. (Tel. : *Altrincham* 4464).
BEAUMANOR. E. Pethers, Beaumanor Park, Nr. Loughborough, Leics.
BELFAST. F. A. Robb, G16TK, 60 Victoria Avenue, Sydenham, Belfast.
BIRMINGHAM. C. W. Thompson, 6 Caldwell Road, Birmingham 9.
BLACKPOOL. H. D. Ashworth, G4PY, 5 Albion Avenue, Blackpool.
BOLTON. N. Moorcroft, 3 Beaconsfield Street, Deane Road, Bolton, Lancs.
BOURNEMOUTH. J. F. Squires, M.B.E., G2DBF, 80 Victoria Road, Bournemouth.
BRADFORD. (Amateur Radio Society) : J. H. Macdonald, G4GJ, Cambridge House, 66 Little Horton Lane, Bradford.
BRADFORD. (Short Wave Club) : V. W. Sowen, G2BYC, Rushwood, Grange Park Drive, Cottingley, Bingley, Yorks.
CANNOCK CHASE. K. R. Boot, G2FZG, 75 Beech Tree Lane, Cannock, Staffs.
CHEADLE. V. E. Hughes, G3AVG, Abbots-Haye, Cheadle, Stoke-on-Trent.
CHELTENHAM. H. Brislin, 52 Cleevemount Road, Cheltenham, Glos.
COVENTRY. J. W. Swinnerton, G2YS, 118 Moor Street, Coventry. (Tel. : *Coventry* 4578).
DONCASTER. H. Flintham, 50 Burton Avenue, Balby, Doncaster.
DUBLIN. T. Keogh, 8 New Ireland Road, Rialto, Dublin.
EAST GRINSTEAD. E. C. Cooper, Heatherlea, Cranston Road, East Grinstead, Sussex
EDGWARE. R. H. Newland, G3VW, 3 Albany Court, Montrose Avenue, Edgware, Middx.
GLASGOW. J. D. Gillies, GM2FZT, 3 Berridale Avenue, Glasgow, S.4. (Tel. : *Merrylee* 4060).
GLOUCESTER. J. W. Dean, G2AZT, 100 Stanley Road, Gloucester.
GRAFTON. W. H. C. Jennings, G2AHB, 82 Craven Park Road, London, N.15. (Tel. : *Stamford Hill* 3891).
GRAYS. R. F. Read, 26 Hillside, Little Thurrock, Grays, Essex.
GRIMSBY. S. Stooks, G8KH, 60 Tunnard Street, Grimsby, Lincs.
HALIFAX. L. Blagbrough, 39 Fountain Street, Sowerby Bridge, Yorks.
HARROW. J. F. A. Lavender, G2KA, 29 Crofts Road, Harrow, Middx.
HOUNSLOW. A. H. Pottle, 11 Abinger Gardens, Isleworth, Middx.
HULL. A. Bell, G2XA, 22 Orchard Road, Anlaby Park, Hull.
JERSEY. E. Banks, GC2CNC, Fort Rock, Tabor Lane, Route des Genets, St. Brelade's, Jersey, C.I.
KINGSTON. J. Hughes, 12 Hillingdon Avenue, Ashford, Middx.
LEEDS. F. Stork, 1 Brudewell View, Leeds 6.
LEICESTER. O. D. Knight, 16 Berners Street, Leicester.
LIVERPOOL. T. W. Carney, G4QC, 9 Gladeville Road, Aigburth Liverpool 17.
MAIDENHEAD. R. F. Woodruff, Oaklands, College Road, Maidenhead.
MAIDSTONE. A. H. J. Warner, G3ABZ, 288 Tonbridge Road, Maidstone.
MANCHESTER. C. R. Plant, G5CP, 33 Manley Road, Sale, Manchester.
MEDWAY. S. J. Coombe, Stanvic, Longhill Road, Chatham, Kent.
MIDDLESBROUGH. H. Stubbings, 11 Station Road, South Bank, Middlesbrough.
MIDLAND. W. J. Vincent, G4OI, 342 Warwick Road, Solihull, Birmingham. (Tel. : *Solihull* 0413).
NEATH. S. Roberts, GW4NZ, 29 Chestnut Road, Cimla, Neath, Glam.
NEWCASTLE. A. Robson, 522 Denton Road, Newcastle-on-Tyne 5.
NORTHERN IRELAND. A. Kennedy, G13KN, 38 Donaghadee Road, Bangor, Co. Down.
NORTH WEST IRELAND. D. R. J. Adair, Cosy Lodge, Culmore Road, Londonderry.
NORTH WEST KENT. L. Gregory, G2AVI, 18 Upper Park Road, Bromley, Kent. (Tel. : *RAVensbourne* 2071).
OSWESTRY. G. H. Banner, G3AHX, 6 Coppice Drive, Oswestry, Salop.
OXFORD. R. H. Farmery, 99 Stanway Road, Headington, Oxford. (Tel. : *Oxford* 61175).
R.A.F. Hon. Secretary, No. 1 R.S., R.A.F. Cranwell, Lincs.
READING. L. A. Hensford, B.E.M., G2BHS, 30 Boston Avenue, Reading. (Tel. : *Reading* 60744).

ROMFORD. R. C. E. Beardow, G3FT, 3 Geneva Gardens, Whalebone Lane North, Chadwell Heath, Essex.

ST. PANCRAS. H. Brown, 84 Blenheim Gardens, London, N.W.2. (Tel.: GLAdstone 3212).

SALISBURY. C. A. Harley, 85 Fisherton Street, Salisbury, Wilts.

SHEPPEY. F. G. Maynard, G4OU, 160 Invicta Road, Sheerness, Kent.

SLADE. L. A. Griffiths, 34 Florence Road, Sutton Coldfield, Warks.

SOUTHAMPTON. A. Ward, 50 Onisbury Road, Bitterne, Southampton.

SOUTHEND. K. F. Crispin, G6MH, 27 Thurston Avenue, Southend-on-Sea. (Tel.: Marine 67297).

SOUTH SHIELDS. W. Dennell, 12 South Frederick Street, South Shields.

STOCKPORT. G. Wood, 121 Garners Lane, Davenport, Stockport, Ches.

STOKE-ON-TRENT. D. Poole, 13 Oldfield Avenue, Norton-le-Moors, Stoke-on-Trent.

STOURBRIDGE. D. Rock, G8PR, Flat 1, Block 1, Worcester Road, Summerfield, Nr. Kidderminster.

STROUD. K. D. Ayers, 1 Victoria Villas, Whiteshill, Stroud, Glos.

SUNDERLAND. W. Stockburn, G2TG, 40 Netherburn Road, Sunderland.

SURREY. L. C. Blanchard, 122 St. Andrews Road, Coulsdon, Surrey. (Tel.: Uplands 3765).

SWINDON. P. Greenwood, G2BUJ, 49 Western Street, Swindon, Wilts.

THAMES VALLEY. D. R. Spearing, G3JG, Thurston, Orchard Way, Esher, Surrey.

WATFORD. J. C. Warren, 29 Market Street, Watford, Herts. (Tel.: Watford 5988).

WANSTEAD. M. M. D'Arcy, G3AGL, 27 Theydon Grove, Woodford Green, Essex.

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WEST CORNWALL. R. V. Allbright, G2JL, Greenacre Cottage, Lidden, Penzance.

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WEST MIDDLESEX. N. Priest, 7 Grange Road, Hayes, Middx.

WEST SUSSEX. L. Frost, G5PF, Old Timbers, Boxgrove, Nr. Chichester.

WHITEFIELD. E. Fearn, 4 Partington Street, Newton Heath, Manchester 10.

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Our new bargain list will be sent on request.

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Superior performance for Short Wave Reception. **Midget Short Wave Variables.**— $1\frac{1}{2}$ in. \times $1\frac{1}{2}$ in. \times $2\frac{1}{2}$ in. long. 581 spindle slotted 5/6; 582 with $\frac{1}{2}$ in. spindle, 6/-.
Low Loss Short Wave Tuning Condensers.—1094 20pF 6/-. 1129 40pF 6/3. 1093 60pF 7/-. 1130 100pF 7/11.
Low Loss 6-Pin Plug-in Coils.—6BB 9-14m 5/-. 6LB 12-26m 5/-. 6Y 22-47m 5/-. 6R 41-94m 5/3. 6W 76-160m 5/3. 6P 150-325m 5/9. 6G 260-510m 5/9. 6BR 490-1,000m 6/6.
Low Loss 6-Pin Coil Formers.—Plain 3/-. threaded 3/3.

Ultra Short Wave Plug-in Coils.—3 turns 2/3, 4 turns 2/3, 5 turns 2/4, 8 turns and 10 turns 2/6. Low loss base 1/6.
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Adjustable Extension Spindles.—Insulated and adjustable from 4 in. to 7 in. For $\frac{1}{2}$ in. spindles. 2/6. The above and many more Eddystone components are in stock at time of going to press ready for delivery by return of post. Send 6d. in stamps for our latest illustrated catalogue of Denco, Eddystone, Raymart, Wearite, Woden, Q.C.C., Hamrad, N.S.F. etc. components.

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 Telephone : Salisbury 2108.

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SP.250A.	250-0-250v. 60m/a. 6.3v. 2-3a., 5v. 2a.	25/-
SP.250B.	250-0-250v. 60m/a. 4v. 1-2a., 4v. 3-5a.	25/-
SP.300A.	300-0-300v. 60m/a. 6.3v. 2-3a., 5v. 2a.	25/-
SP.300B.	300-0-300v. 60m/a. 4v. 2-3a., 4v. 3-5a., 4v. 1-2a.	25/-
SP.301A.	300-0-300v. 120m/a. 5v. 2-3a., 6.3v. 3-4a.	28/-
SP.301B.	300-0-300v. 120m/a. 4v. 2-3a., 4v. 2-3a., 4v. 3-5a.	28/-
SP.350A.	350-0-350v. 100m/a. 5v. 2-3a., 6.3v. 2-3a.	29/-

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Thermo coupled RF am-meters, "5m.a. 2" dial, by leading maker. 15/-



Moving coil meter, 30m.a. shunted, 2" dial, by leading maker. 15/-



3-gang condenser, 50 mmfd. perfection extension shaft and knob. 7/6

2-gang ditto. 5/6



Relay D.P.C.O. activating coil 2/6

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65GX

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Price £10 less speaker and batteries.

TRANSMITTERS.—You have overwhelmed us with your orders for our 75 watt Tx and we regret we cannot now deliver under 3 to 4 weeks; however, knowing you prefer quality instruments we offer the following transmitters:—

1. 10 watt C.W. Tx complete, £12
2. 25 watt C.W. Tx complete, £25
3. 75 watt C.W. Tx complete, £30
4. 140 watt C.W. Tx complete, £40

All the above are complete with Xtals and coils for one band.

Full particulars given on application.

SHORT WAVE (HULL) RADIO

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Telephone: 7168

SPECIAL OFFER!

Limited quantity of brand-new 3-valve Midget Short Wave Receivers, ex-Government stock. (These sets were originally made for the Resistance Movement.) Wave band coverage 25 to 50 meters. Ideally suitable for reception of Overseas Broadcast Programmes, and Continuous Wave Commercial Transmissions.

Complete Equipment consists of:—

- (a) 3-valve 25-50 meters, short-wave battery receiver, using 3 Midget 1T4 valves, in battleship grey crackle finished metal case, measuring $5\frac{1}{4}'' \times 4\frac{1}{2}'' \times 1\frac{1}{8}''$.
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- (d) Aerial and Earth.
- (e) One set of spare batteries consisting of 30v. layer type H.T. and one 4.5 v. L.T. Battery.

This receiver is so small that it can conveniently be carried in the jacket pocket, is easily converted for medium wave operation, and is wonderful value for money. The whole, boxed complete, ready for immediate despatch. Price £6/4/6. Postage 6d. extra.

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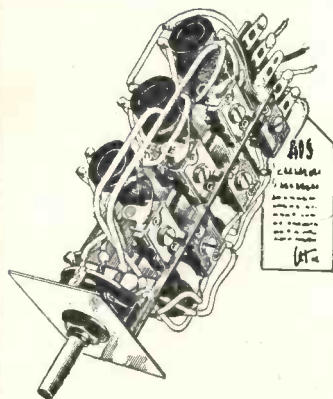
SHORT WAVE BROADCAST STATIONS

Giving Frequency, Wavelength, Callsign and Location

Part I.

This list, covering only 13-24 metres, has been specially prepared by R. H. Greenland of "DX Broadcast." It is the result of a recent survey, and only stations known to be active are included. Further lists will appear in due course, for the broadcast bands up to 60 metres.

Frequency	Wave-length (metres)	Callsign	Location	Frequency	Wave-length (metres)	Callsign	Location
21750	13-79		Davenport.	15420	19-45	GWD	Davenport.
21720	13-81		Davenport.	15380	19-50		Moscow.
21690	13-83		Davenport.	15350	19-54	WRUA	Boston, Mass.
21680	13-84	VLC10	Shepparton, Australia.			VUD8	Delhi, India.
21655	13-85		Davenport.	15340	19-56	KNBI	Dixon, California.
21645	13-86	WNRX	New York.			KNBX	Dixon, California.
21630	13-87		Davenport.	15330	19-57	WGEO	Moscow.
21600	13-89	VLA9	Shepparton, Australia.				Schenectady, New York.
		VLB8	Shepparton, Australia.	15320	19-58	CKCS	Sackville, Canada.
						VLC4	Shepparton, Australia.
21580	13-90	WLWS	Cincinnati, Ohio.				Moscow.
21560	13-91	WCRC	New York.	15310	19-60	GSP	Davenport.
21540	13-93		Davenport.	15300	19-61		Paris.
21510	13-94		Delhi, India.	15290	19-62	WRUL	Boston, Mass.
21500	13-95	WOOC	New York.			KWIX	San Francisco, California.
21480	13-96		Davenport.				Delhi, India.
21470	13-97	S.E.A.C.	Colombo, Ceylon.			VUD11	Dixon, India.
19350	15-50	PMA	Batavia, Dutch East Indies.	15280	19-63	WNRE	New York.
							Moscow.
18160	16-52	WNRA	New York.	15275	19-64		Singapore.
18080	16-59	GVO	Davenport.				Strait Settlements.
18025	16-64	GRQ	Davenport.	15270	19-65	RW96	Moscow.
17955	16-71	WLWLI	Cincinnati, Ohio.			WCBX	New York.
17870	16-80	GRF	Davenport.			KCBR	Delano, California.
17850	16-81	KCBF	Delano, California.	15260	19-66	GSJ	Davenport.
17840	16-82	VLC9	Shepparton, Australia.	15250	19-56	WLWR	Cincinnati, Ohio.
				15240	19-68	TPA2/TPA5	Paris.
17830	16-83	VUD10	Delhi, India.			KNBI	Paris, California.
		WCBN	New York.			KNBX	Dixon, California.
17820	16-84	CKNC	Sackville, Canada.	15230	19-69	WLWL2	Cincinnati, Ohio.
17810	16-85	GSV	Davenport.			VLG6	Lyndhurst, Australia.
		VLA7	Shepparton, Australia.	15220	19-71	PCJ2	Huizen, Holland.
		VLB7	Shepparton, Australia.	15210	19-72	WBOS	Boston, Mass.
						VLC11	Shepparton, Australia.
17800	16-85	KRHO	Honolulu, Hawaii.	15200	19-74	WLWS1	Cincinnati, Ohio.
		WLWO	Cincinnati, Ohio.			VLA6	Shepparton, Australia.
17790	16-86	GSG	Davenport.			VLB6	Shepparton, Australia.
17780	16-87	WNBI	New York.				Shepparton, Australia.
		KNBA	Dixon, California.				New York.
17770	16-88	KNBI	Dixon, California.	15190	19-75	WOOC	Delhi, India.
		OTCS	Leopoldville, Belgian Congo.			VUD5	Delhi, India.
		S.E.A.C.	Colombo, Ceylon.			CKCX	Sackville, Canada.
17765	16-89	TPC3	Paris.	15180	19-77	GSO	Davenport.
17760	16-90	KWIX	San Francisco, California.	15170	19-78	TGWA	Guatemala City, Guatemala.
							Delhi, India.
		KWID	San Francisco, California.	15160	19-79	VUD7	Lyndhurst, Australia.
						VLG7	Motala, Sweden.
17750	16-90	WRUW	Boston, Massachusetts.	15155	19-80	SBT	New York.
				15150	19-80	WRCA	Davenport.
17745	16-91	OTM6	Leopoldville, Belgian Congo.	15140	19-82	GSF	Boston, Mass.
				15130	19-83	WRUW	Boston, Mass.
17730	16-92	GVQ	Davenport.			WRUL	S.E.A.C.
17720	16-93	LRA5	Buenos Aires, Argentina.	15120	19-85	S.E.A.C.	Colombo, Ceylon.
				15100	19-87	EPB	Teheran, Iran.
17700	16-95	GVP	Davenport.			HOXA	Panama City, Panama.
17527	17-11		Brazzaville, French Equ. Africa.	15090	19-88		Davenport.
15750	19-05	RRRD	Moscow.	15000	20-00	WWV	U.S.A. National Bureau of Standards.
15595	19-23	FZI	Brazzaville, French Equ. Africa.				Khartoum, Sudan.
15515	19-33	HCBJ	Quito, Ecuador.	13320	22-53		New York.
15450	19-41	GRD	Davenport.	13050	23-00	WNRI	Quito, Ecuador.
15435	19-43	GWE	Davenport.	12445	24-10	HCBJ	



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CRYSTAL SETS. The Lesdix Bigou Crystal Set in bakelite case, condenser tuning, semi-perm detector and terminals, 15/-.

HAND MAGNETO GENERATORS. Output approx. 70 volts 25 m.a. A.C. perm. Steel Magnet, wound armature driven by gearing in handle, for all experiments, 10/-; 3-magnet type, 12/6; 5-magnet type, 15/-; postage 1/- extra.

MAGNETS. D.C. electro magnets, weight 10 ozs., life on 2 volts 1½ lbs., 4 volts 3 lbs., 6 volts 4 lbs., new surplus, 7/6. The Wonder Midget Magnet Alni perm.; steel disc, ¾" x ¾" with ¼" centre hole, 3/6 each. Horseshoe Magnets in several sizes; send for leaflet; "S.L."

VIBRATORS. Mallory, 12 volt 60 m.a., 15/-; special 12 volt transformer, 27/6, delivery ex-stock. Vibrator Contacts, thin H.F. Reed, bakelite mounted, fine thread adjustment, milled locking nut, Government type, 4/-.

TRANSFORMERS. Double wound, 230v to 12 volts 3 amps, 32/6, and 20 volts 2 amps, 30/-.

AUTO TRANSFORMERS. 230/110 volts 85 watts, 25/-; 150 watts, 35/-; 300 watts, 60/-; 1 kW., £7/10/-; 3 kW., £9/10/-.

RELAYS. Send for special leaflet "R.S.L.," we have relays for all purposes. Mercury relay tubes, 5 amp size, 7/6, postage 1/-.

SMALL MOTORS work off 3-8 volt battery or from A.C. mains through transformer, 15/-; transformer, 7/6 extra.

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G.P.O. CONNECTION STRIPS, solder tags, telephone type moulded base 60-way, 3/6; 10-way R.A.F. terminal strips, bakelite, 2/9.

BUZZERS. Test Buzzers, double contact blade for distant signals or converting to vibrator, robust construction, ex. G.P.O. stock, 8/6. Morse Practice Buzzer, tunable note, metal case, 7/6; bakelite case testing buzzers, 3/6. The high note tiny Townsend Buzzer for the experimenter, platinum contacts, 10/-.

MAHOGANY CANVAS COVERED MARK III CABINETS. 13½" x 12" x 7½", with hinged lid and carrying handle, 15/- each. These are exceptionally well made, ½" mahogany; will strip and polish.

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100 watt audio to modulate 200 watt RF ... **6 Gns.**

SMOOTHING CHOKE—
180 ohms D.C. 20 H 250 mA ... **63/-**

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3A 6, 3v1A ... **79/6**

FHE0696. 750-650-550-0-550-650-750 v 150 mA;
0-2, 5-4-5v5A ... **79/6**

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Smaller version without projecting front or panel handles.

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63" in height with channels, chassis, panels, etc.

7 Gns. Complete. (Crg. 7/6)



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