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the SHORT WAVE LISTENER

DEVOTED EXCLUSIVELY TO
SHORT WAVE RECEPTION

MAY 1948
VOLUME 2 · NUMBER 6

THE **SHORT WAVE** LISTENER

A MONTHLY MAGAZINE FOR THE LISTENING AMATEUR

VOLUME 2 | **MAY 1948** | NUMBER 18

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EDITORIAL

Calibration

One of the more interesting aspects of practical radio work—though by the generality of SWL's a much neglected one—is the accurate determination of frequency. The establishing and maintenance of standard measures of all kinds is a study which, at higher academic levels, absorbs the attention of a great many clever people.

The average SWL is quite content to "go by the dial reading." That is quite all right for straightforward practical work like DX reception, but no good at all if a really accurate determination of frequency is the aim. It is also true that for ordinary purposes a high standard of frequency measurement is not at all necessary—but like so many other things in radio, it is something which is well worth doing for its own sake.

In amateur work, the steps leading to careful frequency checking are: First, the calibrated receiver, which no self-respecting manufacturer would claim to be more than roughly "there"; next, the absorption wavemeter, with which one can find one's way from band to band with certainty, though its calibration accuracy would in general be much worse than the receiver dial; then, the heterodyne wavemeter, calibrated against stations said to be on such-and-such a frequency; fourthly, the checking of the HWM against a crystal oscillator using a quartz bar of a guaranteed degree of accuracy, and itself checked against some regular standard-frequency transmission, like the American WWV.

By now, the whole business will have become extremely interesting, and the startling discovery is made that many crystals are only nominally on their given frequency—and what could be more satisfying than being able to give, with one's signal report to a distant transmitting station, a really accurate check on his frequency.

Amateur Transmission - for the Beginner

The Radio Amateurs' Examination

Set of Specimen Answers

by **THE OLD TIMER**

(The two remaining questions—Nos. 5 and 8—are cleared up herewith. Our contributor covered the rest of the last Radio Amateurs' Examination paper in the March and April issues.)

QUESTION 8: Condition 8 of the Postmaster-General's licence to establish an amateur wireless station stipulates: "Where the sending apparatus is not crystal-controlled there should be kept at the station . . . a reliable frequency meter of the piezo-electric crystal type or other type approved by the Postmaster-General, for measuring the frequency to an accuracy of not less than ± 0·1 per cent."

Describe an apparatus to meet the foregoing requirement. Illustrate your answer by a diagram and explain how the apparatus is used.

ANSWER: The simplest type of frequency meter capable of filling these requirements (which are somewhat stringent) will consist of a 100 kc crystal-controlled oscillator, a 10 kc multivibrator for marking 10 kc points throughout the frequency spectrum, and a harmonic amplifier for accentuating these points through the particular amateur band being used at any time.

For conditions in which extreme accuracy is required it would also be necessary to construct an interpolation oscillator to cover the gaps between the 10 kc points; but for amateur use it is generally considered satisfactory to use a calibrated receiver or an ordinary heterodyne frequency meter, which can be checked at frequent intervals against the 100 kc and 10 kc points available from the secondary standard instrument.

Fig. 1 shows a typical layout for the latter. The first stage is the 100 kc crystal oscillator, using an electron-coupled Colpitts circuit, which has been found to

TABLE OF VALUES

Fig. 1.

C1	·0005 μF variable, split-stator
C2, C3	·01 μF
C4, C10	·1 μF
C5, C8	10 μμF
C6, C7, C12	·001 μF
C9	50 μμF
C13	·00015 μF variable
R1	1 megohm
R2, R3	·5 megohm
R4	25,000 ohms
R5, R8, R9	50,000 ohms
R6, R10	20,000 ohms
R7	10,000 ohms (potr.)
R11	100,000 ohms
R12	250,000 ohms
R13	1,000 ohms
R14	30,000 ohms
RFC1	15 mH
RFC2	2·5 mH
L1, L2	*See text*
V1	6J7 or 6SJ7
V2	6N7
V3	6K8

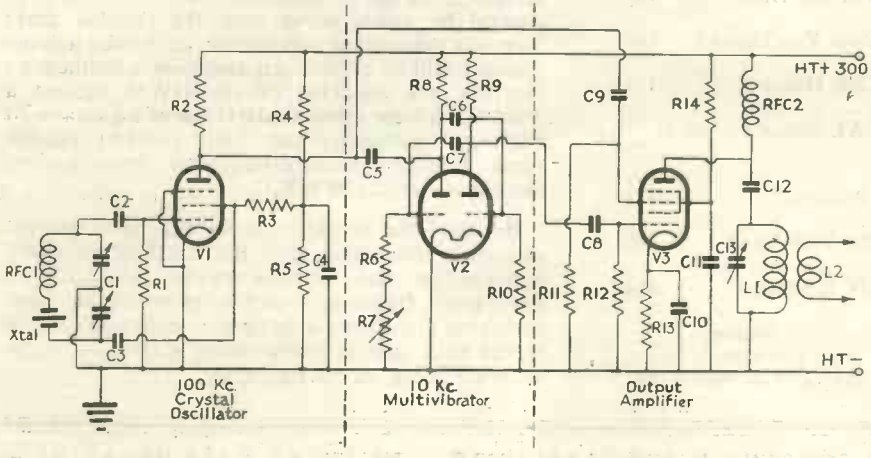


Fig. 1. Circuit arrangement of the Frequency Standard.

be extremely suitable for this purpose on account of its inherent stability. The crystal itself (or, in some cases, the crystal and the 15 mH coil associated with it) may be bought from various firms under a guarantee of accuracy. The output from the anode circuit of V1 is used to trigger a 10 kc multivibrator consisting of a double triode (V2). The 100 kc input already has a somewhat peaky waveform, and the well-known square-wave usually derived from a multivibrator will ensure a profusion of harmonics even up to frequencies of the order of 30 mc.

The 100 kc waveform is also applied directly from the anode of V1 to the auxiliary grid of the harmonic amplifier, V3. The control grid of this same valve takes the 10 kc output from the multivibrator. The result of this mixing is that the 100 kc points are noticeably stronger than the 10 kc points, although all are audible all the time. V3 may be a triode-hexode valve, with the anode of the triode section strapped to the screen grids of the hexode section ; or the hexode section alone may be used, as shown in the diagram.

Its anode circuit (L1 and C13) together with the output link winding L2 is tuned to the amateur band being checked for frequency-measuring purposes. A series of plug-in coils (L1-L2) is therefore the most convenient method of covering all bands.

Working in conjunction with a calibrated receiver or normal heterodyne frequency-meter, the method of using the sub-standard is as follows : The low-frequency edge of the band (7000 kc, 14000 kc, etc.) is roughly located ; the sub-standard is then switched on, and a 100 kc point found. This will establish the band-edge ; and, for checking the entire band, it should be confirmed that the correct number of 100 kc points are audible. (For instance, with the receiver tuned to the 14 mc band, the 100 kc points marking 14000, 14100, 14200, 14300 and 14400 kc should all be identifiable.) Between them will be found all the 10 kc points, any one of which may readily be cross-checked against a known crystal having a frequency within the band.

As the frequency-meter will most often be in use if the transmitter habitually employs a variable-frequency oscillator, the latter (which should have a good slow-motion drive and open scale) may be checked against it and given a direct calibration on the dial. The regular checks against the sub-standard should then be carried out on the VFO instead of on the receiver. The VFO should, in fact, be at least as stable as a normal heterodyne frequency-meter and may be used as such.

QUESTION 5 : What are the relative advantages and disadvantages of a variable-frequency master oscillator over a crystal controlled oscillator for use in an amateur transmitter ? Describe a variable-frequency oscillator of good frequency stability.

ANSWER : The first part of the question may be readily summed up as follows. A variable-frequency oscillator has the following advantages over a crystal, or series of crystals :

(1) It is possible to use the present-day technique of calling a station on, or near, its own frequency merely by setting the VFO (uncoupled from the transmitter) to the desired spot while the wanted station is still transmitting ; and then switching on one's own transmitter and replying to the other station on that frequency.

(2) It is possible to avoid interference from the various commercial stations which still make use of the amateur bands by choosing spot frequencies well out of their range.

(3) In the course of a contact with another station, should serious interference of any sort appear, it is easily

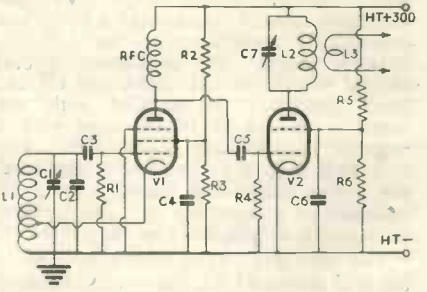


Fig. 2. VFO design suitable for the amateur bands.

TABLE OF VALUES

Fig. 2.

C1	·0001 μF variable
C2	·0003 μF
C4, C6	·01 μF
C3, C5	·0001 μF
C7	·00015 μF variable
R1	100,000 ohms
R2, R5	20,000 ohms
R3, R6	30,000 ohms
R4	50,000 ohms
L1, L2, L3	*See text*
V1	6SK7
V2	6F6 or 6V6

possible to make a small movement in frequency until such interference has been avoided.

(4) In short, a VFO makes available the entire expanse of any of the amateur bands instead of limiting the operator to a number of arbitrary spot-frequencies.

There are, however, undoubtedly some disadvantages. These are as follows :

(1) There is a necessity for constant checking of the frequency employed, especially if it is near the edge of the band, because of the human element in setting up a VFO—quite apart from the possibility of a change in calibration due to a fault.

(2) It is more difficult to obtain complete stability and a perfectly pure and steady CW note with a VFO than it is with a crystal oscillator.

It is possible, however, to build a variable-frequency oscillator of considerable stability, and to calibrate it directly on a dial in such a way that a periodical check against the sub-standard frequency-meter already described is all that is necessary.

There are many kinds of oscillator circuits which will give high stability. Fig. 2 shows one of the simplest—the ordinary electron-coupled oscillator, using a pentode valve for the oscillator itself and a tetrode buffer stage. V1, the oscillator, should operate on a fairly low frequency — preferably in the 1·7 mc amateur band. Its oscillatory circuit should have a low L/C ratio, and C2, the fixed condenser in parallel with the variable, should be of the type with a negative temperature coefficient. The coil itself should be extremely rigid, and the entire oscillatory circuit should be mounted in a screening can and isolated from any heat generated by the valves.

The output of V1 is choke-coupled to the grid circuit of V2, the anode circuit of which may be tuned to the second harmonic of the actual oscillator frequency. Energy is transferred from V2's anode circuit by a coupling coil, which should feed through screened or concentric cable into the frequency-multipliers of the transmitter—or, if control on the same frequency is desired, into a further buffer stage at the transmitter.

A high degree of stability may be obtained from this simple circuit if the following points are watched :

(1) The oscillator should always be switched on some thirty minutes before being put into use for transmission purposes ; or, indeed, may be kept running continuously.

(2) The HT supply should be stabilised by neon voltage-regulator tubes of the type which are now readily obtainable.

(3) There will be found a value of screen voltage for V1 which will make that valve almost unresponsive to slight changes of anode voltage. This voltage may be carefully adjusted by the use of a variable resistance in place of R2 during initial tests.

Whatever the frequency stability obtainable, however, it is still obligatory to carry out frequent checks against a sub-standard ; and the electron-coupled oscillator, as shown, is extremely easy to construct, maintain and operate as compared with some of the more complicated and more stable types of oscillator.

HAVE YOU ANY ?

We are always interested in seeing good photographs of Amateur Radio or SWL interest for possible publication in the *Short Wave Listener*. All that are used are paid for, and can be returned, if required, clean and undamaged. Photographs may be any size, print or negative, but should be clear and sharp. The subjects can be overseas amateur stations, equipment, good QSL cards and in fact anything thought likely to interest other readers.

Marking Dials

Useful Method

Devised by **E. J. HATCH**

THERE are now available a number of cheap but excellent ex-Government slow-motion dials of first-class manufacture, which are generally retailed at prices between 7s. 6d. and 17s. 6d. The maker's price, incidentally, was about £2 5s. !

A major snag, however, is the fact that the dial markings as bought are usually unsuitable. Two dials purchased by the author for use with a Rx were calibrated 100-120 mc.

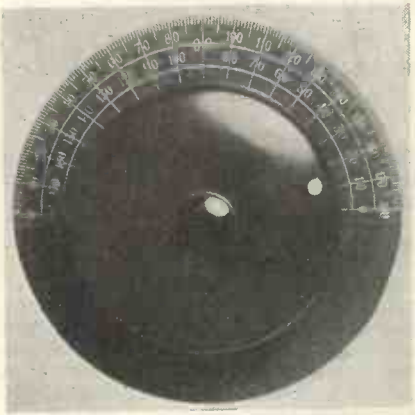
There are several ways of overcoming this disadvantage. One is to obtain from the manufacturers a relatively expensive dial plate marked in degrees, or the dial may be reversed, and re-calibrated on the back.

Photo Scale

The method favoured by the writer, which possesses the twin advantages of cheapness and simplicity, is to use a photographic print of an ordinary 4-in. celluloid protractor. The print, which will consist of white figures (0-180°) on a black background, is cut out, and stuck over the engraving on the dial, and may be lacquered afterwards for protection. Slight enlargement is necessary for a 4½-in. dial, or the dial itself may be turned down to 4 in., when a contact print will suffice.

The finished appearance is very effective and is shown quite clearly in the photograph.

If the dial plate is turned down to 4 in., there is yet another method ; that is, to reverse the dial plate, lacquer with white cellulose or aluminium, and actually



Treatment of a dial with photographed scale, as described in the article.

mount a protractor by means of three nickel-plated 6 BA round-head screws.

For those who are not photographers it should be explained that for the photographic prints, the celluloid protractor is used as a negative ; the necessary printing will be done by any photographic chemist.

Have you heard?

AMATEUR BAND COMMENTARY

by the

DX Scribe

Having to begin with an apology is almost as much of a crime as ending a sentence with a preposition—but an apology is just what I have first to make this month ! That Easter lunch and the 28 mc SLP have brought many curses upon my defenceless head. Sorry, everyone—but when I fixed that SLP for "1100 1300 GMT" I hadn't got used to the idea of BST being with us again. I was thinking of 1100-1300 by *Clock Time*, and that wretched extra hour must have caused many readers to say extremely rude things about me while torn between their lunch and the SLP. Strangely enough, my ears didn't burn—I suppose they're thoroughly toughened by now from wearing 'phones such a lot.

While in an apologetic mood, I had better go on. So your list of Calls Heard doesn't appear this month ? Sorry, again ! But the intake of Calls Heard, and in fact letters, claims and everything else, has again set up a new record. and many lists of Calls Heard have been crowded out.

Let me explain why *yours* is not there. (Lucky ones may skip this.) First, having set an SLP (especially one involving the little inconvenience already mentioned), it is only fair to use all the SLP lists that come in. Agreed ? Then the cuts, to fit the strictly rationed space, must come from the general lists. Who shall we cut ? Well, I work on a different plan each month. Sometimes I use the lists strictly in order of their arrival on my desk. Sometimes, perhaps when feeling a little bleary about the eyes, I select the neatest and clearest ones. Sometimes I throw out those that are swelled by lots of the bread-and-butter stuff. This month, I adopted the principle of giving the new readers as much of a chance as possible ; so that most of the lists dropped overboard have come from the regular supporters. Hard luck for them, but not a real penalty. Many of them have already said that they want to see the most *interesting* array of Calls Heard, and they don't care, personally, whether their own lists appear in it or not. So bear with me, everybody, and we will all continue to do our best to squeeze roughly two quarts into the allotted pint pot.

Events of the Month

Two happenings of the month seem to stand out further than any others. First, UI8AA has come on 'phone, giving several of the 'Phone Only listeners their first taste of Zone 17. Note the 38'ers at the head of the list ! Secondly, C8YR has been pounding in on 14 mc CW for several evenings. This started rather late in the month, and so perhaps is not well known at the time I am writing this ; but I feel sure that he will give several listeners their Zone 23 station. After all, he creates something of a stir on the band ; he has only to send one CQ for the 15 kc or so round his frequency to start humming (or shrieking) with activity. And if you hear fourteen stations calling C8YR, the chances are that you will eventually find him somewhere in the middle of it all.

New Prefixes

For the benefit of those who haven't yet caught up on all the changes, here are some of the recent ones :

AP :	Pakistan
HL :	Korea
MF2 :	Trieste
MC1 :	Civilians in Cyrenaica
MT2 :	Civilians in Tripolitania
MD :	Civilians in Eritrea
MI3 :	Services in Eritrea.

There will doubtless be more variations in the "M" series ; they seem to have great difficulty in settling down. I will try to keep you posted. But it takes some people an awful long time to find these things out—I'm still being asked what "AP" stands for, though the Pakistan stations (all ex-VU's) have been using it for several weeks now.

Super-DX

Under this slightly pretentious heading I propose to deal each month with the stations out of the ordinary run—every month seems to produce its own crop of

G2AMJ, Willerby, East Yorks., is a "28 mc only" operator, and was featured in the "Other Man's Station" series in the April issue of our parent *Short Wave Magazine*. This is a view of the receiving position, with two HRO's used together.

them. Now take this VR9AA, purporting to be in Gilbert and Ellice Islands (he should be using VR1, anyway). Many readers have heard him, including L. Corder (Hadleigh), P. Bolas (Bournville), O. A. Good (Oswestry), G. Braithwaite (Belfast), L. Tombs (Swindon) and others. The most popular time was March 8, 1900 GMT, when he was working SM5OK on 14 mc 'phone. Further details welcome !

Other unusual ones come from L. Collis (Banstead), who logged ZM6AF (14 'phone), HR1CE and VR2AO (28 mc 'phone) and FU8AA (28 mc CW). He also heard AC4YN again. Nice ones from M. E. Bazley (Birmingham) are FO8AA and VK9GW (14 mc CW). M.E.B. would like to know which island VP8AM is on—he's a new one from down there. D. W. Bruce (Eltham), who still holds the hot seat at the top of the 'phone list, offers us a selection of Asiatics, including C4CA, J9ABL, KA1AC, KG6CE, HL1AE, CR9AG—all 14 mc. Still more good ones from him are YN1OC, VS4WL, VR2AP, KG6AW/VK9 and FQ3AT/FE. (See what I mean by Super-DX ?)

D. L. McLean (Yeovil) sends his usual list of MM's but, of course, has heard other things, such as ET3AF, KG6AI, KH6GF, PK2RK, KG6AW/VK9 and C8YR. O. A. Good (Oswestry) has been amazed at the display of KH6, KL7 and VE8 stations, but other items in his log are VP2GE, UH8KAA, ZD4AU, XE3AF, and ZM6AF (the latter several days running on 14 mc 'phone). During March O.A.G. heard 36Z and 103C. E. J. Logan Hertford) does not mention anything individually, but he *has* distinguished himself by scoring 38Z on 'phone only, and takes second place in the 'phone list thereby. HAZ on 'phone looks like a distinct possibility after all !

Query Department

Trying to herd all the queries together under one heading, I have been struck by the fact that those VE8's are causing a lot of headaches. Practically everyone wants a VE8 identified—VE8 ?? on So-and-So Island ; is he in Zone 1 or Zone 2 ? Sorry, chaps, but our Geographical Advice Dept. isn't quite up to it. But all the VE8A and VE8B stations are in the Yukon—that's definite. From VE8M onwards they are in "North-West Territory "—which seems to be a delightfully vague term, and from the map might mean almost anywhere.

So here we go with the puzzles—and look for this month's deliberate mistake ! K. G. Robinson (Leicester) says VE8MB on Cornwallis Island is 94° W., which

ZONES HEARD
LISTING

Listener	1948		Post-war	
	Zones	Countries	Zones	Countries
'PHONE and CW				
N. A. Phelps (London, N.10)	40	162	40	195
D. W. Bruce (Eltham) ..	40	155	40	179
A. Baldwin (London, E.11) ..	40	125	40	156
L. Collis (Banstead)	39	153	40	169
M. E. Bazley (Birmingham) ..	39	142	39	142
W. J. C. Pinnell (Sidcup) ..	39	126	39	153
M.H.Preston(London,S.W.2)	38	147	40	194
C. S. S. Lyon (Liverpool) ..	38	140	40	169
R. S. Stott (Upminster) ..	38	137	38	137
L. N. Goldsbrough (Wirral) ..	38	126	40	168
O. A. Good (Oswestry) ..	38	125	39	176
W. N. Sandeman (Rudyard) ..	38	124	38	129
A. W. G. Boulton (Faringdon)	37	129	40	163
R. A. Hawley (Goostrey) ..	37	112	39	156
G. Curtis (South Harrow) ..	37	110	40	160
T. W. Jones (Birmingham) ..	37	110	38	138
G. P. Watts (Norwich) ..	37	101	39	150
A. H. Onslow (Hove) ..	37	92	39	156
N. S. Beckett (Lowestoft) ..	36	100	38	128
A. Levi (Belfast)	35	103	35	119
D. A. Pullen (Colchester) ..	35	87	37	108
T. Pimblett (Bishops Stortford)	31	78	33	92
A. W. Robertson (Cranford)	30	80	35	110
'PHONE ONLY				
D. W. Bruce (Eltham) ..	38	124	38	150
E. J. Logan (Hertford) ..	38	121	38	159
D. Kendall (Potters Bar) ..	36	103	36	120
L. Collis (Banstead)	35	120	36	140
A. Bannister (Manchester) ..	35	115	35	130
B. Needham (London, W.11)	35	113	36	121
D. L. McLean (Yeovil) ..	35	110	36	137
R. A. Hawley (Goostrey) ..	35	102	37	143
L. N. Goldsbrough (Wirral) ..	35	102	36	133
O. A. Good (Oswestry) ..	35	100	36	122
K. R. Toms (Boreham Wood)	35	92	35	106
N. S. Beckett (Lowestoft) ..	35	92	36	115
C. S. S. Lyon (Liverpool) ..	34	107	35	127
W. N. Sandeman (Rudyard)	34	94	34	100
G. P. Watts (Norwich) ..	34	86	35	129
T. W. W. Dearlove (Frimley Green)	34	85	34	85
T. W. Jones (Birmingham) ..	34	81	36	122
A. H. Onslow (Hove) ..	34	79	37	147
J. M. Graham (Glasgow) ..	33	105	—	—
L. Corder (Hadleigh) ..	32	99	33	108
M. D. Lipscombe (Seaford) ..	32	75	37	119
A. W. Robertson (Cranford)	31	85	35	111
K. G. Robinson (Leicester) ..	31	69	34	106
B. Cage (Ipswich)	31	67	35	111
G. Hare (Leadenham) ..	30	83	35	121
E. W. B. Aldworth (Ashford)	30	81	35	113
L. E. Fisher (Chessington) ..	30	79	—	—
D. F. Willies (Holt)	30	77	32	107
W. B. Harrald (London, S.E.21)	30	73	34	98
D. W. E. Powell (Wilton) ..	30	62	32	83

makes him Zone 2. W. B. Harrald (London, S.E.21) queries VE8PA—"Eastern Arctic." T. Pimblett (Bishops Stortford) brings up VE8MI, and believes he is Zone 1. A. Bannister (Manchester) queries no less than 24 of them, of whom eight are definitely in the Yukon.

O. A. Good quotes a rumour he has heard (and so have I) to the effect that USØKGA, when he *was* signing US and not UA, was in Zone 23. And now this VQ1RX ! Lots of readers have logged him, and I thought it was a "garble" of EQ1RX, who has been very active on 'phone, right at the LF end of 28 mc. But here comes D. F. Willies (Holt), quoting "Victor Queen 1 RX" and also "Easy Queen 1 RX." Seems as though our friend got mixed with his prefixes — or is he a phoney, anyway? T. W. Jones (Birmingham) throws PX1V, CZ2AC and OE8Q into the pile.

N. S. Beckett (Lowestoft) would like to know whether SP1OW (14 mc CW) is genuine, and wants the QTH of VE8OO. M. Harrison (Goring) has heard FT2RN, and wonders. . . . He would like to hear from other listeners down that way; he's rather lonely at 53 Goring Way. W. J. C. Pinnell (Sidcup) quotes the MC1 and MT2 prefixed already mentioned, and queries CZ2AC and XX2M ! And he asks is VS9ET (Oman) counted as a separate country? Yes—he is; and in the official list, at that. And finally N. Druce (Shirley) asks whether Iwojima counts as a separate one, and how the Marianas stand? Well, Iwojima is in the Volcano of Borin Islands, and counts as a country.

The Marianas consist of Guam, Saipan and Tinian, all using KG6 and all counting as *one* country. N.D. raises a query of a different sort by asking "What *does* constitute DX on 28 mc, apart from receiving a station in the wrong part of the world at the wrong time of day?" As he says, you have to disregard such commonplaces as the ZS's, the various VP's in the West Indies and most of the South American gang nowadays. Sad thing, but DX *is* getting too easy now!

W3OR, Essington, Penna., has a very fine outfit, and is active mainly on the 28 mc band. (*Acknowledgment "CQ"*)

The Competitive Spirit

From the keen support for our DX Listings, there's no doubt that competition is popular. And here is N. A. Phelps (London, N.10), who has just jumped to the top of the "mixed" list again, with an idea. He suggests giving a month's notice to listeners, in which they are to make up an 0-V-0 receiver with their own hands; then a week-end contest on 14 mc is to be thrown at them! As he says, "Genuine one-valve efforts—not disguised 1-V-0's or 0-V-1's." We will all chew this one over; at the moment it sounds a good idea. N.A.P. sent a colossal list of 14 mc Calls Heard, but owing to tightness of space we have only been able to squeeze in the 'Phone part of it, which, however, is impressive enough.

And before we leave this subject of contests, I want to ask for a plebiscite. Not one of those door-to-door enquiries, but just a vote! Do we keep on with these Zones, or don't we? The reason for this query is that they are becoming a nuisance, what with all the VE queries, the various USSR districts and the other borderline cases. Here is my suggested alternative: Imagine a list with four columns, containing Countries Heard on 7 mc, 14 mc, 28 mc and Total. One month the order of listing would be decided by the total figure, next month on 28 mc, next on 14 and next on 7 mc. (We might even add 3·5 mc!) Of course, we would keep 'Phone and CW in one list, and 'Phone Only in another. The point is that country lists are pretty well established now, and it has become much easier to count by countries.

Let me know your views, please; this feature isn't run on totalitarian lines, and if you want the Zones, you shall keep them. But, candidly, I would be glad to drop them. As an arbitrary division of the world they were very good *before* the war, but nowadays they seem to mean very little and they have become untidy. So go ahead and fight it out, please, and the majority vote will win, as usual!

General DX News

B. Needham (London, W.11) queries various prefixes, already settled for him. He has heard W2WMV/C9, PK2RK, HH2CW, HI1WF, W2EJ/PK3 and lots of other nice-sounding ones. The best from W. N. Sandemän (Rudyard), who heard twenty new countries during the month, were VR2AY, KH6GS and VQ5DES. While on the subject of KH6GS, C. S. S. Lyon (Liverpool) points out that KH6GF and KH6GS are *both* on, and he thinks that N. A. S. Fitch's remarks last month

DX QTH'S

AP2D	J. K. McDowall (GM3AR), 15 Ruthven Avenue, Giffnock, Renfrewshire.
C7CY, C7TS, C7TY	T. M. Yen, Box 12, Taiyuan, Shansi, China.
CR9AM	Box 504, Macao.
EK1GW	c/o Mackay, Radio Tangier.
J4AAK/G4LV	Cpl. B. M. Selby, c/o Well Hill, Hemingford Road, North Cheam, Surrey.
J9ACD	APO 331, c/o Postmaster, San Francisco, Calif.
KG6AW/VK9	R. Seaman, 2537 Hollins Street, Baltimore, Md., U.S.A.
KG6CJ	APO 264, c/o Postmaster, San Francisco, Calif.
KS4AI	R. W. Bird, Swan Island, West Indies, *via* Tampa, Fla.
OA4Q	Box 538, Lima, Peru.
OQ5AS	Box 9, Usumbura, Urundi, Belgian Congo.
ST2FU	BOAC, Wadi Halfa, Anglo-Egyptian Sudan.
TG9AD	Box 299, Guatemala City.
VK9GW	c/o O.V.C., Port Moresby, New Guinea.
VP2AG	APO 855, c/o Postmaster, Miami, Fla.
VP2KS	St. Kitts, Leeward Islands, B.W.I.
VP7NG	Box 2003. Arlington, Va., U.S.A. (*Stn. in Bahamas.*)
VR4AA	J. D. Davies, Honiara, Brit. Solomon Islands.
VS7LA	c/o RAF Koggala, Ceylon.
WØSQS/Iwojima	APO 86, c/o Postmaster, San Francisco, Calif.
W1DTS/CT2	Bill Gibbs, 24 Fletcher Avenue, Lexington. Mass.
ZB1AO	Capt. Gatehouse, HQ Royal Artillery, Tigne, Malta.
ZD8B	A. Boa, Cables and Wireless, Ltd., Ascenscion Island.
ZP8AC	W. Chippendale, Cas. de Correo 404, Asuncion, Paraguay.
ZS1GV	A. J. Marsh, Port Radio Office, HM Dockyard, Simonstown, South Africa.
ZS6NU	Aeradio Palapye, Palapye Road, Bechuanaland.

about misreading calls were rather cruel! (But look at those 28 mc SLP lists this month and draw your own conclusions—what about that CX?) C.S.S.L. has been performing wonders on 3·5 mc; on that band he has logged FM8AD, HC1JB, KV4AA, KZ5AX, TG9JK, KZ5OJ, XF1A, VP6CDI and many others. That little lot strikes me as an amazing display from round about Central America. 14 and 28 mc have been yielding good results, too, so that C.S.S.L.'s 3·5 activity must represent considerable loss of sleep.

A. W. Robertson (Cranford) mentions "TA4ZQ," who keeps a regular schedule with "FR7TH"—both rather suspicious, to put it mildly. They are heard about 2015 every night on 14 mc. D. Kendall (Potters Bar) says his best DX of the month was YS3PL, M1B, C1CH, ZM6AF, VE8MI and KL7FQ (all 14 mc 'phone)—*plus* an equally good collection on 28 mc. He mentions the sudden burst of activity on 'phone from Russian stations, including UI8AA, on 28 mc.

D. M. Welsh (Staines) started his career as a SWL on February 1 this year—and has logged 26Z and 64C already! He rarely leaves 14 mc and says the most consistent signals have been OX3BE, YV5AY and MD1H. N. A. S. Fitch (London, E.10) brings up a Zone query, the answer to which is that Okinawa (J9) is in Zone 25; Formosa (J9) in Zone 24; and Iwojima (J9) in Zone 27. (Didn't we say the Zones were untidy?) N.A.S.F. has added to his total with J2AMA, PK2RK and KG6AW/VK9; but lots more DX, mainly from Asia and Oceania, has come his way. He put in a little time on 28 mc in the mornings and has found out "how some of these guys do it."

L. N. Goldsbrough (Wirral) took a very poor view of the Easter lunch episode, but found the SLP very interesting—or as much of it as he could cover. He comments on the occasional times when African 'phones have poured in without any European QRM, in the evenings on 14 mc. In one of these bursts he heard ET3AD, ET3AF and ZS3F.

From R. S. Stott (Upminster) comes a short list of the month's best, including ZM6AF, W2WMV/C9, CR9AG, AR8BC, VP8AD and VP8AM. T. W. W. Dearlove (Frimley Green) reminds us that the Hallicrafters' Expedition station has moved over from Kenya to Tanganyika, changing its call from VQ4EHG to VQ3HGE—they are going through to VQ5 in due course. R. A. Hawley (Goostrey) brings up the subject of VQ1RX, which we have already mentioned. What he says makes it pretty clear that VQ1RX and EQ1RX *were* the same station.

E. A. Bovey (Dartmouth) found VK7AZ the outstanding signal of the month; he was on 14 mc with 10 watts to a rotary beam, and was R5, S7. E.A.B. also unearthed another Syrian—AR8BM in

Beirut. M. Forrest (Salisbury), listening on 28 mc, found that VK5AE was about the only Australian 'phone to come through. He is, of course, in North Australia (Zone 29), which doesn't exactly explain it, but helps a little! M.F. queries MI3ZJ—he is ex-MI6ZJ in Eritrea.

J. Read (Norwich) tells us that UAØKFA is definitely at Khabarovsk and in Zone 19, while UAØPA is in Zone 18. A doubtful one from J.R. is "FA9IR," giving his QTH as Madagascar. K. Parvin (London, W.1), who gained an honourable mention and a consolation prize in the recent Eddystone "640" Competition, queries all the MT's and MF's, but we think that one is cleared up. Regarding 3·5 mc, he tells us that ZK1, NY4, PK6, VP4, ZS and HE have all been heard or worked by Americans during the past month or two, and that J2AIA hopes to be on the band with 1 kW soon. Well, good luck to him and his kilowatt!

H. M. Graham (Harefield), reporting for the first time, asks how many others have heard a station calling itself RCA, with no prefix. RCA claims to be in Stockholm. We have already heard from A. Bannister (Manchester) on the subject of VE's; he now joins issue with L. N. Goldsbrough, who recently remarked that he couldn't listen in mid-week to "the more exotic countries." A.B. thinks these "exotic" countries are more in evidence at week-ends, anyway; his own listening is mostly from 11.30 p.m. onwards, and at odd times during the day, from Monday to Friday. He comments on the terriffic signals from HI8WF (14 mc 'phone at midnight) and also from PK2RK on 28300.

L. M. Singletary (Honiton) found EL3A at S9 *plus* on 14 mc 'phone at 1500, and brands him as a phoney; but there *is* an EL3A. L.M.S. also remarks that one frequently hears transmissions on the wrong bands—by which he means that someone calling "CQ 14 mc" is heard on 7 mc, and so on. Not cases of harmonics, but the reverse. Where very strong signals are concerned, of course, it is sometimes a question of the BFO's second harmonic doing its stuff; sometimes, again, it is just a slip of the tongue on the part of the operator.

Three nice ones from D. A. Pullen (Colchester) on 28 mc were ZP8AC, AR8AB and FU8AA. And he mentions a freak evening on March 24, when W6's were roaring in as late as 2045 GMT.

I. E. Alfrey (Chiswick) stayed on 14 mc and was rewarded with VK4VD, C7CY,

Then he picks up the 'addick, and says, "I'll give that S9 plus" or suthinck . .

THE AMATEUR BANDS

Following are the bands at present open for British amateur operation :

1715-2000 *kc*	10 *watts (A) and (B)*
3500-3635 *kc* 3685-3800 *kc*	25 *watts (A)*, 150 *watts (B)*
7000-7300 *kc*	25 *watts (A)*, 150 *watts (B)*
14000-14400 *kc*	25 *watts (A)*, 150 *watts (B)*
*28000-30000 *kc*	25 *watts (A)*, 150 *watts (B)*
*58500-60000 *kc*	25 *watts (A) and (B)*
460·5 *mc*	5 *watts (for radio control of models and only by special application)*
*2300-2450 *mc*	25 *watts (A) and (B).* *FM permitted.

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

J2HYS, TG9JK, VP3AN, VP9F and many other nice but less rare ones.

Fresh Blood

It is good to receive so many letters beginning "This is the first time I have written to you. . . . " There seems to be a fresh wave of enthusiasm for our hobby, and many of these new correspondents are sorry they didn't discover it years ago ! Letters of this kind come from L. C. Booth (Eastbourne), A. J. Browning (Southwick), P. Bagshaw (Sheffield) G. H. M. Yule (Neasden), L. W. Beckett (Uckfield), D. W. E. Powell (Wilton), G. Martin (Cheltenham), P. E. Woolmer (Grantham), and P. W. Bowles (Hove). Many of these readers sent Calls Heard lists, and allude to individual pieces of DX which have been mentioned in the foregoing paragraphs.

As a matter of fact it is becoming something of a problem to squeeze into this limited space all the interesting information that does come from readers. Roughly 60 letters have been dealt with this time ! The only thing I can do is to ask you to leave out references to what we all know is "routine DX" and to concentrate on really hot items. And if you care to separate out the bands with a bold heading, that will also make things much easier for your Scribe.

Calls Heard are going well now—except that there are always too many of them ! However, we'll go on trying to give everyone a look in. I suggest that you all keep your lists shorter by leaving out the routine stuff, and, in particular, that you send lists of "specialised" interest—such as one covering Central Americans only, or Asiatics only.

This time our main SLP will be for 14 mc—so those who send SLP lists are debarred from putting in 14 mc *General* lists. At grave risk of life and limb, I have included an early morning SLP on 3·5 mc ; try it out and see if it is not worth while !

Set Listening Periods, April

April 25, 1400-1600 GMT: 14 mc 'Phone and CW.

April 24 and 25, 0600-0700 GMT : 3·5 mc 'Phone and CW.

Logs for these periods, all Calls Heard lists, news in general—and that vote on "Zones or no Zones"—all wanted, please, by first post on May 4. Address them, as usual, to "DX Scribe," *Short Wave Listener*, 49 Victoria Street, S.W.1. April and May should be outstanding months. Go to it ! Good listening and good luck.

POINT ON REPORTS

Arising from transmitting operators' comments on "Pse QSL," we find that it is apparently not the practice of many SWL's to give the call-sign of the station heard being worked or called by the operator to whom they are QSL'ing. This is bad practice, and apart from making a check difficult for many overseas transmitters who do not have to log every signal they radiate, may cast some doubt on the veracity of the report itself. So always note not only the time, but also whether the station was CQ'ing or calling another station, with the latter's call-sign.

CALLS HEARD

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

SET LISTENING PERIODS

28 mc

Mar. 28, 1100-1300 GMT

L. W. Beckett, Caxton House, Uckfield, Sussex.

'*PHONE:* G5LK, GM3GC, HZ1AB, I1KW, LU3DP, 3BH, MB3MB, MD5AF, PY1AJ, SV1GY, UA3CA, VQ5JEW, W6GW/MM, ZB1AH, 1AK, 1AC, 1BC. (*Rx. : V55R and Expander.*)

M. D. Lipscombe, 83 Stafford Road, Seaford.

'*PHONE:* CX4CS, D4AZB, I1KY, J2AMA, LU4BC, 4CJ, 3BX, PY5AQ, UA3EA, VS7AC, W6PJN/KG6, ZB1AC, 1AH, 1AK. (*Receiver : 3v Converter into R1155.*)

B. Needham, 31 Bomore Road, Kensington, London, W.11.

PHONE: C1BC, CN8AB, HL1AR, J2AMA, 2DND, 9ACA, KG6AF, KV4AD, LU3DH, MD3MB, 5AW, 5OV, MI3ZJ, PY1AJ, 5AQ, ST2CH, UA3CA, 4ECA, VK2NY, 3KX, VQ4NSH, VS7AC, VU2BG, W6PJN/KG6, 2B1AC, 1AH, 1AK, ZD2KC, ZE2JK. (*Rx : R208.*)

L. N. Goldsbrough, 29 Brook Road, Sheffield.

'*PHONE:* CX4CS, FA3JY, HL1AJ, 1AR, HZ1AB, J2AMA, KG6AAF, 6CP, KP4CQ, KV4AD, MI3ZJ, PK2RK, PV5AQ, VK5AE, GHL, VS7JB, 7PW, VU2BG, W5MPV/MM, WAMCI/KG6, W6PJN/KG6, YV4AM.

CW: AP5B, LU5BL, UH8AA, VK4AP, 6FJ, 6PJ(6PW?). (*Rx : Mod. 25 converter into 1155.*)

W. N. Sandeman, Rock House, Rudyard, Nr. Leek, Staffs.

'*PHONE:* CX4CS, FA3JY, HL1AR, HZ1AB, I1KW, J2AMA, KG6AAF, LU3DH, MD3MB, MI3ZJ, PK2RK, PY1JH, ST2KP, UA1AA, 3CA, 3DA, VK5AE, 6HL, VQ4CJG, 4KTH, VS7AC, VU2BG, 2MB, W1PPH/MM, 4MCI/KG6, 6PJN/KG6, YR5W, ZB1AC, 1AH, 1AK, 2A, ZD2KC, ZS1P, 1T, 6LF.

CW: PY2OE, UA1AC, 3CA, 3DS, UB5AB, 5KAA, ZS1EO, 2DY. (*Rx : Hallicrafters S-36.*)

D. F. Willies, The Wilderness, Grove Road, Holt, Norfolk.

'*PHONE:* EQ1RX, FA8JY, HZ AB, KG6AAF, LU3DH, MI 5AF, PY5AQ, PZ1A, ST2AP, SVØAB, VK5AE, 6HL, VQ4ASC, 4CJG, 4KTH, 5DES, 5JCW, VS7AC, 7JB, 7PW, VU2BG, 2MB, ZB1AC, ZD2KC, ZE2JA, ZS6LW. (*Rx : R103/A with Converter.*)

G. Dunn, 44 Barnsbury Road, Liverpool, 4.

'*PHONE:* CX4CS, FA3JY, HZ1AB, KG6AAF, KV4AD, LU4BC, 9BG, PK2RK, PY5AQ, PZ1A, VK6HL, VS7AC, 7PW, VU2BG, 2MB, W6MC1/KG6, W6PJN/KG6, YV4AL, ZB1AC, 2A, ZD2KC. (*Rx: 5v Superhet.*)

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

'*PHONE:* CX4CS, HK3AB, HL1AR, HZ1AB, J2AMA, KG6AAF, KP4CY, KV4AD, LU2DM, 3DH, MD3MB, 5AF, MI3ZJ, OA4AM, OH5NM, PY1AJ, 5AQ, PZ1A, ST2CH, 2KP, SV1GY, UA1AA, 3AW, 3CA, VK2OT, 5AE, 6MU, 6PJ, VQ4ASC, 5JTW, VU2BG, W4MCI/KG6, 6PJN/KG6, YV4AM, ZB1AH, 1AK, ZC6JP, ZD2KC, ZL3CX, 4BN, ZS1P, 1T, 2LW. (*Rx: RME 69.*)

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

'*PHONE:* CX4CF, HZ1AB, J2AMA, LU3DH, MI3ZJ, PK2RK, SVØAB, TG9RK, UA3EA, VS7AC, VU2BG, YV4AM, ZB1AC, 1AH. (*Rx: 0-V-1.*)

P. Bagshaw, 89 Wales Road, Kiveton Park, Nr. Sheffield.

'*PHONE:* CX4CS, FA3JY, HZ1AB, KV4AD, LU3DH, MI3ZJ, PY5AQ, ST2KP, UA3CA, 3DA, VQ4KTH, VU2BG, W3NCV/MM, YV4AM, ZB1AC, 1AH, 1AK, 2A. (*Rx:* SX 24.)

D. Kendall, 40 Aberdale Gardens, Potters Bar, Middlesex.

'*PHONE:* CX4CS, EQ1RX, HL1AR, HZ1AB, I1KW, J2AMA, KG6AW/VK9, KP4AZ, KV4AD, LU3DH, MD3MB, MD5AK, MI3ZJ, PK2RK, PZ1RM, ST2CH, SV1RX, UA1AA, 3CA, 3DA, VK5AE, 6HL, 6RU, VS7AC, 7PW, VU2BG, 2MB, W1MRT/KP4, W4CCR, 4HB, 4JEP, 6PJN/KG6, YR5W, YV4AM, ZB1AC, 1AH, 1AK, ZD2KC, ZL4BN, ZS1P. (*Rx:* 14 *valve, Home-built Superhet.*)

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

'*PHONE:* HL1AR, I1KW, LU3DH, MI3ZJ, PY1AJ, UA3CA, 3EA, VK5AE, 6HL, VS7AC, 7PS, VU2BG, W4MCI/KG6, ZB1AH, 1AK, ZD2KC, ZL1AF.

CW: AP5B, UA3BE, UB5AB, UH8AA, ZS2DX, (*Receiver: Hallicrafters S.20 and Converter.*)

P. W. Bowles, 47 Braemore Road, Hove 3, Sussex.

'*PHONE:* HZ1AB, J2AMA, MI3ZJ, UA1AA, 3CA, 3TN, VU2BG, ZB1AC, 1AH, 1AK, ZD2KC. (*Rx: Eddystone 640.*)

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

'*PHONE:* C4AP, CX4CS, HZ1AB, J2AMA, 2BNB, KG6AAF, W4MC1/KG6, 6PJN/KG6 (Saipan), KV4AD, LU3DH, MD5AF, PY1AJ, 5AQ, UA3DA, VK6HL, VQ4ASC, VS7AC, YV4AM, ZB1AC, 1AH, ZE2JK, ZS6LF.

CW: AP4A, FQ3AT/FE, LU5BM, PY1GJ, UA1AC, W8QOH/MM. (*Rx : 0-V-2.*)

D. H. G. Tyrrell-Lewis, Fernlea Avenue, Ferndown, Dorset.

'*PHONE:* CX4CA, HZ1AB, I1KW, J2AMA, LU3DH, MI3ZJ, ST2KC, UA3CA, VQ5DES, W4JEP, ZB1AC, 1AH, 1AK, ZD2KC. (*Rx :* EF50 *Converter into SAFAR AR18.*)

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

'*PHONE:* CX4CX, FA3JY, HZ1AB, KG6AAF, KP4ES, KV4AD, LU3DH, MI3ZJ, PK2RK, PY5AQ, UA3CA, VE1KY, VK6HL, VP2GB, VQ4KTH, VQ5DES, VS7AC, 7PW, VU2GB, 2MB, W4CCR, 4JEP, 4MCA, 6GW/MM, YV4AN, ZB1AC, ZB2A. (*Battery 1-V-1.*)

D. J. C. Huxtable, Haslemere, Hillsborough Road, Ilfracombe, Devon

'*PHONE:* CX4CS, GW2FGG, W2RFV, 4JEP, YV4AN, ZB1AC. (*Rx : 1-V-1.*)

C. D. Kadwill, 12 Riverdale Road, Bexley, Kent.

'*PHONE:* CX4CS, HZ1AB, I1KW, J2AZ, KP4ES, LU3BH, MI3ZJ, PY5AQ, UA3CA, VK5OE,

VS7AB, VU2BG, 2MB, W3NCV/MM, 4CMI, 4JET, 6GW/MM, YV4AM, ZB1AC, 1AH, 1AK, ZD2KC. (*Rx : Eddystone* 640.)

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

'*PHONE:* FA3JY, G3ANH, 5CP, KP4AG, AS, KV4AD, LU3DH, PY5AQ, ST2KP, UA3CA, 3DA, VK6HL, VS7AC, 7JB, VU2BG, 2MB, W4JEP, W6PJN// KG6, YR5W, ZB1AC, 1AH, ZB2A, ZS 1P. (*Receiver : Marconi CR*100.)

E. Nottingham, Lyndhurst, Upper Poppleton, York.

'*PHONE:* CX4CS, FA3JY, HL1AR, HZ1AB, KG6AAF, 6AF, KP4AC, 4ES, KV4AD, MI3ZJ, PK2RK, ST2KP, UA3CA, VK2OT, 5AE, 6HL, VQ1RX, 4ASC, 4KTH, 5DES, Y7YAC, 7JV, 7PW, VU2BG, W1PPH/MM, 4MCI/KG6, YV4AM, ZB1AC, 1AK, 2A. (*Rx: Hallicrafters Skyrider* 5-10.)

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

'*PHONE:* CN8AB, HL1AR, J2AMA, MI3ZJ, PY1AJ, ST2CH, SV1GY, UA1AA, 3CA, VS7AC, VU2BG, W6PJN/KG6. (*Receiver:* 1-*V*-1.)

C. Watts, Hylton House, Liss, Hants.

'*PHONE:* CN8AB, I1KW, J2AMA, MB3IE, MD3MB, MI6ZJ, PY1AB, SV1GY, UA3CA, VK5AE, ZB1AH, 1AK, ZL4BN. (*Rx: Ex Army R.*208.)

A. R. Walder, 22 Lincoln Road, N. Harrow, Middlesex.

'*PHONE:* CX4CS, HZ1AB, J2AMA, KV4AD, LU4BC, MD5AK, MI3JZ, PY2CD, 5AQ, UA3CA, VK5AE, 6BK, VS7PW, VU2BG, 2MB, YR5W, YV4AM, ZB1AK, ZP8AC.

CW: PZ1M, UA3BE, 6IA, UB5KAA. (*Rx: HRO.*)

R. A. Hawley, Goostrey, Cheshire.

'*PHONE:* CX4CF, FA3JY, HC1KP, HL1AJ, 1AR, HZ1AB, KG6AF, 6AAF, KV4AD, KZ5BN, MD5AF, MI3ZJ, UA1AA, 3CA, VK5AE, 6HL, VQ4CJG, VS7AC, 7JP, 7PW, VU2BG, W6PJN/KG6 YR5W, YV4AM, ZB1AC, ZB2A.

CW: FA9IO, UA1AC, 3CA, 3DS, UB5KAA, VK5OU, 6PJ, YR5J. (*Receiver: Eddystone* 504.)

1·7 mc

Mar. 27, 2100-2300 GMT

E. Nottingham, Lyndhurst, Upper Poppleton, York.

'*PHONE:* G2AB, 2DPQ, 2DWM, 2FLK, 2FXK, 2KS, 2NV, 2OO/A, 3ASD, 3WQ, 4OK, 5SK, 6AG, 6KK, 6TF, 81C, 8SM, GD5CZ, GW4FW.

D. J. C. Huxtable, Haslemere, Hillsborough Road, Ilfracombe, Devon.

'*PHONE:* G2FXK, 2HOF, 2NV, 2SC, 4OK, 5SK, 6JB, 8SM, GW3ALE, 4FW.

D. M. Welsh, Broomelodge, Knowle Green, Staines, Middx.

'*PHONE:* G2AB, 2AJU, 2AYC, 2CZH, 2DWM, 2FXK, 2NV, 3AQM, 3BGU, 3CJ/A, 3PP, 4CG, 4GA, 4OK, 5FK, 5LF, 5MM, 8SM, GC5BZ.

P. Bagshaw, 89 Wales Road, Kiveton Park, Nr. Sheffield.

'*PHONE:* G2BOJ, 2CBS, 2FLK, 2FXK, 2OOV, 3AQX, 3AST, 3BBD, 3WQ, 4OK, 5SK, 8IC.

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

CW: G2FMN, 3ACP, 3AKZ, 3YB, 5OF, 8WB, OZ9G.

W. N. Sandeman, Rock House, Rudyard, Nr. Leek, Staffs.

'*PHONE:* G2DPQ, 2DWM, 2FLK, 2FXK, 2HFP, 2HOS, 2NV, 200/A, 3ANM, 3ASD, 3WQ, 5MM, 5SK, 6AB, 8SN.

CW: G2BVU, 2CJO, 2FMN, 3ADJ, 3AEF, 3AZT, 3BOF, 3CUI, 3CXU, 3DL, 5AQ, 6KR, 8PR, 8RB.

L. M. Singletary, Honiton, Devon.

CW: G2BVU, 2CJO, 2FMN, 2SC, 2ZZ, 3ADJ, 3AJD/A, 3ATU, 3BAA, 3CUI, 6CN, 6VJ, 8PR.

'*PHONE:* G2FXK, 5SK, GW4FW.

P. Hunter, 71 Rutland Drive, Morden, Surrey.

G2AB, 2AYC, 2CZH, 2FLK, 2FXK, 2NV, 3ACP, 3AZT, 3BGU, 3DF, 4CG, 4IC, 4OK, 5LF, 6OA, 8SM, GW4FW.

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

'*PHONE:* G2AB, 2AYC, 2DWM, 2FLK, 2FXK, 2HOF, 3AC, 3AQM, 4GA, 4GM, 5CZ, 5LF, 5NN, 5XA, 6QT, 8SM.

CW: G2FMN, 3ADJ, 3CBU, 3CM, 3CUI, 3CX, 3CXU, 3DUF, 3KP.

GENERAL

14 mc

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

'*PHONE:* AR8BC, C4HF, 7TY, ET3AE, 3AF, HH2X, J5LQK, 9ABL, 9ABN, 9APG, KA1AD, 1AF, 1AI, KG6AI, 6CZ, KH6AW, 6GF, 6GS, 6IJ, KL7FQ, 7GS, 7IT, 7UM, NY4ZQ, OA4AC, 4AI, 4AT, 4BW, 4M, OQ5CF, TG9RV, TI2EV, 5NA, VE8AW, 8BC, 8MB, 8MI, VK2AGJ, 2AGU, 2AGW, 2AML, 2BK, 2BM, 2BT, 2EQ, 2NO, 2PE, 2PL, 2VP, 3BH, 3HF, 3HO, 3IG, 3JE, 3KU, 3KX, 3LN, 3SB, 3TA, 3XD, 3YH, 4DO, 4GE, 4KH, 4MW, 4VD, 5KM, 6DD, 7AJ, 7TR VP2AD, 2AG, 2GB, 2GE, 2KS, 3LF, 6FO, 6MO, VQ2JN, 2WR, 4ASC, 4ERR, 4HGB, 4KTH, 4NSH, VR9AA, VS7PS, VU2AF, 2LS, XE1AC, 2C, 3AF, ZD3B, 4AU, ZE2JV, ZL2BT, 2GX, 2LB, 3BV, 3CV, 3ID, 4AK, 4FO, 4GK, ZM6AF, ZS1BF, 1CN, 1DH, 1DM, 1DU, 1ED, 1T, 2X, 3F, 4D, 4H, 6LN. (*Rx : Mod. R*1155.)

T. W. W. Dearlove, 138 Coleford Bridge Road, Frimley Green, Surrey.

'*PHONE:* AR8BC, C7PY, CXIVD, 2AC, 6AH, ET3AF, HK1FQ, KH6GF, 6GS, KL7FQ, LA2UA/PA, LU1JC, 6AJ, MT2E, OA4AI, 4M, OX3BE, PY1IK, 2JU, 4RR, 7VB, UA1BB, 1KBB, 3AW, 3DA, UB5KAG, VK2CI, 2QP, 2TC, US, 3BZ, 3IT, 3JE, 3KU, 3KX, 3LN, 3TS, 3YH, 4DO, 4KO, 4WF, 6DD, VU2EY, XE1AC, 2MA, YVSAY, 8AG, ZL2BT, 4FO, ZS4D. (*Rx: CR*100.)

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

'*PHONE:* C1CH, 7TY, ET3AE, HH2XR, J2AAR, 2AHA, KA1AI, KG6AI, KH6GF, 6GS, 6IJ, KL7, CB, 7FQ, 7IT, OQ5BR, 5CA, ST2RN, 2SU, TG9, JK, UI8BA, VE8MB, 8NB, 8PA, VK6RU, VP4TT, 9F, VQ2JC, 4ERR, 4HGB, 4NSH, VS2BU, 7PS, XZ2AG, 2MG, YN1LB, ZS1CN, 6EU.

CW: C2KT, CR4SS, KH6IJ, 6MI, KL7UM, UA9CC, ØKAA, UO5CA, VO6AB, ZS6CD, 6LG, 6OK, 6QX. (*Receiver: 5-Valve Superhet.*)

D. W. E. Powell, Loughrigg, Shaftesbury Road, Wilton, Wilts.

PHONE: AR8BC, CE5DH, CX1VD, 2AD, ET3AE, 3AF, HK1EG, KH6CM, 6CT, 6GF, 6GS, KL7FG, OA4M, ST2CH, 2RN, TG9AD, VE8MI, VP2GB, 9B, VQ2JC, VQ4HGB, 4KTH, 4NSH, VS7PS, VU2EY, XE1AC, YV1AD, 5AY, ZD3B, ZL2BT 3BV. (*Rx:* 0-*V*-1.)

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

'*PHONE:* C7TY, CE3BF, 3DA, CT2AB, CX2AX, 2BK, 2BG, 2CO, HC2KL, HK1AB, 1BC, 1DZ, 2DO, 3DQ, 3EO, HR1CE, KA1AF, KH6AW, 6AC, 6BM, 6DF, 6EJ, 6GS, LU1JC, 2BA, 2BB, 2BL, 2DM, 2DP, 3AT, 3CO, 4BW, 4DQ, 4KC, 4XA, 5DH, 5KA, 5VC, 6AC, 6AJ, 7AA, 7CO, 7ER, 7HH, 8AE, 8EU, OA4H, 4M, OQ5CA, PY1AGN, 1AL, 1DC, 1FH, 2AC, 2AK, 2CK, 4RR, 6AW, 6JO, 7AD, 7WH, TG9AD, 9RV, VE8MI, 8MU, 8NB, VK2ADW, 2ALL, 2BC, 2BK, 2CX, 2EQ, 3IC, 2NG,

CALLS HEARD—(*contd.*)

2NI, 2NY, 2PU, 3ASV, 3BT, 3BZ, 3IG, 3JT, 3KM, 3RP, 3TS, 3UP, 3XD, 3YH, 4CS, 4JU, 4KH, 4KO, 4MW, 4VJ, 4WF, 5KL, 5YQ, VP2GE, 5AL, 5AS, 6CDI, 9F, VS1BG, XE1AC, 1BC, 1CQ, 1DV, 1HB, 1SU, 2IY, YN1LMB, YS3PL, ZL2EX, 2BI, ZM6AF. (*Rx:* 1-*V*-2.)

A. J. Browning, 49 Old Shoreham Road, Southwick, Sussex.

'*PHONE:* CN8BA, ET3AE, FA3GZ, HK1DZ, LU1JC, 6AJ, MD1H, 5AK, OX3GE, PY2CK, SV1GY, 1RX, UA3KE, VK3IG, 3JT, VO2AV, 6X, VS7PS, XAFG, MC, YV3AL, ZB2A. (*Receiver: Hambander.*)

D. W. E. Powell, Loughrigg, Shaftesbury Road, Wilton, Wilts.

'*PHONE:* CN8BA, CO2OM, HR1MB, HZ1AB, J2AMA, KP4AZ, 4C1, 4ES, 4FJ, MD3MB, ST2CH, VK6HL, VQ3HGE, 4ERR, VU2BG. (*Rx:* 0-*V*-1.)

F. W. Hardstone, 43 Shubbery Road, Streatham, London, S.W.16.

'*PHONE:* C4AP, CX4CS, HZ1AB, J2AMA, KV4AD, LU3DH, 4BC, 4JN, MI3ZJ, PY5AQ, UA1AA, 3CA, 3DA, VK5AE, 5AI, VQ4KCH, VS7AC, VU2BG, 2MB, YV4M, YR5W, ZE2JK, ZB1AH, ZP8AC, ZS6LF. (*Rx: Hallicrafters S40A.*)

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

CN8AU, 8AW, 8BA, 8BV, 8MI, 8MZ, EA9AI, FA3FB, 3GZ, 8WH, HK1CZ, 1SQ, LU2BB, 4CN, 5HG, 6AJ, OA4M, OX3GE, 3GF, PY1AY, SV1GY, UA3DA, VK2AGU, 2NG, 3BG, 3IG, 3LN, 3NO, 3TA, 3UP, 4KH, 4MW, VO2AB, 2AT, 6AD, 6X, VP6CDI, XE1AC, 2IY, YV5AY, ZB2A, ZL2BT, 3CV, 4FO. (*Rx:* 1-*V*-1 *mains.*)

D. M. Welsh, Broome Lodge, Knowle Green, Staines, Middx.

'*PHONE:* C4AP, CE2AX, 2BQ, CN8BA, 8BV, CO2DQ, 2JL, 7CX, 8MP, CT2AB, CX1VD, EA9AI, EK1DI, HK1FQ, 3IR, 4BF, 5ED, KH6GS, KP4CL, LU1JC, 2BB, 2SM, 4DD, 6AJ. M1NB, MD1H, 2B, 2G, MI3AB, OA4AI, OQ5CR, OX3BD, 3BE, 3GE, 3GF, PY2AMT, 2CK, 2JU, 4QX, 6CO, ST2CH, 2RN, VE8M1, VK2AGU, 2BT, 2NG, 2XG, 3AQM, 3HF, 3HN, 3IG, 3JT, 3LN, 6DD, VO6AD, VP2GG, 9F, VQ4NSH, XE1AC, YV1AD, 1AU, 5AG, 5AY, ZB1AI, ZC6LA, 6NT, 6SQ. (*Rx: R*107.)

P. Bolas, 6 Mulberry Road, Bournville, Birmingham, 30.

'*PHONE:* CO7CX, HA4AB, MD5AP, MI3ZJ, OQ5AG, PY7AD, 7AY, UAIBE, UB5BF, VK3KK, 3LA, 4VD, VS7PS, ZD1H, ZL4GK, ZS1CN. (*Rx:* 1-*V*-2.)

L. C. Booth, 2 Greystone Buildings, South Street, Eastbourne.

'*PHONE:* AP2D, CO2MA, 7VP, CX1VD, 2BG, 2CN, 4CS, 5AP, EA3MB, 3ZT, EK1AA, 1AD, EL5A, ET3AB, 3AE, 3AF, FT4AC, HC2OL, HK1FE, 1FQ, 3FO, KH6GF, 6GS, KL7IT, MT2E, OA4CV, OØ5AV, 5CF, PK4VD, ST2FU, 2RN, UA3AW, 3GA, 6LA, VP4TAX, 6CDI, VØ2JM, 4ASC, 4ERR, 4HGB, 4NSH, VS1AN, 7PS, XE1AC, XF1A, YS3PL, YV5AK, 5AY, ZD3B. (*Rx: R*208.)

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

'*PHONE:* CE3CT, CO2DQ, 2FA, 2RV, 7CX, 7VP, 8MP, CN8AG, 8AM, 8AU, 8AW, 8BA, 8BV, 8MI, 8MZ, CX1VD, 2AL, 2BG, 2CL, EA9AI, EK1AD, EL5A, ET3AF, FA3FB, 9IO, 9KJ, FT4AH, HH2CW, 2S, HK1IS, 3AO, 3FO, LU2AI, 2BB, 2ER, 2FN, 4DD, 5DJF, 6AJ, 7BH, 7DP, 7DX, 8EB, MB9AD, 9AX, 9BD, MD1H, 2B, 2I, 5AP, 5PS, OA4M, OX3GE, 3GF, PY1ACQ, 1AEY, 1AI, 1AN, 1FR, 1HB, 1IJ, 1IK, 1MK, 1UD, 2AMT, 2CK, 2JU, 2TE, 4JO, 4RK, 5AY. 6CO, 7AD, 7AY, 7VB, 7WH, PZ1J, ST2RN, SV1WE, TG9RV, TI2EV, 2OA, VE8MB, VK2AGU, 4VD, VO1AF, 2AB. 2AT, 2BN, 2BP, 2G, 4Q, VP4TAX, VQ4ERR, XAFG, YV1AD, 5ABT, 5AE, 5AY, ZB2A, ZD3B, ZL2BT. (*Rx: Murphy A.*122.)

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

'*PHONE:* CR9AG, CX1DB, EL5A, KP4CI, KV4AD, MI3ZJ, PK2RK, PY1MK, 2GJ, 4RR, ST2CH, 2FU, 2JF, UA3AW, VK5AE, 6HL, VP6JC, VQ4GWS, 4HRP, VU2BG, W2EJV/PK3, ZS1CN, 1P, 1T. 5DS, 6KP, 6KS, 6U. (*Rx: Eddystone* 504.)

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

'*PHONE:* AP2D, EL2A, HL1AQ, 1AR, HZ1AB, J2AMA, KG6AW/VK9, 6BW, 6CJ, KP4ES; MD3MB, MI3ZJ, PK2RK, ST2CH, 2JF, 2KP, TG9AD, VK5AE, 6RU, VP4TAI, VQ4EHG, 4HRT, VS7AC, 7PS, 7SV, VU2AF, 2BF, 2CQ, 2MD, 2QV, W2DUM/MM/Azores, 2EJV/PK3, 4MCI/KGC, YV4AN, ZB1AC, 1KQ, 1L, ZC6NF, ZS1T, 6JB, 6LW.

G. Braithwaite, 15 Ayr Street, Belfast, N.1.

'*PHONE:* CN8AB, 8BA, 8BV, 8EH, EL6A, FA3JY, MD5AF, MI3ZJ, OQ5CH, ST2CH, 2FU, VQ4ASC, 4ERR, 4HRP, WIPPH M/M (N. African Coast), ZD2KC, ZE2JV, ZS1B, 1P, 1T, 1AX, 1CG, 1CN, 1DM, 1FD, 2AF, 2CI, 5CU, 6U, 6CM, 6DW, 6EK, 6FI, 6FU, 6GO, 6IR, 6JR, 6LB, 6LW. (*Receiver: V55R.*)

N. Druce, 13 Nursery Avenue, Shirley, Surrey.

'*PHONE:* AP2D, C1BC, 1CH, CR9AG, CX4CS, EL5A, HC1KE, HK4AR, HL1AJ, 1AN, 1AQ, 1AR, WZ1AB, J2AMA, 2CDJ, 9ABN, 9ACD, KA1ABZ, KG6AAF 6AD, 6CP, 6AW/VK9, KP4FC, KV4AD, OA4BK, PK2RK, PZ1D, VK4BT, 6HL, 6RU, VQ3HGE, W2WMV/C9, 4MCI/KG6, 6PJN/KG6, ØSQS(Iwojima), YN1EP, ZD2KC, ZE1JB, 2JV, ZL1OF, 4BN.

A. Bannister, 58 Demesne Road, Manchester 16.

AP2D, C1CS, 7CS, CE1AH, HL1DB, KA1ABX, KG6AD, AF, AW/VK9, BW, CJ, CP, NP, OA4AN, PK2RK, OQ5AR, CH, ST2CH, FU, JF, KP, UA3AW, UB5KAA, UQ5CK, VK2ADC, AMUFP, 5AE, AL, KL, 6HL, VP3TR, 4TU, 5AW, VQ3EDD, 4GWB, HRP, VS7AC, SV, VU2CR. JC, PA/AP2, W4KGS/KZ5, 6J1M/C1, 7JEA/MM, 8QOH/MM, ZL4BN, CN, ZS1P, T, 6JB, LW.

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

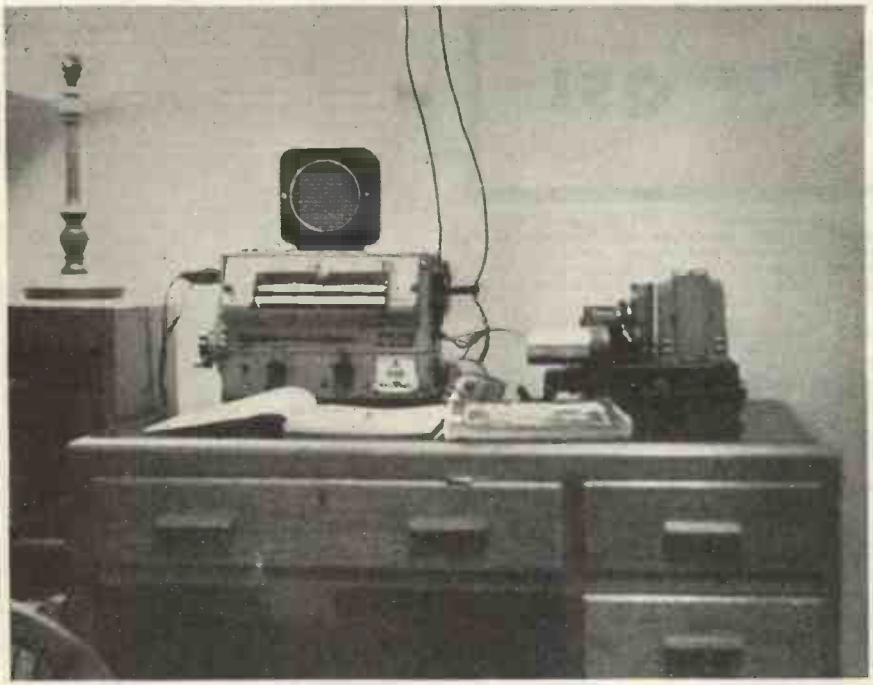
'*PHONE:* C1CS, CE1AH, CP1JI, CR9AG, CX1DB, 3BL, 4CS, HH2CW, HI6EC, HL1AE, 1AH, KA1ABZ, KG6AW/VK9, KG6CB/SAIPAN, LU2DM, 3DH, 4BC, 9EB, PK2RK, PZ1A, ST2CH, 2JE, TI4RR, VP2KS, 5AS, 5AW, 5EM, VQ3EDD, 3HGE, 4ERR, VS7AC, YN1AC, ZS1B, 1BV, 1CN, 1P, 1T, 2CI, 5Q, 6EG, 6JI, 6NE. (*Rx: Marconi CR*100.)

3.5 mc

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

'*PHONE:* VE2HE, 3ACE, 3AIO, VP6CDI, W4ATC, 4CPG, 4DPI, 4FNR, 4FUM, 4HAJ, 4ISR, 4IYC, 4KMK, 4LIL, 4LR, 4NGZ, 5CT, 5DNV, 5FNY, 5GLD, 5GMO, 5IPE, 5KAC, 5KJB, 5KMZ, 5NNZ, 5QA, 6AEE, 7LUN (Ariz.), 8KNM, 8KWI, 8LEK, 8SIZ, 8VAB, 8WDH/8, 9CQS, 9DOD, 9FAA, 9IDZ, 9JSC, 9MM, ØCVU, ØEKK, ØFPH, ØKSR, ØUUB, XE1TA. (*March* 1-29.)

CW: FA8BG, FM8AD, HC1JB, KS4AI, KV4AA, KZ5AX, 5OJ, TG9JK, W1A. M, 1BRK, 2RDK, 3GAU, 3LOE, 4IWB, 4KFC, 4KVX, 5CKY, 5LDN, 5ZF, 6DYQ, 6SZY, 8BNB, 8DDY, 9LM, 9UIT, 9VSS, ØDWD, ØELH, ØGDH, ØKSY, XF1A, ZL2HP. (0500-0745 *GMT, March* 13-14. *Rx:* 0-*V*-1.)



SWL STATIONS No. 11

THIS is the outfit operated by D. H. G. Tyrell-Lewis, Magdalen College, Oxford. The receiver itself is a modified Italian Air Force SAFAR AR18, which is a 6-valve superhet, covering 14-430 and 580-1500 metres in seven bands. A power pack has been provided for it, giving 250 volts HT and 12 volts AC for the valve heaters, which are in series-parallel.

The aerial is an indoor multi-wire, with separate tuning system, all of D.H.G.T-L's own design.

He has been interested in radio ever since the tender age of twelve, but activities have been somewhat limited, due to studies and war service with the RAF. D.H.G.T-L is a keen DX SWL, 14 mc being his favourite band. His ambition, like so many others of us, is to get on the air at the earliest possible opportunity—just listening to DX is too tantalizing ; he wants to *work* it !

"GOING PORTABLE"

The Editorial comment in our last issue has brought forth several interesting letters on the subject of portable working from the SWL point of view. As we thought, there are a number of readers interested in activity of this kind. H. Masler (Cheltenham) has been successful with an MCR-1 for portable use, modified with a built-in speaker, miniaturised battery supply, and an additional output stage ; this gives very good results with doublet aerials on the hills round Cheltenham. H.M. is now working on a 5/10 converter, using miniature valves, to go with the MCR-1.

M. Harrison (Goring-by-Sea) has a converter working into a portable BC receiver, and is anxious for a "portable-only" SLP to be set.

M. Norton (Birmingham) is another who has operated the MCR-1 under portable conditions ; the set is fitted in a small wooden case, felt-lined, for safety in transit. With a 25-ft. "throw-up" aerial, lightweight 'phones, and tubular batteries for power supply, the whole outfit is carried in his cycle bag.

All this sounds to us like very enterprising work, and we should be glad to hear from other readers who have had recent practical experience of operating out-of-doors.

PSE **QSL**

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

D2LJ *Royal Signals Det.*, 16 *Veh. Coy., R.A.O.C., B.A.O.R.* 25. Reports requested on 1·7, 3·5, 7 and 14 mc CW and 'phone.

D4AQN *APO* 61, c/o *Postmaster, New York, N.Y.* Operating 'phone on 28200 and 28424 kc, 1300-1700 BST daily.

F3HL 15 *Avenue du Petit Fabron, Nice, France.* Reports wanted on 'phone operation on 14180, 28360, 29500 and 58720 kc.

F8BS 134 *Boulevard Roosevelt, Bordeaux, Gironde, France.* Operating VFO-controlled 'phone on 14 and 28 mc bands over week-ends.

FA3FB 29 *Rue Mogador, Algiers, Algeria, North Africa.* Reports on CW and 'phone transmissions on 14200, 14286, 14300, 28400, 28572 and 28600 kc; operating periods irregular.

GC2AAO *Drummoyne House, St. Martin's, Jersey, C.I.* Reports requested on 'phone and CW transmissions in 3·5, 7, 14 and 28 mc bands.

G2AOA 158 *Ribbleton Avenue, Preston, Lancs.* Operating 'phone and CW on 1·7, 7, 28 and 58 mc bands, after 1900 BST daily.

G2AOK *Church Street, Stow-on-the-Wold, Nr. Cheltenham, Glos.* Operating 'phone and CW on various frequencies in 28 and 58 mc bands, 1900-2300 BST daily. Reports also wanted for G2AOK/A. 100 per cent. QSL station.

G2BBI 6 *Trinity Avenue, Westcliff-on-Sea, Essex.* Operating CW and 'phone on various frequencies in 7, 14 and 28 mc bands, 0500-0800 and 1730-1930 GMT daily and over week-ends. Reports wanted from outside Europe only.

G2BID 9 *Hebers, Middleton, Lancs.* Operating CW on 1780 and 3530 kc, and 'phone on 1780 and 3750 kc. Operating periods: Week-days, 1·7 mc, 2130-2330; 3·5 mc, 1300-2100: Sundays, 1·7 mc, 1100-1800 and 2100-2300; 3·5 mc, 1800-2100 BST.

G2BVU *QSL via BCM/QSL, London, W.C.*1. Reports requested from South Coast and Home Counties areas on 1878 and 7016 kc CW.

G2CIW 23 *Tower Hill, Brentwood, Essex.* Operating CW and 'phone on 58840 kc, after 2200 BST; reports requested from over 60 miles distant.

G2HR 25 *Clivedon Road, Highams Park, London, E.*4. Reports wanted from outside Europe on 14080 and 14104 kc CW; also for G2HR/A.

G2KF *Havencroft, Station Road, Edenbridge, Kent.* Reports requested on 'phone and CW transmissions on 1757, 3500, 3527, 14200 and 59030 kc, operating after 2200 BST.

G2KG 61 *Third Avenue, Chelmsford, Essex.* Operating 'phone and CW on 59050 kc, 1730-1830 and 2100-2200 BST daily.

G3AGP 73 *Torrington Way, Morden, Surrey.* Operating 'phone daily on various frequencies in 1·7, 3·5 and 7 mc bands. 100 per cent. QSL station.

G3BYY 51 *Kenworthy Road, London, E.*9. Reports requested on 58864 kc CW and 'phone, operating 2200-2300 BST daily

G3CJU 164 *London Road, Newbury, Berks.* Operating CW on various frequencies in 7 mc band, doubled to 14 and 28 mc, during periods 1000-1200 and 1700-1830 BST on week-days; 1000-1200 and 0030-0130 on Saturdays; and 1000-1300 and 1500-1730 on Sundays. Reports on 7 and 14 mc transmissions from outside U.K., and on 28 mc from any distance.

G3CQL 29 *Station Road, Leigh-on-Sea, Essex.* Reports wanted on CW transmissions on 1842, 3535, 7070 and 14140 kc, during periods 1900-2359 BST week-days, and 0630-2359 BST on Sundays.

G3CRK 2 *Cranleigh Gardens, Southall, Middlesex.* Requests full and critical reports from distances over 1,000 miles on 3524, 7010, 7048, 14020, 14096 and 28040 kc CW transmissions; operating periods irregular.

G3CVG 6 *Marlborough Street, Plumpton, Wakefield, Yorks.* Reports wanted on 7043, 7067, 14086 and 14134 kc CW.

G5HM 18 *West Street, Rochdale, Lancs.* Reports requested on 7 mc VFO-controlled 'phone, operating during periods 2000-2200 GMT on Thursdays, and 1200-1500 GMT on Sundays.

HA4QB *Pongrac-ut* 17 *MN ep I/29, Budapest, Hungary.* Reports wanted 7, 14, 28 and 58 mc VFO-controlled 'phone and CW; operating periods irregular.

HA6AG *XI-ker. Puskas ter.* 13, *Budapest, Hungary.* Operating CW in 3·5, 7, 14, 28 and 58 mc bands, during period 0500-2300 GMT; reports also requested for HAØAG.

I1AIJ *Via Fontanesi* 33, *Torino, Italy.* Requests reports on 'phone in 3·5, 7, 14 and 28 mc bands; operating periods irregular.

I1AKS *Via Biumi* 1, *Varese, Italy.* Reports requested on VFO-controlled CW and 'phone in 7 and 14 mc bands, operating 1200-2359 GMT daily.

I1BI *Centrale Elettrica, Giais, Marsure, Udine, Italy.* Reports on VFO-controlled 14 mc CW and 'phone.

I1IZ *Via Bengasi* 14, *Leghorn, Livorno, Italy.* Operating CW in bands 7000-7150 and 14000-14150 kc, 1300-1400 and 2000-2359 GMT daily.

I1ON *Lt. Fernando Bosinelli, S.Pietro Cariano, Verona, Italy.* Operating 'phone and CW in 14 and 28 mc bands, during afternoon and evening periods.

I1WN *Via delle Prome* 2, *Perugia, Italy.* Operating 'phone and CW in 7, 14 and 28 mc bands, during periods 1500-1630 and 2130-2359 GMT daily, and over Sundays.

I1WP *P.O. Box* 30, *Perugia, Italy.* Operating 'phone in bands 7000-7200 and 14200-14300 kc, and CW 7000-7100 and 14000-14180 kc, during periods 1500-1600 and 2230-0100 GMT daily.

OH2RU *Mannerheimstreet* 62, *Helsingfors, Finland.* Reports wanted on 14006 kc CW.

ON4WX 12 *Marche aux Grains, Courtrai, Belgium* Operating CW on 14011 and 14100 kc and in 28 mc band, 0900-1300 and 1700-2200 GMT daily.

OZ3SL *Udbygade* 10.*I, Copenhagen, N, Denmark.* Reports wanted on VFO-controlled 3·5, 7 and 14 mc CW, operating during periods 0600-0800 and 1700-2359 GMT daily.

OZ7WJ 73 *Norregade, Odense, Denmark.* Operating VFO-controlled CW and 'phone on 3·5, 7, 14 and 28 mc bands.

PAØGN *Ryksstraatweg* 6, *Gilmmen (GR), Netherlands.* Operating 'phone and CW on 3·5, 7, 14, 28, 50 and 58 mc bands; reports particularly wanted on VHF transmissions.

PAØOM *Rynstraat* 137.*I, Amsterdam, Netherlands.* Operating on all amateur bands, but mainly on 3·5 mc and usually on 'phone. 100 per cent. QSL station.

PAØXE *Zylweg* 35 *Rood, Haarlem, Netherlands.* VFO-controlled 7 mc CW and 'phone, during morning and afternoon periods.

PAØYW *Nieuwe Ebbingestraat* 86 1/*A, Groningen, Netherlands.* Reports requested on CW and 'phone transmissions in 3·5 mc band, and on 7080, 7210, 14160 and 14420 kc.

"PSE QSL"

We have to thank many readers for their comments in response to the note on p. 132 of our last issue. Without exception, those who have written say they regard "Pse QSL" as a useful and interesting feature, and several quote the large percentage of QSL cards which it returns —this is as it should be, since provided that the reports do give the information requested, the operators concerned are pledged to QSL by card. It is a fact, however, that many transmitters are astonished at the volume of reports which an entry in "Pse QSL" produces, and do find it difficult to deal with them all in reasonable time. Furthermore, since most operators use the various QSL Bureaux, there is often a considerable time lag before cards start coming back. In general, it seems that readers following "Pse QSL" can expect at least a 70 per cent. return, over a period.

Though several useful suggestions have been made as to how to mop up the backlog of outstanding requests for publication, the general opinion is that we should keep "Pse QSL" to the one page, as at present.

For our part, we have decided to alter the form somewhat, such that one month the entries are all DX in character, and the next mainly covering Europe—as has been done in the current list. This will ensure a more even distribution, and will cater for all interests. It should be remembered that the *Short Wave Listener* now has quite a wide overseas distribution —a few copies at least go to practically every country in the world—so that we have to keep in mind SWL's outside our own DX skip area.

The VHF End

Design for a Beam—Latest Results—Calls Heard

by **A. A. MAWSE**

THIS month we start with the technical section, so that it will not be squeezed out by running short of space ! Here are the details which we promised of that 3-element horizontal rotary beam.

The elements—director, radiator and reflector—are made of ¾- or ½-inch dural tube, lengths being 93, 97 and 100 inches respectively. (*See* Sketch.) They are connected together at their centres, as shown in the diagram, by one length of 1-inch tube. (*Note*.—This is *not* insulated from the elements.) Alternatively, a wooden support, properly treated to stand the weather, can be used. The feeder is connected to the radiator by the "folded-dipole" method. This is necessary as the presence of the parasitic director and reflector lower the centre impedance of the radiator to something less than 20 ohms, and hence 80- or 72-ohm twin-feeder will not match.

The folded dipole employs a half-wave rod, broken at centre, for feeder connections, and placed about two inches below the "unbroken" radiator element. The two elements, broken and unbroken, are joined at their ends, but insulated from each other at the centre. Although the lower element may be made of same diameter tube as the upper, a better impedance match is obtained if it is somewhat smaller, say, about two-thirds the diameter. The beam can be made to rotate about its own centre of gravity (or "balance point"), which can be found by experiment.

The front-to-back ratio of this beam is about 20dB, while front-to-side is still higher. Beams to this design have been used at several southern-G 58 mc stations, for both transmission and reception, with good results.

Let us know how you get on with your version and if we can help in any way (other than coming to put it up for you, of course !) again let us know.

Recent Conditions

Among the highlights of the month's VHF news is the 6-metre opening on March 27, when ZS1T was heard in southern England and worked by G5BY. The same day ZB2A also heard ZS, while MD5KW and W1PPH/MM (at Alexandria) reported the MUF over 50 mc. While on the subject of six metres, the Dutch Post Office have PA1KWK on 52·59 mc with 800 watts to a 4-element beam, on from 0800 to 1600 GMT daily. The beam is turned 90° every 15 minutes, starting N at the hour, then E, S and W in turn. Reports should be sent to Radio Station, Kootwyk, Holland. The signals have already been heard in this country.

GDX Results

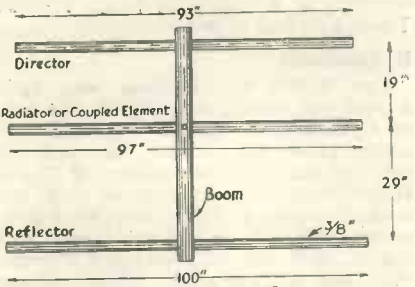
The outstanding evening during March for GDX was undoubtedly March 8, when not only was much GDX logged, but all signals were remarkably strong and steady for hours on end. As L. C. Blanchard (Coulsdon) says, "Can't remember conditions quite so good for a long time". Among the other good days were March 13 and 24. The former coincided, opportunely, with the start of the *Short Wave Magazine* Activity Week End No. 1. On the second day of M.A.W.E., things deteriorated a lot and little GDX was audible, although G2ADZ was heard weakly at midday in the London area. March 24 was "F-day." F8AA, F8GH, F8NW and F8ZF were among those we heard or heard being called on that evening. F8NW was reported as far north as the Midlands.

Five-Metre Counties Heard

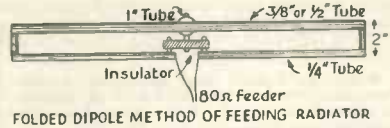
Starting Figure, 10

W. H. Pierce (Reigate)	27
P. J. Towgood (Bournemouth)	24
R. Rew (Birmingham)	24
G. E. Magrow (Dawlish)	19
A. H. Onslow (Hove)	10

All these good spells were apparently a result of the anticyclonic weather of early March, and towards the end of the month conditions fell off somewhat. As a check on GDX conditions we would recommend the schedules between G2BMZ (Torquay) and G5US (Camberley) at 1930 and 2215 BST nightly, and also between G2ADZ (Oswestry) and G2XC (Portsmouth) at 1900 (ex. Sundays). Another regular one is the three-way G2NM (Bosham), G2XC and G6KB (Henley) at 1730 BST (not at week-ends).



3-ELEMENT BEAM FOR 59 mc.



FOLDED DIPOLE METHOD OF FEEDING RADIATOR

Design details for the 5-metre beam described in the text.

Counties and Countries

The "Counties Heard" panel has started to grow and we congratulate W. H. Pierce on his fine lead. R. Rew, sharing second place with P. J. Towgood, has a most unusual county in his list, namely, Dumfries. His achievement in hearing GM3OL is a fine one. Unfortunately for the rest of us, GM3OL is temporarily inactive on "five." A. H. Onslow, who last month told us 10 counties was too high a target, has confirmed the correctness of our reply by logging 10 in 3 weeks. Good going!

Individual Reports

D. Outram (115 yds. from Kings Cross Station) sends a useful log of calls heard in a noisy location during M.A.W.E. No. 1, and has a 144 mc double-superhet under way. His 58 mc dipole is of copper rod and 48 ft. high, which is 6 ft. above the roof tops. Another Londoner, N. E. Barrett (Temple Fortune) reminds us that Thursday night is "5-Metre Night" for many London area stations, and consequently activity peaks on that evening.

A. H. Onslow (Hove) has an RF Unit Type 27 in use and wishes to exchange notes with anyone else operating the same equipment. Since installing it he has heard G2ADZ, G5ZT and F8GH (Oise) as really good DX. In the same district L. F. Hobden (Brighton) draws attention to the flutter fading experienced when aircraft are flying in the vicinity. This is a fairly common phenomenon on VHF and

FIVE-METRE CALLS HEARD

D. L. Courtier-Dutton, Tiev-Tara, Hilltop Road. Herne Bay, Kent.

***Under* 50 *miles*:** G2FZR, 2KG, 3BOB, 3BTL, 3BWS, 3CQ, 6PG.

50-100 *miles*: G2AJ, 2BB, 2MR, 2NH, 3CUA, 3CWW, 3HT, 3NR, 4CG, 6NF, 6OH, 8RS, 8SM.

***Over* 100 *miles*:** G3AUA, 4AP, 8WV. (*Mod. RF Unit Type 25 and 5m-dipole.*)

A. H. Onslow, 10 Egmont Road, Hove, Sussex.

***Under* 50 *miles*:** G2BB, 2CWL, 2HLF, 2NM, 2UJ, 2XC, 3AAT/A, 3VB, 4MR, 5MA, 5MR, 5RP, 5US, 6KD, 6OH, 6UH, 8KZ, 8SM, 8TS.

50-100 *miles*: F8NW, G2AJ.

Over 100 miles: F8GH, G2ADZ, 5BM, 5ZT.

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

G2BMZ, 2HLF, 2MR, 2NM, 2XC, 3AAT/A, 3AUA, 3AUS, 3AVF, 3CWW, 3HW, 4AP, 4KD, 5AS, 5BY, 5LQ, 5MA, 5MQ, 5RP, 5US, 5ZT, 6HD, 6HZ, 6KB, 6VX, 6WT, 6XM, 8KZ, 8SM, 8WL.

R. Rew, 14 Shrublands Avenue, Quinton. Birmingham, 32.

***Under* 50 *miles*:** G2AK, 2ATK, 2AOK/A, 2BKZ, 2COP, 2NV, 2RI, 3ABA, 3IS, 3LN, 3PZ, 5BJ, 5BM, 5JU, 5LJ, 5PP, 6FK, 6YU, 6ZQ, 8KL, 8UR, 8VN.

50-100 *miles*: G2ADZ, 2AJ, 2AJ/P, 2AOA, 2APW, 2BB, 2IN, 2OI, 3APY, 3BXE, 3BY, 3DA, 4LU, 4RO, 5MQ, 5RP, 6MN/A, 6OH, 6XM, 8PX, 8SM, 8UZ, 8WV.

100-150 *miles*: G2CIW, 2MR, 2NH, 2UJ, 2XC, 3BLP, 4IG, 5GX, 5MA, 5PY, 6OS, 6VX. (*January 28-March 28: Rx, 3-valve convertor into communication receiver; aerial, 3-element beam in roof-space.*)

P. J. Towgood, 6 Guildhill Road, Southbourne, Bournemouth.

F8NW, G2ADZ, 2AJ, 2AK, 2BB, 2BMZ, 2CIW, 2CWL, 2FKZ, 2HLF, 2MR, 2NH, 2NM, 2QV, 2XC, 3AAT/A, 3AUS, 3BLP, 3BYY, 3CQ, 3CWW, 3FD, 3YH, 4AP, 4KD, 4RO, 5BY, 5LJ, 5LQ, 5MA, 5MR, 5MQ, 5PY, 5RP, 5US, 5ZT, 6HD, 6FO, 6NA, 6NF, 6PG, 6VX, 6WT, 6XM, 8KZ, 8RS, 8SM. (*All heard March 5-March 25 on 1-V-2.*)

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

F8LO, 8NW, 8ZF, 8GH, G2ADZ, 2AJ/P 2AK, 2AOK/A, 2AUA, 2BB, 2BMZ, 2CIW, 2COP, 2CWL, 2FZR, 2NM, 2OI, 2XC, 3ABA, 3APY, 3DA, 4AP, 5BD, 5BY, 5IG, 5LJ, 5MQ, 5MR, 5RP, 8PX, 8RS, 8WV. (*Period: February 28-March 14. Rx: Series tuned conv. to 9-stage home-built superhet. Aerial: 2-element Rotary.*)

N. Druce, 13 Nursery Avenue, Shirley, Surrey.

***'Phone*:** G2AXG, 2MR, 2NH, 2ZV, 3BLP, 4IG, 6LX, 8KZ.

***CW*:** G2CIW, 2FKZ, 2LC, 2MR, 2MV, 2NH, 2WS, 2YL, 3BLP, 3BOB, 3BUZ, 3HT, 4IG, 4RO, 5MA, 5PY, 5RM, 6HX, 6JJ, 6LK, 6LX, 6NB, 6UH, 6VX, 8SM.

(*February 28-29, on Eddystone Converter to 7 v. Supr. Aerial: ½ wave dipole.*)

L. C. Blanchard, 122 St. Andrews Road, Coulsdon, Surrey.

F8NW, 8ZFG, G2ADZ, 2AJ/P, 2AUA, 2BMZ, 2DBF, 2DU, 2HLF, 2ZK, 3AUS, 3BK, 3BOB, 3CUA, 5BD, 5BJ, 5BY, 5LJ, 5MQ, 5PP, 5ZT, 6HD, 8AL. (*February 15-March 14: Rx, modified HRO; Aerial: 4-element rotary 27-ft. high.*)

is due to the in-and-out-of-phase reflections from the aircraft.

In Devonshire, G. E. Magrow (Dawlish) has been hearing F8NW (Boulogne) fairly regularly, while from the Midlands, R. Rew (Birmingham) sends a very useful comment on his VHF activities. R.R. is nearly on the top of a 600 ft. hill. His entirely home-built Rx is a 3-valve convertor and a communications receiver on 4·8 mc; he has a 6AK5 as RF and as mixer with 6C4 oscillator, employing split-stator tuning. The aerial is a 3-element rotary in the roof space. His best DX so far is GM3OL and G5BY, both at 168 miles. In common with many of us he has been logging GIA on 58·92 (3rd harmonic ?), putting out official news. This signal is a good indicator of GDX conditions in London and the south. A number of BBC harmonics are also to be heard. R.R. raises several other interesting points, but these must be held over for a future issue.

P. J. Towgood (Bournemouth) heard some weak and fading signals around 50 mc on the morning of March 21. His GDX includes G5MQ at nearly 190 miles.

Note

The North-West Radio Frequency Club are holding a five-metre field day on Saturday, May 29, using various battery-operated portable receivers. Any reader interested should get in touch with the secretary at 8 Evangelist Road, Kentish Town, London, N.W.5.

In Conclusion

Our thanks to all those who have written this month, and for the fine lists of Calls Heard. As the result of your co-operation, this feature has made an excellent start. On the subject of "Calls Heard" may we ask you to set them out in the form in which they are printed here, on one side only of separate sheets, well spaced, with the calls arranged numerically and alphabetically under mileage headings, the name and QTH of the sender at the top, and a brief note on equipment at the end of the list. If you will do this it saves much time in preparing the copy—and we shall be grateful accordingly.

NEXT M.A.W.E. PERIOD

Watch the 5-metre band during the Activity Week-End May 8-9, from 1500 BST on Saturday to midnight on Sunday. Please let us have your report as soon as possible after May 9.

The next *Magazine* Activity Week-end is May 8-9, from 1500 BST on the Saturday to midnight Sunday.

Reports on the last (April) M.A.W.E. and on the month's activities in general should reach us by May 6 *latest*, addressed A. A. Mawse, *Short Wave Listener*, 49 Victoria Street, London, S.W.1. 73 es tnx.

THE DA STATIONS

Though the DA's are operating under organised conditions, they are still "underground" in every sense of the word. The situation is both delicate and complicated, and our own fear is that the present illegal DA activity is merely prejudicing their chances of getting official licences. Though many readers may find it hard to believe that the DA's are pirates, we can assure them, on information officially given us by the authorities in Germany, that this is the case.

QSL BUREAU NOTE

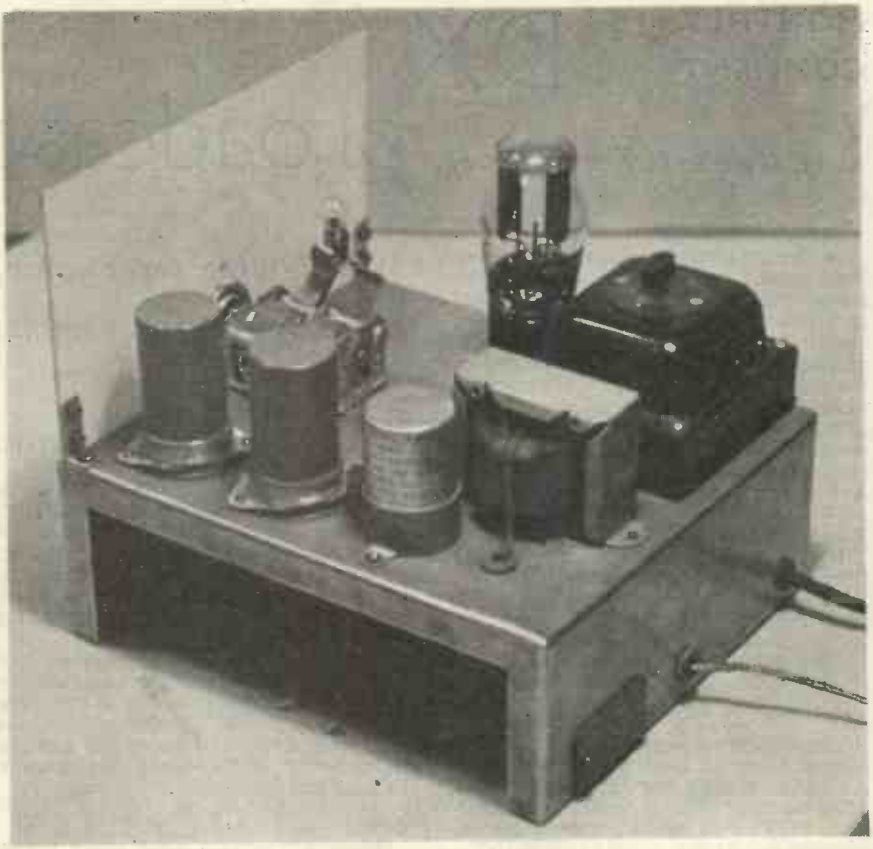
Readers who use our QSL Bureau and are having new cards printed are advised to have "Pse QSL via BCM/QSL, London, W.C.1," added as the QSL address, with a space left for an SWL number, which is put on by the Bureau when the cards are being handled outwards. This will overcome the difficulty of delivering inwards cards filled in to "G-SWL" only! Actually, we have been working this system for some time, in the interests of SWL's generally. The listener himself can help further by using our Bureau for his return address.

CORRESPONDENCE

It would be a great help if readers would address their correspondence to our various departments on *separate sheets, addressed to the section concerned.* It obviously leads to delay and wasted effort if one letter has to be circulated to each of several different departments, and news items of interest sometimes become out-of-date in the process. The *Short Wave Listener* sections are: Editor (general correspondence); The DX Scribe (Amateur Band Commentary and DX band Calls Heard); DX Broadcast (R. H. Greenland's feature); A. A. Mawse (VHF matters and VHF Calls Heard only); Circulation Manager (anything concerning subscriptions, back numbers, changes of address, and Reader Circle); and Advertising Manager (matters relative to advertising only).

SUBSCRIPTION RENEWALS

As we cannot afford wasted copies, please take the necessary action immediately you get your subscription renewal notice. This is sent you with your copy when your renewal becomes due. It is only necessary to complete the form and return it to us with your remittance.



Radiovision Pre-Selector Unit, with self-contained power pack.

IDEA FOR BANDSPREAD

M. Harrison, 53 Goring Way, Goring-by-Sea, Sussex, suggests the following: "Many push-button all-wave superhets and domestic receivers are arranged for a small degree of bandspread on the B.C. bands. It is quite simple to transfer this to the amateur bands. All you do is to take the chassis out of the cabinet, and a set of screw trimmers will be found under each button. Take the 19-metre band trimmer, and adjust it till the amateur 14 mc band is struck. The same can be done for the other bands. For 1·7 mc, the appropriate trimmer may have to be fully unscrewed. In this way an efficient amateur-band receiver can be obtained; I have done this, and it is now my main set."

Readers should adopt this procedure with due caution; though it is a good idea, and workable, it is also possible to put the set out of adjustment for normal reception.

CHANGE OF ADDRESS

The Mail Order Supply Company now operate a new order department (post only) at 3 Robert Street, Hampstead Road, London, N.W.1, to which all mail orders should be directed. Other enquiries to 24 New Road, London, E., as before.

HUNGARIAN QSL BUREAU

With the reorganisation of Amateur Radio in Hungary, *all SWL reports* should be passed through the special SWL Bureau established for the purpose: Dezso Felkai, Bethlen Utca 50, Rakospalota, Hungary. The transmitters' bureau, operated at a different QTH, will not handle SWL cards either way.

VK QSL SECTIONS

Following are the QSL addresses for the VK2, 3, 4, 5, 6 and 7 districts of Australia—thanks, GI5HU.

New South Wales, VK2—J. B. Corbin, VK2YC, Box 1734, G.P.O., Sydney.

Victoria, VK3—G. Roper, VK3XB, 26 Lucas Street, Caulfield, S.E.8.

Queensland, VK4—E. Neale, VK4EN, 38 Felix Street, Woolowin, N.3.

South Australia, VK5—G. Luxon, VK5RX, 8 Brook Street, West Mitcham.

West Australia, VK6—J. Rumble, VK6RU, Box F319, G.P.O., Perth.

Tasmania, VK7—T. A. Allen, VK7AL, 8 Thirza Street, Newton, Tasmania.

MONTHLY COMMENT DX broadcast

by

R. H. GREENLAND, B.Sc.

World-wide reception of Short Wave programmes

In the past, various experiments have been carried out in connection with the transmission of signals to the planets, and in a first attempt in Australia to receive signals reflected from the moon's surface, success was achieved after an interval of only 2½ seconds. A further attempt was carried out by the Council of Scientific and Industrial Research and the Postmaster-General's Department in conjunction with Radio Australia at 1230 on March 15, when the transmitter VLB5, 21540 kc, was beamed on the moon. Results are not yet to hand.

It is reported from Australia that, as from May 1, times in the East Indies will be adjusted as follows: Sumatra—GMT *plus* 7 hrs; Borneo, Java and East Indonesia—GMT *plus* 8 hrs; New Guinea and Timor—GMT *plus* 9 hrs.

Australasia

Last month we mentioned reception of short wave broadcasts from Perth, Western Australia. We are now informed that the 31-metre band channel has been changed from 9520 kc to 9610 kc; the complete schedule is: VLW3, 11830 kc, 0230-1000; VLW5, 9610 kc, 1015-1600 and 2200-0215 daily.

G. Mould (ex-Wallington, Surrey) is now reporting from San Fernando, Trinidad, B.W.I. He gives good reception of VIQ3, 9660 kc, around 2000 with the opening news of the ABC National programme, and by way of identification a string of medium-wave call-signs preceding a final direction: "Short wave Station VLQ3." W. S. Prior (Darlington) has obtained further news of the Australian Research Expedition to Macquarie Island in Antarctica. Weak signals have been received by DX enthusiasts in Perth, W.A., from the base station. The following frequencies are those allotted to the Expedition: VJM and VJH, 9940 kc; VJM2 and VJH2, 12255 kc; VJM3 and VJH3, 15845 kc; VJM4 and VJH4, 19255 kc. VK1AA is the call-sign used by the Antarctic Exploration ship LST3501 in the 40-metre amateur band.

A frequency alteration has been made in connection with Radio Australia's broadcasts. From 0200 to 0740, VLG6 has been replaced by VLG11, 15210 kc. In addition, there is a new experimental transmission to the East Coast of North America over VLA8, 11760 kc, from 2145 to 2315 daily.

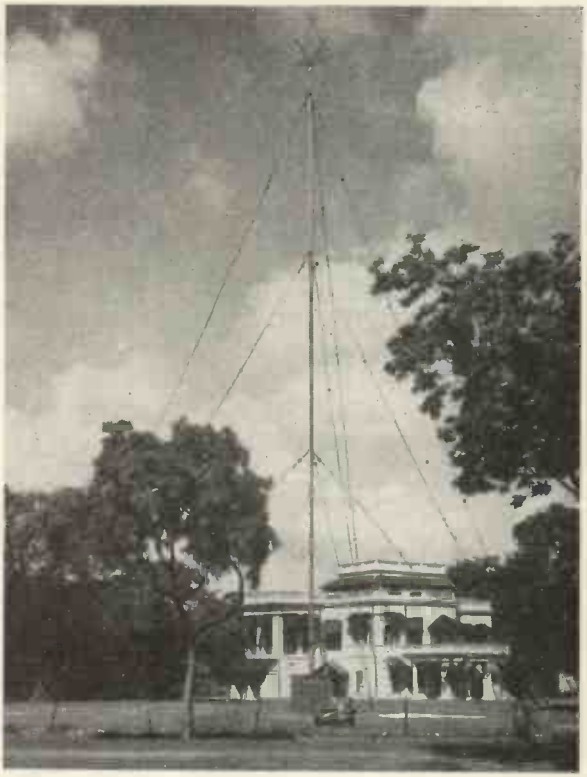
Further news of ZM2AP, Samoa, 7700 kc, which was officially opened on February 1 with a power of 2 kW. The transmitter stands on the hills behind Apia, the capital, and the revised schedule is 0615-0800 on Mondays, Wednesdays, Fridays and Saturdays.

Asia

There is a pile of news about broadcasting stations in China. First, J. P. Burden (Portsmouth) says that as from March 1, XGOY moved from 6145 kc to its 11913 kc outlet, but is continuing to operate 7153 kc in parallel for its afternoon transmissions to North America, Asia, Europe and the South Seas. The writer logged XGOY on 11913 kc on March 6 at 1515, with a Post Bag-*cum*-Musical Request programme for English-speaking listeners. In reality, this is the Symphony Hour broadcast given by the Voice of China on Saturdays and Sundays until 1600, and it is well worth your attention! XGHT, 6060 kc, relays an English programme from XNCR from 1145 to 1200 daily, and the latter appears on two new frequencies, 6470 kc and 6096 kc at 1200. XURA has returned to its former channel of 7223 kc, and XGPB, 6110 kc, of as yet unknown location, broadcasts

until 1500. The writer recorded a Chinese station with Western music and gong chimes at 1457 and close-down at 1500 on March 14. The frequency was 12220 kc and the call appeared to be XMTO, though all directions were in Chinese. Could this be XMPA, Nanking ("The Voice of the Chinese Air Force") which is allocated to this frequency with the following schedule : 0400-0600 ; 1000-1500 ; 2300-2400? AFRS programmes are carried by XGIO on 9990 kc at 1145 and on 8450 kc at 2030. XGOE is reported to be on 9860 kc at 1100.

JKF1, Tokio, 9655 kc, was a loud signal at 2225 on March 7, with a broadcast of Japanese music, followed by a news in Japanese at 2230. A lady announcer was heard giving directions in Japanese after the time signal at 2300. This consists of three notes of a low pitch, followed by a long note of higher frequency. Again it must be stressed that when this station is heard, its signals are prominent, but more frequently it cannot be traced at all.



The studio buildings, VUM2, Madras.

In the Philippines KZRH is still the most consistent and popular broadcaster. F Smallwood (Bramley, Leeds) has logged it on 9630 kc several times between 1400 and 1530 with orchestral music and the following direction : "This is the Manila Broadcasting Company—11 p.m. and you are tuned to KZRH, The Voice of the Philippines."

H. Vicary (Bristol, 3) logged KZRH at 2025 on March 1. Reports can be sent to : Radio Station KZRH, The Manila Broadcasting Company, Manila, P.I. F. Smallwood also reports : "The Voice of America in Manila" on 11890 kc at good strength most Saturdays and Sundays between 1400 and 1505 with a relay of the Far Eastern service from the U.S.A. The final direction is : "This is Manila concluding our relay of the Voice of the United States of America on 11890 kc in the 25-metre band." F. S. also heard "The Voice of Manila" on 15330 kc, concluding a United Nations programme at 0845 on March 7, with the direction : "This is Manila operating on 15330 kc."

Radio Batavia has four short wave English transmissions daily as follows : The first extends from 1030 to 1100 and is intended for Malaya, Australia and New Zealand. The transmitters are : YDC, 15150 kc ; PLS, 10315 kc ; YDD, 2600 kc ; YDD2, 4865 kc ; and YDD3, 9557 kc. The second broadcast from 1430 to 1500 is directed to America and is carried by YDC and a parallel transmitter on 8916 kc. The transmission to the British Isles can be heard 1700-1730 over PMA, 19340 kc and YDC, 15150 kc. Finally, a broadcast to the Middle East from 1700-1730 is carried by PMW, 17630 kc. Incidentally, both PLS and YDD3 have been logged recently around 1430 by the

TABULATED SCHEDULES

I. Vatican City, Rome. Transmissions in English.

Daily News Bulletin at 1500 (Winter) and 1400 (Summer).
Frequencies: 9660 kc and 15095 kc.
Daily Talks on 9660 kc and 5970 kc at 1815.

Sunday:	"Roma Sacra."
Monday:	Mission Items.
Tuesday:	Weekly News Items.
Wednesday:	Doctrinal Talk.
Thursday:	Words of the Pope.
Friday:	Sacred Heart Programme.
Saturday:	Liturgical Talk.

Every Tuesday: News Summary for India and South Africa on 17445 kc at 1500 (Summer) and 1530 (Winter).

Every Sunday: Mass is broadcast on 9660 kc and 5970 kc at 1030 (Winter) and 0930 (Summer).

II. The "Happy Station" Programmes, PCJ, Hilversum, Holland.

Programmes are of 90 minutes' duration, consisting of: (1) Musical enertainment linked by polyglot announcements, (2) "Spotlight on Holland" (local colour news), (3) Mailbag.

Sunday.	For East and Near East. 17770 kc, 15220 kc, 6020 kc. 1545-1715. For Africa and South America. 11730 kc, 9590 kc, 6020 kc. 2100-2230. For North America. 11730 kc, 9590 kc, 6020 kc. 0300-0430 (Monday morn).
Tuesday.	For Pacific, Australasia. 17770 kc, 15220 kc, 6020 kc. 0900-1030.
Wednesday.	For East and Near East. 17770 kc, 15220 kc, 6020 kc. 1545-1715. For Africa and South America. 11730 kc, 9590 kc, 6020 kc. 2100-2230. For North America. 11730 kc, 9590 kc, 6020 kc. 0300-0430 (Thursday morn.).

III. Canadian Broadcasting Corporation. Schedule of European Service Transmissions from Sackville. (Daily.)

CKNC	17820 kc:	1415-2305.
CKCS	15320 kc:	*1600-2305.
CKCX	15190 kc:	*1415-1600.

*Sundays—1630.

IV. Radio Australia.

The following additional call-signs and frequencies are now in general use :—

VLB3	11760 kc:	100 kw.	Shepparton
VLB11	15160 kc:	100 kw.	Shepparton.
VLC7	11810 kc:	50 kw.	Shepparton.
VLG6	15230 kc:	10 kw.	Lyndhurst.

Official alterations to Transmission Schedules for British Isles and Europe.

(1)	0700-0815.	VLA6, 15200 kc becomes VLA9, 21600 kc. VLB10, 11710 kc becomes VLB3, 11760 kc.
(2)	1430-1500.	VLC7, 11840 kc becomes VLC7, 11810 kc.
(3)	2000-2130.	VLC11, 15210 kc becomes VLC, 15200 kc.
(4)	2200-2315.	VLG7, 15160 kc becomes VLC6, 15230 kc.

writer, who also heard "The Voice of Free Indonesia" between 1430 and 1530 on March 6 on (a somewhat lower frequency than usual) 10825 kc, with an English programme presented by the Indonesian Broadcasting System.

F. Smallwood has received the British Far Eastern Broadcasting Service in Singapore on various dates, with the News at 1415 and continuing until 1635. All the following channels have been audible : 11735 kc, 9690 kc, and 6770 kc. F.S. says they moved from 11770 kc to 11735 kc on February 8. C. A. Wharton (Harehills, Leeds) heard Saigon, French Indo-China, 11780 kc, with the Knightsbridge March at 1430 and RAD, Tashkent, 6820 kc, at 1710. H. Hedley (B.A.O.R. 3) logged the latter on February 29 with a good signal but appreciable fading. The writer observed RAD with "Red Caravan" and other items of native Turkestan music around 1715 on March 14. Before the close at 1730, the lady announcer stated that the Tashkent Radio Broadcasting Committee presented programmes three times weekly, on Sundays, Wednesdays and Fridays, at 2230 Indian Standard Time (*i.e.* 1700 GMT) on a wavelength of 43·96 metres. Her final words were : "This is Tashkent calling ! It is 11.30 p.m. Tashkent Time. Good-night, everybody."

E. Strangeway (Scagglethorpe, Yorks) recently logged VUM2, Madras, 4920 kc, with news in English at 1530, followed by orchestral music at 1545. R. Burr (Loughborough) did well to get Delhi on 3495 kc with an English transmission on the occasion of the celebrations held in connection with the eighteenth anniversary of Independence Day.

Radio S.E.A.C., Colombo, Ceylon, was heard 1530-1600 on March 7 with soft music, on 9520 kc. At 1600 a female announcer said : "Now follows the News from London." F. W. Hardstone (Streatham, S.W.16) received Radio S.E.A.C. between 1500 and 1615 on March 21 with a broadcast directed to India, Pakistan and the Far East. The frequency was 15120 kc and signal strength peaked to 40 dB over S9.

I. Guggenheim (Haifa, Palestine) heard a new station at 1600 on February 20 on 6085 kc, and calling itself : "The Voice of Arabia in Aden." The programme consisted of a 45-minute play and 45 minutes of English music, and signal strength was S9. Reception reports were requested to

be sent to: The Manager, Cable and Wireless, Aden. This station has also been heard at 1500, but it is understood that as yet there is no regular series of broadcasts. From the neighbouring country of Afghanistan we learn that broadcasting is carried out around 1730 on a frequency of 7960 kc. About the time of the rising in the Yemen, a new short wave station appeared on 7385 kc. This is located at Sana, capital of the Yemen, and broadcasts 1630-1715 daily. Programmes are in Arabic, and the transmissions are badly modulated.

E. J. Coates (Dagenham) provides our final Asiatic contribution. He encloses the following information concerning the Forces Broadcasting Service, Jerusalem, M.E.L.F. Their chocolate-and-cream coloured verification card gives the frequency as 7220 kc; power 7½ kW; normal aerial system, a horizontal half-wave; and location Beit Jala near Jerusalem, at an elevation of 900 metres a.s.l. The daily programme extends from 0430 to 0630, 0800-0810 (News), 1100-1115 (News), 1300-1415, 1600-1630, and a final session 1800 to 2100. Some of the features are relayed from London, which may give listeners the impression that they are tuned to the BBC short wave service direct. But D. O. French (Norwich) informs us that 7220 kc is not now used, having been superseded by 6075 kc on February 1.

Latest reports, however, give 7070 kc as the new channel, with schedule 0430-0630 and 0800-2100.

Africa

G. Mould (Trinidad) sends in some very useful facts concerning several African stations. He thinks there are two Mozambique stations in the 60-metre band, for, on the same day, he has logged CR7BV, 4905 kc, with the direction: "Lourenco Marques for happy listening on the 60- and 85-metre bands," and a programme with a distinct Portuguese flavour on 4840 kc around 1705. Actually, 4845 kc is the channel used by CSX2, Ponta Delgada in the Azores, later in the day.

G.M. has logged the Angola stations CR6RL, 15895 kc, and CR6RA, 9470 kc, both around 1845; and the elusive Johannesburg station on 4895 kc at 1945. Records of classical music and announcements in Afrikaans were features noted. G.M. cites VQ7LO, 4885 kc, as the best signal in the 60-metre band, peaking to S8 at 1700. W. S. Prior (Darlington) mentions ZRB, Pretoria on 6210 kc, in parallel with 9110 kc for better reception in skip areas, and gives the schedule as 2330-0000. D. O. French says that ZRB, 9110 kc, relays Johannesburg at 1510.

In Northern Rhodesia, broadcasts are carried out over ZQP, Lusaka on 9705 kc, 7280 kc, and 3914 kc. The week-day schedule is: 1500-1700; and that for Sundays is: 0900-1030 and 1530-1630. English programmes are confined to Tuesdays and Saturdays. F/Lt. J. A. Jagger (Grays, Essex) says that ZQP broadcasts the News from "Cape to Cairo" at 1645 on week-days, and that News from Tananarivo, Madagascar, can be heard at 1630 on a frequency of 9695 kc. P. W. Kennedy (Salisbury, Southern Rhodesia) has heard this one with News in French and an S8 signal at 0400, together with the transmission on its other frequency of 6100 kc.

Additional Station Addresses

1. **RADIO ALGERIE**, Services Techniques de la Radio-diffusion, 10 Rue Hoche, Algiers.
2. **STATION ZPA3**, Radio Teleco, Azora 56, Asuncion, Paraguay.
3. **STATION KRHO**, O.W.I., P.O. Box 3740, Honolulu, Hawaii.
4. **HCJB. THE VOICE OF THE ANDES**, Casilla 691, Quito, Ehuador.
5. **RADIO STATION ZFY**, P.O. Box 272, Georgetown, British Guiana.

Mauritius

With reference to our earlier remarks regarding the Mauritius short wave broadcasting station on 7295 kc, some very interesting information is to hand from A. McCreadie (Edinburgh, 5), who was at one time stationed on the island. He thinks this is the short wave transmitter used by the Mauritius Broadcasting Service to supplement their medium-wave station on 1210 kc. To quote A.M.: "The Mauritius Broadcasting Service was originally run by a private lessee who has since been bought out by the Colonial Government. The m-w transmitter and the studio are situated not in Port Louis, the capital, but in Rose Hill, twelve miles south-west of Port Louis, being actually on the top floor of the Plaza Cinema—the largest on the island. The short wave transmitter is situated in the Hotel de Ville in Curepipe in the centre of the island." A. McCreadie says the power is low and the short wave aerial a simple inverted-L, and he is doubtful if the signals could have been picked up in this country. However, the daily schedule is: 0815-0930 (Lunch-time programme in French) and 1245-1455 (also in French). On Saturdays from 1000 to 1200 a special

DX BROADCAST—CALLS HEARD

J. Holden, The Bakery, Tang Hall Lane, York.

1.	March 14	1640	XGOY	Chungking	11915 kc, S8
2.	March 17	1415	KRHO	Honolulu	15250 kc, S7
3.	March 20	1920	CR7BJ	Lourenco Marques	9645 kc, S8
4.	March 20	2200	KZCA	Salzburg	7220 kc, S8
5.	March 20	2315	HCJB	Quito	12455 kc, S9
6.	March 20	2335	VP4RD	Port-of-Spain	9645 kc, S5
7.	March 21	0100	VONH	Saint Johns	5970 kc, S6
8.	March 21	0130	CJCX	Sydney, N.S.	6010 kc, S6
9.	March 21	1230	VLA6	Shepparton	15200 kc, S9
10.	March 21	1430	SEAC	Colombo	15120 kc, S6
11	March 21	1540	YDC	Batavia	15145 kc, S6
12.	March 21	2125	ZYB8	Sao Paulo	11765 kc, S8

Rx. Eddystone 640. Aerial: 15 ft., vertical

P. W. Kennedy, Box 1383, Salisbury, Southern Rhodesia.

1.	February 1	0330	YV5RU	Caracas	4880 kc, S8
2.	February 1	0340	YV5RY	Caracas	4725 kc, S8
3.	February 1	0345	YV5RN	Caracas	4915 kc, S8
4.	February 1	0346	HJCH	Bogota	4895 kc, S6
5.	February 2	0330	OAX4V	Lima	5915 kc, S8
6.	February 8	2005	VLQ	Brisbane	12000 kc, S4
7.	February 9	0400		Tananarivo, M'd'ar	9700 kc, S8
8.	February 10	0330	LRM	Mendoza	6180 kc, S8
9.	February 15	0410	CBFW	Vercheres, Canada	6090 kc, S5
10.	February 15	1903	CKNC	Sackville	17820 kc, S9
11.	February 20	0330	OAX4Z	Lima	5895 kc, S5
12.	February 23	0330	XEKW	Morelia, Mexico.	6030 kc, S9

Rx. GEC BC 4666. Aerial: 150 ft. inverted-L

F/Lt. J. A. Jagger, No. 1 R.A.F. Movement Unit, Grays, Essex.

1.	March 1	0048	XEBT	Mexico City	6000 kc, S8
2.	March 2	2306	PZH5	Paramaribo	5843 kc, S8
3.	March 3	2350	YNXW	Managua	8150 kc, S8
4.	March 4	2145		Athens, Greece	13730 kc, S9plus
5.	March 7	1800	VQ7LO	Nairobi	4870 kc, S7
6.	March 9	1630	ZQP	Lusaka	9705 kc, S6
7.	March 9	1815	KZCA	Salzburg	7220 kc, S8
8.	March 12	1740	ZOY	Accra, Gold Coast	4915 kc, S5
9.	March 15	1715	ZOH	Colombo	4900 kc, S9plus
10.	March 18	2015	VRR5	Kingston, Jamaica	12050 kc, S7
11.	March 18	2225	HI2T	Trujillo, D.R.	9760 kc, S8
12.	March 20	2321	HH3W	Port-au-Prince	10135 kc, S8

Rx. BC342. Aerial: 6 ft., indoor
R107 plus R208. Aerial: 60 ft. outdoor

R. Iball, 1 Riddell Avenue, Langold, Worksop, Notts.

1.	February 29	2100	VLQ3	Brisbane	9660 kc, S6
2.	February 29	2140	VP4RD	Port-of-Spain	9625 kc, S5
3.	March 3	2315	TGWA	Guatemala City	9760 kc, S6
4.	March 3	2330	HI4T	Trujillo	5970 kc, S6-4
5.	March 3	2340	HH2S	Port-au-Prince	5948 kc, S6
6.	March 4	1530		Singapore	9690 kc, S8
7.	March 4	1600	XGOY	Chungking	11915 kc, S6
8.	March 5	2330	HI2T	Trujillo	9740 kc, S9
9.	March 7	2030	VLH4	Melbourne	11880 kc, S6
10.	March 8	0430	HCJB	Quito	5970 kc, S6
11.	March 14	1700	RAD	Tashkent	6825 kc, S6
12.	March 16	0415	CJCX	Sydney, N.S.	6010 kc, S7

Rx. Bush SH5. Aerial: 20 ft. NW/SE, 18 t. high

Cpl. H. B. Hedley, 1 Wireless Regt., B.A.O.R. 3.

1.	February 1	0500	JCKW	Jerusalem	7220 kc, S7
2.	February 1	2015	CSX	Lisbon	6374 kc, S7
3.	February 1	2030		Tangier	6200 kc, S8
4.	February 2	1200	KZCA	Salzburg	7220 kc, S9
5.	February 2	1300	VLQ3	Brisbane	9660 kc, S5-7
6.	February 2	1330	VLH3	Melbourne	9580 kc, S4-7
7.	February 9	0130	YV5RN	Caracas	4915 kc, S6
8.	February 9	0131		Barquisimeto	4990 kc, S7
9.	February 13	0230	SEAC	Colombo	6075 kc, S7
10.	February 13	0300	HP5K	Colon	6005 kc, S6
11.	February 17	1700	YDC	Batavia	15150 kc, S5-7
12.	February 29	1705	RAD	Tashkent	6825 kc, S6

Rx: HRO. Aerial: indoor

programme is broadcast to the dependency of Rodrigues. French is the language normally in use, but English is frequently heard. The direction is: "Ici l'île Maurice" or "This is the Mauritius Broadcasting Service operating on 42 metres." A.M. mentions another radio station in the same neighbourhood. This is "Radio Saint-Denis" on the French island of Réunion. The short wave outlet is 4805 kc and the power 80 watts; the interval signal is a single gong stroke and the *Marseillaise* is used on closing down. A.M. writes: "The schedule at the time of my stay in Mauritius was 1730 to 1900, and the quality of the transmission on short waves was poor—speech in particular had a hollow echoing sound, as if a barn was used for a studio! Programmes consisted mainly of light musical items, with, before closing down, a News bulletin in French, as were all announcements."

According to E. Strangeway (Malton) FHE3, Dakar, Senegal, 11715 kc, is a powerful signal every evening 1845-1945, during which time they broadcast dance music. Last month we mentioned CQM4, Bissau, Portuguese Guinea, on 7948 kc, but some reports say 8170 kc according to D. O. French (Norwich). The writer first logged this station on March 1 when, at 2155, a rendering of "In The Shadows," by Finck, was being broadcast. The frequency, corrected to 7943 kc, was just slightly higher than that of Alicante which uses the 7940 kc channel, but the transmissions must not be confused with those of Radio Douala, French Cameroons on 7950 kc, broadcasting in Arabic 1645-1725 and in French 1800-200 (2100 on Sundays).

The Addis Ababa, Ethiopia, station on 9620 kc gives regular broadcasts now with Amharic, Arabic and English announcements. The schedule is: Weekdays: 1100-1145; 1415-1630: Sundays: 0800-0930; 1415-1630. OTC2, Leopoldville, using 50 kilowatts, is now on 9760 kc, and has been heard with a Mail Bag in English at 2045 on Wednesdays. The daily English broadcast has been put forward to 1930. The Sudan Broadcasting Service's station at Omdurman, 13320 kc, was logged with its weekly English broadcast at 1730 on March 12. The usual lengthy News was followed by recordings of some of the popular Strauss waltzes.

E. G. Cressey (Wisbech, Cambs.) reports on Radio International, Tangier, from whom he has received a folder-type verification card depicting a typical Arab street scene. The short wave outlet on 6200 kc runs a power of 1 kW and the schedule is 1300-1600 and 1900-2400 daily. French, Spanish, Arabic and the English languages are all used. At 2000 on Sundays an English programme opens with the words: "You are tuned to Radio International broadcasting from Tangier."

Latin America

Chile is mentioned by F. Smallwood (Leeds), who has logged CE1174 on 11740 kc at 0001 with the call: "Radio Nuevo Mundo, Santiago," and CE1180 on 12000 kc with news in Spanish followed at 2337 by the call: "Radio Société Nacional de Agricultura en Chile." P. W. Kennedy (Salisbury, S. Rhodesia) reports LRM, Mendoza, Argentina, 6180 kc, with an S8 signal, signing off at 0400 with the call: "Radio Aconcagua" and a march.

In Ecuador, Radio Quito, HCQRX has moved from 6000 kc to 4985 kc, and a new one, HC4FS, La Voz de Esmeraldas, uses 4560 kc from 0100 to 0400. PR13, Belo Horizonte, Brazil, announces that it is increasing its power to 5 kilowatts. Several correspondents mention new stations in Venezuela. YVIRJ, Radio Cebimas, 6150 kc, operates 0001-0200 (D. O. French). YV6RK, La Voz del Tigré, El Tigré, 3033 kc, is on the air 2300-0230; and YV9RA is a new Venezuelan district for DX enthusiasts. Operating on 4820 kc, La Voz de Apure (YV9RA) in San Fernando de Apure is in service from 0001 to 0230 daily.

Coming north to Panàma, H. B. Hedley (B.A.O.R.3) logged HP5K, Colon, 6005 kc, on March 4, concluding a Musical Request programme in English at 0300. The direction: "Cadena Panamana de Radiodifusion" was given at this time. F/Lt. Jagger (Grays, Essex) has logged a Nicaragua station with an S8 signal on 8150 kc, announcing as "La Voz de America Centrale." This may be YNXW, Managua, officially on 8 90 kc. In El Salvador, YSCP is a new one operating 0100-0200 on a frequency of 5200 kc, and HRQ, San Pedro Sula, is the new Honduras short-waver on 6125 kc. The writer recently heard TIGPH, San José, Costa Rica, 5870 kc, with a good signal just before the close-down at 0600. Musical items were followed by a fanfare of trumpets and a march, then a mention of "Victoria" and "Radio Nacional" and finally TIGPH terminated with its National Air. On March 5, TIPG, 9618 kc, San José, Costa Rica and TGWA, 9685 kc, Guatemala City were logged at 0525, both

relaying a pelota game between the two countries, the result being a 1-1 draw. TGWA was the stronger signal. G. Mould (Trinidad) says that TGWA on 15170 kc provides a good quality programme until 2000 daily.

R. Iball (Langold, Notts.) logged TIPG, announcing as : "La Voz de la Victor" at 0430 on March 19, and simultaneously he heard a Mexican station on approximately 9615 kc with a news bulletin in English. This is almost certainly XERQ, 9610 kc, La Cadena de Radio Continental, in Mexico City. P. W. Kennedy reports another Mexican, XEKW, El Eco de Michoacan, Morelia, 6030 kc, with an S9 signal as late as 0445. R. Iball (Worksop) has received a verification from J. Arismendi Trujillo, Fundador-Proprietario, La Voz del Yuna, Ciudad Trujillo, Dominican Republic, but no mention is made of the 9740 kc frequency. It states that HI2T, 7275 kc, operates with 7·5 kW, and that HI4T, 5970 kc, uses 500 watts. The address is : Apartado 623, Ciudad Trujillo, D.R. From another source we learn that HI2T on 9740 kc commences with an identification signal of eight pianoforte notes at 1200 and closes at 0458 daily.

G. Mould reports HIL, now heard with call on 6170 kc at 0100. G.M. logged HHCM, Port-au-Prince, Haiti, 6165 kc, recently, between 0015 and 0100. An interval signal of gongs, preceded and followed by a Sousa march, was given every quarter-hour, with the direction in French : " — Broadcasting System — Port-au-Prince, capitale du République d'Haiti." F/Lt. Jagger cites HH2S, 5945 kc, with an English transmission Wednesdays at 0030 according to their letter and verification card ; and he mentions that HH3W, 10135 kc, is usually in parallel with WLWR for a Sunday evening Symphony Concert at 1815.

Now a reference to VPO3, Bridgetown, Barbados, 10605 kc, reported by both J. Holden (York) and D. O. French (Norwich) The former says that VPO3 is on the air most Saturday nights with racing commentaries and musical recordings ; the latter gives the schedule as 1445-2145 Saturdays.

Europe

In Europe, H. B. Hedley reports the Blue Danube Network station in Salzburg on 7220 kc to be using new call-letters KZCA (announced—Kay Zee See Ay). L. W. Lowis gives details of the Linz, Austria station on 9575 kc, operated by Sendergruppe Rot-Weiss-Rot (I.S.B. Radio Section) Seidengasse 13, Wien VII. The daily schedule is : 0600-0815 ; 0945-1430 ; 1600-2400, with extended programmes on Saturdays and Sundays. It is reported that the American Forces Network station on 6080 kc has now closed down and has been replaced by Radio Munchen under German supervision. F/Lt. Jagger says that the International Red Cross programme from Geneva is given daily at 1745 on 6345 kc ; the transmitter is HEI2. R. Burr has just had a verification from Vatican City, and a detailed programme sheet, the English section of which is contained in our Tabulated Schedules. The Danish Forces Radio station in Germany on 6225 kc was heard recently at excellent strength with news in Danish at 2000, and on March 6, Radio Monte Carlo was S9 with news in French at 1830, followed by the direction : "Ici Monte Carlo ; voici l'heure—dix-neuf heures quarante." The frequency is 6035 kc, the power 20 kW, and the schedule : 0630-0830 ; 1100-1300 ; 1730-2215.

On Sunday, March 7, TFJ, Iceland, 12235 kc, opened with a plaintive melody in a minor key and was S9 throughout. G. Mould heard English news from Europe as follows : ZAA, Tirana, 7850 kc 2015-2030 ; Belgrade, 6100 kc, 2030-2045 ; Warsaw, 6220 kc, 2050 ; and Bucharest, 6210 kc, 1915. Warsaw is also using 11710 kc from 1100 to 1220.

In conclusion, A. J. Slater (Southwick, Sussex) sends another list of medium-wave DX stations which have verified. WAPA (Porto Rico) acknowledged this first report from England ; XEB (Mexico City) verified by *air mail*, and cards have been received from CHVC (Niagara Falls) and CJCB (Sydney, N.S.). Altogether, 100 different North and South American medium-wavers were logged in January and February alone. Our hearty congratulations to A.J.S. who is now covering all DX from the medium waves to the VHF's !

The Broadcast SLP for April will be from 2100 to 2200 GMT on Saturday, April 24 ; any frequency but *no* Europeans, and the final date for reception reports at this office is April 29. Correspondence should be addressed : R. H. Greenland, *The Short Wave Listener*, 49 Victoria Street, London, S.W.1.

ALL TIMES GIVEN IN THIS ARTICLE ARE GMT EXCEPT WHERE STATED

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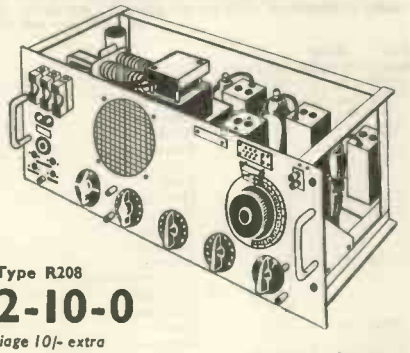

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SHORT WAVE BROADCAST STATIONS

Revision 41·34-49·22 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
7257	41·34	JKC	Tokio.
7250	41·38	PJC1	Willemstad.
			Rome.
7240	41·44	VLQ	Brisbane.
		VUB2	Bombay.
		VUD11	Delhi.
			Paris.
7230	41·49	GSW	Daventry.
7220	41·55	KZCA	Salzburg.
		ZQP	Lusaka.
			Singapore.
7210	41·61	LLS	Tromso.
		HEI3	Schwarzenburg.
		VUC2	Calcutta.
		GWL	Daventry.
7200	41·67	HC1AC	Quito.
			Moscow.
7185	41·75	SEAC	Colombo.
7180	41·77	CR6AA	Lobito, Angola.
			Vienna.
7167	41·86	HI8Z	Santiago, D.R.
7165	41·87		Moscow.
7152	41·94	XGOY	Chungking.
7140	42·02	CR7RE	Malange, Angola.
7135	42·05	FET22	Oviedo, Spain.
7125	42·10	VO6MI	Hargeisha.
7110	42·19	EDV10	Madrid.
7102	42·24	YNET	Masaya, Nicaragua.
7084	42·34	YI5KG	Baghdad, Iraq.
7070	42·43	JCKW	Jerusalem
7045	42·58	FET15	Cordoba, Spain.
7040	42·61	YSI	San Salvador.
7037	42·63	EAJ3	Valencia, Spain.
7022	42·72	EAJ9	Malaga, Spain.
7006	42·83	FET1	Valladolid.
7000	42·86	HC1VT	Ambato, Ecuador.
			Brazzaville.
6980	42·98	FO8AA	Papeete, Tahiti.
6917	43·37	FZK6	Dakar, Senegal.
6915	43·38	YNQ	Managua.
6877	43·62	YNWW	Granada.
6870	43·67	HC4EB	Manta, Ecuador.
6850	43·80	YNOW	Managua.
6820	43·99	RAD	Tashkent.
6790	44·18	ZJM6	Jaffa.
6783	44·23	HI2A	Santiago, D.R.
6770	44·31	CP49	La Paz, Bolivia.
			Singapore.
6758	44·39	YNPS	Managua.
6740	44·51	HI3C	La Romana, D.R.
6716	44·67	YNMA	Managua.
6700	44·78	YNCNN	Managua.
6670	44·97	TGBC	Mazatenango.
6635	45·21	HC2RL	Guayaquil.
6630	45·25	HIT	Trujillo, D.R.
6620	45·32	TG2	Guatemala City.
6547	45·82	YNBH	Managua.
6450	46·51	COHI	Santa Clara, Cuba.
6440	46·58	TGWB	Guatemala City.
6433	46·66	HI1R	San Cristobal.
6410	46·80	OAX4G	Lima, Peru.
6405	46·84	TGQA	Quezaltenango.
6400	46·88	CR4AA	Praia, Cape Verde.
6390	46·95	HI9B	Santiago, D.R.
6385	46·99	HI1X	Trujillo, D.R.
6374	47·07	CSX	Lisbon.
6351	47·23	HRP1	San Pedro Sula.
6345	47·28	HEI2	Schwarzenburg.
6333	47·37	OAX6E	Arequipa.
6325	47·43	COCW	Havana, Cuba.
6321	47·46		Baden-Baden.
6315	47·51	OAX4M	Miraflores, Peru.
6312	47·53	HI1Z	Trujillo, D.R.
6295	47·66	TGRA	Refalhulou.
6282	47·75	OTM5	Leopoldville.
6276	47·80	ZPA1	Asuncion.
6272	47·83	YSR	San Salvador.
6255	47·96	TGRA	Guatemala City.
6250	48·00	YSUA	San Salvador.
6245	48·04	HI1N	Trujillo, D.R.
6242	48·06	CP5	La Paz, Bolivia.
6240	48·08	HJCF	Bogota, Colombia.
6235	48·12	HRD2	La Ceiba, Honduras.
6225	48·19	HJFB	Manizales.
6220	48·23	OAX4M	Lima, Peru.
		CE622	Santiago, Chile.
			Warsaw.
6210	48·31	HC1AC	Quito.
			Bucharest.
6208	48·33	FK8AA	Noumea, New Caledonia.
6204	48·36	YV6RD	Bolivar.
6200	48·39		Tangier.
6196	48·42	HI1A	Santiago, D.R.
6190	48·47	VUD10	Delhi.
			Jaffa.
			Tokio.
6187	48·49	HIL	Trujillo, D.R.
6185	48·50	LLI	Frederikstad, Norway.
		XECC	Puebla, Mexico.
6180	48·54	GRO	Daventry.
		LRM	Mendoza.
6175	48·58	XEXA	Mexico City.
		HI9T	Puerto Plata.
6170	48·62	CXA21	Montevideo.
			Suva, Fiji.
6165	48·66	HE3	Schwarzenburg.
		HHCM	Port-au-Prince, Haiti.
		TILS	San Jose, Costa Rica.
			Saigon, Indo-China.
6160	48·70	HJCD	Bogota.
		CBRX	Vancouver, B.C.
			Moscow.
6155	48·74	EQB	Teheran, Iran.
		CSWD	Lisbon.
			Vienna.
6153	48·75	TIRH	San Jose, C.R.
6152	48·76	CE615	Santiago, Chile.
6150	48·78	GRW	Daventry.
		VLR2	Lyndhurst.
		YSPB	San Salvador.
		CKRO	Winnipeg.
		YV1RJ	Cebimas, Venezuela.
6145	48·82	HJDE	Medellin.
6135	48·90	ZJM4	Jaffa.
		HNU	Baghdad.
			Punta Arenas, Chile.
6130	48·94	CHNX	Halifax, N.S.
		COCD	Havana.
		RW96	Moscow.
6125	48·98	HS8PD	Bangkok, Siam.
		CXA4	Montevideo.
		HRQ	San Pedro Sula.
6122	49·00	HP5H	Panama City.
6120	49·02	OIX1	Helsingfors, Finland.
			Singapore.
		LRX1	Buenos Aires.
		XEUZ	Mexico City.
6115	49·06	HIG	Trujillo, D.R.
6110	49·10	GSL	Daventry.
		VUD3	Delhi.
6105	49·14	HJFK	Pereira, Colombia.
		PRE9	Fortaleza, Brazil.
6100	49·18		Belgrade, Yugoslavia.
6095	49·22	ZYB7	Sao Paulo.
		ZRJ	Johannesburg.

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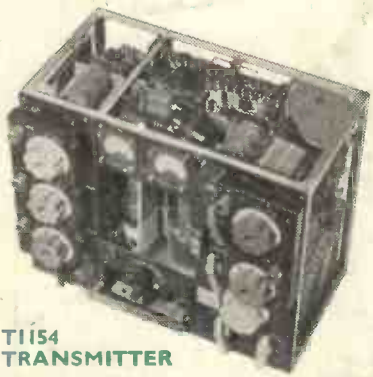

T1154 TRANSMITTER

Complete Tx. for "Fone," C.W. and M.C.W. with valves ML6 (VT105) Hartley M.O., 2/PT15's (VT104) parallel P.A., ML6 mod. and side tone, suppressor grid modulation, simplified tuning, etc., etc., with circuit less power pack, in metal case 14" × 16½" × 8½".

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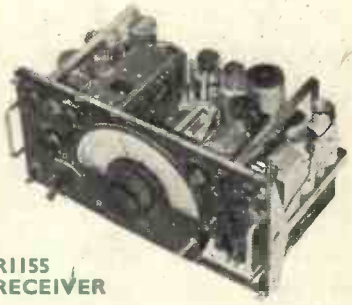
Power supply required H.T. 1200 V. 200 ma. smoothed D.C. L.T. 6·3 V. 5 a. Circuit available at 2/3, post free.



R1155 RECEIVER

A communication Receiver for 18·0-7·5 mcs., 7·5-3·0 mcs., 1500-600 kcs., 500-200 kcs., 200-75 kcs., with 10 valves. S.M. tuning, calibrated dial, etc. Complete receiver unit in metal case 16½" × 9½" × 9" with circuit, less power pack. Tested in operation before despatch.

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Outputs: L.T. 7·2 V. 13 amps. H.T. 225 V. 110 ma.
Type 34 : 10K19.
Type 34A 10K13065.
Input : 9·3 V. 23 amps.
Type 35A : 10K13066.
Input : 18 V. 12 amps.

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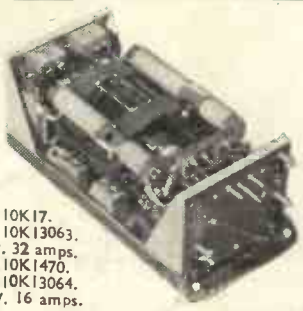
POWER UNITS for T1154 Tx



Output 1,200 V. at 200 ma.

Type 32 : 10K17.
Type 32A : 10K13063.
Input : 12 V. 32 amps.
Type 33 : 10K1470.
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