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APRIL 1949
VOLUME 3 · NUMBER 5

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THE **SHORT WAVE** LISTENER

A MONTHLY MAGAZINE FOR THE LISTENING AMATEUR

VOLUME 3

APRIL 1949

NUMBER 29

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EDITORIAL

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Efficiency

We have had occasion before to comment in this space upon the extraordinary disregard, on the part of a great many SWL's, of the aerial as a factor in overall station efficiency.

The reasons are many: Any good modern receiver will produce a large number of short wave transmissions with no more "aerial" than the stray coupling into the mains, or its own "internal" aerial; the erection of an aerial is a nuisance, it can be unsightly and may involve expense; in some of the densely populated dormitory areas the tenant of a house is prohibited from erecting any sort of outside aerial. Altogether, the aerial is looked upon as being more trouble than it is worth.

But the truth is far different. Reception of high-powered short wave broadcasters without an aerial is no proof of the capabilities of the receiver on weak transmissions from the distant parts of the earth; *any* receiver, no matter how good, will *always* be improved (often out of recognition) by providing it with an aerial, properly installed and coupled; the erection of an outside aerial is therefore well worth careful consideration if the utmost is expected from the receiver. And, in their own interests, listeners who contemplate serious operation on the short waves should be prepared to state a case for the erection of an aerial to the authority concerned—though admittedly this is too frequently a difficult line to take.

Where it is possible to put out an aerial, and the receiver is to be used for something more than casual short wave listening, our advice is always to take the fullest advantage of such a facility—it always pays a good dividend.

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Receiver Aerial Matching

More on Improving Input Performance

by J. N. WALKER (G5JU)

(Our contributor shows how the receiver input circuit cannot be expected to match to any length of wire on all frequencies. The use of either of the two external matching units he discusses here will be well worth while with almost any receiver.—Ed.)

THE input impedance at the aerial terminals of a communications receiver is generally chosen to match into some standard feeder impedance. When used with the appropriate feeder, a good match results, at least at the receiver end.

When an end-on aerial is employed, or when a feeder cable with a characteristic impedance different from that of the receiver input is used, things are not so simple, as a few examples will show.

Assume the receiver input impedance is 400 ohms and a low-impedance feeder cable of about 80 ohms is used between the aerial and the receiver. The ratio of the impedances is 5 to 1, which will result in a certain amount of mismatch and a consequent deterioration in performance. On average to strong signals, the falling off will not be serious but weak signals will be adversely affected.

With an end-on aerial, the degree of mismatch will vary greatly according to frequency. When the receiving frequency is such that the length of the aerial represents an exact quarter-wavelength, the end will show a low impedance—about 40 ohms in an average case. On the other hand, when the aerial is an exact half-wavelength, the end impedance will be high—2,000 ohms or more. At intermediate frequencies, the end impedance will vary between these extremes and, in the case of a long wire, the multiples of quarter- and half-wavelengths and their fractions will further complicate matters. *Only over relatively small bands of frequencies will the match be really good.* With a 400 ohm input impedance, these points will occur when the aerial is slightly longer or slightly shorter than a quarter wavelength. Whatever the receiver impedance, it is not possible with an ordinary type of aerial to ensure an accurate match

over a wide range of frequencies. (It can be done commercially by using special aerial systems and untuned feeders.)

On amateur frequencies, the nearest one can get to obtaining a good match on each band is to use a Windom type of aerial, the latter, as usual, working either on the fundamental or harmonic modes. For instance, an aerial 66 ft. long, with the feeder tapped on about 11 ft. from the centre, will give good results on the 28, 14 and 7 mc bands. The single-wire feeder possesses a medium impedance which will match quite well into the receiver.

An end-on half-wave aerial (or a multiple of half-waves) is actually about the worst one could use! The self-resonant properties of the aerial are largely nullified when the end, with its relatively high impedance, is connected to the receiver aerial terminal.

Construction of a Matching Unit

It is not a difficult matter to construct a small unit, with the aid of which correct matching can be maintained over a wide range of frequencies. In effect, this unit is a pre-selector, but one which does not require a valve and therefore introduces no complications in the way of power supplies. It enables full advantage to be taken of the natural resonant properties of the aerial and ensures a correct match to the receiver at all frequencies. Further, with a super-heterodyne receiver, the additional tuned circuit reduces image interference, and, with any type of receiver, gives a measure of increased selectivity.

The circuit of the unit is shown in Fig. 1. Using the component values specified, any aerial up to 150 ft. in length can be matched on any frequency higher than about 3.5 mc. To be fully effective on frequencies lower than this, it is necessary to increase the value of C4 and C5 to about 20 μF . Conversely, at the higher frequencies—for instance, the 28 and 14 mc bands—some improvement will be obtained if C4 and C5 are reduced to 5 μF . Variable trimmers may therefore be used in place of fixed condensers for C4 and C5, where the interest lies over a wide range of frequencies.

The construction is straightforward and easy. Any convenient panel and chassis may be used. The differential condensers C1 and C3 should be mounted on insulated brackets, since the spindles must not be

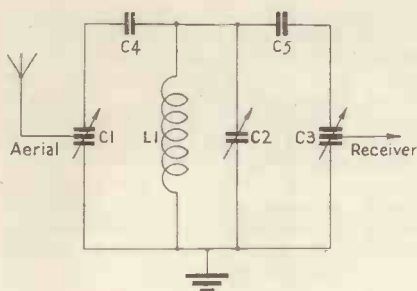


Fig. 1. The aerial matching unit described in the text, applicable to any receiver.

TABLE OF VALUES

Fig. 1. The Aerial Matching Unit

- C1, C3 = 25 μ F differential
 C2 = 60 or 100 μ F single
 C4, C5 = 10 μ F ceramic or silvered mica. (*But see text.*)
 L1 = Coil to cover appropriate frequencies

earthed. One stator of each condenser is earthed—it is immaterial which—and the other stators connect to the tuned circuit, through C4 and C5. It is preferable to use standard Eddystone plug-in coils for L1, since the tuning range of each coil can be readily ascertained. Also, dials should be fitted to the variable condensers, so that the settings of various frequency bands, or for different aeriels, can be logged for future reference. The dials fitted to C1 and C3 should indicate zero when the rotor sections are fully meshed with the earthed stators, corresponding to minimum coupling and low impedance.

Operation of the Unit

With the aerial connected directly to the receiver, first tune in a station on the selected frequency band. If an S-meter is available to give a definite carrier level indication, so much the better.

Then transfer the aerial to the appropriate stand-off insulator on the pre-selector unit and connect the receiver to the other insulator with a short length of wire. Plug in a suitable coil and tune C2 to resonance. Starting with C3 at zero, increase the dial reading in small steps, retuning C2 each time (only a small movement will be necessary) until maximum strength results. The unit is now matched to the input impedance of the receiver.

Follow the same procedure with C1

(retuning with C2) until the aerial also is properly matched. Unless the match originally was good, a definite improvement will be noticeable. Thereafter, there will be little need to touch C3, but the settings of C1 and C2 will vary according to the frequency band in use. In general, the dial of C1 will be at zero when the aerial length approaches a quarter wavelength or an odd multiple thereof, and near maximum when the aerial is a half wavelength or any multiple.

Second Method

A second method of ensuring correct matching is shown in Fig. 2. This involves the use of a valve but cuts out one variable adjustment and is, on the whole, somewhat better where it is desired to cover a wide range of frequencies. The first portion is practically identical with that of Fig. 1. The signal is fed into the grid of a pentode valve, which is used as a cathode follower, the output to the receiver being taken from the cathode via a condenser, to prevent the bias-cum-load resistor being short circuited.

Normally, a valve with a high mutual conductance is specified for cathode follower applications, in order to bring the output impedance down to a low value (70 to 100 ohms). In the present instance, this is not necessary and it will, in fact, be better to use a valve such as the EF37, EF39, 6J7 or similar, possessing a medium mutual conductance, and giving a close match to the receiver input impedance.

It will not be easy to adapt the circuit

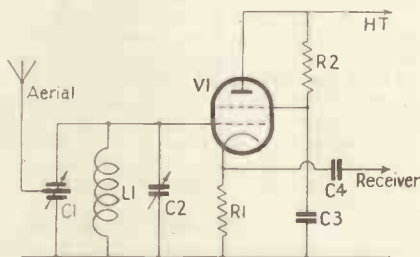


Fig. 2. A rather better design, simpler to operate than the unit described in Fig. 1.

TABLE OF VALUES

Fig. 2. Cathode-Follower Matching Unit

- C1, C2 and L1 as in Fig. 1.
 C3, C4 = .01 μ F (preferably mica)
 R1 = 470 ohms, $\frac{1}{2}$ watt
 R2 = 47,000 ohms, $\frac{1}{2}$ watt
 V1 = EF37, EF39, 6J7, etc.

for use with a battery valve. An RF choke will be necessary in each leg of the filament, since the latter must be held above earth potential as regards RF. At the same time, there will be no need for the RF chokes to be so efficient as when used in, for instance, an electron-coupled oscillator circuit and if the reader is prepared to wind two chokes, having reasonably high inductance combined with low resistance, satisfactory results should be obtained.

In the circuit of Fig. 2 the output impedance remains constant irrespective of

frequency but it is still, of course, necessary to match the aerial to the tuned circuit by adjustment of C1. One feature of the cathode follower circuit is the very high input impedance which, in effect, will sharpen the tuning of the L1/C2 combination and give added selectivity. Admittedly, the valve itself will not provide any additional gain, but the improved matching and the increased selectivity will result in a definite improvement in the performance of any receiver with which the unit is used.

R.A.E. Questions Answered

From the May, 1948, Examination

by **THE OLD TIMER**

(Here are his suggested answers to three more of the questions in the last Radio Amateurs' Examination Paper. The remaining questions will be dealt with in our next issue.—Ed.)

QUESTION 2. What steps should be taken by the holder of an amateur transmitting licence to ensure full compliance with the requirement that a full record should be kept of all transmissions?

ANSWER: The exact wording of Condition 6 in the Licence is as follows: "A running record shall be kept in a book of approved type (not loose-leaf) of all sending periods showing the date and time of each period and the frequency and type of emission employed. No gaps shall be left between entries in the log. The record of sending periods shall in all cases be initialled at the time of recording by the authorised operator named in Condition 4."

If this condition were to be taken literally the average amateur would have a *less* complete log than is desirable from his own point of view. It will be noticed that there is no insistence on the logging of even the call-sign of the station called or worked! (This is obviously implied, however, in the words "running record . . . of all sending periods.")

From the operator's own point of view he should have a record of the station called (or the CQ or QRZ call), the incoming and outgoing reports, the fre-

quency and type of emission, and a space for any remarks on conditions or on transmission and reception peculiarities, e.g., reports of over-modulation and so on.

The specimen log in Fig. 1 shows just about the minimum requirements and is quite self-explanatory as regards times, calls and frequencies.

Note that the operator has initialled each "period of activity" after writing it up, and not each single contact made. Actually, taking the licence condition literally, those of us who keep a rough log and write it up properly in the permanent log every few days are only expected to initial entries "at the time of recording" —which might mean only once on every one or two pages.

The question of input power now arises. If one is in the habit of changing power at frequent intervals, it would be desirable to use another column, adjoining that for "Frequency and System," to log the exact power used. If, however, it is the custom to use 25 watts on all bands except 1.7 mc and 10 watts on that band, then those figures can be noted at the head of a page of the log and no further notes made until any alterations take place. Changes in power for the purpose of low-power tests and so on can, of course, be noted in the "Remarks" column with entries such as "reduced to 1 watt." Every change of frequency should also be recorded.

It is important to note that, in the opinion of the writer, this answer covers the *minimum* desirable requirements. Those who wish to keep much fuller logs, giving the full addresses of stations worked, names of operators and other notes, will

REMARKS: 10 watts input 1.7mc, 25 watts other bands.

DATE	TIME ON	TIME OFF	CALLED	WORKED	HIS RST	MY RST	FREQUENCY & SYSTEM	REMARKS	SIG
1/1/49	0630	0645	W1BUX	W1BUX	559	449	3510 CW	Good Cond.	
	0645	0700	QRZ?	W210P	569	539	"	"	P.W.S.
	1000	1010	CQ	KL7PJ	589	579	14050 CW	Sigs. Flutters	
	1010	1025	ZL1MB	ZL1MB	569	569	14005 CW		
	1030		CQ						P.W.S.
	2230	2250	CQF	99XX	57F	57F	1850 PHONE	Hf reports 60% Mod.	P.W.S.

Fig. 1. Suggested log-book ruling and layout.

be well advised to allow the running record to appear right across both pages of the log book, using the right-hand page for such additional information and, possibly, other data such as sunspot conditions, weather, local interference and anything else of interest.

QUESTION 8. What is the effect of connecting two condensers (a) in series, and (b) in parallel? What is the total effective capacitance when four condensers, each of 100 μF , are connected in a series-parallel arrangement consisting of two parallel paths, each of which contains two condensers in series?

ANSWER: 1. General.—Let the two condensers under consideration be called C_a and C_b . When they are connected in parallel the total capacitance, C , is given by the simple expression $C = C_a + C_b$.

When they are connected in series the total capacitance is less than that of any of the individual condensers and is expressed thus:

$$C = \frac{1}{\frac{1}{C_a} + \frac{1}{C_b}}$$

2. For the particular combination given (see Fig. 2) the total effective capacitance is worked out by considering each path

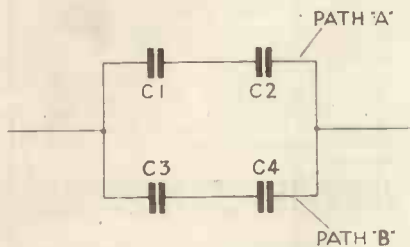


Fig. 2. Condensers in series-parallel.

separately. C_1, C_2, C_3 and C_4 are all condensers of 100 μF capacity. Thus, the effective capacitance along path "A" is 50 μF , and the effective capacitance along path "B" is also 50 μF . As the two paths are in parallel the combined capacitance is 100 μF .

QUESTION 7. Describe a transmitting aerial suitable for one of the amateur bands, indicating the main features of the design and any directional properties. Illustrate your answer with a diagram.

ANSWER: The aerial shown in the sketch (Fig. 3) is a simple dipole and has been chosen as being the fundamental

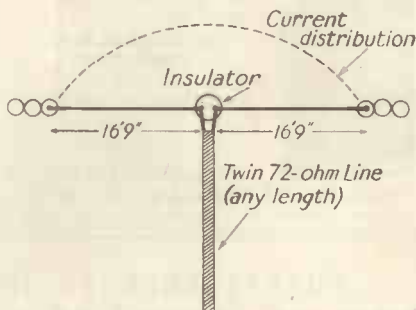


Fig. 3. Dimensioned half-wave doublet aerial for 14 mc.

aerial from which practically all designs for short-wave aerials originate. It is suitable for any one amateur band, but not for more than one.

Its physical length approximates to half the wavelength for which it is to be used, but as the velocity of a wave travelling along a wire is slightly reduced when radiation is taking place, the correction

factor of roughly 5 per cent. makes the exact physical length .475 of a wavelength.

The formula usually employed converts also from metres to feet, and is as follows :

$$\text{Length} = \frac{492 \cdot (.95)}{f} \text{ ft.,}$$

thus converting directly from the frequency *f* into the length in feet. The hypothetical dipole illustrated is designed to work on 14100 kc and its length is 33 ft. 6 in.

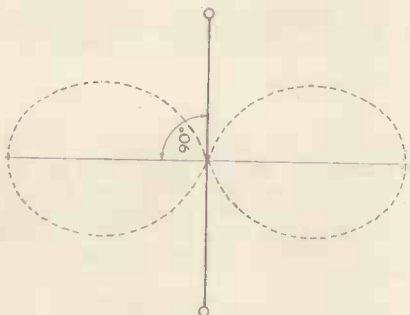


Fig. 4. Radiation pattern of a half-wave aerial.

The current distribution, as shown by the dotted line, is common to all half-wave aerials, maximum current flowing at the centre, at which point the dipole is broken and the feeder line introduced. As the radiation resistance of such an aerial, when it is suspended any exact number of quarter-waves above a perfect earth, is 72 ohms (which represents its impedance at the centre), it may most conveniently be fed by a screened, twisted or coaxial line having a surge impedance of 72 ohms. Many types of standard co-axial line are available which conform to this figure.

The line will be fed at the transmitter by means of a low-impedance link, probably consisting of a single turn coupled to the output tank circuit.

If the height is not an exact number of quarter-waves the radiation resistance may deviate considerably from the figure of 72 ohms ; this is compensated for at the point of feeding by "fanning" the feeder line slightly if necessary.

The directional properties of a dipole are shown in the sketch (Fig. 4), giving maximum radiation at right-angles to the horizontal plane of the aerial and minimum radiation in the direction of the ends.

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RF-27 on Ten Metres

Some Conversion Experiments.

by F. HOYLE

BEING an ardent 10-metre listener, it was decided to conduct a few experiments with the RF-27 unit on the 10-metre band.

First of all, three coils were wound on $\frac{7}{8}$ -in. diameter formers, the RF and mixer coils having $8\frac{1}{2}$ turns each of 20 SWG enamelled wire, and the winding length being spaced out to $\frac{11}{16}$ in. approximately. The third one, the oscillator coil, had $6\frac{1}{2}$ turns with the same spacing between turns. The existing coils were then removed from the unit. While taking out the 5-metre oscillator coil it was found that the wire from the top of this coil to the oscillator under-chassis trimmer was broken inside the covering, about half-way along its length. A bit of doubt crept in here! Was that the reason no 5-metre signals had been received?

The next step was to disconnect the aerial coupling coils, the aerial being taken direct to the top end of the RF coil via the small fixed aerial series condenser. A 500,000-ohm resistor was then soldered across the RF trimmer situated above the chassis, to provide an earth return for the grid of the RF valve.

As the coil details were purely mental estimation or guess-work, one was both pleased and rather surprised to tune in American amateurs calling "CQ Ten" between 0° and 30° on the dial; the main receiver, an R.1155, was tuned to about 7.5 mc.

Thinking that one turn less on the RF and mixer coils would bring the 10-metre band to a more convenient spot on the dial, the first and second turns on each coil were shorted by soldering a small piece of wire across them.

The result of this was that the 10-metre band vanished completely, so the coils were restored to normal again! The main receiver was then tuned to various frequencies, and it was found that with the R.1155 set to 4.5 mc, the 10-metre band occupied the centre of the converter dial, i.e. 60° to 110° or 120° approximately. Only slight adjustment of the iron core of the output coil was necessary.

A large number of Americans on 10 metres were pulled in at terrific volume,

with a few VE's at S8 and S9. Several American amateurs were also heard calling "CQ Eleven" around 130° on the dial.

Results on the initial try-out were very satisfying, although several improvements may suggest themselves, such as replacing the output coil by an RF choke.

FIVE GOES

With effect from March 31, British operators will no longer have the use of the 58.5-60 mc band, which has fathered VHF activity in this country since amateurs first began to explore the higher frequencies. A general survey of the results achieved and the experiences gained during the period of British 5-metre activity will appear in the April *Short Wave Magazine*.

RADIO VALVE DATA

We welcome the reappearance of the first post-war version of *Radio Valve Data*, an 80-page production giving the characteristics and other essential data on 1,600 British and American receiving valves. These are classified by types under functional headings, and British valves are further grouped under manufacturers' names; obsolete, replacement and current types are also listed. Altogether, *Radio Valve Data* is complete on its subject and as such is an essential buy for all those with a practical interest in radio. Price is 3s. 9d., post free, of the Books Department, Iliffe & Sons, Ltd., Dorset House, Stamford Street, London, S.E.1.

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THERE is not the slightest doubt that spring is coming, if it is spring that causes the hibernating listener to leap from his burrow, warm up the receiver, ferret through his log and write up the story!

At any rate, we are glad to say that this month's post has again broken all records; the number of Calls Heard lists has positively shattered them; and the size of our three competitive tables, as you will see, has increased in proportion.

The Set Listening Periods were greeted with *eclat*—so much so that I received enough lists for them alone to fill the whole three pages of Calls Heard, and it made me very sad to have to conduct a kind of lottery to decide which SLP lists should be displayed this month. But more about this later. . .

THE SLP'S, FEBRUARY 26 and 27

They were both on 14 mc and both good. The evening

Have
you
heard
?

others. Some doubtful calls like FO8 and FR8 were also to be heard, but are regarded here as extremely suspicious.

GENERAL DX NOTES

There are always one or two

FR8AB and FR8LI? Several readers have either heard these stations or heard them being called. Well, the probability is that they are phoney. If I ever hear to the contrary I will be only too glad to say so.

Finally, the matter of 1.7 mc QTH's. Lots of people have been correcting lots of other people's lists, saying that stations they quoted last month are not in the county stated. All I can say on this subject is—*don't* rely on the Call Book. If the stations you hear on the Top Band don't identify themselves, wait until you have a card from them before claiming. After all, you have a whole year and you won't win the competition by putting in the highest score this month or next.

THE 1.7 MC BAND

An incredible amount of keenness on this band has been stirred up by the Counties Heard list. J. H. Woodward

AMATEUR BAND COMMENTARY by the DX Scribe

'phone period attracted more listeners than the morning CW period, but both brought in the DX. A very rough analysis of the lists shows that the best DX heard by the 'phone enthusiasts was CO, HH, HK, JA, NY4, OQ5, VK4 (Papua), VP6, YK1 and YV. Many readers report that JA2BL gave them their first Japanese 'phone station—some for 14 mc, some for any band—and all agree that he was coming across like a local at S9 plus. In fact many passed him up as "just another Yank." VK4VD gave other readers their first taste from Papua, although some probably thought he was just another VK.

The CW lads collected such countries as EL, FK8, HP, KG6, KH6, KL7, KS6, UD6, UA9 and VE7, among many

subjects brought up by practically everybody, and it is best to deal with them first instead of constantly referring to them individually. The largest single topic this month has been "tell A. Bannister (Manchester) that the W4 he heard was W4AXC/C6 in Tsingtao, China." (True, it has been spelt as Singtow, Hinghow and all sorts of funny things, but there it is.) Many others add that W7LZJ/C6 is also in Tsingtao, and has been telling the world that he is in Zone 23. Sorry, chaps, he isn't—it's 24.

Next, that YQ5B! Roughly 100 listeners have told me that he is describing himself as a portable in Roumania, so that's that one cleared up! Now the DU prefix—yes, it's the new prefix for the Philippines and replaces KA.

(Stoke-on-Trent) says he was "fair knocked sideways" by L. H. Waine's starting score of 41 last month; he then goes on to say that he has a QSL from G3PU (Weymouth) and was surprised to find that he was only using 5 watts. Was that DX? Well, it may have been for J. H. W. up in Stoke-on-Trent, but it wasn't for G3PU, who, on another occasion, provided the biggest news of the month.

Here it is: on February 19 he was working W4NNN (Falls Church, Virginia) on 3.5 mc, and asked him to listen on the Top Band. G3PU then put his 10-watt rig in action on 1751 kc, at 0630 GMT, and back came the W4 with an RST 339 report on G3PU's signals! A fine piece of work this, and I am not sure that G signals

have ever before penetrated as far as W4 on the 1.7 mc band, although W1 was worked in 1933 and W4 heard.

G3PU also passes on the very interesting news from W4NNN that the W, KP4, KV4 and KH6 stations will probably be allowed to use up to 200 watts on the Top Band, 1800-1825 kc and 1875-1900 kc. When they do, we will run a "States Heard" list!

G. C. Allen (Thornton Heath) has pushed his score up to 38, with 280 separate calls heard since January 1, and remarks that L. H. Waive (Yeovil) looks like scraping the barrel by about June. Don't forget, though, you 1.7 mc county-chasers, that you have the following in front of you: England, 41; Scotland, 33; Wales, 12; Northern Ireland, 6; Channel Islands, 4; and the Isle of Man. I make that total 97, although some of those Scottish counties are doubtless devoid of Top Band operators.

W. Eyre (Whaley Bridge) and others comment on the fact that GC2BMU is on Alderney—and, by the way, he goes QRT at midnight when the island's mains are switched off! Others commenting on the band are N. Allatt (Barnsley), E. Nottingham (York), E. C. Palmer (Bath), J. H. Hayden (Tunbridge Wells) and D. Powell (Wilton). The general criticism is "too much fish-phone"!

3.5 MC DX

Rather a dearth of 80-metre reports this month, but the faithful C. S. S. Lyon (Liverpool) sends in a nice list including KP4, KV4, KZ5, TG9, TI2, and has also heard the presumably phoney FB8AB. D. G. Martin (Cheltenham) was rewarded for quite a lot of listening by hearing VE7WZ on 'phone, and also a number of W5's and 6's—all between 0700 and 0730. J. W. North (Leeds), who is a fourteen-year-old, listens on 3.5 and 7 mc only,



G8IL runs this fine living-room outfit at 16 Canadian Avenue, Salisbury, Wilts. A description of this station appeared in the March issue of our *Short Wave Magazine*.

and asks "Why not a single VE, VK, VO or W on 3.5? You give the idea that it's simple." Sorry if I did that—perhaps it isn't so simple after all. When all your local Europeans shake the 'phones off your head and you can listen in a quiet period for something about one-twentieth as strong, then there's a chance of pulling in the DX! R. Bastin (Coventry) says he got tired of easy DX on 14 mc one night, so went up on 3.5 and got 20 W's and VE's on 'phone.

THE 7 MC BAND

A. Bannister (Manchester) enquires, "Does one use a soup-strainer or a 300-cycle filter for this band?" It gives him nothing but frustration, and there are many who agree. R. S. Stott (Upminster) says he has heard KL7, KZ5 and TF—but "what QRM!" D. Powell (Wilton) offers VP6CDI (2300), KP4HU (2230), KP4KD (2320), YV1AX (2340), UA9KCA (2230) and would like to know more about LZ3SD and TAIKC. A. Baldwin (London,

FOUR-BAND DX

Listener	14 mc	7 mc	3.5 mc	28 mc	Total
M. E. Bazley (Birmingham)	200	42	15	114	211
O. A. Good (Oswestry)	195	14	8	81	195
D. W. Bruce (Eltham)	194	69	34	145	204
R. S. Stott (Upminster)	181	71	25	115	187
J. L. Hall (Croydon)	176	121	54	7	189
D. W. Waddell (Nantwich)	168	57	27	1	168
E. J. Allaway (Smethwick)	167	28	27	103	172
W. J. C. Pinnell (Sidcup)	165	75	29	85	174
N. S. Beckett (Lowestoft)	147	47	22	2	150
R. A. Hawley (Goostrey)	142	25	19	122	181
D. L. McLean (Yeovil)	137	16	16	139	158 (P)*
A. W. Robertson (Cranford)	136	17	20	77	144
E. J. Parish (Watford)	135	12	23	102	150 (P)
G. Braithwaite (Belfast)	133	18	15	118	156
A. Bannister (Manchester)	133	15	21	119	152 (P)
T. A. Studley (Harrow)	131	49	33	49	131
F. K. Earp (London, S.W.11)	128	28	20	87	143 (P)
J. M. Graham (Glasgow)	128	20	24	129	140 (P)
D. S. Kendall (Potters Bar)	125	19	27	115	142 (P)
K. Parvin (Thornton Heath)	124	20	27	78	134 (P)
D. Powell (Wilton)	119	54	27	53	128
N. A. S. Fitch (London, E.10)	118	11	21	102	141
H. M. Knott (Margate)	118	21	18	135	?
K. Smeeton (Barnton)	116	17	22	75	124 (P)
A. M. Norden (London, N.W.11)	112	18	11	1	113 (P)
E. A. Parkinson (Leeds)	110	10	14	95	127 (P)
R. A. Fowler (Cranwell)	109	22	20	46	118
H. M. Graham (Harefield)	109	17	16	15	109 (P)
J. G. P. Butler (Portsmouth)	108	35	18	60	121
D. G. Martin (Cheltenham)	107	14	16	66	127 (P)
A. R. Wybrow (London, S.E.22)	106	21	8	85	? (P)
M. G. Whitaker (Halifax)	104	21	22	58	119 (P)
L. Tombs (Swindon)	99	15	21	106	129 (P)
D. Shallcross (Derby)	98	18	20	43	111
A. M. Levi (Belfast)	96	10	18	75	142 (P)
R. L. Bastin (Coventry)	93	18	18	45	106 (P)
T. W. W. Dearlove (Frimley Green)	88	7	11	99	130
F. A. Herridge (London, S.W.12)	87	37	15	105	134
A. L. Higgins (Aberkenfig)	80	9	14	14	83
C. S. Poole (Ipswich)	79	12	17	38	90 (P)
A. E. Carter (Romford)	76	14	20	70	110 (P)
P. G. Lucy (East Barnet)	76	9	15	63	102 (P)
S. J. Chapman (Leicester)	73	20	23	114	128
H. M. Knott (Margate)	71	15	13	38	88
O. R. F. Mason (Prittlewell)	71	11	9	2	72 (P)
P. Bysh (London, N.8)	69	14	11	29	80 (P)
K. M. Parry (Sandwich)	55	12	3	1	59 (P)
A. O. Frearson (Birmingham)	51	10	6	55	88
C. A. Naylor (Appley Bridge)	47	3	8	46	73 (P)
R. Gibbs (Ipswich)	45	3	12	15	55 (P)

*(P) Signifies *Phone Only.

E.11) comes up with LU8AE (2325), FP8AN (0725). The latter put in one timid appearance and was promptly wiped off the map by the wolf-pack. C. S. S. Lyon mentions LU3EL, VP2AA, HK5CR and UP2KBA. Your Scribe adds KV4AA (2330) and MP4BAD (2200).

THE DX ON 14 MC

This band, as usual, carries most of the traffic and causes most of the arguments! My own humble offerings on 14 mc this month are FD8RG (14050, CW at 1900 many evenings), HP1PL (T7, 2300) and WØMCF/C3 (14060, CW at 1300). The FD is genuine and in Togo, but he calls "CQ F" every evening and thereafter is wiped out by all the world calling him.

So many listeners have reported so many stations on this band that I propose to pick out the best of the bunch and leave the more commonplace stuff alone. We have, for instance, lots of KR6's, heard by nearly everyone. There is VK4VD—see the 'phone SLP. J. Warren, a younger SWL in West Croydon, sticking to 'phone, found FQ8SN, VP5AX, ZD1PW and 1SW and JA2BL. M. E. Bazley (Birmingham), on CW, weighs in with EA6AZ (Balearics), EZ4BB (Saar), FD8RG, FI8ZZ, FK8AB, FM8AD, KC6EA, KW6AG, VP8AK and VK1VU (Heard Island). Probably the best list of the month, and very nice going.

A. Baldwin (London, E.11), also on CW, shoots in ZS9D, ZK2AA and W3ORD/C3. SU4XV, XU8CI and EA6AZ he dismisses as phoneys. D. K. Cocking (Farnborough) during a short session at 0225 heard YS1GM (S9), YV1AD and 2AC and a VE7. R. S. Stott (Upminster) collected ZD9AA, XE1CQ, FM8AD, HP1LL and C4RK, to pick-out a few.

A. Bannister (Manchester)



Outdoor operation. G2FUU and G5HO ran G5HO/P during one of last season's field day events. We are hoping that this year SWL's will take a greater and more active interest in portable working.

remarks on how the dawn of February 1st "brought 14 mc to life"—it certainly had been pretty bad just before that. On February 17 at 0300 he logged VQ8AE, KH6CT and EP3AD! H. M. Knott (Margate) offers these 14 mc 'phones: XE1AC (S9 at 0800), YS1JR (0017), KG6EF (1640). Also MD4BPC on CW at 2330—an unusual one.

D. W. Bruce (Eltham) found conditions much better and collected C4AR, DU1AX, VP3AA/MM, PJ5KO ('phone), ZD9AA and KZ5AX (CW). He also received a card from VQ8AF. R. A. Fowler (Cranwell) passes on the news that he heard a CN8 say that they are already licensed there for 21 mc; he adds that if anyone is still looking for Trieste they will find I1NU about. G. Braithwaite (Belfast) bumped up his score with VS6, PJ5 and VQ8 on 'phone, plus UL7 and FM8 on CW.

A. R. Wybrow (London, S.E.22) asks whether UQ2AB on 'phone is genuine. Practically everyone logged him in the SLP, and from what I have heard of him he sounds

genuine all right, even if a little difficult to understand. A. B. Greaves (Leeds) says there don't seem to be many reports of reception using the B.2. Why, he asks, is it so unpopular? And he adds that if there is a good "anti-I1 device" going, he would like to know about it!

D. W. Waddell (Nantwich) comes back with a nice long list of 14 mc DX. The best, on CW, are DU1RTI, FD8RG, HP1PL, VP2AJ, VP5AA, VP8AK, ZD9AA and YK1AB. "Queeries" are EA6AZ, MZ5C and PX1A. A. W. Robertson (Cranford) contributes HC1JW, HP1LE, VP2KS and VP5AK. A. W. R. heard ZS6CZ say that he would be working for a few days as ZS6CZ/ZS7 in Swaziland.

From F. K. Earp (London, S.W.11) the best 14 mc DX is CE5FL, CE5BH (2030-2210), ZS30 (1000), and KG6EF (1810). K. Smeeton (Branton) contributes VP3AA/MM, VP3HAG, VP3LF, VP3MCB and VP2KM, along with OA4M, CE5BH, HI8WF, HH2X and KR6AX — all

14 mc 'phone. The best from W. Cleaver (Warwick) were DU1AK (1515), W6AXJ/KG6 (1400), plus six KR6's, three KH6's and sundry KL7's. CEIAM at 0810 was an unusual one.

ANY QUESTIONS?

Let's have a pause from all this DX to air some queries. W. J. C. Pinnell (Sidcup) wants the call of the KG6 on Iwojima that he heard on 'phone—it's almost certainly KG6IC. And he asks whether all the SM8's are on Novaya Zemlya—the answer is no. Both he and J. Warren (Croydon) want to know if Sicily counts as a separate country from Italy. Not in my list of countries, it doesn't—and it has no distinguishing prefix.

A. L. Higgins (Aberkenfig) wants idents on ZC8SQ,

I2RG, I2TN and I3KTA. Any offers? A. B. Greaves (Leeds): Is VK1DI on Heard Island? Don't know as yet. R. S. Stott (Upminster): Do Jersey and Guernsey count as separate counties on the Top Band Contest? Yes, they do, and Alderney, too. But *not* as countries.

E. C. Palmer (Bath) asks, "Where is UC2? I only know UC5." Well, UC2 is, and always has been, White Russia. UC5 has never been anything but a misprint. It occurred in one published list of countries and prefixes and was copied by all the others except ourselves. Small prize if anyone can ever catch me out in the past as showing UC5—there never was such an animal.

D. K. Cocking's recent query about CE 'phone has been answered by a large

number of readers who mention, among others, CE2CC at 2215 and CE3CZ at 2300. W. J. Barwick (Romford) quotes my reference to the VP2 prefixes last month and asks how many countries they add up to. I meant to make it clear that there are only *two*—the Leeward Islands and the Windward Islands. (Incidentally, apologies for a slight slip which, however, no one spotted! St. Vincent is VP2S, *not* VP2V as stated.)

Some "Zone" queries: several readers want the Zone numbers for UAØKFB, UAØKFD and UAØKED. And now some very short ones: For M. G. Whitaker (Halifax) — Libya and Cyrenaica *do* count separately; ZC6 is separate from 4X4; but I don't know VP2JN. For A. Frearson (Birmingham): AG2AG is Trieste.

1-7 mc COUNTIES HEARD—1949

Listener	Counties	Listener	Counties
'PHONE and CW		'PHONE ONLY	
L. H. Waine (Yeovil)	45	W. Eyre (Whaley Bridge)	39
R. A. Hawley (Goostrey)	41	J. Bagshaw (Callington)	30
G. C. Allen (Thornton Heath)	38	N. Allatt (Barnsley)	30
A. Baldwin (London, E.11)	36	R. A. Hawley (Goostrey)	29
R. S. Stott (Upminster)	36	J. H. Woodward (Stoke-on-Trent)	29
E. C. Palmer (Bath)	36	E. Nottingham (York)	28
D. Powell (Wilton)	33	E. C. Palmer (Bath)	25
J. Woodfield (Hayes)	25	A. M. Levi (Belfast)	24
D. Webber (Newton Abbot)	25	W. McBey (Orkney)	23
D. T. Bradford (Denham)	23	N. S. Beckett (Lowestoft)	22
N. S. Beckett (Lowestoft)	22	P. N. Marriage (Newbury)	22
L. E. P. Holgate (Jersey)	21	R. S. Stott (Upminster)	21
M. E. Bazley (Birmingham)	17	M. G. Whitaker (Halifax)	19
R. P. M. Masters (Portsmouth)	16	D. Garrard (Ipswich)	19
A. C. Blair (Farnham)	16	A. E. Carter (Romford)	17
D. Shallcross (Derby)	11	K. Parvin (Thornton Heath)	17
		K. Smeeton (Barnton)	11
		A. R. Wybrow (London, S.E.22)	10
		H. M. Graham (Harefield)	10
		K. G. Harland (Westcliff)	10
		O. R. F. Mason (Prittlewell)	3

For C. S. Poole (Ipswich) : KR6's are Zone 25, UA6KOV is Zone 16: And last month's "FMSZM" was most probably SM5ZM. For H.M. Graham (Harefield) : Yes, EA6 is a separate country, *if* the representative you hear is really in the Balearics. The EZ's, like EZ7CW, stated to be in Saarbrücken, cannot count as a country; the Saar is not recognised as such.

D. S. Kendall (Potters Bar) answers a few of last month's queries. First, the new JA calls are different from the old J's—they are not just "turned inside out" like the German DL's. Next, those who want 'phone from KV4 and KZ5 may often find it round about 29-29.7 mc in the afternoon. Finally (and this one is well known by now), the MO prefix has replaced MD. MO1A and MO1C are in Benghazi.

In reply to the numerous listeners who have asked for an amended list of prefixes, I am glad to tell them that they will find it herewith. It corrects the list published in the *DX Operating Manual* and brings it as nearly as possible up to date.

THE 28 MC DX

Now back to the DX bands again. 28 mc has been outstandingly good during the month and nearly everyone has heard nearly everything, so I must try to pack a lot into a small space. O. A. Good (Oswestry) was a faithful

follower of 14 mc until quite recently, but since adopting 28 he has logged 81 countries in 30 Zones, 79 of them on 'phone. As he says, various countries which are quite rare on 14 mc are almost commonplace on 28. His log shows KG6IC, W6WVJ/KW6, W7FS/MM (near Formosa) and the C6's, plus *seven* HC's on 'phone. D. G. Martin (Cheltenham) offers JA2AB, VP2IN, TG9AN, ZD4AX and eight ZL's. W. J. C. Pinnell logged YN, KR6, JA, LX and EK for new ones. R. S. Stott wiped up Central America with YS1AC, YNIRO and 1HB, HR1MB and HP2NA.

J. H. Hayden (Tunbridge Wells) found the morning of February 20 especially fine for ZL, JA and the Pacific. (Most mornings since then have been, too.) He adds W6WVJ/KW6 and a lot of W6 and 7 and VE7 (1830-2000). C. S. S. Lyon heard KH6IK on 28 mc CW at 2325 one night—most unusual.

Nice ones from D. L. McLean (Yeovil) include CP5FB, W6WVJ/KW6, W6VBT/Galapagos (good one, that!) and W5FAH and WØDR both operating mobiles from cars. J. Neal (Birmingham) says that with a little more experience he will "hear things like the DX Kings," and then lists HH2CP, JA2AB, KV4AL, YN1HB, KG6IC and a bunch of KR6's. Not so bad now, I should say.

W. Cleaver (Warwick) heard C7TY, CP5FB, DU1AK

(0755), VS6AM and the C6's, and the KW6. H. M. Graham persuaded his I-V-1 to go on 28 mc and promptly logged the West Coast W's at S8-9.

Lots and lots of other readers have sent in lists that would at one time have qualified as "Super-DX," but as they are mostly repetitions of the stations already quoted I am regretfully leaving them out. I would like to add finally that I seem to have stolen a crafty one on all of you by hearing VP7NK (Bahamas) three times on 28010 CW, about midday. No one else mentions him.

MISCELLANEOUS SHORTS

Very sorry to hear from W. McBey, whose address is temporarily the Royal Infirmary, Aberdeen, instead of Kirkwall, Orkney. Just when he was hoping to double his Top Band Counties he was rushed off for an operation, but he hopes to be back again by now. I am sure readers will wish him luck.

M. E. Bazley (Birmingham) heads both the Four-Band List and the Monthly Zones Heard this time—fine work. He heard all Zones except No. 23, but he did hear people calling AC4RF on 28 mc. H. M. Knott says cards for TA3GVU are handled both ways by W2SN. He also heard W5AXI/MM rounding up the MM's and discussing the plea they are making for "emancipation." They want to be allowed the full 28 mc

PREFIX AMENDMENTS

This list amends—to March 1, 1949—the country-prefix and prefix-country tables appearing on pp. 33-36 of the *DX Operating Manual*. By working from the list below in the order in which it is printed, readers who possess the *Manual* will be able to insert their corrections in the easiest way—and will have an up-to-date Prefix List.

Delete "ARI, Syria"
 Add "C3, Formosa"
 Amend "D, Germany," to "DL, Germany"
 Amend "I, Sardinia" to "IS, Sardinia"
 Amend "J, Japan" to "JA, Japan"
 Delete "J9, Okinawa"
 Delete "J9, Iwojima"
 Add "KC6, Carolines"
 Add "KG6I, Iwojima"
 Add "KR6, Okinawa"
 Add "KX6, Marshalls"

Amend "MC1, MD1, Cyrenaica" to "MC1, MO1, Cyrenaica"
 Add "MP4, Oman"
 Add "VK9, Norfolk Island"
 Delete "YS9, Oman"
 Delete "YK, Syria"
 Add "ZS7, Swaziland"
 Amend "ZS4, Basutoland" to "ZS8, Basutoland"
 Amend "ZS6, Bechuanaland" to "ZS9, Bechuanaland"
 Add "ZC8, Arab Palestine"
 Add "4X4, Israel"

ZONES HEARD (FEBRUARY)

Listener	Zones	Countries
'PHONE and CW		
M. E. Bazley (Birmingham)	39	148
E. J. Allaway (Smethwick)	39	134
G. Braithwaite (Belfast)	37	118
D. W. Bruce (Eltham)	36	131
R. S. Stott (Upminster)	35	114
R. A. Hawley (Goostrey)	35	84
H. M. Knott (Margate)	34	112
G. P. Watts (Norwich)	33	33
D. W. Waddell (Nantwich)	32	106
R. A. Fowler (Cranwell)	32	92
R. W. Thomas (London. E.5)	27	31
'PHONE ONLY		
D. S. Kendall (Potters Bar)	35	109
A. Bannister (Manchester)	35	105
E. J. Allaway (Smethwick)	34	113
L. Tombs (Swindon)	34	90
R. A. Hawley (Goostrey)	34	81
K. Parvin (Thornton Heath)	33	104
A. W. Tideswell (Stoke-on-Trent)	33	65
W. J. Barwick (Romford)	32	95
O. A. Good (Oswestry)	32	95
R. S. Stott (Upminster)	32	94
A. M. Levi (Belfast)	32	80
S. J. Chapman (Leicester)	31	89
R. A. Fowler (Cranwell)	31	87
F. K. Earp (London, S.W.11)	31	82
J. M. Graham (Glasgow)	30	74
A. R. Wybrow (London. S.E.22)	30	70
R. Handley (Cranwell)	29	80
A. E. Carter (Romford)	29	75
T. W. W. Dearlove (Frimley Green)	29	60
K. Smeeton (Barnton)	28	84
E. C. Palmer (Bath)	28	55
D. G. Martin (Cheltenham)	27	66
E. A. Parkinson (Leeds)	26	68
M. G. Whitaker (Halifax)	26	60
J. P. Warren (Croydon)	24	66
H. M. Graham (Harefield)	23	55
B. Hummerstone (Harrow)	23	53
P. Bysh (London. N.8)	22	60
A. T. Cheesley (London, E.10)	22	55
A. B. Greaves (Leeds)	22	48
K. M. Parry (Sandwich)	21	50
A. O. Frearson (Birmingham)	18	28
A. M. Norden (London, N.W.11)	16	43
J. C. Edwards (Cricklade)	16	41
O. R. F. Mason (Prittlewell)	10	17

band; they want an alternative band, preferably 14 mc; and they want to be recognised as DX for scoring purposes. Fair enough, I should say. Incidentally W5AXI/MM told me over the air that he would always QSL all SWL's whose reports are of any value at all, and that he doesn't want Reply Coupons.

E. H. Williams (Poole) followed the progress of MM's, with W5AXI coming up the Red Sea and WØIAX going through the Med. They were due to pass in the Suez Canal—what a QSO that would be!

T. Cooper (Accrington) rightly pours scorn on 'phone operators who inflict their children's "tiny voices" on the listening public. Also, he says, why some of the affectionate farewells at the end of contacts? You'd think the chaps were at the dockside when an emigration ship was setting off. He pleads for straightforward signing off—some of the present stuff is as bad as the trawlers' "Gone me"!

D. Newhouse (Huddersfield) sent a QSL for VP9R but had it returned by VP9D with the sad news that VP9R is a Silent Key. VP9D says that over a dozen VP9's are working Europe regularly. J. Goudie (Coldstream) uses a B.28 and asks whether it is a CR100/2 or a CR100/4—can anyone tell him, please?

N. A. S. Fitch (London, E.10) has a nice new 640 and has been doing four-band listening, with ZB1Q, FA8BG and GC2BMU on 3.5, CO8WM and KS4AJ on 7 and lots of the usual DX on 14 and 28. He castigates some of the bad notes one hears nowadays—EA5CG, one of the worst, was truthfully reported by one of his contacts as RST 492!

K. Parvin (Thornton Heath) wants to know whether there is any activity whatever in CR5, CR8, CR10, FD8 (yes!), FL8, FY8, ZC3, ZS7, Crete, Caymans, South Sandwich Is.,

Brunei and Sarawak. He has analysed all the available information and come to the opinion that a listener who scored *full possible marks* at present on the four DX bands would show up with a score like this: 3.5 mc, 85; 7 mc, 165; 14 mc, 227; 28 mc, 169. Total, about 230. So there's your target, readers! K. P. found February the best month ever, and comments on the fact that he heard two G's working AC4RF on 28 mc, but couldn't find the AC4.

FROM OVERSEAS

Capt. J. B. Lievens (Suez Canal Zone), whose letter arrived just too late for last month, heard 33Z and 99C on 'phone in January, with 73 countries on 28 and 77 on 14. His nicest ones on 14 mc were VQ8CB (genuinely on Chagos Is.), ZS9D, ZS9J and VU7AF.

B. F. Stedman (RAF M.E.) says that on 28 mc the G's are best from 1100 to 1300 GMT and the ZS's around 1600. M13LZ and all the MM's round the Persian Gulf are, of course, locals. B. F. S. hopes to transfer his attention to the VHF bands soon.

TAILPIECE

I am afraid letters from many readers arrived too late for inclusion or comment this month. But I must also apologise to many who were in time but have just been squeezed out by lack of space. In order to get as many Calls Heard lists as possible into our three pages this month I selected the short, good-quality lists in preference to the lengthy ones containing hundreds of calls that have appeared before.

So that you all have a chance next month I make this *suggestion*—but with no compulsion! Please restrict your lists to 25 calls and make them your "Twenty-five Best." If everyone does that, there is a good chance that they will all squeeze in. In any case please let us have quality and not quantity. I don't want to have to introduce any more "legislation," but really there isn't much point in listing dozens of W6's, VK's, ZL's and ZS's when conditions are like this, is there? If you stick to your Twenty-five Best, the quality thereof will automatically adjust itself as conditions

vary. Please give it a try and I will comment on its success or otherwise next month.

SET LISTENING PERIODS

March 26, 1900-2100 GMT
—7 mc CW only.

March 27, 0900-1100 GMT
—28 mc 'Phone and CW.

April 30, 2100-2300 GMT
—14 mc 'Phone only.

May 1, 0700-0900 GMT
—14 mc CW only.

Next month's deadline is first post on April 2. This just gives you time to add up your Monthly Zone and Country score for March! Please keep your competition claims separate from your letters, and please try to separate out your chatty letters into the following headings: 28 mc, 14 mc, 7 mc, 3.5 mc, Queries and "General Gen." It will help me no end if you will do this, especially if the mail continues at its present volume! Address them as usual to DX Scribe, *Short Wave Listener*, 49 Victoria Street, London, S.W.1. Good hunting!

HAD YOURS?

In a recent letter, VE7ZM remarks that he may inadvertently have missed QSL'ing some of the SWL reports he has received; those who have QSL'd him without response so far are invited to confirm the report by card to: W. Wadsworth, VE7ZM, Box 909, Duncan, B.C., Canada. VE7ZM adds that the SWL reports he does get are greatly appreciated.

MAPS AND MANUALS

We can still supply the DX Zone Map (6s. post free) and the *DX Operating Manual* (2s. 8d.) which together cover the ground for all those interested in amateur-band DX activity. Together, they will give you all the information you need. Write the Circulation Manager, Short Wave Magazine, Ltd., 49 Victoria Street, London, S.W.1.

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A. C. HOILE, 55 UNION ST., MAIDSTONE, KENT - - - - - **LOOSE 83579**

CALLS HEARD

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

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

7 mc : No Europeans.

Arrange logs in the form given here, with (a) prefixes in alphabetical order, but not repeated; (b) numbers in numerical order and repeated as part of the call-sign; (c) call-signs in alphabetical order. For example:—VK2GW, 3CP, 4UL, VP1AA, 6CDY, VQ3HJP, 4EJT, W6ENV, 7VY. Please underline each prefix, keep each list to one band, and, in short, make your lists exactly like those below, except that the more space you leave, the better.

SET LISTENING PERIODS

14 mc CW

February 27, 0800-1000 GMT

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

FA8BG, 9RW, KG6FA, KH6LG, 6QH, KL7FM, 7IB, 7LL, UD6AF, VE7SB, 8DB, VK2AMB, 2ANO, 2IC, 2JT, 2YC, 2ZH, 3ACS, 3APA, 3ML, 3OV, 3VJ, 3YD, 3YP, 4UL, 5FH, 5JS, W7AJS, 7EGE, 7IYA, ZL1DA, 1DI, 2CW, 2FV, 2GH, 2LB, 2UV, 3CC, 3GE, 4DU, 4II. (Rx : R1155A.)

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

FA9RW, KH6ES/KH6, 6LG, 6QH, KL7GT, 7LL, UA9CL, VE7SB, 8BU, VK2DI, 5JS, 7KB, W6SR, 7AJS, 7DZO, 7IYA, ZL2LB, 2QM, 2UV, 3CT. (Rx : V55R and Pre-selector.)

N. S. Beckett, 48 Beaconsfield Road, Lowestoft.

KL7ES, 7GT, 7LL, UA9CL, VE4DS, 4RO, 7SB, 7VC, 8AO, 8MB, VK2DK, 2EC, 2ZH, 3APA, 4UL, 5FR, 5JH, W6SR, 7ENS, 7IYA, ØHLA, ZL2CU, 2KW. (Rx : 0-V-0.)

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

KL7GT, VE7HB, 8AO, 8OK, VK3JS, 3VJ, ZL3CW. (Rx : S504 and 640.)

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

UA9CA, ØKFD, VK2XY, 2ZH, 5BZ, VO2CF, W7AJS, 7IYA, ZL2FG, 2QM, 4AW, 4DV. (Rx : S.640.)

M. E. Bazley, 2 Bagnell Road, Birmingham, 14.

EL3A, FK8AB, HP1PL, KH6DQ, 6ES/KS6, 6GS, 6IJ, 6RS, KL7FM, 7LL, 7PM, 7SB, 7UO, UAØKFD, ØKGA, VE6AO, 7SB, 8CD, VK2AMB, 2QG, 3ACS, 3APA, 4UL, 9NR, W6IW, 6TI, 7AJS, 7DZO, 7ECI, 7IYA, ZL1DI, 1DP, 1PO, 2CW, 2GD, 2GH, 2NG, 2UV, 3FV. (Rx : AR88 LF.)

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

UA9DP, UD6AF, VK2RX, 3APA, 3FH, 3YP, 5PN, ZL3UV. (Rx : S.504.)

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

KH6GS, KL7GT, PY7WI, UA9CL, VK2AMB, 2QL, 3APA, 3JI, 4UL, ZL2CW, 2QO. (Rx : S.640.)

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

FO8DE, FR8LI, KH6QH, VK2AM, 3APA, 3OP, 3VJ, 4UL, 5BJ, 5BZ, 7KB, VO2CF, ZL2UV. (Rx : S.504.)

H. M. Knott, 6 Old Crossing Road, Margate, Kent.

KH6ES, 6GH, KL7LL, VE7SB, VK2AMB, 3ACS, 3FH, 3VJ, 4UL, 7KH, W6SR, 7DZO, 7IYA. (Rx : S.640.)

14 mc 'Phone

February 26, 2000-2200 GMT

E. Pringle, 34 Woodbine Terrace, Birtley, Co. Durham.

4X4AD, HK1FQ, JA2BL, LU4BC, MI3SI, OQ5CF, PY2CK, 7QG, SVØWF, VK2QR, 3HW, 4VD, VP6IS, VU2BF. (Rx : BC342N.)

A. R. Walder, 22 Lincoln Road, North Harrow, Middx.

CN8BB, 8MA, CO4DQ, FA9AW,

9WC, LU4BN, OQ5CF, PY2CK, SVØWF, VK3EE, 3HW, 3LA, VO6AL, VP6IS, VU2BF, ZC6LZ, 4X4AD. (Rx : HRO.)

B. Davies, 73 Eden Road, Beckenham, Kent.

CN8AJ, 8BQ, FA9OW, FT4AT, JA2BL, MI3CD, 3SI, OQ5CF, PY2CK, 7QG, VK3HW, 4VD, VO6AL, 4X4AD. (Rx : 0-V-1.)

W. Cleaver, 23 Cape Road, Warwick, EK1FD, 1MD, FA8WC, HK1FE, 1FU, PY6ARV, 6CM, 7QG, VK2QR, 3HW, 4VD, VU2BF.

B. Hummerstone, 70 Minehead Road, South Harrow, Middlesex.

EK1MO, FA9HS, 9OW, 9WC, HK1FQ, JA2CL, LU4BC, OQ5CF, PY2CK, 7QG, 4X4AD. (Rx : R1155.)

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

CN8BQ, EK1MD, FA9AW, 9WC, FT4AS, 4AT, JA2BL, 2QL, LU4BH, 4BT, 4CN, MI3CB, PY1GQ, 7QG, UQ2AB, VK2QR, 3HW, 3LA, 4VD, VU2BF, YK1AC, ZC6UN, ZL4AO, 4X4AD. (Rx : 1-V-2.)

J. Goudie, High Street, Coldstream, Berwick.

FT4AT, HK1FE, JA2BL, LU4BC, OQ5CL, PY2CK, VK2QR, 3EE, 4VD, VO6AL, VP6IF, VU2BF, 4X4AD. (Rx : B28.)

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

AR8BC, CN8BQ, 8BT, 8MA, 8MZ, CO2JG, 2PN, FA9OW, 9WC, FT4AS, 4AT, HH2CP, HK1FQ, LU4BC, OQ5CF, PY2CK, 7AO, 7QG, VK3EE, 3HW, 3LA, 4VD, VP6IS, YK1AC, 4X4AD. (Rx : V55R with Preselector.)

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

4X4AD, DL4ZU/Air, EK1FD, FT4AT, HK1FE, JA2BL, MI3CD, OQ5BR, PY2CK, 7QG, 8GL, VU2BF, VK2QR, 2XG, 3HW, 4VD, VO6AL, VP6IS. (Rx : S504 and 640.)

T. E. Botham, 4 Victoria Terrace, Walsall, Staffs.

CN8MA, EK1MD, FA9WK, HK1FQ, JA2PL, PY2CK, 7QG, VK2XG, 4VD, VP6IS, VU2BF, YV1AU, ZL4AO. (Rx : 5-valve Superhet, Bush R.G.3.)

T. Cooper, 5 Bishop Street, Accrington, Lancs.

JA2BL, PY7QG, VK2BF, 2QR, 3EW, 3HW, VO6AL, VP6YB, VU2BX, 2ET, 4X4AD. (Rx : R1155A.)

N. S. Beckett, 48 Beaconsfield Road, Lowestoft.

CN8BQ, CO2BQ, HK1FQ, JA2BL,

LU4BC, 6AJ, OQ5AC, 5CF, PY1AH, 2CK, 7QG, SV5UN, VK3LA, 4VD, VO6AL, VP6IS, VU2DS, 4X4AD. (Rx: 0-V-0.)

C. S. Poole, 27 Bedford Street, Ipswich, Suffolk.

CN8BB, 8BP, FA9OW, FT4AT, HK1FQ, JA2BL, LU4BC, MI3CO, OQ5CS, PY2CK, 7QG, SV0WF, VK2TR, 3HW, 4VD, VP6IS, VU2BF. (Rx: HRO and BC348.)

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

FT4AT, JA2BL, LU4BC, PY2CK, VK2QR, 3EE, 3HW, 3LA, 4VD, VP6IS, VU2BF, 2ET. (Rx: S504.)

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

FA9HS, 9OW, FT4AS, 4AT, HA5B, HK1FQ, JA2BL, LU4BC, OQ5CF, PY2CK, 4UO, 7QG, SV0WF, VK3EE, 4VD, VO6AL, VU2BF, 4X4AD. (Rx: 12-valve superhet.)

P. Bysh, 118 Campsbourne Road, Hornsey, London, N.8.

JA2BL, LU4BC, OQ5CL, PY2CK, 7QG, SV0WF, VK3EE, 3HW, 3LA, 4VD, VO6AL, VU2BF, 2BX, 4X4AD. (Rx: SX24.)

K. M. Parry, 6 St. Bart's Road, Sandwich, Kent.

CN8MA, FA9WC, FT4AT, JA2BL, PY2CK, VK2QR, 3LA, VO6AL, VU2BF, 4X4AD. (Rx: Ultra U434 B.C.)

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

CN8BB, 8BQ, CO2DQ, FA9OW, FT4AT, JA2CL, LU4BC, PY2CK, 7QG, SV0WF, VK2QR, 3EE, 3HW, 4VD, VU2BF, 4X4AD. (Rx: S504.)

P. G. Lucy, 11 Hereford Avenue, East Barnet, Herts.

CN8BP, CX2CO, EK1MD, FA9UA, HI8WF, HK1FQ, LU4BC, NY4BA, OQ5CF, PY2CK, 7QG, SV5UN, VK2QR, 3DN, 3EE, 3HW, 3LA, VP6IS, VU2BF, 4X4AD. (Rx: R1155A.)

J. P. Warren, 14 Francis Road, W, Croydon, Surrey.

CN8MA, FA9IW, FT4AT, JA2BL, OQ5CF, PY2CK, 7QG, VK3EE, 3HW, 3LA, 4VD, VO6AL, VU2BF. (Rx: Converted Bendix RA-10-DA.)

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

CN8BB, 8BP, 8BQ, FABKC, 9WC FT4AS, 4AT, HK1FQ, JA2BL, LU4BC, MI3SI, OQ5CF, PY2AK, 2ARV, 2CK, 7QG, VK3HW, 3LA, 4VD, VP6IS, VU2BF, YV5BI, 5BV, 4X4AD. (Rx: S640.)

E. H. Williams, Tara, Rowland Avenue, Poole, Dorset.

CN8AR, EK1MD, FA9WC,

JA2BL, LU4BC, PY2CK, 2MK, VK2QR, 3EE, 3HW, 4VD, VP6BF, 6IS, VU2BF, 2DX, ZC6C, 4X4AD. (Rx: AR88.)

583537 A/A Fowler, R. A., "A" Flt., "C" Sqn., Apps' Wing, No. 1 Radio School, R.A.F. Cranwell, Nr. Sleaford, Lincs.

CN8BB, 8BQ, 8BT, 8MZ, CO2DT, EK1AD, FA9AW, 9WS, FT4AS, 4AT, HK1FE, 1FQ, JA2BL, PY2CK, 7QG, VO6AL, VP6IS, VK2QR, 3EE, 3LA, 4VD, ZL4AL, 4X4AD. (Rx: 0-V-2.)

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

AR8AB, CN8AR, 8BB, 8MZ, CO2PN, CX1CA, 2CL, EK1MD, FA9WK, FT4AT, JA2BL, LU4BC, 4BK, PY1IK, 2AC, 2CK, 7AU, 7QG, SV0WF, VK2TI, 3AWN, 3HW, 3LA, 4VD, VP6IS, VU2BF, 2ET, YV1AU, ZC6UNZ, ZL4AO, 4X4AD. (Rx: 12-valve superhet.)

T. W. W. Dearlove, Lattices, 138 Coleford Bridge Road, Frimley Green, Nr. Aldershot.

CN8BB, CO2SG, EK1MD, FA9OW, FT4AS, 4ET, JA2BL, LU4BC, PY4UO, 7QG, SV0WF, VK3EE, 3LA, 4VD, VP6IS. (Rx: CR100.)

K. L. B. Dalby, Green Lane, Lea, Gainsborough, Lincs.

AR8BC, CO8PN, FA8WC, 9OW, HK1FQ, JA2BL, OQ5CF, PY2CK, 7QG, 8GL, VK2QR, 3EE, 3HW, 4VD, VO6CL, VP6IF, VU2BF, 4X4AD. (Rx: S640.)

A. Levi, 33 Old Cavehill Road, Belfast.

HK1FQ, JA2BL, OQ5CF, PY2CK, VK2QR, 3HW, 3LA, VO6AL, VP6IS, VU2BF, 4X4AD. (Rx: S504 with BC453.)

D. Streatfield, 2 Palmerston Road, Wimbledon, London, S.W.19.

CN8EQ, CX2CO, FA9UA, FT4AT, HK1FQ, PY2CK, VK2QR, VO1AF, 2DB. (Rx: Eddystone S640.)

E. Nottingham, Lyndhurst, Upper Poppleton, York.

FA9OW, FT4AS, 4AT, HK1FQ, JA2BL, LU4BC, OQ5CF, 5CQ, PY2CK, 4BI, 7QG, VK2ADR, 2HC, 2QR, 3EE, 3HW, 3LA, 4VD, VP6IS, VU2BF, YV1AU, 4X4AD. (Rx: S640.)

A. W. Robertson, 149 Firs Drive, Cranford, Hounslow, Middx.

CN8BB, 8MA, FA9WC, FT4AS, HK1FE, 1FQ, JA2BL, LU4AG, 4BC, MI3CD, 3SI, OQ5CF, PY2CK, 4BI, 7BW, 7QG, VK2XG, 3HW, 3LA, 3NEU, VO6AI, VP6IS, VU2BF, ZL4AF, 4X4AD. (Rx: Mains TRF3.)

GENERAL

3.5 mc

C. S. Lyon, 15 Ullet Road, Liverpool, 17.

CW: KP4KD, KV4AA, KZ5AX, 5ER, 5WD, TG9JK, TI2KP, VE3QU, VK5KO, W5CKY, 5DAA, 6KRI, 0AIW. (Rx: 1-V-1.)

28 mc

J. M. Graham, 20 Chesterfield Avenue, Glasgow, N.W.

'PHONE: AR8AB, CX5AP, EK1DI, EL7A, ET3AH, MT2D, 2E, NY4PG, OQ5AB, 5LL, OX3GG, ST2AM, T18AV, VE8RA, VS9AH, W7KOP, YNIHB, YV4AN, ZD4AX, ZE1JI, 1JO. (Rx: CR100.)

C. Sheppard, 5 Rowan Avenue, Tolladine, Worcester.

LU3EJ, 3DH, 4EC, 5BT, 4BO, VQ2BP, 2BJ, 2GS, 2CT, VQ4CJG, HR1MB, HK3CO, 4JB, PY2OS, YV4AA, TA3FAS, VP6YB, PZ1RM. (Rx: S640.)

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

'PHONE: W4AXC/C6, W7LZJ/C6, C7TY, CR9AG, HC1FG, 1JW, 1KV, 1KX, 2JR, 2OL, 2OT, HH1HB, HZ1AB, JA2AB, 2AZ, 2BJ, 2KN, 7AA, 8AB, K6GDP, 6ED, 6ES, 6ET, 6IC, W6CW/W/KG6, W7KKH/KG6, KR6AD, 6AS, 6BA, 6BL, 6NE, W6WVJ/KW6, KZ5FL, MI3SC, 3LZ, 3Z, OA4AB, 4CY, 4DI, OQ5AB, 5BA, 5BQ, 5CA, 5HL, 5LL, 5TP, PZ1M, 1RM, TG9AN, 9RV, VE5CD, 5FA, 5JV, 6EB, 6JD, 6LA, 6SR, 6WZ, 7AZ, 7EL, 7VY, 7ZM, VK2EQ, 3AQL, 5KL, 6DD, 6HL, VP3TR, 6CDI, 6HR, 6JC, 6YB, VQ2DH, 5PBD, VS9AH, W7CKZ, 7DND, 7DTG, 7EGC, 7EK, 7ESK, 7GUI, 7HDY, 7HHW, 7LBK, 7LJH, 7MBW, 7MGI, 7MZC, ZLHD/MM, 5AXI/MM, 5OCN/MM, 6YTY/MM, 7FS/MM, 8ZVL/MM, 0IAX/MM, YNIHB, 1RO, YS1AC, ZD4AB, 4AX, ZE1BJ, 1JH, 1JI, 1JO, 2JA, 2JK, 2JL, 2JV, ZL1ON, 2BQ, 3DS, 3JO, 3LE, 4BN, ZS1AX, 1B, 1DM, 1EB, 1EO, 1FD, 1K, 1MM, 1T, 2C1, 2DY, 3G, 3O, 6AM, 6CY, 6DW, 6EY, 6IG, 6KD, 6LF, 6OV, 6QP, 6RA, 6Z. (Rx: S640.)

A. Bannister, 58 Demeses Road, Whalley Range, Manchester, 6.

'PHONE: C7TY, ET3AF, HH1HB, HI6EC, HL1BJ, JA2AJ, 2AN, 2AT, 7AA, KG6AD, 6CS, 2ET, KR6AS, 6BA, NY4DB, 4DD, VQ2HW, 4RF, VS6AE, 6AM,

7PS, 9AJ, VU2LJ, VK6DD, 6HL, 6JW, W4X/C6, 6CWW/KG6, 7LZJ/C6, XE2W, YN1AS, 1HB, 1RO. (Rx: Modified P22.)

John B. Buckell, 16a Botwell Lane, Hayes, Middlesex.

'PHONE: FA3JY, HC2KJ, JA3AA, 8AB, KP4AJ, 4BY, 4EZ, 4HN, MT2D, OX3BD, SV0WF, TA3GVU, TF3EA, V5CSD, VO2AN, 2FL, 2CT, VP6CDI, VP9F, W6CWW, ZB1Q, ZD4AX, ZL1OF, ZS1FD, 6CY. (Rx: S640.)

J. H. Woodward, 6 Council Houses, Rode Heath, Stoke-on-Trent.

'PHONE: CE2CC, CO2NG, CX1NE, 4CS, HC1JW, 10Y, 2JR, KP4IE, LU2DM, 3AA, 3DH, 5DQ, NY4DD, OQ4AB, 4AK, OQ5BA, PY2ZN, VQ1X, VP2KM, 4TZ, 6CDI, 6SD, 9F, W2WAT/MM, 3NED/MM, 6AZT, 6CTO, 6IL, 6WHA, 6ZZ, 7ECG, 7ERA, 7MBX, YN1RO, ZB2D. (Rx: S640.)

J. Neal, 217 Sladefield Road, Ward End, Birmingham, 8.

'PHONE: AR8AB, CN8BA, 8ER, CO2LW, 7RQ, FA3JY, HC1FG, 1KS, HH2CP, HK3CU, JA2B, KG6IC, KP4AZ, 4CU, 41L, KR6AD, 6AM, 4V4AL, LU2DM, MI3LZ, 3SC, MT2D, 2E, 2FG, 2FU, PY1AGP, 1VM, 2CK, 2OS, 6CN, TA3GVU, V7ABD, 7ZM, V06AN, VP3MCB, 6JC, 9DD, VQ5PBD, VS9AH, W3OZA/MM, 6YLR/MM, 7FS/MM (Okinawa), O1AX/MM, ZC6XY, ZD4AX, ZS1AX, 6OP, 6Z, YN1HB, 4X4AD. (Rx: S640.)

P. Bysh, 118 Campsborne Road, Hornsey, London, N.8.

'PHONE: EK1DI, KP4EZ, 4FO, LU3AA, 9AX, MI3LZ, MT2E, 2FU, NY4DD, PY2CK, PZ1RM, ST2AM, TA3GVU, VO2AN, 2CT, 2CZ, 2FL, 2GS, VP6JC, VS9AH, W2LVH/MM, O1AX/MM. (Rx: Sx24.)

D. A. Ford, 147 Camborne Road, Morden, Surrey.

'PHONE: CE2CC, 3AE, CN8BA, CO2BZ, 2LW, 7RQ, CX4CS, 3AA, FA3JY, HC1FG, 1JW, 2JR, 2OA, HH7HB, KP4AJ, 4ES, 4FO, 4HZ, 4IH, KR6AF, 6AM, LUIBJC, 1VIC, 2DM, 3AA, 3DH, 3EJ, 4BO, 5BQ, MI3LZ, MT2P, 2FU, OQ5BA, PY1FR, 2CK, 2OE, 4RK, 6CN, PZ1M, TA3GVU, VE5JD, 6JD, VK2ASN, 2NT, V06AN, 2ZZ, VP4TZ, 6CDI, 6HR, 6JC, 6SP, 9G, VQ2DH, 2DW, YS1AC, W6UZ, 7EAG, 7ITN, ZD4AX, ZEI1Q, 2JV, ZS1AX, 1B, 1EO, 1MM, 3Q, 6KF, 6L, 6OP, 6Z. (Rx: S640.)

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

'PHONE: C7TY, CN8BA, 8ER, CR6AI, EK1DI, EL3A, EQ1RX, JA2AB, 2AC, 2AZ, 7AA, 8AB, KG6ES, 6ET, KR6BA, LU4EC,

MT2D, 2E, OQ5CA, 5TP, PY2AS, ST2AM, VK6JW, VQ2HW, 4CJG, 4RF, 5PBD, VS9AH, W6CWW/KG6, 6WVJ/KW6, 7LZJ/C6, ZC6UN, ZD4AX, ZS3O, 6QP. (Rx: AR88LF.)

W. Neal, 217 Sladefield Road, Ward End, Birmingham, 8.

'PHONE: AP2J, AR8AB, CN8BA, CO7RQ, EK1DI, FA3JY, HC2OL, JA2AB, KP4AZ, KZ5FL, NY4DD, ST2AM, VK2ADK, VP4TAY, 6YB, VS9AH, 9AJ, W3CCY/KG6, YN1HB. (Rx: S640.)

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

'PHONE: AP2F, AR8AB, CR9AG, KP4AZ, MT2FU, PK5KM, PZ1RM, ST2AM, V5CSD, VK6GF, VS9AH, W2LDH/MM, 2UWC/MM, 2ZBA/MM, 5AXI/MM, 6YLR/MM, YV4AM, ZE2JK, ZD4AX, ZS2ET. (Rx: S640.)

14 mc

Miss D. Hall Taylor, Red House, 2 York Road, Birkdale, Southport, Lancs.

'PHONE: CN8BA, 8EI, 8EQ, 8MB, 8MI, CO7VP, 8MP, EA8CO, EK1EA, FA3FB, 3GZ, 3JY, 3KC, 9WK, FT4AR, 4AT, HC1FG, HG6EC, HK3IQ, JA2BL, LU4BC, MO1A, PY2CQ, 4BI, 4ZI, 7AX, 7QG, TA3BS, 3GVU, VK2AHA, 2HA, 3BH, 3LA, 3HW, 3WU, 4VD, 6QR, VO2AQ, 2AW, 6AL, VP3MCB, 6IS, 9F, VU2BF, W1RAL/KL7, 6CAL/TA3, YV1AQ, 5BQ, 5BZ, 5CM, YS1GM, ZC6EN, 6RO, 6UN, ZD1SW. (Rx: BC348-9.)

R. E. Turney, Park Farm, Brixworth, Northants.

'PHONE: CE2CC, CN8AB, 8BA, 8BF, 8BQ, 8EI, 8EQ, CO7CX, CX2CO, EK1AD, 1DI, 1MD, FA3FB, 3GZ, 8CF, 9WC, HC1FO, 1KE, 7KD, HK1FO, NY4BA, OQ4AT, OX3MC, PY2CK, 6AG, 7DD, 7QG, 8GD, TI2RC, VO2AQ, 6AL, VP3MCB, 4TH, 9G, W7AZR, YS1GM, YV1AQ, 4AA, 5AB, 5AY, 4X4AD. (Rx: 0-V-1.)

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

CN8MI, CO2SG, 8WM, CX2CL, OX3MC, PY1DC, 4ZI, 7QG, SV0WF, TA3GVU, VO1AF, VP5AR, 6IS, 9S, VK3WU, W6TEZ, YV1AU. (Rx: Ferranti B.C.)

T. Loughenbury, 103 Alderman's Green Road, Coventry.

'PHONE: CE2CC, 3CZ, CO2JK, 2MA, 2WV, 7CX, 7VP, EA9AI, F8CF, 9CW, 9OW, 9UO, FT4AR, HC1FG, HH2X, HK1FE, 3IQ, HP1LL, LU3EL, PJ5KO,

VK3BN, VP3MCB, 4TH, 6YB, 9F, YS1A, 2GU, YV4BH, 5AB, 5AY, 5BZ, ZA5AC. (Rx: Hambander.)

C. S. Pollington, 8 Cleveland Road, Chichester.

'PHONE: CE2CC, CO2MA, ET3AJ, HK3IR, KP4DO, LU4BH, 4CN, MI3SC, MO1A, NY4DA, OQ4AT, PY2CK, TI2RC, VK2GR, 2OR, 2TE, 2VP, 4VD, VO1AF, 2CL, 6AL, 6AN, VP3MCB, 9F, 9WW, YV1AQ, 1AU, 1EZ, 5BQ, ZC4UN, ZS6CZ. (Rx: 11554 modified.)

A. Ross, 40 Chiltern View, Letchworth, Herts.

'PHONE: AR8AB, 8MW, CO2EP, 8WM, CX2CO, EK1AS, FA3FB, 3GZ, 9AW, HK1FE, 3IR, 8OF, HZ1AB, 1AD, KG6GL, 6GP, NY4BA, OQ5AB, OX1AJ, PY2CK, 4UO, 6AG, 6CO, 7EA, 7EN, 7DU, VK2AGL, 2JP, 3HW, 3MM, 4KS, 4VJ, 5ED, 5RN, 6KW, 6MD, 6NJ, 6RU, VP4TH, 5AK, 9F, 9G, 9WW, V51CS, W6CAL/P/TA3, 6IVG, 6PWR, XE1AC, YV5AB, 5BW, ZL4HP, ZS2BB, 6CW, 6EO, 6PT. (Rx: Ex-Army R107.)

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

'PHONE: CN8MU, CO2MA, 2SG, 7CX, EA8CO, EK1MD, FA8WH, FT4AS, LU4BH, OQ5CF, OX3BC, PY4ZI, 7QG, VK2GR, 2VP, 3AW, 3AWN, 3HW, 3LZ, 3MW, 3NW, 3WU, 4KS, 4UL, 4VD, 5NP, VP3MCB, 4TH, 6CDI, 6IS, 6RS, V04SC, VU2BF, W1RAF/KL7, YV5AB, ZL2GM, 4FG, ZS6DW, 6JW. (Rx: S640.)

D. K. Cocking, Old Meadow, Farnborough Park, Kent.

'PHONE: PY1EA, 2CK, 7DD, 7QG, VE7GE, 8RA, VK2AGW, 2QR, 2XG, 4VD, VO6AF, V04ERR, W6QF, XE1AC, YK1AC, YS1GM, YV1AD, 2AC. (Rx: Pilot BC SH5.)

P. Bysh, 118 Campsborne Road, Hornsey, London, N.8.

'PHONE: CE2CS, CN8BQ, 8EI, 8MI, 8MU, CO2DO, 2MA, 8MP, CX2CL, EK1AD, FA3FB, 3GZ, 3JY, 3KC, HK1FE, KP4DO, LU4BH, 9LA, MI3SI, MDIA, NY4BA, OQ4M, OQ5CL, OX3BD, 3MC, PY1AC, 2CK, 4LZ, 6AG, 7QG, 7VB, TI2RC, VE6TM, VP9F, 9WW, W61KQ, 6NIG, 7AZR, YV1AZ, 5AB, 5BV, ZC6UN, 4X4AD, 4CZ. (Rx: Sx24.)

T. Measures, 36 Shaftesbury Avenue, Long Eaton, Notts.

'PHONE: CN8BA, 8EI, 8EQ, 8MI, EK1AD, FA3BK, 3FB, 3GZ, 3KC, 8CC, 9OW, 9WC, FT4AC, 4AP, 4AR, MI3SC, OQ5CF, OX3BC, 3BD, PY1KZ, 2AG, 2CT, 7QG, VK3AWN, V06AL, VP9F, YV5AB, ZB2A, 2D, 2E, ZC6UN. (Rx: 0-V-1 Battery.)



SWL STATIONS

No. 20

THIS excellent photograph illustrates the SWL station run by R. G. Wyatt at 62 Hibbert Road, Harrow Weald, Middlesex, who has a fine array of equipment.

Left to right, the receivers are: a Collins 6-valve superhet; R.1155A, modified, and with an S-meter incorporated; an AR88D; and on the extreme right a home-built 1-V-2. Above the AR88 is the BC-221 for frequency checking, and a panadaptor for visual observation of a band of frequencies simultaneously, while another piece of gear is a home-built 5-watt speech amplifier.

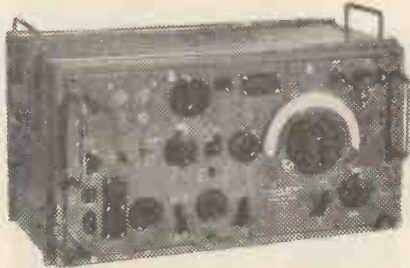
Main interest at this station is 14 mc CW, with a doublet for that band as

aerial; also available are an outdoor rotary dipole and a fixed dipole in the roof-space for 28 mc, with a three-element rotary 10-metre beam in course of construction.

R. G. W. is a listener of very long standing, who first started in the days of spark, though it is only during the last two years that he has turned his attention to the short waves. Naturally, a ticket is in prospect, and to that end R. G. W. hopes to take the forthcoming Radio Amateurs' Examination. A certain amount of essential equipment for eventual use on the transmitting side is being collected, and we are sure that many of our readers will look forward to hearing his signal on the air. Good luck, R. G. W.!

Please mention the Short Wave Listener when writing to Advertisers

PREMIER RADIO



R107, ONE OF THE ARMY'S FINEST COMMUNICATIONS RECEIVERS. (See "W.W.", August, 1945). 9 valves, R.F. amp. osc. Frequency Changer, 2 I.F.'s (465 kc). 2nd Detector, AVC. Af. amp. B.F.O. A.C. mains, 100-250v. or 12v. accum. Frequency range 17.5 to 7 mc/s., 7-25 mc/s to 2.9 mc/s, 3-0 to 1.2 mc/s. Monitor L.S. built in. Complete. Write for full details. £16/16/-. Carriage paid.



NEW 2-VALVE ALL-WAVE KIT

15 to 2,000 metres. Switched Coil Pack ready wired and tested. 2 Mazda HL23 Valves, 'Phones, H.T. and L.T. Batteries, Condensers, resistors, diagrams and steel case, all ready to assemble, £3/10/-, including P.T.



METER BOARDS

A useful control board for the shack or workshop. Contains 3 1/2" M.I. meter, 0-300v. Reads A.C. or D.C. 2 Porcelain fuses. Input plug and socket, and 3 output sockets, size 12" x 6". Price 22/6.



TRANSMITTING VARIABLE CONDENSERS

200 PF ceramic insulation, 17" spacing made by "Oydon." 4/6 each.

WIRE WOUND RESISTORS 50K 200 watt, 4/-, 20K 200 watt, 4/-, 2K+12K 150 watt, 4/-, 75K 100 watt, 4/-, 350 ohms 75 watt, 2/-, All vitreous enamelled.

TELEVISION MAGNIFYING LENS. Suit any 8", 6", or 7" tube Increase picture size considerably, 29/6.

P.F. DRIVER TRANS. Split Sec. super quality.

FERRANT MAKE, 10/- each.

THE FAMOUS R1155 RECEIVER. Frequency range, 18.5 mes-75 kcs. in 5 wavebands. 10 Valves including magic eye, completely enclosed in black metal case, 18" x 9" x 9", £8/8/-. All tested and in perfect order.

GOVERNMENT SURPLUS MAINS TRANSFORMERS. All are for use on 230v 50 cycle mains.

Type			
33	38v 2a.	Tapped at 32, 34, 36v	15/-
42	500-0-500v 170mA	4v 4a	25/-
44	10v 5a, 10v 5a, 10v 5a		35/-
51	350-0-250v 60mA, 6-3v 1a, 6-3v 2-3a		12/6
53	250-0-250v 60mA, 5v 2a, 6-3v 2-3a		15/-
54	275-0-275v 60mA, 5v 2a, 6-3v 2-3a		18/-
55	250-0-250v 100mA, 5v 2a, 6-3v 3-5a		17/8
56	330-0-330v 70mA, 5v 2a, 6-3v 2-3a		17/6
57	300-0-300v 70mA, 4v 2a, 4v 3-5a		17/6
E.H.T. TRANSFORMERS. For 200-230v 50c input half-wave. For use with valve or metal rectifier. Used in a voltage doubling circuit, these will give slightly over double the half-wave output. We can supply suitable rectifiers.			
E.H.T.1.	Output 300v		17/8
E.H.T.2.	Output 1,000v and 2-0-2v 2a		25/-
E.H.T.3.	Output 2,000v and 2-0-2v 2a		35/-
ALUMINUM CHASSIS. Substantially made of bright Aluminum with four sides.			
7	" x 3 1/2" x 2"	4/6 14" x 9" x 2 1/2"	8/3
9 1/2	" x 4 1/2" x 2"	5/6 16" x 8" x 2 1/2"	8/6
10"	" x 6" x 2 1/2"	7/- 20" x 8" x 2 1/2"	10/8
12"	" x 9" x 2 1/2"	7/3 22" x 10" x 2 1/2"	13/6

ALL-WAVE SUPERHET KIT. A Kit of Parts to build a 6-valve (plus rectifier) receiver, covering 10-50 metres. Medium- and long-wave bands. Valve line-up, 6K8, 6K7, 6Q7, 6J7, two 25A6 in pushpull. Metal Rectifiers are incorporated for H.T. supply. Output impedance is for 3 and 15 ohms. The latest Wearite Coil Pack incorporating Iron Dust Coils is used, making construction and alignment extremely simple. A pick-up position on the wave-change switch and pick-up terminals are provided. A complete kit including valves, but without speaker or cabinet. Chassis size, 14" x 6". Overall height, 9". Price, £10/16/3, including Purchase Tax. Wired and tested, £12/10/-. Suitable loud-speakers are the GOODMANS 10" 6-watt P.M. at 47/6, or for superlative reproduction, the Goodmans 12" P.M. at £6/15/-.

NEW TRF RECEIVERS
Complete and ready for use in Bakelite Cabinet, 12" x 6" x 6".
3 Valves plus metal rectifier, medium and long wavebands.
A.C. or A.C./D.C. for 200-250v mains. Pre-War Price £7/19/6 including P.T.

R1155 POWER SUPPLY UNIT
(Incorporating output stage). A robust unit contained in a black enamelled case, 10" x 8" x 6", which matches the receiver. There are two models for 100-250v 50 cycles mains. Each supplies an output of 250v at 80 ma, which is ample for the R.1155 with the output stage. With output stage, 70/-. Power pack only, 50/-.

BATTERY CHARGER KITS
6v 1a (tapped at 2v), 22/6. 12v 1a .. 27/6
These incorporate Metal Rectifiers and Transformers. For 200-250v. A.C. mains.

SECTIONAL WHP AERIALS
Seven sections which plug into each other making an Aerial 14 ft. long .. each 3/6
Insulated Bases .. each 2/6

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**NOW OPEN. NEW BRANCH AT
207 EDGWARE ROAD, W.2 (Ambassador 4033)**

OPEN ALL DAY SATURDAY

2v BAKELITE CASED ACCUMULATORS by Oldham. Dagenite, Exide, etc. New and unused, unspillable vents. 7" x 4" x 2" each 8/6
MIDGET SUPERHET RADIO KIT with Illuminated Glass Dial. All parts including Valves, M/C Speaker and Instructions. 4 valves plus Metal Rectifier. 16-50 metres and 200-557 metres. 200 to 250v A.C. or A.C./D.C. mains. State which is required. Size, 10" x 6" x 6", 28/5/-, including Purchase Tax
MIDGET RADIO CABINETS in Brown Bakelite. Can be supplied for the above Midget Kit at 25/-, including P.T.
COLLARO AUTO CHANGERS. Mixer-changer rim-drive. High fidelity, crystal pick-up. Repeat reject mechanism. £14/6/8.
COLLARO AC/DC GRAMOPHONE MOTORS, with turntable, but without pick-up or auto stop. 28/5/8.
GARRARD ELECTRIC GRAMOPHONE UNIT, with magnetic pick-up. A.C. 100/250v. 25/19/5
COLLARO ELECTRIC GRAMOPHONE MOTOR, with 12" turntable. A.C. 100/250v. 25/18/4
CONRAD ELECTRIC GRAMOPHONE MOTOR 9" turntable. 200/250v A.C. 57/6

All above motors include purchase tax.
UNIT TYPE A3562A. Brand new, contains two ceramic base 807, one 6U40, one EF50, one E.A.50. A large quantity of condensers, chokes, resistors, etc. 30/-
UNIT TYPE T.28/APT-1. Contains one 832, one 829, two 6C4, two 5R4, one 6X5, three 6AC7, one 6V6, one 931A, and a huge variety of other material. £10. Valves available separately.

ROTARY TRANSFORMERS. Used in reverse will charge a 2 to 6v accumulator at 3 amps from D.C. mains. Many other applications, 10/-

METAL RECTIFIERS. Half-wave, output 230v 30ma, 2/6 Half-wave or voltage doubling 280v 30ma, 3/- Half-wave 300v 75ma, 4/- J50 400v 2ma, 3/8, or six for 18/6. 15v 1a bridge, 6/-

VALVES AT LOW PRICES. —68N7, 6/6; 128R7, 6/6; 68H7, 6/6; 6H6, 5/-; 128N7, 6/6; 1T4, 6/-; 128H7, 7/3; 128L7, 7/6; 6K7, 7/6; 6B7, 5/-; 6B8G, 5/-; 6J7G, 7/6; 6K7, 7/6; 7X7, 5/-; 7C7, 7/6; 7N7, 7/6; 7Q7, 6/6; VR95-954, 4/-; CV172, 5/-; CV73-11E3, 10/-; VU111-V1907, 10/-; V870-7475, 7/6; VR57-EK32, 7/6; CV67, 10/-; VR78-D1, 2/6; VU39-MU14, 7/6; CV6-DET20, 5/-; VR63-SR31, 3/6; VU133-V960, 10/-; 3B24, 10/-; VR503-KT35c, 7/6; VR91-EF50, 5/-; VR92-EA50, 5/-; VR136-EF54, 7/6; VT60A-807, 7/6; VR116-V872, 10/-; VR54-EB34, 3/6; VR56-EF36, 6/-; 9D2, 7/6; 8D2, 7/6; 16D2, 7/6; 4D1, 7/6; 1L06, 10/-; 1LN5, 8/6; 1LD5, 7/6; 3D6, 8/6; 9003, 6/6; 89G7, 6/6; 6X5, 7/6; 6U4, 5/-; 6V6, 6/6.

2-GANG SHORT-WAVE TUNING CONDENSERS. Ceramic insulation, 100PF each section. The complete kit, 10/-
BALANCED ARMATURE UNITS. Extremely sensitive, make excellent earphones, microphones, or telephones. each 1/3, doz. 12/-

SMOOTHING CHOKES
 50 mA. 30H, made by Marconi 10/6
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 100 mA. 6H, made by S.P.O. Co. 5/-
 200 mA. 20H, made by Bush 17/6
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METER KIT. A super quality Ferranti 500 microamp m/c meter, with separate high stability, high accuracy, resistors to measure, 15, 60, 150 and 600v D.C. Scale length 1 1/4", diameter 2 1/4". Scale marked 0-5, 10, 15 and 0-200, 400, 600. Internal resistance, 500 ohms each 5/-
A.C. M/C METER WITH INTERNAL RECTIFIER. Scale length 2 1/4", diameter 3 1/4". Scale 0-300v. Made by Metro-Vick each 25/-
M/A METERS. 30 mA, 3 1/4" O.D., 10/6. 50 mA, 2 1/4" square, 8/6. 150 mA, 2 1/4" O.D., 6/- 250 mA, 3 1/4" O.D., 10/6.

MORSE SET

Includes a high note buzzer with a first quality morse key. Mounted on a platform with fixing clip for battery. Price 3/).



SLOW MOTION DIAL

With 200-1 vernier reduction. Calibrated 0-100. Front panel mounting. 6" diameter. Fast and slow motion. 6/6.



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Includes microphone and earpiece in one unit with "Press to talk" switch in grip. Balanced armature units. No batteries needed. 8/6 each.



MINE DETECTOR PANEL

Include three IT4 valves, 12-1 Midget Trans, three ceramic valveholders, 18 condensers and resistors, etc., 20/- Without valves, 5/-

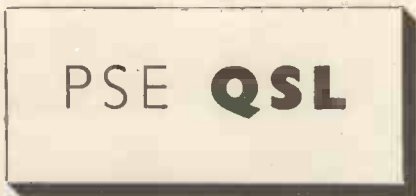


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 VR97.97" diameter, green screen, 4v 1a. Heater, 2,500v max. H.T. Complete with socket, 35/-

C.R. TUBES
 E.M.I.41 Cathode Ray Tubes, 3 1/2" diameter, green screen, short persistence. 4v 1.3a Heater, 800v H.T. Complete with socket, 17/6 each

ELECTROLYTIC CONDENSERS
 32+32 mF 350v working, aly cans 5/11
 16+16 mF 500v working, aly cans 4/11
 16+ 8 mF 450v working, aly cans 4/11
 8+ 8 mF 500v working, aly cans 4/3
 8 mF 450v working, aly cans 3/-
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P.M. LOUDSPEAKERS
 by famous makers. 5" W.B. or Truevox. 2-3 ohms, 10/-; 5" Celestion, 2-3 ohms, 12/6; 5" Rola, 2-3 ohms, 16/6; 3 1/2" Magnavox, 2-3 ohms, 17/6; 6" Rola, 2-3 ohms, 16/6; 8" Rola, 2-3 ohms, 17/- 10" Rola, 2-3 ohms, 23/6; 12" Rola Q12, 15 ohms, 85/- Output transformers if required for above 2/11 extra (except, G12).



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

- CR7AH P.O. Box 812, Lourenco Marques, Mozambique. 28175 kc 'phone, 1000-1200 and 1500-1800 GMT.
- CTIEA Rua Tenente Ferreira Durao 67-2-Dt. Lisbon, Portugal. Operating 14200, 14256 and 14292 kc 'phone, 1800-2200 GMT daily.
- EI6X 104 O'Connell Street, Limerick, Eire. Critical reports on 7 mc 'phone only, operating Sundays 1200-1600 GMT.
- G2APW Lamorna, Pant, Oswestry, Shropshire. VFO-controlled 1-7, 3-5, 7, 14, 28 and 144 mc 'phone, 1630-2100 GMT, and weekends.
- G2BTO/P (Mobile) c/o 287 Wigan Road, Bolton, Lancs. VFO-controlled 1875 and 3510 kc CW, operating weekdays 1300-1400 GMT.
- G3BYT The Barley Mow Cot, Boundary Road, Wooburn Green, Bucks. 7005 and 7010 kc CW, Saturdays 1400-2300, Sundays 1000-1930 GMT.
- G3BYV Newlands, Marley Road, Harrietsham, Kent. VFO-controlled 1800, 1825, 1850 and 1875 kc 'phone, 2000-0230 GMT.
- G3CYX 9 Earlshall Road, London, S.E.9. 14096 kc CW, 2000-2200 GMT, weekdays 1000-1300 GMT.
- G3DDJ 2 Canfield Road, Brighton, 7, Sussex. QSLs all reports on 3-5, 7 and 14 mc 'phone.
- GM3DSU 52 Albert Avenue, Glasgow, S.2. Scotland. 7009, 7018, 14018 and 14036 kc CW, operating 1900-2000 and 2200-2300 GMT.
- GM3EMM Cauldecoats Farn Cottages, Portobello, Midlothian. 3-5, 7 and 14 mc CW, VFO, Fridays 1900-2100, Sundays 1600-2100 GMT.
- G3EVE 2 Canfield Road, Brighton, 7, Sussex. QSLs all reports on 3580 and 7160 kc 'phone, 7028 kc CW, operating Thursday evenings.
- G4HH 22 Darbshire Road, Fleetwood, Lancs. VFO-controlled 1-8, 7, 14, 28 and 144 mc 'phone and CW, at 1830 GMT, and weekends.
- G5GH 121 Palace Road, London, S.W.2. QSL's all useful reports on 1-7 and 3-5 mc CW, VFO, (over 150 miles), and on 144160 kc CW, 1900-2000 and 2200-0100 GMT, and weekends.
- G8KO 53 Grove Park Road, London, N.15. 59-35, 145-5 and 145-8 mc 'phone, operating 1930-2300 GMT, Sundays 0930-1330 GMT.
- HP1LB P.O. Box 1616, Panama City, Panama. 14 mc 'phone, VFO, operating 1900-2300 GMT, weekends 0700-2200 GMT.
- IIVT Via Castaldi 20, Milano, Italy. 14 mc 'phone, operating 1530-1800 GMT.
- KP4AY Box 4563, San Juan, Puerto Rico. VFO-controlled 'phone in band 28-5-29-5 mc, 0830-1300 GMT. Give details QRM and QSB.
- OH7NC J. Lahtela, Kuopio, Asuntola C.32, Finland. 3500, 3510, 7020 and 14040 kc CW, operating 0800-0900, 1000-1100 and 1500-2359 GMT.
- OQ5CF Bastin, Nizi, Stanleyville, Belgian Congo. 14150 and 14400 kc 'phone. 1400-1800 GMT.
- OZ5AH A. Hollaender, Aarre Varde, Denmark. 3690 and 3795 kc 'phone, 1800-2359 GMT.
- PA0AU Oost Kousdijk 12B, Rotterdam, Netherlands. 14 and 28 mc NBFM 'phone, operating 1930-2030 GMT, Sundays 1000-1900 GMT.
- PA0GT Erbeeklaan 22, Den Haag, Netherlands. VFO-controlled 14 mc CW and NBFM 'phone.
- PA0MU Asselschestraat 24, Apeldoorn, Netherlands. QSL's all 144180 kc CW reports, 1800-1900 GMT.
- PA0NB Prof. H. de Vrieslaan 82, Urrecht, Holland. 3501, 3510, 3518 and 3525 kc CW, weekends.
- SM6AGE Ljungstigen 26, Karlsborg, Sweden. Speech quality and frequency-drift of 7 mc CW and 'phone, VFO, 0500-0700 and 1700-2200 GMT.
- ST2RL P.O. Box 253, Khartoum, Sudan. Modulation of 28 mc 'phone, 0800-1000 and 1400-1800 GMT.
- UA3DN Leningradskoje Road 65, app.147, Moscow, U.S.S.R. Operating 1-9, 7 and 28 mc CW.
- UA3KAQ Radio Club, Neglinnaya 14, Moscow, U.S.S.R. 7 and 14 mc 'phone and 7, 14, 21 and 28 mc CW, operating 0700-1900 GMT.
- VE2AJ Crabtree Mills, Quebec, Canada. Comparative reports on 28300 kc 'phone, VFO, 1715-1800 GMT, weekends 1400-2359 GMT.
- VESH 1044 King Street, Saskatchewan, Saskatchewan, Canada. CW on 3-5 and 7 mc, and on 14037 kc.
- VE7ADJ 1134 Harwood Street, Vancouver, Canada. 14 mc 'phone, 0200-0700 and 1500-1700 GMT.
- VK2TE A. Boyd, Charles Street, Charlestown, N.S.W., Australia. VFO-controlled 14325 and 28250 kc 'phone, operating 0500-1200 GMT.
- VK3FO 424 Centre Road, Bentleigh, S.E.14, Victoria, Australia. Modulation of 7, 14 and 28 mc 'phone and CW, 0800-1200 GMT, and weekends.
- VK3OP 43 Ford Street, Newport, W.15, Victoria, Australia. 14 and 28 mc 'phone and CW, VFO.
- V56BG W. Magill, Stewart Terrace, The Peak, Hong Kong. 7, 14 and 28 mc 'phone and CW, 1400-1800 GMT.
- W11XJ 59 Edward Road, Watertown 72, Mass., U.S.A. 7 and 14 mc CW; 14 and 28 mc 'phone.
- W1MRK 57 Hancock Street, Auburndale, Mass., U.S.A. VFO-controlled 14 and 28 mc 'phone.
- W2AX 20 Sterling Place, Roosevelt, Long Island, N.Y., U.S.A. 14024 kc CW, 1700-2200 GMT.
- W2BE 33-63 154th Street, Flushing, N.Y., U.S.A. 14 and 28 mc CW, VFO-controlled, 0001-0200 GMT.
- W2SXX 455 S. Broad Street, Trenton, N.J., U.S.A. 7005, 7015, 7025 and 7035 kc CW, at 0500 GMT.
- W3MAC L. J. Papp, RFD.1, Easton, Pa., U.S.A. Only detailed reports on 28 mc 'phone, VFO.
- W4GZB Kittle, 7th Street, Lynn Haven, Fla., U.S.A. 28-5 mc 'phone, VFO, Sundays 1000 GMT.
- W5EGK 714 N. Fifth Street, West Monroe, La., U.S.A. VFO-controlled 14 mc CW, at 0100 GMT.
- W5KHN 622 John Lee, Corpus Christi, Texas, U.S.A. Modulation of 28640 and 28840 kc 'phone.
- W5QS O. Walden, RFD.5, Box 574, Dallas, Texas, U.S.A. Operating 14202 kc 'phone, evenings.
- W6BGV 2206 Meade Place, Calif., U.S.A. Operating VFO-controlled 14 mc CW.
- W6EYB 4025 Albright Avenue, Culver City, Calif., U.S.A. 14 and 28 mc CW, 0100-0900 GMT.
- W6RRG 238 Daniels Avenue, Vallejo, California, U.S.A. QSL's all comparative reports on CW operation on 14001-14090 kc, and 28030 kc.
- W9HOS 11408 S. Wallace Street, Chicago, Illinois, U.S.A. QSL's all comparative reports, 3-9-4-0 mc 'phone, 0430-0600 GMT; 29-0-29-7 mc 'phone, weekends 1600-2000 GMT.
- W9UA 359 Seminary Avenue, Aurora, Illinois, U.S.A. QSL's all reports 3870, 3970, 14220 and 14280 kc 'phone, 0430 GMT onwards.
- W0HUI 400 Ildereen Drive, Springfield, Missouri, U.S.A. 3960, 14100 and 28600 kc 'phone and CW, 0500-0700 and 1600-2359 GMT.
- ZB1AY 53 St. Joseph Street, Senglea, Malta. Tone and stability of 14080 kc CW, 1600-2000 GMT; and details of DX heard calling ZB1AY.
- ZL2RZ R. Cresswell, Penbroke Road, Stratford, New Zealand. Comparative reports on 28220 and 28362 kc 'phone, 0700-1000 GMT.
- ZS1BK Rosalie, Balmoral Road, Lansdowne, Cape, S. Africa. QSL's all accurate reports on 7, 14 and 28 mc 'phone and CW, 1500-2000 GMT.
- ZSSGS 18 Taylor Road, Pietermaritzburg, S. Africa. 14 and 28 mc 'phone and CW, 1500-2000 GMT.

The VHF End

Receivers and Aerials—

Reader Comments—420 mc Activity

by A. A. MAWSE

IN spite of the rather poor conditions prevailing on the VHF bands interest continues to increase, and we are glad to have had reports and enquiries from several new correspondents this month. Only one day in February produced conditions much above the seasonal average, and that was February 25, when, in south-east England, distances of 100 miles or so were being covered on two metres. Severe fading was present, especially towards midnight and, in spite of very high peak signal strengths, transmissions from more than 40 to 50 miles were far from Q5. The main effect, therefore, was that while signals from beyond the normal two-metre horizon were being logged and making our list of calls heard look much more impressive, the value of the band from a communication point of view was definitely poor. Our own impressions, up to date, are that fading is much more severe on two metres than it was on five. Perhaps readers may have some opinions on this and we should be glad to have comments.

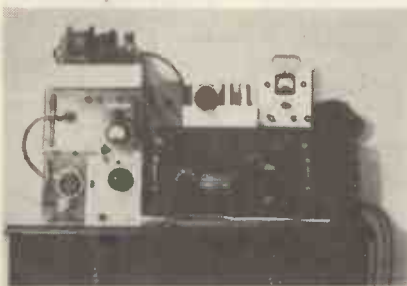
Two-metre Receivers

Last November we commented on the adverse effect low heater volts appeared to have on the note produced by the oscillator in 145 mc converters, a drop of mains voltage below the correct figure causing all received signals to sound T6. G2XC tells us he has had a similar experience with the two-metre converter described in that same issue of the *Short Wave Listener*, and at the same time passes on the tip that a complete cure has been effected by tapping the grid leak and condenser (R6 and C12 in his circuit diagram) down the coil (L4). About one-third the way down is a good position. Not only does this produce a much purer DC note, but the frequency stability in general is greatly improved. G2XC also points out that several readers have tried using the converter with a much higher IF than that specified; although there are certain advantages to be gained by using a high IF it is probable that the oscillator injection by stray coupling to the mixer

will not be sufficient if the signal and oscillator frequencies differ too much—accordingly, with high IF some more definite coupling between oscillator and mixer should be provided. In that case it may well be desirable to screen the oscillator from the mixer so that injection is made only by the intended method. Without this precaution the volts injected by stray coupling may oppose those entering by the desired route!

Aerials

We have had requests from a number of newcomers to the VHF's for some details of suitable aerials, particularly beams, for use on 145 mc. Once again referring back to the November, 1948, issue of the *Short Wave Listener*, measurements for a four-element beam were given on page 374. This was for feeding to the receiver via an 80-ohm line, a fact which we seem to have omitted in the original description. On two metres (and, in fact, on all the VHF bands) the matching of the aerial to the feeder and the feeder to the receiver is of great importance. A loss of 6 to 12 dB is not at all improbable if these points are not watched. In the case of the 4-element beam above, the matching of the beam to the feeder is achieved by using a folded dipole and by making the "fed" element of the dipole of smaller diameter tube than the other. If a three-element beam is attempted with similar spacings a nearer match will be obtained by making both the folded dipole elements of the same diameter tube. The matching of the feeder to the Rx input is something which can be done by experiment, while using the Rx, and should present fewer worries than the matching at the other end of the feeder.



R. Muir, Haslemere, now doing his spell of National Service, runs this neat rig when he is at home. A Type 27 RF unit for 5 metres and an Eddystone converter for 144 mc are operated with a BC-342.

Readers' Reports

First of all comes a very interesting letter from R. Rew (Birmingham) who, with the knowledge that G3EMY, 3LN, 5JU and 8JI are all active on the 420 mc band in his area, has decided to get going on that band and hopes to be the first to send us a list of 70 cm. calls heard. So R. R. has been working busily on his ASB8. He has replaced the normal video output stages of the receiver with a 6SN7 to act as first AF and BFO, and a 6F6 as output stage. As readers may know, in the ASB8 there are two IF's, 55 and 16 mc. For the third detector in this line-up R. R. has substituted an EA50 and has a 6H6 as noise limiter. The IF and AF stages are working well, but he is meeting some trouble in getting the RF section to tune to 420-460 mc. The original frequency for which this Rx was designed was 510 mc. R. R. is contemplating lengthening the tuning lines on the 955 oscillator to make it tune 55 mc on the LF side of the band, but is still undecided on the modifications to be made to the "lighthouse" RF stage. It is giving good gain as it stands but is not properly tuned to the amateur band. However, we gather he has several schemes in mind; so we anticipate that it will not be long now before he is scooping in 70 cm. signals and we get that Calls Heard list from him.

L. W. Ross (Almondsbury, Glos), having shifted QTH, has been somewhat inactive, but has plenty of VHF gear in action. An ASB8 forms the 420-mc Rx equipment for L. W. R., but we have no information on what modifications he may have made to it. He has a 7-element c.s. beam for 420 mc mounted above his 4-element two-metre array. For reception on the latter band there is a modified R1147 and a converter employing acorns working into a BC455 on 8.5 mc; an RF26 is still available for five- and six-metre work. He reports that most of the Bristol 144 mc stations are using vertical polarisation in contrast to the horizontal polarity employed in other parts of the country. This will, of course, reduce the chance of contacts between the Bristol area and distant stations.

E. Wicks (Bournemouth) is in a poor location, but is hoping to convert an RF26 for use on two metres; he had it going on five and heard some F's last autumn. D. S. Allison (Stockwell) is intending to modify his RF27 for 144 mc; he had good results from it on five, feeding into a 0-V-1 Rx. His beam is ready for 144 mc. R. F. Muir (Haslemere) is at

present doing his period of National Service, but hopes to get going on VHF again as soon as he is home.

F. W. Hattemore (Winchester) is completely screened by hills on all sides; his RF26 on five and his modified RF27 on two have failed to produce any signals so far. The RF26 did perform well at a previous QTH; work is under way on a 420 mc converter. H. Lodge (Wickford) has spent three weeks trying to find the two-metre band. We would suggest he arranges a test with G2CIW (Brentwood), who is only 10 miles away and should provide a strong signal for H. L., who sends an interesting list of calls heard on five metres during the past year.

S. R. Winter (Hammersmith) has an RF26 on five metres feeding an R1155A, and is hoping to modify a Type 27 for two metres. F. R. Stringer (Southwold) wants suggestions for a two-metre battery-operated receiver suitable for portable work. Before the war he used a super-regen. and heard 2½-metre signals up to 10 miles—but this is hardly the type of Rx for modern conditions.

As we rather expected, M. Taylor's offer last month to give details of how to modify the RF27 for two metres produced an inundation of enquiries. Congratulations and thanks to him on having answered all the letters so promptly. His reward, we hope, will be to see numerous lists of calls heard in this column in the months to come. M. T. has reached the conclusion that 9001 and 9003 valves are no good above 60 mc. He says the EF54 knocks spots off them.

Lastly, W. A. Kane (Ballywalter) reports from Northern Ireland, where GI2HML and GI3AXD are active in Belfast. Several receivers have been tried by W. A. K., the latest one being a converter using 9003 RF and mixer and 9002 oscillator. It looks as if M. T. and W. A. K. had better get together on this 9003 question.

As you read this, the last days of five metres will be at hand. Some of the Tx men who have been active on five for many years will be holding a QSO Party on March 31 from 1900 onwards, so there may be the chance to add that extra county before the band is finally closed. Let us have your final county and country scores for five metres in time for next month's *Short Wave Listener*.

Latest date for next month is April 5, and the address is, as usual, A. A. Mawse, *Short Wave Listener*, 49 Victoria Street, London, S.W.1. BCNU on April 21.

Monthly Comment by R. H. GREENLAND, B.Sc.

DX broadcast

WORLD WIDE RECEPTION OF SHORT WAVE PROGRAMMES

Our very hearty congratulations to Dr. T. B. Williamson (Harpندن), who has heard 116 countries on the short wave broadcast bands and has had 72 of these confirmed! What other records can our readers claim?

AUSTRALASIA

Many listeners tune in regularly to the consistent signals from Radio Australia. Here is their latest schedule of broadcasts to the British Isles: (1) 0700-0815, VLA8, 11760 kc and VLB9, 9580 kc; 0700-0745 only, VLC10, 21680 kc; (2) 1400-1500, VLA6, 15200 kc and VLG3, 11710 kc; 1400-1445 only, VLC11, 15210 kc and VLB3, 11760 kc; (3) 2000-2155, VLC9, 17840 kc; 2000-2130 only, VLA8, 11760 kc and VLB2, 9650 kc; (4) 2210-2315, VLG3, 11710 kc.

J. E. Saunders (Streatham, S.W.16) has been experimenting with a one-valve receiver and logged VLB2, 9680 kc at 2030 on January 22.

Radio New Zealand is in the news again. R. Iball (Langold, Notts) has received their verification letter which states: "Our engineers were particularly pleased to receive the full details and appreciate the trouble you have taken in compiling the data." To quote R.I. himself: "When we SWL's receive a letter like this, it does a lot to know

that our efforts are appreciated." Well done!

We wonder if our readers know of Radio New Zealand's Mail Bag, read by a woman announcer each Thursday at 0730 over ZL3, 11780 kc and ZL4, 15280 kc? Another programme we recommend is the weekly travel talk at 0735 on Sundays—here is the gist of the talk for February 19. Almost anywhere in the Dominion one will find mountains, but the real climbing country is that of the lofty Southern Alps. Here the giant is Mount Aorangi, 12,349 ft high, more prosaically named Mt. Cook. It is a land of frozen rivers and glaciers, and is a favourite winter sports ground. A famous mountaineer told us "that the climbers will camp around fires no more than 100 ft. from the summits of some of the peaks, and what is their purpose in making these hazardous ascents? Perhaps it is because they are then "just a little bit closer to heaven!" On February 22 at 0645, we logged a special broadcast over ZL3; conditions were very poor, but we did hear the voice of a native chief greeting his people back home in the Cook Islands.

AFRICA

CR7BU in Mozambique, 4952 kc, was logged by R. Iball when it was giving the following schedule at 2055 on

January 25: "Twelve Hours Broadcast! 0700-0900 in the 31 and 16-metre bands; 1000-1300 and 1400-1500 in the 31-metre band; 1700-1800 in the 31 and 60-metre bands; and 1800-2300 in the 60 and 85-metre bands." At 2100, the closing direction: "This is Lourenco Marques Calling!" was followed by the Good-night Melody and Portuguese National Anthem. J. Holden (York) says that CR7BV, 4855 kc, provides a good signal with its Portuguese programme around 1900. He also reports Johannesburg III, 4895 kc, signing off at 2105, and E. Strangeway (Scagglethorpe, Yorks) heard Pietermaritzburg, 4878 kc at the same time on January 7, with announcements in both English and Afrikaans.

For the South Africa v. England Test matches with John Ariott as the commentator, H. M. Knott (Westbrook, Nr. Margate) succeeded in tuning in the point-to-point transmitter ZSS, Cape Town on 18900 kc.

Cape Town's broadcasting outlet on 5882 kc was exceptionally good at 2108 on February 22, when the announcer said: "This is Cape Town calling on 51 metres. This station is now closing down until 6.45 tomorrow morning. Goodnight, Everybody!"

J. E. Saunders logged

All times given in this article are GMT except where stated

TABULATED SCHEDULES

I. FINNISH STATIONS

Address : OY Yleisradio ab Fabiansgatan 15, Helsinki, Finland.

Separate address for OIX4, Pori.

OY Yleisradio ab Porin Yleisradioasema, Pori (Bjorneborg), Finland.

Stations used :	OIX1 Helsinki	15 kW	6120 kc.
	OIX2 Lahti	15 kW	9555 kc.
	OIX4 Pori	100 kW	15190 kc.
	OIX5 Helsinki	1 kW	17800 kc.

Operating times :	0300-0500 Finnish.	1200-1300 English.
	1645-1745 Finnish.	2100-2200 French.

II. "THE VOICE OF GREECE"

9607 kc.

0515-0735

1000-1300

7300 kc.

1600 News in Greek. 1630 News in English. 1645 News in French. 1700 News in Turkish. 1750 News in Russian. 1800 News in Rumanian. 1810 News in Yugoslav. 1820 News in Bulgarian. 1830 News in Albanian. 1840 Warnings to Shipping.

15345 kc.

2230-2330. Special transmission for the U.S.A.

OTC3, Leopoldville, 9767 kc, closing its English transmission at 2030 on January 27. This station has a 50 kW RCA transmitter coupled to a number of rhombics connected in series, these being situated two miles outside the city. The studios are located in the centre of the town and the reception centre is five miles outside. Reports should be sent to : Box 505, Leopoldville, Belgian Congo. Radio Congo Belge is the official station of the Gouvernement General ; the transmitters are OTM1, 6295 kc, 3 kW ; 0500-0700, 1000-1200, 1600-2000 : OTM2, 9380 kc, 7½ kW ; 0500-0700, 1000-2000 : OTM4, 11720 kc, 7½ kW ; 1015-1200 ; with programmes in French, Flemish and Portuguese. OTH, 9210 kc, 15 kW, gives a daily broadcast from 1730 to 1830, with programmes in French and various Congo tongues for the native population. The address is : Radio Congo Belge, P.O.Box 171, Leo-Kalina, Belgian Congo. M. Service (South Norwood, S.E.25) heard OTM2 with music at 2045 and announcing : "Ici Congo Belge."

R. Iball and E. Strangeway both logged Dakar, 11898 kc, recently with direction at

2045 : "Ici Dakar," though E. S. says this is normally given at the hour and half-hour only. On February 17, it closed with the Marseillaise at 2200. E. S. has forwarded us his handsome verification card from CQM4, Emissora Guine, Bissau, Portuguese Guinea ; the power is 1 kW, they use a Telefunken transmitter, the new frequency is 6998 kc (42.87 m), and the hours of transmission are 2130-2300 daily. R. Iball thinks they are still on 7940 kc, for, from 2135-2145, he heard a recorded English lesson (in which the needle stuck !) and Alicante was just slightly higher on a frequency of 7948 kc.

CR4AA, Praia, Cape Verde Islands, 6024 kc, operates 1830-2000, but with the limited power of 100 watts it will not be easy to log here.

E. Strangeway finds that ZOY, Accra, 4915 kc, has passed its peak period, but he has identified a religious service at 1730 and the Local News at 1745. VQ7LO, 4855 kc, was quite good at 1700 on February 13, when the leader of a party of American tourists, in an interview, paid tribute to Kenya as a hunting ground for the buffalo and

elephant, and said that they were leaving for Cape Town via the Victoria Falls and Bulawayo the next morning.

ASIA

In the Far East, HLKA, Seoul, Korea, was discovered by H. M. Knott on January 29 at 2100, with an English announcement mentioning their medium-wave outlet and another short wave relay on 119.5 metres. J. Holden gives the 7935-kc channel at strengths ranging from S2 to S7 around 2130. R. Iball logged ZBW3, Radio Hong Kong, 9525 kc, at closing time at 1513, when the local time was given as : "Thirteen minutes past eleven." In Japan, WLKS, 6105 kc, The Voice of the British Commonwealth, Kuré, closes at 1400 with the playing of God Save the King, and in China, XGOA, Nanking, is supposed to operate according to the following schedule : 15105 kc, 0200-0300 ; 9730 kc, 1000-1330 ; 9605 kc, 9730 kc, 5985 kc, 1350-1500 ; 5918 kc, 1400-1500 (English News at dictation speed).

In the East Indies, YDO, Macassar, Celebes, 9550 kc was logged here with dance music and Dutch announcements at 1345 on February 5 ; the same programme was being radiated simultaneously by PLB4, Batavia, 10365 kc ; and PLB7, 11017 kc, in the same city, had orchestral music at 1440. Radio Sario Menado, Celebes, 9745 kc, uses an 800-watt transmitter of Japanese origin, its programmes being intended for Dutch and Indonesian Occupation Forces there. The schedule is : Monday to Friday, 1000-1200 ; Saturday and Sunday, 1000-1400. The Voice of Sumatra, 7620 kc, broadcasts daily as follows : 1230-1300 (Javanese) ; 1300-1315 (English, beginning and ending with the playing of the tango "Jealousy") ; 1315-1330 (Indian languages). YCN3, Radio Pontianak, 8090 kc, is

the outlet for the island of Borneo, and broadcasts 1130-1330 daily.

C. S. Poole (Ipswich) sends in a letter received from the High Commissioner for Pakistan; it reads: "A new 7.5 kilowatt short wave broadcasting station has been opened at Dacca, East Bengal. The station will operate on 11890 kc, which will enable Radio Pakistan to be heard throughout Pakistan itself as well as South-East Asia. The new station was opened on January 16, 1949, by the Honourable Khwaja Shahabuddin, Minister of the Interior and Broadcasting Division, Government of Pakistan." For the further enlightenment of our readers, we would mention that Radio Pakistan is now being logged here on 15280 kc; at 1530 on February 20, the chimes of a studio clock were followed by the direction: "This is Radio Pakistan. Here is the News." Reception reports are requested by this station.

All-India Radio is again in the news! R. Iball and R. Patrick (Accrington) have been listening to the 1445-1545 Delhi transmissions, which open with the words: "This is All-India Radio's Experimental programme for overseas listeners heard every day at this time. Please write to us and let us know what you think of our programmes. The address is: External Service Division, Broadcasting House, Delhi."

The frequencies are: 6010 kc (VUD11), 9565 kc, 9590 kc (VUD5), 15160 kc (VUD7) and 17830 kc (VUD10). R. G. York (West Croydon) heard Delhi on 7290 kc (VUD5) one evening with a Mail Bag programme.

VUM2, Madras, 4920 kc, logged by J. Holden, has been very consistent of late, signing at 1700 with half-hour clock chimes and the direction: "All-India Radio, Madras." From this station, at 1705 on February 18, the writer



RADIO NEW ZEALAND. Installing one of the high-power valves at the new short wave transmitter at Titahi Bay, Wellington, N.Z.

heard bands playing and a March Past of Mounted Police in black and red turbans, in a parade at a local pageant. The same day at 1615, VUB2, Bombay, 4880 kc, had been logged with a talk on Agriculture in the English Universities.

Since January 15, Radio Goa has been operating on 9610 kc from 1230 to 1530 daily; ZOH, Radio Ceylon, 4900 kc was heard with light orchestral favourites at 1650 on February 13, closing down soon after 1700. The Siamese Broadcasting Corporation is reported to be carrying out tests on 11720 kc from 1000 to 1130, with the last quarter-

hour devoted to News in English. R. G. York heard RAD, Radio Tashkent, 6820 kc, with Russian Folk Music from 1700 to 1715, followed by News in English until 1730. He mentions that this one transmits twice weekly on Sundays and Wednesdays. R. G. Y. heard Kol-Israel's English News at 2000 on 6817 kc; they stated that their transmissions were on 360 kc, 450 kc, 500 kc, and 6800 kc! The 500 kc one will not last long—this is the 600-metre international calling and distress wave for ships!

J. Holden mentions that from 1500 until 1600, when Radio Lebanon, Beirut,

8036 kc, broadcasts its English Hour, it suffers from considerable CW interference. The writer noted YI5KG, Baghdad, 7092 kc, with a native orchestra and an excellent signal at 0510 one morning. In the evenings it broadcasts in Arabic from 1800 and closes down at 1900.

R. Iball has received a belated letter verification from ZNP18. It reads: "This station belongs to Messrs. Cable and Wireless, Ltd., of London; situated at Amman, Transjordan; using Marconi SWB8's and working at high speed for commercial traffic to and from all parts of the world *via* London. Voice Casts and Picture Services are also transmitted direct to London and New York. Our input power is 8 kW, with input to directional Aerial Rhombic of 3 to 3.5 kW." The address is: ZNP18, Cable and Wireless, Ltd., Amman, Transjordan.

M. Service has logged TAP, Ankara, 9465 kc, broadcasting News in English at 1745, but announcing that the schedule was shortly being changed to a later hour. R. G. York heard their talk entitled: "Turkey's Society for the Prevention of Cruelty to Children" in the regular Monday-Thursday series at 2130 on January 13 (S9 *plus*!).

Finally in this continent, R. Patrick has been hearing the Near East Arab Broadcasting Station, Limassol, Cyprus, 9650 kc around 1700; the interval signal is a phrase of native music, played on stringed instruments.

NORTH AMERICA

The United States Pacific Coast stations have again put in an appearance, according to R. Iball, who heard the following as indicated. KGEI, 9700 kc, 0845-0915; KWIX, 9570 kc, 0830-0845, with this direction at 0845: "KWIX, San Francisco, operated by the Associated Broadcasters Incorporated, located at the

Mark Hopkins Hotel, and on a frequency of 9.57 mc—we now conclude this transmission."

Also KNBI, 9750 kc; KGEX, 11730 kc, and KNBX, 11790 kc, all in parallel from 0900 to 0930. E. Strangeway logged KRHO, Honolulu, on February 18, 1400-1415, when it closed down; it was working on an announced new channel of 9530 kc.

A. Treanor (Liverpool, 8) kindly submits the programme schedule for the United Nations Radio Division at Lake Success, New York.

English programmes are broadcast as follows: daily except Mondays; 0730-0735 (News Summary), KRHO, 15130 kc; 0750-0800 (News); 0800-0815 (Radio Review), KNBA, 6060 kc; Tuesday to Friday: 0410-0435 (News Review, Talks), CHOL, 11720 kc; Saturdays only: 0435-0450 (Weekly Review), CHLS, 9610 kc. Incidentally, A. T. is faced with the problem of poor reception through lack of space for an aerial of normal length — any suggestions?

In Canada, CHNX has been logged by R. G. York and G. T. Senior (Roundhay, Leeds). G. T. S. listens 2230-0100 on 6130 kc, and R. G. Y. says that CHNX uses both 6130 kc and 6100 kc and transmits a good signal (S9) on both at 2200. On January 14, the announcer remarked: "The temperature at Downtown, Halifax, is 18°." We wonder if CJCX was the station heard on 6010 kc, for R. Patrick logged this one in Sydney, Nova Scotia, on 6010 kc at 0001 on February 2 with a Quiz Time programme from Toronto. E. Strangeway recently heard CBLX, Vercheres, Quebec, on 15090 kc between 1930 and 2000, and R. G. York noted VONH, Saint Johns, Newfoundland, 5970 kc, beginning its transmission at 2115 with a Programme Preview.

SOUTH AMERICA

Two readers have received from HCBJ, Quito, interesting mementos as a reward for their good reports; H. Vicary (Bristol, 3) has a miniature sombrero, and Cleve Costello (Wellington, N.Z.) a bamboo harmonica. R. Iball has logged their 17890 kc signals from 1700 to 1900, and according to H. Vicary, reports can be sent to either: "The Voice of the Andes," P.O. Box 390, Flushing, Long Island, New York, or direct to P.O. Box 691, Quito, Ecuador. R. Iball has noted CXA19, Montevideo, 11835 kc, at 2155 with a series of vibra-
phone notes and the direction, pronounced "Say-Ekis-Ah-Oono-Nuevo." J. Holden logged CEI180, Santiago de Chile, 11998 kc at 2215, and ZPA5, Radio Encarnacion, Paraguay, at 2205; at 2120 on February 5, the latter was broadcasting well-known hymn tunes! HJCQ, 4955 kc, was the only station left in the 60-metre band at 0405 on February 17; the Spanish News, direction and National March were noted before the close down at 0415. In Venezuela, YV5RX, 3505 kc, and YV4RZ, 3450 kc, both closed at 0330 on February 17 to the strains of the Venezuelan National Anthem. J. C. Catch (South Shields) at 0030 on February 13 heard YV6RK's call and "roar" of the tiger (the slogan is: "La Voz del Tigré"); it has since been reported elsewhere that YV6RK has moved from 3330 kc to 3500 kc. J. C. C. has received a verification from YV8RB, Radio Monagas, containing profuse thanks for his report and the personal card of the director, R. Arreaza Almenar. According to the letter, three stations are controlled by "Cadena Oriental Venezilana" as under: (1) YV8RB, Radio Monagas, Maturin, 3470 kc, affiliated to the BBC, Apartado de Correo 14, Maturin; (2) YV6RH, Emisoras Unidas, Barcelona,

3450 kc, affiliated to the NBC, Apartado de Correos 27, Barcelona; (3) YV7RB, Radio Sucre, Cumana, 3590 kc, affiliated to the CBS, Apartado de Correos 26, Cumana.

H. M. Knott reports that a very unusual and slightly disturbing broadcast was heard by him from VP4RD, 9630 kc, at 2200 on January 25, when a recording of ITMA was heard and this only shortly after Tommy Handley's death.

In Brazil, ZYK2 has been logged by M. Service on 6085 kc at the unusual hour of 1500-1530 with News in Portuguese. J. Holden tells us that the 15145 kc transmitter is a Marconi SWB10, input 15 to 20 kW, with high-level plate modulation, and that the aerials are Beverage arrays oriented to 258°. At 2000 on January 31, C. Sheppard (Tolladine, Worcester) heard a most interesting tit-bit from ZYN7, Fortaleza, 15165 kc; it was a farewell message by a British official to the Brazilian people. G. T. Senior sends this station's schedule, which is: Mondays to Fridays inclusive, 1900-2100. R. Iball and E. Strangeway have logged ZYC9, Radio Tamoio, Rio de Janeiro, on 15370 kc at 1800; E. S. says it has a cock-crowing identification signal.

Dr. T. B. Williamson gives the following information. He has logged PRC5, Radio Club do Para, Belem, 4865 kc at 2350; PRF6, Radio Bare, Manaus, 4895 kc, 2330; and ZYE7, Parnaiba, 4825 kc at 2200. More recently, PRF6 was heard on 4955 kc at 2350, using three ascending chimes and the slogan: "Radio-difusora Amazonas, Manaus." R. V. Aldridge says it has adopted the new call-letters ZYFH, signs on at 0001, and gives English announcements at 0200. Further, R. V. A. logged ZYB9, Radio Tope, Sao Paulo, 15155 kc, recently at 2100 with an S7 signal.

R. Patrick says that ZFY,

Georgetown, 6000 kc, which had been putting in a fine signal around 0015, recently moved to 5985 kc and now suffers badly from interference.

CENTRAL AMERICA AND WEST INDIES

In Guatemala, Dr. Williamson mentions TG2, 6620 kc, giving direction: "Radio Morse (pronounced Morsay)" at 2305; TGLA, 6286 kc, with call: "La Voz de Centro America—TGL y TGLA" at 2325; and TGTA, 6340 kc with call: "TGT y TGTA Radio Bolivar" at 2350. J. C. Catch reports TGWA, 15170 kc with a marimba band at 1830, and the writer heard TGWB, 6440 kc, with call at 0400 recently. C. J. Fern (Hawaii) suggests TGOA, Guatemala City, as our unidentified station on 4170 kc.

Again, Dr. Williamson presents HORT, Panama City, 6060 kc, logged at 2345 with a bolero and the direction: "Radio Balboa"; and HRP1, San Pedro Sula, 6350 kc, logged at 2345 with slogan: "El Eco de Honduras": the writer found this one at 0403, closing with a National Air.

C. J. Fern advises us that YNWW, Granada, Nicaragua, has abandoned 6877 kc for 8150 kc, and we heard this one with a rumba at 0347 on February 17. In addition, YNXW, Managua, 8190 kc, was logged with call at 0410, and once, as early as 2350. Also heard were YNBH 6540 kc, S9 at 0332; YNVP, 6758 kc, S9 plus; and YNOW on 6850 kc.

In the West Indies, HH2S, Port-au-Prince, Haiti, 5948 kc, was logged at 2325 by J. Holden, and HH3W has been heard here as early as 2150 recently. HI2T, 9740 kc, was heard at 2040 by R. Iball, who noted the new direction: "La Voz de Dominicana, with studios in Santo Domingo, capital of the Republic of Dominicana." M. Service on

February 1 heard it with five beats on a gong and closing down at 0500. Dr. Williamson spotted HIIA on 4981 kc closing at 2327.

Cubans are prominent. We have COCQ, 8825 kc, closing with "Siboney" at 0530 (C. Costello); COBC, 9360 kc, heard as early as 2115 (J. Holden); COBZ, 9025 kc, with slogan: "Las emisoras mas ambiguas de Cuba," and an English-Spanish lesson introduced by the Lambeth Walk at 2300 on Saturdays; also COCW, 6320 kc, audible at 2330 with call: "Cadena Rojo" (T. B. Williamson). COBQ, 9235 kc, is reported to be on the air every Monday, 0400-0500, with an English-Spanish lesson. Finally, J. C. Catch has received from Kingston, Jamaica, ZQI's latest schedule: 4950 kc, 2100-2230; 3480 kc, 0030-0300.

EUROPE

Again, J. C. Catch has had an interesting letter from T. Varese, who is associated with the American broadcaster JJOY in Athens, heard on Fridays only at 1830 on 8000 kc. This is a 30-K Collins type transmitter using a doublet aerial with 72-ohm feeder and a power output of 375 watts. C. Costello gives the QTH as: Communications Branch, Grecian District, U.S. Corps of Engineers, Themistocleous 7, Athens.

The "Greek Freedom" station is apparently open to receive reports now, requests in English having been made at 2000 on 6740 kc. The address is: "The Greek Democratic Army Broadcasting Station, Larissa, Greece." H. M. Knott found it on yet another channel, 6450 kc, on January 15. J. Holden has heard from Radio Athens after a nine months' wait. They write: "The last period of 8-9 months was a period of intense activity for the National Broadcasting Institute and for the newly-

established S.W. station. The Institute, direction, as well as the whole staff here, have been extremely busy in organising and perfecting the operation of the S.W. transmitters so as the Voice of Greece be heard in as many parts of the world as possible." The schedule is given elsewhere.

R. Patrick informs us that PCJ, Hilversum, is issuing a monthly programme guide which will be sent regularly free of charge to any listener on request. Write to: PCJ, P.O. Box 137, Hilversum, Netherlands.

R. P. has also logged KZCA, Salzburg, 7220 kc, with its AFN Blue Danube Network programme clearly at 1400, and he hears Radio Luxembourg, 6090 kc, S8-9 from 1630 onwards. J. C. Catch logged LLG, Frederikstad, 9610 kc, between 1630 and 1645 with dance music and English announcements.

R. Iball says that 17825 kc is their highest frequency, this news being given on their QSL card, containing a panoramic view of the city of Oslo. C. Costello dialed OZF, Copenhagen, 9520 kc at 0500.

Denmark also broadcasts to the Far East on Tuesdays, Thursdays and Saturdays from 1000 to 1100 on OZH 2, 15165 kc.

C. Costello sends a list of Spanish short wave stations—nine are enumerated—and a new one of 200 kW is under construction at Fernando Po,

Spanish Guinea. Entitled "Radio Atlantica," it will broadcast in six languages on frequencies of 17600, 11600 and 8800 kc.

Please note that Sweden's Saturday afternoon DX Session is now at 1515, and that Daventry has two additional transmitters in operation on 6040 kc and 6060 kc respectively. R. G. York hears Geneva, 6672 kc, with United Nations News in English at 1830 (S9 plus). TFJ, Reykjavik, 12175 kc, was just about hitting the pin on the S-meter, with its *souppon* of native music at 1615 on February 13.

The same day, both E. Strangeway and the writer heard a new one on 6780 kc between 1900 and 2100, at which hour the striking of a clock was heard and "God Save the King" closed the proceedings. We had the RAF Band, George Melachrino, and many popular variety artists, and the station announced as: "This is the International Broadcasting Service," or, alternatively, "I.B. Company" and "I.B. Corporation." This rather badly modulated transmitter appears to be located somewhere in a British Occupation Zone in Europe.

On February 18, we listened at 1025 to the British frequency announcements on 2000 kc; they were: "This is Station GMT calling. Here are provisional corrections to the carrier and modulation fre-

quencies which have just been radiated; they were seven parts in one hundred million high. This is Station GMT of the Royal Greenwich Observatory closing down." E. Strangeway has received from T. J. Monaghan, B.Sc. Engineer-in-Chief, Department of Posts and Telegraphs, The Castle, Dublin, a confirmation of his report on Athlone's short wave activities. The letter, though not mentioning any specific short wave outlet, continues: "We shall be glad at all times to receive reception reports from you."

STOP PRESS

J. L. Rennett (Aberdeen) has just received a letter from Radio Indonesia in Batavia, advertising a regular monthly Quiz Contest, with prizes for those listeners who correctly answer a short list of questions about the geography and the prominent political figures in Indonesia. The first contest was held on March 5 at 1100 over YDC, 15150 kc; PLB7, 11017 kc; and YDB3, 7270 kc. It appears, therefore, that subsequent contests will be held on the first Saturday of each month, commencing at 1100, so what about a prize from the East Indies?

All correspondence for next month's comments should be sent to reach this office not later than April 15, and the address—R. H. Greenland, *Short Wave Listener*, 49 Victoria Street, London, S.W.1

QSL BUREAU NOTE

The throughput of cards has shown a steady increase since our QSL Bureau was first established nearly 2½ years ago: as needs and experience dictated, so its operation and method of working have been kept up to date. One particular way in which SWL's can help us to maintain the efficiency of the Bureau is by using the number which we issue as the identification on their own cards: a card coming in (as some do) addressed simply "G-SWL" is a little difficult to deliver! Provided you have an identifying number on your outgoing card, and the amateur concerned puts it on his card when QSL'ing you, his card will reach you safely.

Only direct subscribers to the *Short Wave Listener* (or the *Magazine*) are entitled to two-way use of our QSL Bureau, the full address of which is BCM/QSL, London, W.C.1.

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SHORT WAVE BROADCAST STATIONS

Revision 25-58-31-41 Metres

Giving Frequency, Wavelength, Callsign and Location

These lists appear each month, covering the 11-128 metre section of the wave band within which all the short wave broadcasting services of the world operate. For economy of space, this band is dealt with in five sections, a list of active stations in one of these sections being given in full every month. Such revision is necessary due to constant changes of frequency, callsign and operating schedules. All stations appearing in our lists are normally receivable in this country and are under regular observation.

Frequency	Wave-length	Callsign	Location	Frequency	Wave-length	Callsign	Location
11730	25-58	WRUW KGEX	Boston. San Francisco. Paris			LRA1	Buenos Aires. Singapore.
11725	25-59	WRUW WRUL	Boston. Boston.	9680	30-99	EQC XEQQ	Teheran. Mexico City. Paris.
11720	25-60	OTM4 CHOL ZJM7 HS8PD	Leo-Kallna. Sackville. Limassol. Bangkok.	9675	31-01	GWT	Daventry.
11715	25-61	HE15	Berne.	9670	31-02	WNRX KGEI VUD3	New York. San Francisco. Delhi.
11712	25-61	FHE3	Dakar.				Vienna.
11710	25-62	VLG3 WLWRI	Lyndhurst. Cincinnati. Moscow.	9660	31-06	HVJ LRX VLQ3	Vatican City. Buenos Aires. Brisbane.
11705	25-63	SBP WLWS1 WLWS2 XORA	Motala. Cincinnati. Cincinnati. Shanghai.	9655	31-07	JKF	Nazaki.
11700	25-64	GVW CE1170	Daventry. Santiago. Paris.	9650	31-09	WCBN KNBA VLB2	New York. San Francisco. Shepparton.
11696	25-65	HP5A	Panama City.				Limassol, Cyprus.
11685	25-67	HVJ XGAF	Vatican City. Changsha.	9640	31-12	YVKC COX4 DZH2	Caracas. Havana. Manila.
11680	25-68	GRG HJCT	Daventry. Bogota.			GVZ CXA8 VP4RD	Daventry. Montevideo. Port of Spain.
11084	27-03		Makassar.			VUD2 VUD10 VUD11	Delhi. Delhi. Delhi.
11080	27-02	CS9MD	Ponta Delgada.			CKLO CBFX	Sackville. Montreal.
11030	27-19	YDH2	Samarang.			CP12	Sucre, Bolivia. Rome.
11027	27-20	CS2MK	Lisbon.	9625	31-17	GWO XEBT	Daventry. Mexico City.
11017	27-23	PLB7	Batavia.	9620	31-19	VUD3 CXA6 ETA	Delhi. Montevideo. Addis Ababa.
10780	27-83	SDB2	Motala.				Paris.
10615	28-26		Tananarivo.	9618	31-20	TIPG DUH4	San Jose. Manila.
10600	28-30	ZIK2	Bridgetown.			VLB9	Shepparton.
10385	28-88	PLB4	Batavia.	9610	31-22	LLG ZYC8 CHLS	Frederikstad. Rio de Janeiro. Sackville.
10220	29-35	PSH	Rio de Janeiro.			XERQ VLW5	Mexico City. Perth, W.A.
10135	29-60	HH3W	Port-au-Prince.				Goa.
10055	29-84	SUV	Cairo.	9608	31-23	ZRL	Moscow.
9984	30-05		Brazzaville.	9605	31-23	HP5J JKE	Cape Town. Panama City.
9958	30-12	HCFB	Quito.			XGSH GRY	Yamata, Japan. Nanking.
9930	30-21	HJAQ	Cartagena.	9600	31-25		Daventry.
9925	30-23	XDY	Chapultepec.	9595	31-27		Athlone.
9915	30-26	GRU	Daventry.	9590	31-28	PCJ VUD5 VUM2	Hilversum. Delhi. Madras.
9890	30-33	HJAP	Cartagena.	9585	31-30	CE960	Santiago.
9870	30-40		Johannesburg.	9582	31-31	CR7BE	Lourenco Marques.
9835	30-50	COBL	Havana.	9580	31-32	VLB9 GSC VLH3	Shepparton. Daventry. Melbourne.
9825	30-53	GRH	Daventry.				Linz, Austria.
9800	30-61		Moscow.	9575	31-33		Boston.
9780	30-67		Moscow.	9570	31-35	WRUW KWID KWIX	San Francisco. San Francisco.
9767	30-71	OTC2	Leopoldville.				Algiers.
9760	30-74	TGWA	Guatemala City. Moscow.	9557	31-39	XETT	Mexico City.
9750	30-77	KWIX	San Francisco.	9555	31-40	OIX2	Lahti.
9740	30-80	HI2T	Trujillo, D.R. Moscow.				Singapore.
9730	30-83	CE970 XGOA	Valparaiso. Nanking. Leipzig.	9550	31-41	YDO OLR3A	Macassar, Prague.
9727	30-85	CS2MF	Lisbon.				Paris.
9720	30-86	PRL7	Rio de Janeiro. Moscow.				
9715	30-88	ZQP	Lusaka.				
9710	30-90		Lourenco Marques. Moscow.				
9700	30-93	KGEI WLWS2 WOOW FZF6 CP25	San Francisco. Cincinnati. New York. Fort de France. La Paz.				
9695	30-94	FIQA	Tananarivo.				
9690	30-96	DZH5 GRX	Manila. Daventry.				

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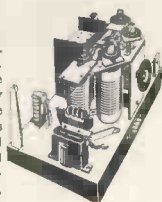
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0-60 Ma.	0-5000 ohms.
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