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The SHORT WAVE LISTENER

DEVOTED EXCLUSIVELY TO
SHORT WAVE RECEPTION

FEBRUARY 1950
VOLUME 4 · NUMBER 3

THE **SHORT WAVE** LISTENER

A MONTHLY MAGAZINE FOR THE LISTENING AMATEUR

VOLUME 4 **FEBRUARY 1950** NUMBER 39

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Payment at good rates is offered for articles of short wave listener interest.

CONTENTS

FEBRUARY 1950

EDITORIAL

QRP

It is commonly supposed that QRP is purely a transmitters' expression, applying to those who radiate using low-power equipment.

But in just the same sense, SWL's can be QRP with "low power"—or simple one- or two-valve—receivers, and it is the purpose of this note to draw the attention of readers, once again, to the interest and excitement still to be derived from the construction and operation of such a set. Years ago, many transmitters well-known to-day cut their teeth on a "one-lung perker," usually a single-valve Hartley oscillator coupled directly to the aerial, and thereby gained the *practical experience* which is such an important factor in this great hobby of Amateur Radio.

In the same way, SWL's of all generations can learn the essentials of receiver design by building themselves a straight 0-V-0, 0-V-1 or 1-V-1, and using it for a period in the quest for DX.

Some very good designs for such receivers have already appeared in the *Short Wave Listener*—and there will be more. We commend them to readers who, the possession of a commercial superhet notwithstanding, want to feel that they have really got down to it and have themselves produced a receiver which will give results.

Apart from this, it is a fact that until one has listened round on the DX bands with a pair of headphones and a straight receiver with a silent background, the true meaning of receiver capability cannot be measured or appreciated.

General-Purpose LF Amplifier

TWO-STAGE AUDIO UNIT, WITH NEGATIVE FEEDBACK

by W. N. STEVENS, G3AKA

(This is a design for which many readers have asked—a simple audio amplifier, adaptable for a variety of uses where the requirement is for a primary boosting unit to operate with existing equipment.—Ed.)

IT was the failure of a valve in the normally-used amplifier that started the whole thing. The valve in question had, at the critical moment, ceased functioning completely. There was no replacement on hand and the local radio shops were closed for the week-end —it being late one Saturday afternoon. The moral, of course, which the writer had failed to take note of was—always keep replacements where possible.

The crux of the matter was that it was vital to have a few watts of audio available for the next day. Confronted with this problem, it was finally decided to start work immediately on a new amplifier embodying valves and components already on hand. On further reflection, it was apparent that the idea was quite a good one in any case since the amplifier normally employed was really too large for the purpose of reproducing gramophone records for home use. Therefore, from all angles, the answer was a new amplifier.

The considerations involved in the new design were (*a*) adequate gain for normal room volume—but no more, (*b*) reasonably high fidelity and (*c*) compactness.

The Circuit

A circuit was hastily sketched out and, after a few modifications, due to certain components not being immediately available, emerged as shown in Fig. 1.

The output valve was the first consideration and finally a 6V6 was chosen. With the 250 volts HT obtainable from the power pack to be used, sufficient audio output could be expected. For the pre-amplifier a 6J5 was selected, as the junk box revealed one such triode reposing therein. With the two valves available it was only a few minutes' work to draw in the coupling and supply components.

The completed amplifier was constructed, starting right from scratch, in just about three hours. This time includes the effecting of several modifications that became advisable after the initial tests. One of these modifications was the inclusion of some kind of bass-boost circuit. Old gramophone records are particularly prone to severe bass attenuation and modern discs are also by no means ideal in this respect. Therefore, more bass was needed ; especially as a crystal pick-up was being used, this type being less "bassy" than the magnetic ones.

A boost circuit was tried in the anode circuit of V1, consisting of a 50,000-ohm and 5,000-ohm resistor and a 0·05-μF condenser, but this proved unsatisfactory inasmuch as, although it certainly improved the bass-response, it lowered the gain considerably.

The second method, as shown in Fig. 1, was highly successful. This equaliser circuit comprising R1, R2 and C1 makes a considerable difference to the performance and yet does not appear to reduce the gain unduly.

The remainder of the circuit leaves little for comment. R3 serves as the amplifier gain control. R4 and R5 are the V1 anode load and decoupling resistors respectively and C3 is the decoupling condenser. No bias is applied to the cathode of V1 ; the omission tends to provide a certain amount of negative feedback which is all to the good where quality is concerned. Coupling to the 6V6 output valve is through C5, the value (0·5 μF) being a good all-round one. The 50,000-ohm resistor R6 is a grid stopper which, though often not necessary, is a wise precaution against possible instability ; R7 is the grid-leak. Bias to the 6V6 is obtained from R9/C4.

Negative Feedback

In the interests of quality the application of negative feedback, to reduce harmonic distortion, was considered justifiable. Since only one component was to be used (R10), the time involved could be dismissed as of no consequence. Naturally, we can never get something for nothing, and the application of negative feedback incurs some loss in stage gain. However, the output obtained from the amplifier as finally completed is quite adequate for domestic use. And you do get an improvement in quality.

Taking advantage of the negative feedback resistor, the tone control was fitted in the feedback line—this again needed only one component, a 300-$\mu\mu$F variable condenser (C7).

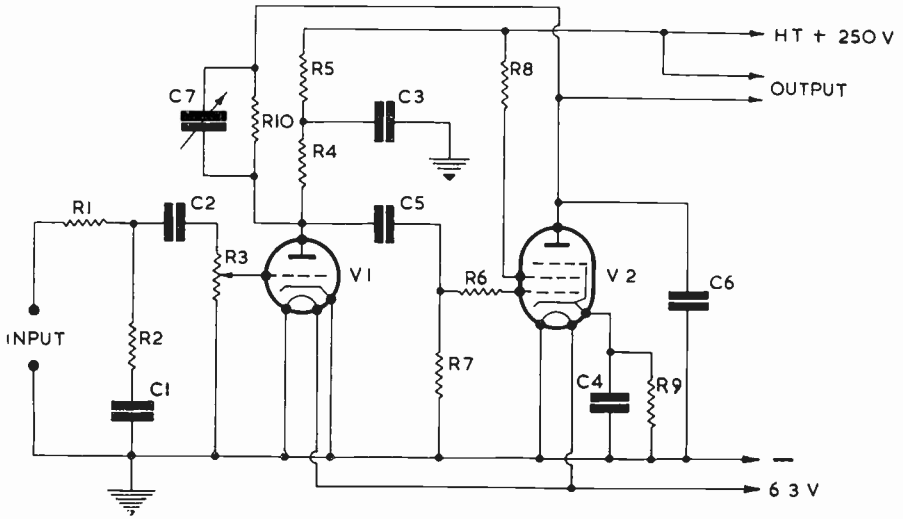


Fig. 1. Circuit of the amplifier—a simple two-stage unit with many applications, the parts for which most amateurs will already have at hand.

Construction

The amplifier must be reasonably compact, says proviso (*c*). The best that could be accomplished at short notice was an inverted "U" chassis made from a strip of aluminium discovered in one of the boxes in the shack. The strip was 7 in. × 6 in. in size, and it was bent in the vice into a chassis 6 in. wide with a sub-space of 2 in.—that is to say the top of the finished chassis measured 3 in. × 6 in. Now the writer can foresee claims that this could be reduced to even smaller dimensions. Agreed; it could be made considerably smaller, but the 6 in. × 7 in. strip was the most convenient that was on hand.

A symmetrical layout is always pleasing and this was easily achieved without detriment to compact wiring or loss in efficiency. The two valve-holders were fitted along the centre line and 1½ in. from each edge. Two jack sockets are fitted—on the left-hand side the input and on the right the output. The two controls on the front and between the jack sockets are audio gain (left) and tone control (right). The latter needs comment, since it is "live" on both sides and the spindle must therefore be insulated from the chassis.

This was overcome in a simple manner. The variable condenser (a waxed mica dielectric type, incidentally) was mounted on a piece of paxolin slightly larger in area and the paxolin was bolted to the chassis. A hole large enough in diameter to clear the hexagonal fixing nut on the condenser spindle (by which the condenser was affixed to the paxolin) was first drilled in the chassis. This can be clearly seen in the accompanying photograph.

There are practically no leads as such in the amplifier. Most of the components are taken from point to point (*i.e.* such as valveholder

TABLE OF VALUES

Fig. 1. The Two-Stage Audio Amplifier.

C1 = 0·1 μF paper
C2 = 0·01 μF paper
C3 = 0·1 μF mica
C4 = 50 μF, 25V working electro
C5 = 0·05 μF paper
C6 = 0·002 μF mica
C7 = 300 μμF variable
R1 = 100,000 ohms. ½ watt
R2 = 100,000 ohms. ½ watt
R3 = 500,000 ohms potentiometer
R4 = 250,000 ohms. ½ watt
R5 = 2,500 ohms. 1 watt
R6 = 50,000 ohms. ½ watt
R7 = 750,000 ohms. ½ watt
R8 = 100 ohms. 1 watt
R9 = 250 ohms. 2 watt
V1 = 6J5
V2 = 6V6

Miscellaneous

International octal valve holders (2)
Insulated jack sockets (2)
Control knobs (2)
Anchor tag strips (2)
Chassis (aluminium strip 7 in. × 6 in.)
Rubber grommet
Supply leads
Supply lead plug
Nuts, bolts, washers, sleeving and wire

tags, jack tags, and so on). No screened leads are used in the grid circuits simply because there is no necessity! It was found convenient to fit two anchor tags (insulated) both along the inside rear of the chassis.

A rubber grommet was inserted where the supply leads enter the sub-chassis. And that's about all, really. With a little forethought, the wiring should be simplicity itself and definitely no straggling leads (the cause of so much instability) need result. The existing anchor points, such as valveholder tags, potentiometer, and so on, together with the two anchor tags, will allow for absolutely rigid construction.

The writer does appreciate, however, that there may well be newcomers to construction amongst us and with these in mind here are a few notes on the wiring-up procedure.

When all the necessary components have been mounted and securely fixed, wiring should commence with the heater leads. This will depend upon the LT supply available. It is usual practice to earth one side of the heater winding and in this case one of the heater tags on each valveholder can be taken to an earth point. Remember, leads must be short and direct. If soldering tags are fixed to the bolts holding the valveholders in position a useful earthing point is assured. To these points take the earthed heater leads and also use these points as far as possible for all earth returns for the stage concerned.

Next, wire up the positive heater leads.

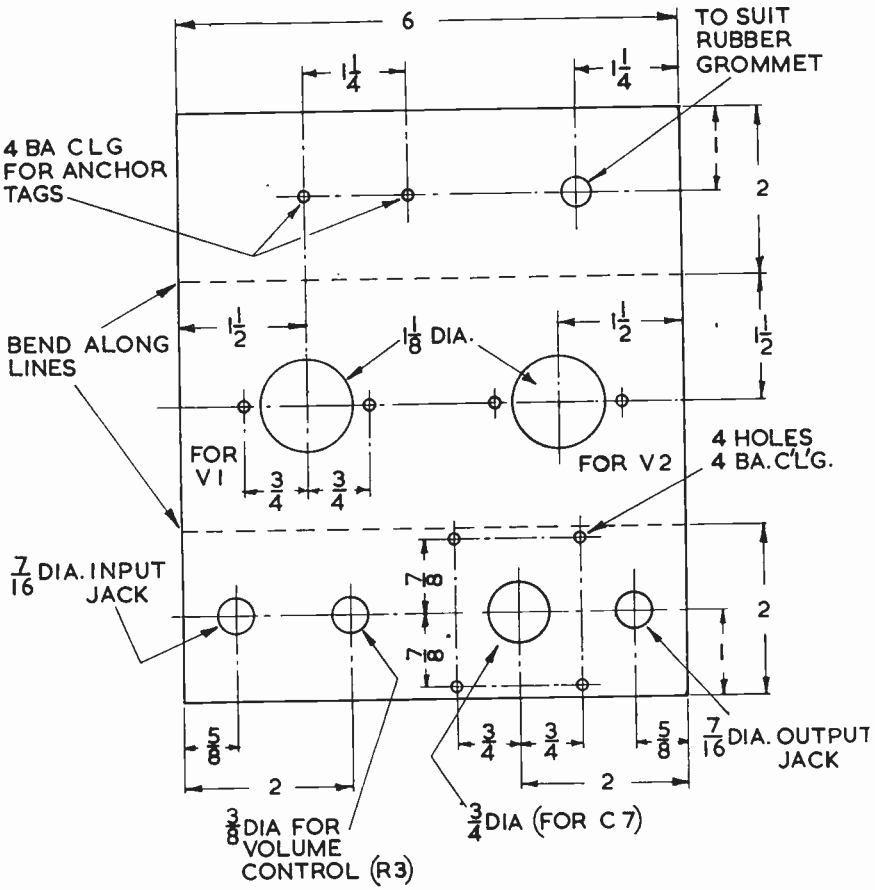
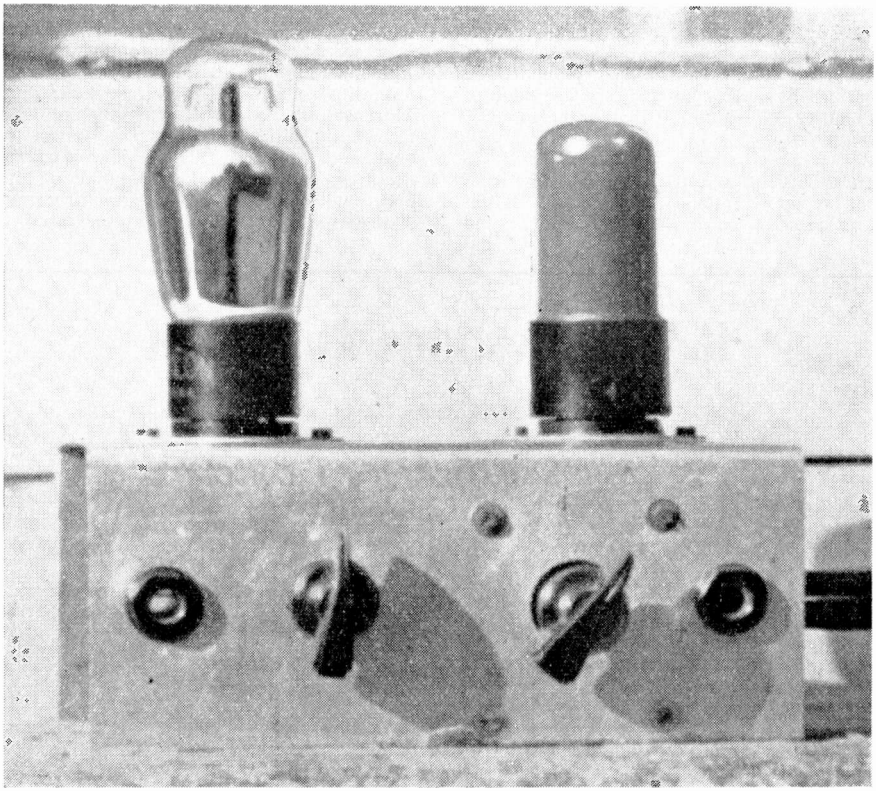


Fig. 2. Chassis construction details. A single sheet of metal is used, bent up after the holes have been drilled out.



How the Audio Amplifier might appear when completed.

The bias components for V2 should come next, using the valve-base soldering tag for the "earthy" connections. The feedback resistor and R8 can now be wired in. Then fix the anode circuit of V1 (R4, C3, R5). The coupling components such as C5 and R6 are then best soldered in. Finish off the various connecting leads and all that remains is the input circuit. And then the amplifier is finished.

If a little careful thought is applied the components should "fall" into position and almost no wire will be required Practically every "lead" will be the wire ends of condensers and resistors.

With a Record Player

Using either a magnetic or crystal pickup, and an 8-in. PM speaker, excellent results were obtained. The input equaliser circuit is certainly worth while, particularly when playing discs that are beginning to show signs of wear. The fidelity is excellent and should satisfy the most fastidious.

With a Receiver

Naturally, this amplifier unit could well be used as an output stage for a tuner unit. This is particularly useful since many of the popular "surplus" receivers require an additional audio stage (or have none at all). For the experimenter, too, an output unit such as this could be used in conjunction with experimental RF sections, thereby eliminating the necessity to rebuild the audio section each time.

There are, however, one or two points to bear in mind should the unit be used with RF sections or added to receivers. The equaliser circuit (R1, R2 and C1) is hardly necessary and should be deleted. Also C2 should be omitted if a coupling condenser is included in the preceding stage.

Another point worthy of mention is that the negative feedback may not be effective. With receivers of high selectivity the AF response is rather narrow and the inclusion of negative feedback will hardly improve the tone. And without it, you will, of course, get more gain.

Lastly, if the unit is used with a receiver, more output might in some cases be considered necessary. The 6V6 could, with effect, be replaced by a 6L6. In this case the value of R9 must be altered to 170 ohms or thereabouts.

Conclusion

This article, and the amplifier described, can lay no real claim to originality. But it does describe an inexpensive, efficient and reliable small amplifier well suited for use with record players at normal room volume or, with slight modifications, for use as an output unit with an existing receiver or tuner unit. Moreover, the construction will present no major difficulties to even the veriest of beginners. Most constructors will find all the necessary components in the junkbox ; but even if all new components have to be purchased it will still be remarkably cheap.

R.A.E. Questions Answered

FROM THE MAY 1949 EXAMINATION

PART I

by THE OLD TIMER

(For the third year we are presenting model answers, to be completed between now and our issue dated May, to the questions set for the last Radio Amateurs' Examination. At that sitting, of 898 candidates entered 636 passed, giving a pass rate of 71 per cent. The next examination is on May 10 this year, for which entries are required by March 1 ; intending candidates should apply through their local Technical College or the Education Authority. It is hoped that once again this series will be of practical assistance to those preparing for the R.A.E.—Ed.)

QUESTION 3. An alternating voltage of 10 volts at a frequency of $\frac{5}{\pi}$ Mc/s is applied to a circuit of the following elements in series :—(i) a capacitance of 100 $\mu\mu$F, (ii) a non-inductive resistor of 10 ohms.

(*a*) What value of inductance in series is required to tune the circuit to resonance ?

(*b*) At resonance, what is the current in the circuit ?

(Examiners' Report : *"This question was attempted by approximately 60 per cent. of candidates, a small number of whom obtained correct answers to part (a), while a fair number answered part (b) correctly. It was observed that some candidates who attempted part (a) did not use the indices method of calculation and became confused with the handling of unwieldy quantities."*)

ANSWER : (a) To determine the value of inductance necessary to tune the circuit to resonance, we must use the formula

$$f = \frac{10^6}{2\pi\sqrt{LC}}$$

where f is the frequency in kilocycles ;
L the inductance in microhenries ;
C the capacitance in micro-microfarads.

Substituting the known values for $f\left(\frac{5}{\pi}mc\right)$ and C (100 $\mu\mu$F) we arrive at

$$\frac{5}{\pi} \times 1{,}000 = \frac{10^6}{2\pi\sqrt{100\,L}}$$

or $$5 = \frac{10^3}{2\sqrt{100\,L}}$$

or $$10\sqrt{100\,L} = 10^3$$

from which $$L = 100\ \mu H.$$

(b) To determine the current in the circuit we must first find its impedance. This is obtained from the formula

$$Z = \sqrt{R^2+(X_L-X_0)^2}$$

where X_L is the inductive reactance

and X_0 the capacitive reactance.

But we need not find these terms X_L and X_0 separately, since we have already proved that the circuit is in resonance (by choosing the inductance necessary for that purpose). This is another way of stating that X_L and X_0 are equal and opposite. We, therefore, cancel them out and the formula becomes

$$Z = \sqrt{R^2} \quad \text{or} \quad Z = R ;$$

since R is a non-inductive resistor of 10 ohms, the value of Z is 10 ohms, and the stated alternating voltage of 10 volts will produce a current of 1 *ampere* in the circuit.

QUESTION 6. Describe *three* methods commonly used for coupling transmitters to aerials and discuss the relative merits of each type of coupling.

(Examiners' Report : *"Fairly well done by most candidates."*)

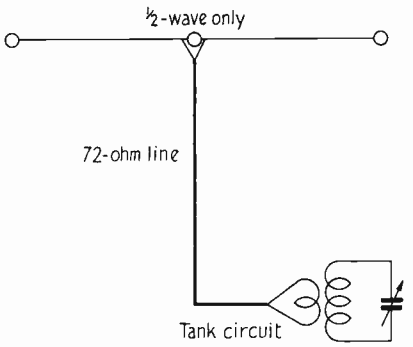


FIG. 1 (Current Feed)

ANSWER : The three methods chosen are (i) current feed at centre ; (ii) voltage feed at end ; and (iii) tuned aerial of the Marconi type.

(i) A dipole—that is to say an aerial with an electrical length of half a wavelength at the operating frequency—has a radiation resistance, measured at the centre, of approximately 72 ohms. It may, therefore, be very conveniently fed by breaking the wire at the centre and inserting a length of 72-ohm line of either the co-axial or parallel-conductor type. At the transmitter end this feeder is simply coupled to a link consisting of a small number of turns, reasonably tightly coupled to the tank circuit. A very low standing-wave ratio on the feeder should be achieved when the tank circuit is tuned to the resonant frequency of the dipole (*see* Fig. 1).

(ii) An aerial whose length is any multiple of half a wavelength may conveniently be voltage-fed at one end by means of a tuned high-impedance feeder. A convenient type of feeder frequently used has a surge impedance of 600 ohms, and uses spacers of polythene or other good dielectric material every 18 in. or so to preserve even spacing of the two conductors.

One side of this feeder line is connected to the end of the aerial and the other left free. At the point where the feeder joins the aerial the voltage is high, the current low, therefore this is known as a voltage-feed system. It also follows that if the feeders are a quarter-wave in length (or any *odd* multiple of a quarter-wave) the conditions at the bottom, between the transmitter tank circuit and the feeders, will be those of *current* feed. If the feeders are a half-wave, or any multiple of a half-wave, in length, the condition at the bottom will be the same as at the top—voltage feed.

The feeder system is usually connected to a tuned circuit which is, in turn, link-coupled to the tank circuit. According to the electrical length of the feeders the method of tuning them will vary ; for current feed the condenser or condensers will be in series with the coil, for voltage feed in parallel. (*See* Fig. 2.)

(iii) The non-resonant or "Marconi" aerial is used mostly for the lower frequencies, where it is difficult to erect a sufficient length of wire to produce a resonant half-wave. Thus a much shorter length, representing a quarter-wave or perhaps only an eighth, is loaded by means of an inductance and tuned with a series condenser, a direct earth connection or counterpoise taking the place of the other half of a dipole. If the Marconi aerial is exactly a quarter-wave long it may be fed "against earth" with 72-ohm line, just as a dipole is fed in the centre. If it is not, a tuned system is preferable. Any length of wire may, of course, be tuned to any desired frequency by choosing the right values for L and C in the aerial tuning unit, which, again, is link-coupled to the transmitter tank coil. (*See* Fig. 3.)

The respective merits of the three systems may be stated very briefly as follows :

(i) Is extremely simple but at the same time very efficient. Simple, because it avoids the

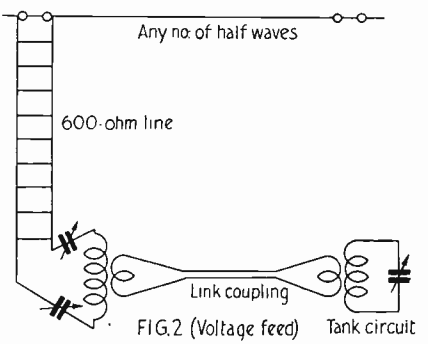


FIG. 2 (Voltage feed)

use of an extra tuned circuit at the "bottom end," coupling being achieved by an untuned link. Efficient, because the whole system is symmetrical and it is very easy to obtain a very low standing-wave ratio on the feeder, which therefore does not radiate and distort the polar diagram of the horizontal portion. Its *disadvantage* is that it is definitely a single-frequency aerial and cannot be used on more than one band.

(ii) May be made practically as efficient as (i), although the feed is never completely symmetrical. The feeders operate with a high standing-wave on them and, therefore, tend to be more "lossy" than co-axial low-impedance line, and the tuning operation is more difficult. The great *advantage* is that the system may be

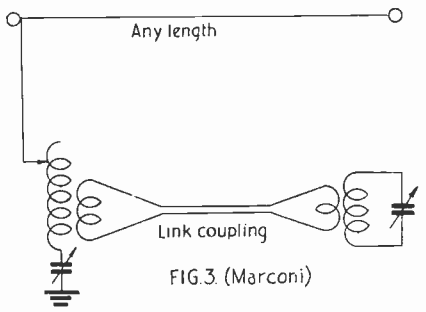


FIG.3. (Marconi)

employed on many frequency bands, provided that the top is cut for the longest one in use. Thus a 136-ft. top will operate as a half-wave aerial on the 3·5 mc band, full-wave on 7 mc, two-wave at 14 mc, four-wave at 28 mc and so on. It is probably the best-known and most popular multi-band system.

(iii) Is generally used where no other system is practicable, as, for example, by an amateur who wishes to use the 1·7 mc band but cannot erect more than 100 ft. of wire. In such cases there is *no* substitute for the Marconi aerial, which is therefore an extremely important type. It has the disadvantage that the entire length of wire, including the vertical portion, radiates, and, arising from this, the serious disadvantage that only part of the radiator can be erected at a good height and clear of obstructions. For the lower frequencies, however, it suits amateur purposes extremely well and is, in many cases, the only possible type that can be used.

SSB RECEPTION

There is growing interest in the practice of Single Sideband operation, though there are not as yet a great number of stations active. However, one keen G who can frequently be heard on about 3730 kc is G2NX of Oswestry; he is looking for co-operation, and SWL's who hear him in QSO will find that the best way of receiving the signal is to switch out AVC, turn down the RF gain, put in the BFO and, with the main tuning set as nearly as possible on the signal, carefully adjust the BFO pitch control till good, clear speech results. The adjustment is tricky at first, but it is easily mastered. This procedure amounts to inserting the missing carrier at the receiving end, and is the essence of SSB working. Another good way of doing it, which will probably give much better results, is to use a very stable oscillator—such as a BC-221 or a Class-D wavemeter—tuned to the frequency and coupled to the input end of the receiver. If this coupling can be made variable, so much the better, as it will enable the correct level of "carrier injection" to be obtained; if this is too low, the signal will sound over-modulated, and vice versa, since the SSB signal actually modulates the re-inserted carrier.

"TWO METRES WITH THE RF-27"

Several readers point out that the physical wiring to the EC52 valveholder in Fig. 2 at the top of p. 37 does not correspond to the EC52 pin connections as given in Fig. 3, p. 38. That is so, but as explained in the caption on p. 37, those sketches are only to "suggest general layout details," and were not intended as a point-to-point wiring plan. The article to which this note refers appeared in the January issue of the *Short Wave Listener*.

STORM LOCATION TECHNIQUE

In conjunction with the Meteorological Office, the Department of Scientific and Industrial Research has developed a system of storm location which depends upon D/F'ing lightning flashes. The train of radio waves created by the flash is shown on a cathode-ray tube at the D/F station. There are four such stations, each with two receivers with the control at Dunstable. Bearings taken on lightning flashes are plotted at the control station, the storm centre being at the intersection of the four direction lines from the D/F stations, which are equipped to give both sense and bearing. Ranges of up to 1,000 miles or more are obtained on the system, and the data it provides are used for weather forecasting and aircraft-route warnings.

PHOTOGRAPHS

We are always glad to see photographs of Amateur Radio or general short wave interest for publication in these pages. Payment is made for all such material accepted, and photographs can be returned after use since the block-making process involves no damage to the print. These can be any size, but *must* be clear and sharp. Readers who send in (or have sent in) photographs should note, however, that they have often to be held for some time before actual appearance in print.

BEGINNERS NOTE

Our *Principles of Short Wave Reception* is a little book of which many thousands have been sold. In four chapters of 32 pp. it deals in an essentially practical manner with the fundamentals, including the construction of simple equipment. Price is but 1s. 8d., post free, of the Circulation Manager, Short Wave Magazine, Ltd., 49 Victoria Street, London, S.W.1.

BRITISH SHORT WAVE LEAGUE

The reorganisation of the League has now been completed, and steady progress is being made with the plans for its development and further expansion. The British Short Wave League sets out to give all in any way interested in short wave radio as a hobby the solid advantages of a specialist organisation designed to cater for their needs. Since one of the first requirements is a live publication, the *BSWL Review* appears as a 12-page addition to the *Short Wave Listener* and the combined journal goes only to BSWL members. Those who belong to the League identify themselves as active enthusiasts who take their hobby seriously enough to want to know all about it and keep right up to date.

If you are at all interested in joining such an association, a note to The Manager, British Short Wave League, 53 Victoria Street, London, S.W.1, will bring you full details. And if you would like to see what the *BSWL Review* looks like, ask for a back-number copy of the combined publication (price 1s. 6d., post free).

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.

CO7GM *Guillermo Melo, Punta San Juan, Camaguey, Cuba.* 'Phone operation in band 28·1-28·5 mc.

CO8AZ *Calvario* 919, *Stgo. de Cuba, Oriente, Cuba.* 14075 kc CW, 1100-1200 and 2200-2359 GMT.

CR7BN *P.O. Box* 943, *Lourenco Marques, Mozambique.* 14049, 14150 and 28100 kc 'phone and CW, 1800-2359 GMT.

DL2OW 1945 *A.A.C.S. Sqdn., APO.* 57, *c/o P.M., N.Y.C., U.S.A.* 3·5, 14 and 28 mc 'phone, 0500-0900 and 1600-2359 GMT.

DL2PB *Sgm. Langridge,* 1 *Wireless Regt. Royal Signals, B.A.O.R.* 3. 14000-14100 kc CW.

DL4OT 33*rd Med. Depot Co., APO.* 696, *c/o P.M., N.Y.C., U.S.A.* 28 mc 'phone. Modulation, and any hum.

EA1BZ *Consolacion* 20, *Torrelavega, Spain.* 7015 and 14030 kc 'phone and CW, 2200-2359 GMT.

EA5CS *San Carlos* 102, *Alicante, Spain.* 7 and 14 mc 'phone and CW, 1800-2359 GMT.

EK1AO, **EK1FM** 34 *Goya Street, Tangier, Tangier Zone.* Operating 3·5, 7, 14 and 28 mc CW.

G3BEX 112 *Southwick Street, Southwick, Sussex.* 1·7 mc 'phone and CW, VFO, after 1900 GMT.

G3CRS *A.R.S., HMS. Collingwood, Fareham, Hants.* 3·5, 7, 14 and 28 mc 'phone and CW.

G3EJF 43 *Hawthorn Avenue. Bury, Lancs.* CW and 'phone, 1·7 mc only, over 150 mi'es.

G3ESY, **G3ESY/A** 5 *Orchard Gardens, Putson, Hereford.* Quality and modulation of 14 and 28 mc 'phone, 1700-2359 GMT. Reports outside Europe.

G3ETE 3 *Collins Buildings, Saltford, Bristol.* 3507, 7010 and 14020 kc CW, Monday, Thursday and Saturday 2000-2300 GMT.

G3GBJ 209 *Plymouth Road, Redditch, Worcs.* 3·5 mc CW, 1430 GMT onwards, and after 2000 GMT.

HP1BR *Apartado* 883, *Panama, Panama Republic.* Quality, modulation, also QSB, of 14163 and 28326 kc 'phone, 0500-0800 and 1100-1400 GMT.

KZ5WZ *Box* 1176, *Ancon, Panama Canal Zone.* 7, 14 and 28 mc CW operation.

ON4LP, **ON4LU** *Arbespine* 22, *Sart-les-Spa, Liege, Belgium.* 7 and 14 mc CW, 1130-1300 and 1800-2359 GMT.

OQ5AO *P.O. Box* 1104, *Elisabethville, Belgian Congo.* 28 mc 'phone and CW, 1000-1100, 1500-2000 GMT.

OX3UG *E. Faber, Prins Christians Sund, Greenland.* 3·5, 7, 14 and 28 mc CW operation.

PY1AIK *P.O. Box* 4752, *Rio de Janeiro, Brazil.* 14-14·1 mc CW, 2100-0200 GMT.

PY1MK *R. Sa Earp* 84, *Petropolis, Rio de Janeiro, Brazil.* 28 mc 'phone, 0001-0300, 1600-1700 GMT.

SM4AWZ *Herrgaardsgatan* 4.*A.III, Karlstad, Sweden.* 7 mc QRP CW, VFO, mornings and evenings.

SM5ACR *Corp.* 50 *N-E. Forsberg, Dept. F.E., R.A.F. Signal School, F.C.S. Vesteras, Sweden.* 3·5, 7 and 14 mc CW, 1600-0500 GMT.

TI2HP *Box* 952, *San Jose, Costa Rica.* 14, 28 and 50 mc 'phone, 0001-0600 GMT, Sundays 1200-2200 GMT. Enclose IRC.

VE1ZS *P.O. Box* 513, *Chatham, New Brunswick, Canada.* 3·5, 14 and 28 mc 'phone and CW operation.

VE2AAL 6865 *Bordeaux Street, Montreal, Quebec, Canada.* Quality of modulation of 28 mc NB. FM.

VE2WY 515 *Berwick Avenue, Mount Royal, Quebec, Canada.* Comparative reports, 28268 and 28300 kc 'phone, operating 1200-1800 GMT.

VK2GS 53 *Denman Avenue, Wiley Park, N.S.W., Australia.* 14 mc 'phone and CW. 0700-1300 GMT.

VK3AWW 23 *Waterloo Street, Camberwell. Victoria, Australia.* Comparative reports, 14 mc 'phone, 0630-0930 GMT. Details Wx.

VK3WL 91 *Walpole Street, Kew, E.4, Victoria, Australia.* 7, 14, 28 and 50 mc 'phone and CW.

VK5BS 5 *Karong Avenue, Edwardstown, South Australia.* 7, 14 and 28 mc CW.

VO2CX *N. Whitaker, Torbay Airport, St. John's, Newfoundland.* 14 and 28 mc 'phone and CW, 2000-2100 GMT.

VP4TAQ 4 *Mathura Street, St. James, Port of Spain, Trinidad.* 7000, 7075 and 14024 kc CW, operating 2200-0200 GMT.

VQ4KTF *P.O. Box* 71, *Kitale, Kenya.* 14116 kc, CW, also 'phone quality, 1700-2000 GMT. Details Wx.

W2ODO 740 *E.* 243*rd. Street. Bronx* 66, *N.Y.C., U.S.A* 14 mc 'phone, 0415-0600 GMT, and weekends.

W2TAF 42-02 *Ditmars Boulevard, L.I. City,* 5, *N.Y., U.S.A.* 28 mc 'phone, 1400-1900 GMT weekends.

W2TPZ *P.O. Box* 16, *Eastport, L.I., N.Y., U.S.A.* 14 and 28 mc CW, 1200-1400 and 2000-2300 GMT.

W2ZCZ 20 *E. Oneida Street, Baldwinsville, N.Y, U.S.A.* 7·01 mc CW, 2130-2300 GMT.

W2ZLR 57-41 134*th Street, Flushing, L.I., N.Y., U.S.A.* 3·5 and 7 mc CW, 0400-0900 GMT.

W2ZTZ 13 *Ann Street, Spring Valley, N.Y., U.S.A.* 28530-28680 kc 'phone, 1600-1900 GMT.

W3KG 4 *Knox Avenue, Monessen, Pa., U.S.A.* 14 mc 'phone, 0500 and 2200 GMT. Comparative reports.

W3LVF 725 *Garden, Glenside, Pa., U.S.A.* CW and 'phone, 7 mc 2200-0100 GMT, 14 mc 0400-0800, 50 and 144 mc 0100-0400. Comparative reports.

W5OFM 10506 *Flaxman Avenue, Houston, Tex., U.S.A.* 28 mc 'phone quality, Comparative reports.

W5ONS 1402 *Goliad Drive, Victoria, Texas, U.S.A.* 28 and 50·038 mc 'phone, 1300-1500 GMT.

W6AJN 710 *Hancock Way, El Cerrito, Calif., U.S.A.* 14 and 28 mc CW, VFO. Reports from Europe.

W6DTW 1602 *Rheem Avenue, Richmond, Calif., U.S.A.* 7, 14 and 28 mc CW, also 28 mc 'phone.

W7EW 1020 *S.*43*rd Street, Tacoma* 8, *Wash., U.S.A.* 14050-14150 kc CW, 0500-0800 GMT.

W8BZG 2607 *Vestry Avenue, Cleveland, Ohio, U.S.A.* 28 mc 'phone, 0900-1600 GMT. From GC, GM, GW.

W8RXY 1920 *S. Washington Avenue, Lansing, Mich., U.S.A.* 29 mc 'phone, 1500-2359 GMT.

W9BF 407 *W. Felicity Street, Angola, Ind., U.S.A.* 7 and 14 mc CW, operating daily.

W9GAY 3652 *N. Central Park Avenue, Chicago, Ill., U.S.A.* Quality of 14 mc 'phone, 0500-0800 GMT.

W9KMC 2500 *Green Bay Road, Evanston, Ill., U.S.A.* 14 mc CW, operating 0001-1400 GMT.

W9KXD 4329 *N. Hamlin Avenue, Chicago, Ill., U.S.A.* Comparative reports and details of stability of 14 mc CW, 1200-1300 and 2100-0200 GMT.

W9TJB 1442 *N. Washtenaw Avenue, Chicago, Ill., U.S.A.* Comparative reports, and readability through QRM of 28 mc NB. FM., weekends 1500-1800 GMT.

WØPXB 101 *E. Peary Street, Duluth* 8, *Minn., U.S.A* 28·5-28·7 mc 'phone operation.

ZB1AJX 18 *Bugeta Buildings, Prince of Wales Road, Sliema, Malta.* 7 mc 'phone, 2200-2359 GMT.

ZL1LA 66 *Tohunga Crescent, Auckland C.4, N. Zealand.* Comparative reports, 14258 kc 'phone, 0400-0800 GMT Saturdays, 0600-0900 GMT weekdays.

ZS2CV 3 *Molteno St., Uitenhage, Cape, S. Africa.* 14 mc CW, 1600-2000 GMT. From GC, GD, GI, GW.

ZS6HN 49 *Webber Road, Delville, Germiston, S. Africa.* 7, 14 and 28 mc 'phone and CW.

Broadcaster KDKA

A VISITOR'S IMPRESSIONS

WHILE in Pittsburgh, the writer made contact with the staff of the broadcast station KDKA for the reason that he felt that he ought to take advantage of the opportunity of visiting what is reputed to be the world's first short wave broadcast station. It is not, however, proposed to enter into any controversy on the veracity of that claim ! As may be expected, a number of the technical staff were found to operate amateur stations and took pride in demonstrating the KDKA equipment to a fellow amateur from across the ocean.

First of all, the studios in central Pittsburgh were visited and although the audio equipment there was interesting, it was not found to be very much different from that which one would expect to find in any broadcast studio. More interesting, however, were the several recording units in use for general programme purposes. The solid construction of these machines was most impressive. They appeared more like the sort of precision machine which one would expect to find in the tool room of an engineering works, except that they were, if anything, even better finished.

KDKA Equipment

The main broadcast transmitter at KDKA runs 50 kW and is of interest because of its comparatively small size—about 30 ft. long, 7 ft. high and 4 ft. deep, exclusive of the main HT power supply equipment—and because of the fact that it utilises air-cooled valves throughout. Incidentally, the main transmitting aerial is a ¾-wave vertical mast, which is no mean height as the operating frequency is 1020 kc !

KDKA also possessed a 3 kW FM transmitter at the time it was visited and it is noteworthy that the author has seen larger amateur-built 150-watt transmitters for the lower frequency bands. This station is situated several miles outside Pittsburgh and the FM aerial consists of a dipole and director, only about 15 ft. above ground level—it looked absurdly minute against the background of the medium wave vertical.

Have you heard?

NOT a very interesting month, December, 1949, and this is practically the first time I have begun this Commentary with such a remark. However, there it is: The DX was about, but the bands were pretty unreliable in spite of some very nice little patches. The "Zones Heard" list for the month tells its own story, and as for the SLP lists—well, we'll change the subject right away.

Let's round up 1949 with a few summings-up of the Contests and things, and then get right down to 1950. First, the Four-Band Table. It presents a very different aspect this month, because, instead of numbers of countries, it shows the positions of the leading contestants in the various categories.

Those listeners whose names you see in the left-hand column are those who succeeded in coming not lower than *fifth* in one column or another—either for 'Phone and CW or for 'Phone Only. In the latter case their position is followed by the sign (P). If, now, we award them five points for a 1st, four for a 2nd, three for a 3rd, and so on, the "winners" of the whole thing turn out to be:

1st:	D. W. Bruce (Eltham)	19 points
2nd:	K. Parvin (Thornton Heath)	14 points
3rd:	D. L. McLean (Yeovil) W. J. C. Pinnell (Sidcup)	13 points

All honour to these listeners for a very fine all-round performance. We shall not be hearing so much from D. W. Bruce, who is now in the R.A.F., but we wish him Good Listening on all his leaves and passes! And I must mention that J. L. Hall (Croydon) would have headed the 3·5 and 7 mc columns on his showing in the December table, but he didn't appear in the January issue, not having reported for three months.

THE TOP-BAND MARATHON

This came to an end on December 31, having served the useful purpose of introducing many listeners to the joys of the 1·7 mc band for the first time. For the "Premier Award," so to speak, no one has been able to catch G. C. Allen, of Thornton Heath, who heads the 'Phone and CW list handsomely with his 65 counties. The 'Phone section falls to R. A. Hawley (Goostrey) with his score of 52. The results are shown in the small table elsewhere in this feature.

It is only fair, again, to mention that there *might* have been some change in positions if other listeners had kept up regular reports. I have had to keep to my rule that if you don't report for three months your name is removed from the table. Thus we had to expunge A. Baldwin (London, E.11), who otherwise would have been second in the 'Phone and CW section.

Likewise, it was hard luck that A. Hart (Ilkeston) should reappear at the eleventh hour with a claim of 53 counties, which would have won him the 'Phone section. But I made it clear at the outset that the idea of a Marathon was a *progressive reporting of your scores*, and that no one would be allowed to "fade out" and then suddenly crop up again late in the year with a large score. Sorry—but there it is. In the 1950 Four-Band Marathon I am stipulating that all scores reported must refer to the previous two months only; thus, if you drop out for three months your name will be removed, and when you come back you will only be able to claim additions for the previous two months, thereby losing something.

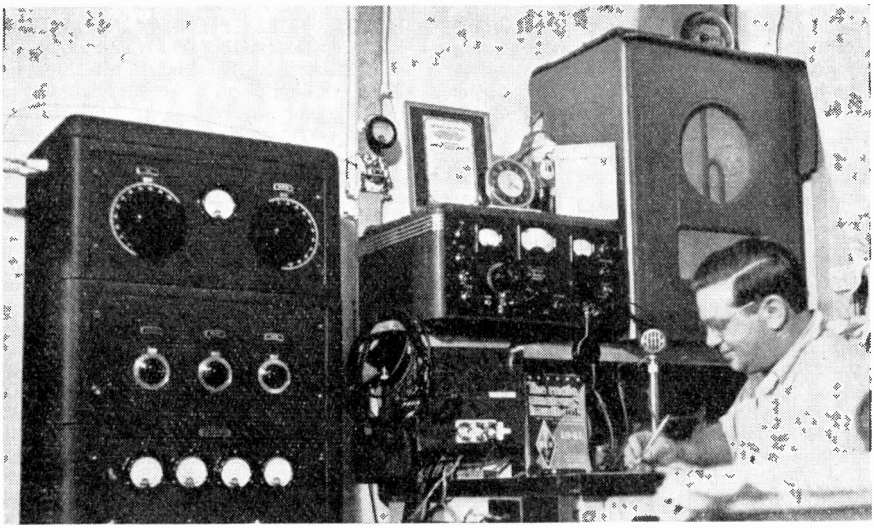
ZONES HEARD, DECEMBER

This table appears as usual. As I have already remarked, totals are noticeably down; in fact only two listeners went above the century mark during the month. O. A. Good (Oswestry) heads the 'Phone and CW list, with R. A. Hawley at the top of the 'Phone Only section. Congratulations to these two for their performance in the last of these lists that will appear for some little time.

And now, before I go on to the plans for 1950, let us discuss the last month of 1949, along with a certain amount of matter on the usual subjects of cabbages and kings.

THE 3·5 MC DX

I should have thought that many listeners



W6UAP, Huntington Park, Calif., runs a pair of HF100's in the final, into a 3-element beam. The Class-B modulator consists of a pair of 35T's.

would be aware of the fact that the ZL's have been pouring in in the mornings on this band ; but the only one wise to it seems to be J. L. Hall, who lists VK5KO and four ZL's in his Calls Heard. ZL's heard by your Scribe between 0730 and 0800 on many mornings include ZL1BY, 1CI, 1HM, 1MB, 3GQ, 3NH and 4JA ; on good mornings some of them have been RST 569 and the weakest 449. Peak time, early in January, was 0745, although ZL1MB was heard as late as 0910. ZS5YF was noticed on CW at 1900 on January 6.

Lots of readers have been hearing an abnormal amount of DX 'phone on the band. J. M. Graham (Glasgow) mentions VE's, VO's and W1, 2 and 3 (all between 2300 and 0030) ; D. L. McLean (Yeovil) finds 3·7 mc good for W 'phone by 2300 ; M. G. Whitaker (Halifax) has logged W and VE as early as 2155. O. R. F. Mason (Prittlewell) found December 17-18 amazing, and logged 51 DX stations, including W6's on 'phone, between 0715 and 0815. W8OND, using a balloon, was S9.

J. R. Bolton (Kenton) heard VE1, 2, 6 and W1, 4, 7 on 'phone ; D. G. Martin (Cheltenham) mentions VE7WZ and W6RB ; D. Powell (Wilton) found a new 'phone country with KP4AZ. Reverting to CW, J. C. Beal (N. Wembley) would like to know more about OY2Q (or OY2MA ?), and K. Twibell (Worksop) heard ZC6DD (RST 556) at 1043 GMT. He asks whether ZC6 and 4X are two separate countries. They are.

Other 3·5 mc points—the enormous strength of W1ATE on 'phone and VE1RF on CW when there is little else about ; the frequent appearances of SP1CM, who is perfectly genuine, on CW ; and the occasional signals from HZ1KE. Lastly, the welcome appearance of KZ5DR on CW at about 0730 in the mornings.

DX ON FORTY

This band has been extraordinarily good, but seems to remain the prerogative of the "specialists." Some of the keenest DX-chasers resolutely refuse to touch it. We will take the 'Phone DX first. J. M. Graham mentions EA6AF, F9JD/Corsica, I1MV/Trieste, SP5AB, YO3RI and 3V8AS. K. Parvin (Thornton Heath) quotes EA6AF and 6AI, lots of FA's, PY4QE and SP5AB. W. J. C. Pinnell heard CT2AE and CX5AJ, and J. C. Beal collected EK1HK, F9JD and YO3RI. D. S. Kendall, R. L. Bastin and others mention ZB1AJX "roaring through."

Now the CW. N. S. Beckett (Lowestoft) received W's at 1800 on December 15 and 16 ; they were still there at 1000 next day, including W9 and WØ. In the French contest he logged FT4, CN8 and a round dozen FA8's ; his Calls Heard list for the band includes CO, OX, UF6, UI8, VQ4, ZS. A. H. Edgar (Newcastle) has found the band good but "not a patch on last month." His best were CE3OO, CM7FU, KG6MS, LU6SL, VS4AU (?), YV4AN and YS2GU. J. C. Beal mentions CM7NR, KZ5IP, UF6AB and VP2LA. D.

Powell was getting VK's at 0900 ; I heard several myself at 1800-1900—fairly roaring in—just before Christmas. AP5B has also been heard on the band. (Yes—this *was* 7 mc we were talking about, in spite of the unfortunate mistake—for which humble apologies—in last month's Calls Heard, which ascribed half the 14 mc lists to 7 mc and made several people sit up !)

THE 14 MC DX

Here is a potted version of the best things heard on 14 mc during the month. First, 'Phone. From Asia we have AR8AR, DU1AL and "heaps of J's." From Africa, CR5UP (still there, bless him !), EL5B, FF3CN, 8DA and 8FP, VQ3KIF and VQ8AX. From Central America, FY8AA, HI6EC, HR2RF, TG5DM, TI2OA and VP7NU. All that's left over is OY2RD, OY3IGO, VP8AP (South Orkneys) and "loads of VE8's."

On CW the band yielded up CR6AQ, 7AK, CT3AV, F9QV/Corsica, FN8AD, FY8AA, HC2GR, HS1SS, SP1CM, VP2KM, VK9RM VQ8AX, ZD2LMF, ZD9AA and ZS3R. (Of course, all this DX has passed through a fairly fine filter ; lots more was heard but this seems to be the pick.)

Odd comments come from D. K. Cocking (Farnborough), who says CX2CO romps in when the band is otherwise dead : from G. Moses (Crewe) who says the same thing about W2SAI ; from P. H. Strudwick (Finchley), who heard KC4AK claiming to be in the Antarctic.

D. L. McLean remarks that the mornings round 0900 have been very poor ; best time, he has found, is 1700-1900, although 2300 to midnight is sometimes interesting. On one night, 2305-2335, he logged KP4, CE, CO, PY, LU, TI, CR5, W7, VE6 and VE7 —all 'phone. R. A. Hawley (Goostrey) heard 4X4CV/Airborne over Israel—not over the English Channel this time. D. Dadswell and others remark that the band is good from 1700-1900 but seems "dead" afterwards. (Not dead

FOUR-BAND DX

(WINNERS OF THE CONTEST ENDING DECEMBER 31, 1949)

Listener	28 mc	14 mc	7 mc	3·5 mc	Total
A. Bannister (Manchester)	3rd (P)	1st (P)	—	—	2nd (P)
N. S. Beckett (Lowestoft)	—	—	2nd	3rd	—
D. W. Bruce (Eltham)	1st	1st	—	2nd	1st
P. E. Chinn (London, S.E.22)	2nd (P)	—	—	—	—
F. K. Earp (London, S.W.11)	—	4th (P)	3rd (P)	3rd (P)	3rd (P)
O. A. Good (Oswestry)	5th	2nd	—	—	2nd
H. M. Graham (Harefield)	—	—	5th (P)	—	—
J. M. Graham (Glasgow)	4th (P)	—	1st (P)	4th (P)	—
R. A. Hawley (Goostrey)	2nd	—	—	—	3rd
F. A. Herridge (London, S.W.12)	4th	—	—	—	—
T. W. Jones (Birmingham)	—	3rd	5th	—	5th
D. S. Kendall (Potters Bar)	5th (P)	—	4th (P)	2nd (P)	3rd (P)
D. L. McLean (Yeovil)	1st (P)	3rd (P)	—	—	1st (P)
E. J. Parish (Watford)	—	4th (P)	—	—	—
K. Parvin (Thornton Heath)	—	2nd (P)	2nd (P)	1st (P)	5th (P)
W. J. C. Pinnell (Sidcup)	3rd	5th	1st	5th	3rd
C. S. Poole (Ipswich)	—	—	—	5th (P)	—
D. Powell (Wilton)	—	—	3rd	4th	—
A. Studley (Harrow)	—	—	4th	1st	—
D. W. Waddell (Hitchin)	—	4th	—	—	4th

(P) Signifies 'Phone Only

really—just a bit depressed !) K. Twibell mentions FM1SS again, on very chirpy CW ; K. Smeeton (Barnton) says he is pegging along with his CW and being rewarded by new ones.

H. M. Graham (Harefield) brings out a new Bermudan—VP9II ; O. A. Good awards the palm for consistency to VQ8AX and points out that VQ3KIF is quite an interesting station to watch for because it only exists when W3KIF/MM lands at Dar-es-Salaam.

TEN METRES

On the whole I think that Ten has been better than Twenty this month. Here is the best of the 'Phone DX, roughly tabulated. Asia gave us AP2J, AR8UN, CR9AG, HZ1KE, KH6VU/KG6, MP4BAB, MP4BAO (Bahrein), MS4A, PK1UH, 3LC, 3MR, 3SJ, 3WH, 3XE, 4DA, 4KS and W2EJV/PK3, YK1AC, XZ2PM, ZC6DZ and W5OFO/MM near Hong Kong. From Africa we had CR5UP, FD3RG, FF3AH, 8AH and 8FP, OQ5AO, VQ5ALT, ZD1FB, ZD2LMF, ZS3O, ZS9F and 3V8AP.

Central and South America were interesting, with HC1OY, HC7CR, HH2X, HR1RL, OA1D, TI2RC, VP2GG, VP5AR and YV1BF. This doesn't leave much over except TF3SF, TF3MB and OX3BD. From Oceania, of course, VK's and ZL's were "too numerous to mention."

This all makes it pretty clear that more DX has been gleaned on 28 mc than on 14 mc this month. P. H. Strudwick (Finchley) says : "If you want KG6 and KR6 try the band at 0900." D. K. Cocking (Farnborough) says it's a wonderful band, which has given him more DX in his first two months than 14 mc did in the previous year.

D. L. McLean and D. S. Kendall both heard LY1BC explaining that he was using his pre-war call because his country was "occupied" ; but for goodness' sake, if you have an old Call Book, *do not QSL direct*—I leave you to imagine the possible consequences. At all events it is nice to know that this Old Timer manages to carry on.

Opinions always vary about Ten—here's J. C. Beal saying it was at its worst since last May, and M. G. Whitaker describing it as the best band of the month. W. J. C. Pinnell rightly remarks that it can be very good in the mornings, but after noon it gets cluttered with W's above 28·5 mc and VE's below. K. Parvin (Thornton Heath) finds that he heard 36 Zones and 124 Countries (all 'Phone) on ten metres during 1949.

I understand from VS9AL that he, VS9AH and VS9AF are the only genuine stations in Aden, and that 9AF is not active. VS9AL sticks to CW and 9AH to 'phone, and anything else you hear with that prefix is phoney.

1·7 mc COUNTIES HEARD, 1949

LIST OF WINNERS

	Counties
'Phone and CW	
1st : G. C. Allen (Thornton Heath) ..	65
2nd : R. A. Hawley (Goostrey) ..	61
3rd : L. Singletary (Bicester) ..	58
'Phone Only	
1st : R. A. Hawley (Goostrey) ..	52
2nd : J. H. I. Austin (Coventry) ..	50
3rd : W. Eyre (Whaley Bridge) } K. L. B. Dalby (Gainsborough }	47

GENERAL PATTER

E. J. Logan (Hertford) thought conditions "strange" but found the DX getting through—and his two Calls Heard lists proved it ! Only one of them is reproduced owing to our old enemy "pressure of space." He heard KH6VU but apparently overlooked the "KG6" suffix. P. Bysh (London, N.8) only wanted a VK or ZL to give him an HAC in the first five minutes of 1950. He logged VQ4AI, CE2BQ, G2AJ, ZC6DZ and W2QKE in quick succession.

F. A. Herridge (London, S.W.12) started 1950 with a battery 0-V-1 on his bench in addition to his bigger receiver. He greatly admires N. S. Beckett's work with a 0-V-0 (especially on 7 mc) and hopes to emulate it. R. G. Goulding (Wrexham) and J. Neal (Birmingham) both mention a station signing CR4SS ; one reports him RST 592, the other 572 ! Personally, I doubt him ; but the genuine CR4AD, 4AE and 4AF have been heard dozens of times on 14 mc, late at night.

J. L. Hall heard DL1FF say that he was receiving AP5B on 3·5 mc, and also that he had worked a crossband QSO with W1EFN, DL1FF being on 3·5 and the W on 1·7 !

L. M. Singletary (Bicester) would like to see more SLP's each month ; he finds the comparisons between SLP lists very interesting and regards the General lists as (more or less) waste of space. Others have said much the same thing, but many are violently opposed to them. A. Scott (Liverpool) wants more SLP's for 0-V-0 and 0-V-1 receivers (in addition to the normal ones). This, I think, is a way of satisfying practically everybody. (*What a hope . . .—Ed.*)

W. Poynter (St. Albans) remarks that OH8OC is ten miles inside the Arctic Circle, being much farther north than most of the OH's.

COMMENTS

J. P. Warren (S. Croydon) found that his score by his fifteenth birthday was 37 Zones

G3AMM, Scunthorpe, Lincs., giving his radio class their Morse instruction. These boys are fortunate in having a master who, himself an active amateur, is able to develop and encourage their interest in the practice of Amateur Radio.

and 133 Countries. He wants to know whether there are any challengers? (Better start young, some of you fellers !) O. A. Good now has QSL's from 39 Zones and 122 Countries (36 and 87 on 'Phone). And D. G. Martin sums up 1949 by saying that he heard as many countries as in 1948, but in half the listening time.

G5QQ (Rawdon, Leeds) wants to know why more SWL's don't take to reporting on QRP transmissions. He works on 7 mc with 5 watts and is very anxious to know his coverage, but he hasn't received a *single report*. He will QSL 100 per cent., and is always prepared to keep skeds with SWL's more than 150 miles away—on either CW or 'Phone. QTH is G. Cockerham, Rowallan. Canada Drive, Rawdon, Leeds. (Personally I think the reason why QRP stations do not meet with more co-operation is that the listeners who hear them don't generally realise that they *are* QRP.)

THE SP STORY

Most of these SP stations that a lot of you have been rather sheepishly reporting are genuine. At any rate we can testify to the genuineness of SP's 1CM, 1KM, 1SE, 1SJ, 5AB, 5AC, 5SG and 5ZPZ. The 1's are pre-war SP's with their old calls in action again ; the 5's are new ones. QSL Bureau is P.Z.K., Box 320, Warsaw

QUERY DEPARTMENT

G. Moses queries a station that he copied as "SV5ZBZ"—I suggest SP5ZPZ (*see* previous paragraph). J. M. Graham (Glasgow) heard ZC2CZ and HV1A being called by W's—anyone heard them? Also he would like to know the best time for TA3GVU on 3·5 mc. D. L. McLean wants the usual frequency of F9QU/FM8 on 14 mc 'phone. He adds, by the way, that he has an All-India Call Book, so if anyone wants QTH's of stations in VU, VS7, XZ, FN8, AC3, 4 or 5, and AP, he will gladly furnish them on receipt of a stamped addressed envelope. A. H. Edgar asks "Where is EAØ?"; A. L. Higgins (Aberkenfig) would like more information on OY1BPD or OY1PA (28 mc). O. A. Good wonders whether VE8GH is in the Yukon. Finally, J. C. Beal asks for the QTH's of PJ5TR and UA9KJA, and whether all the YO's are genuine. I think most of them are.

TOP BAND NEWS

D. Powell, who reported reception of MD2GO last month, now has a letter confirming it (QSL card to follow) and telling him that MD2GO was using only 15 watts. D.P. has just acquired his 11th country with GD3UB. L. M. Singletary has also logged 11 countries.

A. H. Edgar thinks 1·7 mc the best band of all, whether searching for new counties or listening to local 'phone. On Christmas night he heard G, GM, GW and GI in five minutes. He adds that WWV on 2·5 mc has been heard at S5.

G. C. Allen, the triumphant winner of the "Counties Heard" contest, says that 62 of the 65 have obliged with QSL's. He is missing on Cumberland, Berwickshire and Guernsey. He also has heard lots of GM stations whose QTH's are not yet known. G.C.A. says it has been a great experience and he has learned a

lot about the band, his biggest surprise being the number of stations using it *regularly*, particularly in Lancs. and Yorks. He expects his grand total of Calls Heard on the band to exceed 1,250 !

W. J. C. Pinnell acquired a receiver covering the Top Band at Christmas time, and between December 25 and 27 he logged no fewer than 40 counties. I must confess that some of these figures surprise me a lot. What a band !

It only remains to add that G3PU (Weymouth) worked W4NNN on 1815 kc for the first post-war contact between G and W4 on the band ; and that GD3UB has worked VE1EA. Doubtless many other transatlantic contacts have been made by now. We should all remember, however, that there was a great deal of successful transatlantic working on 1·7 mc in January and February, 1939.

CALLS HEARD

No, not another blitz. Last month's lecture had its effect and the lists were, on the whole, much better this time. But several were discarded after the first glance because they didn't seem to obey *any* of the rules.

I am very sorry about the mistake (already alluded to) which caused several 14 mc lists to appear under the heading of 7 mc last month. Actually there were only three 7 mc lists and all the rest should have been under the 14 mc heading ; somebody must have dropped something, somehow, somewhere !

CONTESTS FOR 1950

And so to the New Year and the new contests. Funny how "Entering the Lists" is picking up its old meaning again, even if the contest is a little less violent than in Ye Olde Days.

There will be two permanent tables, running through the whole year. The first will be a Four-Band Table starting as from January 1, 1950, and should be set out as in the example, I. Herdam.

DX QTH's

CM9AC	Box 543, Havana, Cuba.
CT3AV	Fernando O. Tavares da Silva, Beco do Chao da Loba 5, Funchal, Madeira.
EA8RB	Manuel Cruz Barrios, Post Box 12, La Laguna, Tenerife.
EK1AO	34 Goya Street, Tangier.
FF8AH	Box 566, Dakar.
HP1BR	A. R. Rowley, Apartado 883, Panama.
MD7XP	L. Parks, c/o Met. Office R/S. RAF, Nicosia, Cyprus, M.E.F. 3.
MI3DX	c/o Cable and Wireless, Asmara, Eritrea.
MP4BAO	Box 333, Awali, Bahrein Is., Persian Gulf.
MS4FM	M. K. Hare, c/o British Administrator, Mogadishu, Somalia.
PK2JB, PK3HR, PK3LC	Box 222, Soerabaya, Java.
VO6VB	Goose Airport, Labrador.
VS1BJ	GHQ Signal Regt., c/o GPO, Singapore.
VS2CR	J. Hemphill (*ex-G3CTG*), c/o Perak River Hydro-Electric, Ltd., Malim Nawar, Perak, Malaya.
VS6BI, VS6BO	Box 541, Hongkong.
ZB1BB	A. L. Langford (*ex-ZC6JU*), HQ Forces Broadcasting Service, Malta.
3V8AP	Box 155, Tunis.

do not report for three months your name will be removed. Countries claimed must only date back for *two* months.

The second regular table will be "Zones Heard" on a Post-War basis—*not* 1950 or Monthly, but the total since you first started up after the war. This one we will split, as we have always split the Monthly Zones Heard, into "'Phone and CW" and "'Phone Only"—

Name	28 mc	14 mc	7 mc	3·5 mc	Total Countries	Total Points
I. Herdam (Esher)	25	30	11	10	35	76

Note that the "Total Points" column, which is the new addition, is simply the *sum of the totals on the four bands*, as distinct from the total number of different countries. It will often be this column that decides the order of merit, so it behoves you all to get cracking on all four bands rather than to try to pile up a big total on one or two of them. If you are claiming for 'Phone Only, add (P) after the last column, as in 1949. And note that if you so make it perfectly clear which you mean. (Like the example, I. Gottem.)

Name	Zones	Countries
I. Gottem (Dover) ..	39	185
'PHONE AND CW		

THE FEBRUARY CONTEST

These two tables should be a fairly simple matter to keep clean and tidy. But each month I hope to introduce a third one in the form of a monthly contest. It's too late for one in January, but the contest for the month of *February* will be Counties and Countries Heard on 1·7 mc. Listen for the whole month, send your log at the end of the month, and the results will appear in the following issue. And *always* state "'Phone and CW" or "'Phone Only."

I hope that these three separate contests, two of them "running fights" and the third a novelty which should appeal to specialists in some particular kind of listening, will keep things lively during the year. Sometimes the Monthly Contest will be for Zones Heard on a particular band, or Zones Heard on four bands, or for the greatest number of stations from one particular DX country. By all means send in your suggestions for such a monthly trial, if you have any bright ideas.

Calls Heard will, of course, continue, along with the usual Set Listening Periods and some extra ones.

SET LISTENING PERIODS

I announced in advance that the January periods had been chosen to fall in with the BERU Contest. The CW part of this started on January 14 and is resumed on January 28; the 'Phone section starts on January 21. In each case the contest runs from 1700 GMT on the Saturday until the same time the following day. I chose 14 mc for *both* SLP's, as being the band which will probably yield the most DX. So here they are, set out as usual :

January 21, 1700-1800 GMT—14 mc 'Phone.
January 28, 1700-1800 GMT—14 mc CW.
February 22, 1900-2000 *GMT—14 mc CW and 'Phone (for* 0-*V*-0 *and* 0-*V*-1 *only*).
February 25, 2200-2300 *GMT—1·7 mc CW and 'Phone.*
February 26, 0900-1000 *GMT—28 mc 'Phone.*

Note that I have included an extra mid-week one for the wee sma' receivers, as I have been asked to do by several exponents thereof. Meanwhile, however, get busy on the January ones and let us have some record lists of DX during the BERU Contests. They should both give you a grand chance of finding some new countries.

It only remains for me to say that the deadline for the March issue will be first post of February 1. This, I know, doesn't give you time to squeeze in the entire month of January for your Four-Band claims and so on, but the odd days always carry over into the next month; and we can't leave it later than February 1 on account of the calendar—which even we DX-chasers can't alter.

So address it all to DX Scribe, *Short Wave Listener*, 49 Victoria Street, London, S.W.1; keep your claims separate from your letters, please, and read back through that last Calls Heard Blitz of mine if you are in any doubts (or, equally, read the top of the first Calls Heard page). Otherwise you may be disappointed and I may be unpopular.

Until next month, 73 and the Best of Listening.

ZONES HEARD
(DECEMBER)

Listener	Zones	Countries
'PHONE and CW		
O. A. Good (Oswestry) ..	36	114
R. A. Hawley (Goostrey) ..	36	99
A. H. Edgar (Newcastle) ..	33	84
C. J. Goddard (Coventry) ..	31	56
J. C. Beal (N. Wembley) ..	28	80
J. Neal (Birmingham) ..	25	62
P. Bysh (London, N.8) ..	21	55
'PHONE ONLY		
R. A. Hawley (Goostrey) ..	35	94
D. S. Kendall (Potters Bar)	35	93
K. Parvin (Thornton Heath)	33	115
O. A. Good (Oswestry) ..	33	97
M. Whitaker (Halifax) ..	33	97
J. P. Warren (Croydon) ..	29	74
J. R. Bolton (Kenton) ..	29	43
J. M. Graham (Glasgow) ..	27	81
R. G. Goulding (Wrexham)	24	54
H. M. Graham (Harefield)	23	61
R. J. Line (Birmingham) ..	23	58
D. Dadswell (Steyning) ..	23	55
J. C. Beal (N. Wembley) ..	23	54
D. K. Cocking (Farnborough)	22	43
P. Bysh (London, N.8) ..	21	52
D. J. Williams (Pontyberem)	20	43
G. Murray (Newcastle) ..	17	38

THE CALL BOOK

We are glad to be able to draw readers' attention to an advertising announcement in this issue regarding the *Radio Amateur Call Book*. For some time, it has not been possible for individual subscribers in this country to obtain the *Call Book* owing to the exchange difficulty. This has now been overcome, and it can be ordered on either a single-copy or yearly subscription basis, as required. The Winter 1949-50 issue is now being distributed.

CALLS HEARD

SET LISTENING PERIODS

28 mc

Dec. 26, 1500-1600 GMT
(for 0-V-0 and 0-V-1 Rx, only)

P. H. Strudwick, 18 Elm Court, Finchley, London, N.3.

PHONE: MI3SC, TA3GVU, VO2CX, ZD4AU. (*Rx:* 0-*V*-1.)

L. M. Singletary, R.A.F., Bicester, Oxon.

'*PHONE:* SVØWB, TA3GVU, VO2N, ZD4AU, ZS1B.

CW: FA9VE. (*Rx:* 0-*V*-1.)

W. Poynter, Woodend, Oakwood Road, Bricket Wood, St. Albans.

'*PHONE:* OQ5CH, SVØWB, TA3GVU, WØBD, ØJRY.

M. Whitaker, Stile-House, Shelf, Nr. Halifax.

'*PHONE:* EK1BC, 1WX, FA3KC, KP4LL, MI3SC, OQ5AO, 5CH, SVØPY, ØWB, TA3GVU, VO2CX, ZD4AU, ZE2KH, ZS5U, 6XT, 9F. (*Rx:* 0-*V*-1.)

14 mc

Dec. 27, 1900-2000 GMT
('Phone only)

N. Roberts, 14 Broad Street, Launceston, Cornwall.

KP4AZ, PY7EE, VO1VI, VQ4NSH (*Rx: SX28A.*)

R. G. Poppi, 274 Kent House Road, Beckenham, Kent.

CO2SC, 2ZH, KP4AZ, 4TA, PY7AJ, TI2AT, 2CL, VO1GR, VP4TB. (*Rx: S.*640.)

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

CN8BA, CO2SG, VO1VI. (*Rx: AR-88 and S.*504.)

S. Smith, 40 Stoneleigh Road, Kenilworth, Warks.

CN8OE, PY7EE, VO1AF, 1VJ, VP4TN. (*Rx: R.*1084.)

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

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

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

P. H. Strudwick, 18 Elm Court, Finchley, London, N.3.

CO2SG, FF8MEH, KP4AZ, PY7AJ, 7EE, VO1TI, 1VI, VP4TB, VQ4ADC, YV5HR. (*Rx: S.*640.)

G. Moses, 65 Railton Avenue, Crewe.

CN8AR, CO2SG, PY7EE, VE7ON, 8MJ, W7LAH. (*Rx: S.*640.)

J. R. Killeen, 101 Derby Road, Hinckley, Leicestershire.

CN8AR, CO2SG, PY7EE, VO1VI. (*Rx: AR88D.*)

W. C. Askew, Burrough, Melton Mowbray, Leics.

AK2CO, CN8AR, CO2SG, KP4AZ, PY1QT, 7EE, VO1VI, VP4TP. (*Rx: Commander.*)

L. M. Singletary, R.A.F., Bicester, Oxon.

VO1VI, VP4TB.

B. L. Stedman, Gun Green, Hawkhurst, Kent.

KP4AZ, VO1VI, W7LAH. (*Rx: B.2 modified.*)

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

CO2AG, FF8MH, KP4AZ, PY7AY, 7AJ, 7EE, VE8MJ, 8NZ, 8OX, VO1VI, W7LAH. (*Rx: V55R and Converter.*)

GENERAL

3·5 mc

J. L. Hall, 2 Combe Court, St. Peter's Road, Croydon.

'*PHONE:* FA3GA, 8BG, VO2P, 2W, 4AM, W5HAJ.

CW: CT3AB, EK1AO, FA8BG, 8CF, 8IH, 8JO, 9RZ, KP4HU, MP4BAD, VK5KO, W5KC, 9AND 9BMV, ZL1BY, 1HM, 2ACV, 3NH.

O. R. F. Mason, Greenways, Fairlawn Gardens, Prittlewell, Essex.

'*PHONE:* VE3AE, 5UT, W1FOF, 1GIX, 2CRO, 2CUY, 2RTM, 3CIC, 4CQW 6BJB. 6MJZ, 8DXB, 9OH, ØAKS, ØCQL. (*Rx:* 1155*A modified*) 0715-0815 *GMT December* 17.

M. G. Whitaker, Stile-House, Shelf, Nr. Halifax.

'*PHONE:* VE1IE, 1FT, 1LZ, 1RE, VO1AB, 2W, W1ATE, 1EMF, 1GIF, 2DYW, 2IYO, 2JBE, 2SKA, 3BHB, 3CSY, 3FMG, 4YEJ. (*Rx:* 0-*V*-1.)

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

'*PHONE:* VE1DF, 1EL, 1IE, 1RA, W1ABV, 1ATE, 1BEQ, 1CMN, 1IIM, 1IUG, 1JHL, 1LOP, 1LTG, 1NQ, 1ONK, 1PNM, 1TGV, 1ZE, 2BIQ, 2DYK, 2JC, 2KYW, 2TQE, 3JOO, 4BSS, 4JPV, 4UC, 8FWC, 9OHM, ØFWD, ØMAZ. (*Rx: Modified R1155A.*) *December* 25-26.

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

'*PHONE:* W1ATE, 1BMF, 1IIM, 1NQ, 2AFQ, 2CSY, 2CUT 2RXM, 2VJM, 4OGS, 8CKW. (*Rx: RCA AR88LF.*)

7 mc

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

CW: CO2DK, 8FH, CT2AB, EA8AS, FT4BM, MD7DC, OX3UE, UA9CQ, 9CV, 9KCA, UF6AB, 6KPA, UI8KAA, UO5AD, VQ4HJP, ZB1AB/P, 2G, ZS1BK. (*Rx:* 0-*V*-0.)

A. H. Edgar, 15 Dene Terrace, South Gosforth, Newcastle-on-Tyne,3.

CW: CE3OO, CM7FU, CN8AQ, FA8JO, 9RJ, 9VE, 9VN, KG6MS, LU6SL, TF5TP, UA3KBT, 9CC, VE1CY, 1GU, 5HA, VK2UC, 3FS, VO1AK, VS4AU, W1CPT, 1CUR, 2DKP, 4GAY, YS1GU, YV4AN, ZS2U. (*Rx: S*640.)

M. Whitaker, Stile-House, Shelf, Nr. Halifax.

'*PHONE:* EZ4AE, FA3DS, IS1RBA, ZB1AJX.

CW: W1FEE, YO2RF. (*Rx: 0-V-1 and Hambander.*)

J. C. Beal, 24 Woodfield Avenue, North Wembley, Middlesex.

'*PHONE:* EK1HK, F9JD (Corsica) FA8BG, YO3RI.

CW: CM7NR, FA8BG, 8RJ, 9VN, KZ5IP, UA3CN, UB5BY, UC2KAB, UF6AB, UP2KBA, UQ2KAB, VE1GU, VP2LA, W1BOR, 2AOA, 2BMX, 2QBG, 4IIY, 4QNA, 8ZTR, YO3GE, 3RZ, YU1WEZ. (*Rx: BC*-224-*B.*)

28 mc

R. G. Poppi, 274 Kent House Road, Beckenham, Kent.

'*PHONE:* CR7IL, HH5G, JA7AA, KH6VU/KG6, MP4BAA (Bahrein Is.), PK1KR, 1UA, 3MW, 3SJ, 3WH, 3XE, VU2BF, 2BJ, 2GB, 2GJ, 2LJ, 2UP, W2KQA/CR7, XZ2FK. (*Rx: S*.640.)

Geoff Ayton, 76 St. Bernard Road, Stockton-on-Tees, Co. Durham.

'*PHONE:* CO2OM, 7RQ, CT1LP, 1PK, EK1BC, 1RW, FF8AH, HC1KW, HZ1AB, KP4AJ, 4AY, 4EG, 4FN, 4KT, LU4CO, OE4US, PY2QK, 7QT, SVØWY, TA3FAS, VP5AR, VP6IC, 6JC, VP9F, YR7WL, ZB1AK, 2A ZC6DZ, ZP5BL, W2ZCE/MM, W3NCV/MM, W5OTF/MM, W5AXI/MM. (*Rx: S*.640.)

N. Roberts, 14 Broad Street, Launceston, Cornwall.

'*PHONE:* VE5CD, 5KR, 6ME, VP6SD, YO7WL, ZS6IR. (*Rx: SX*28*A.*)

E. J. Logan, Linten Cottage, 4 Fanshawe Street, Bengeo, Hertford.

'*PHONE:* AP2G, AR8AB, CR5UP, FF8AH, 8FP, HC1JW, HP1HB, HR1RL, HZ1AB, 1KE, KG6AD, 6FX, 6GA, KV4AAL, KZ5CS, LU6DAS, MI3AB, 3GH, 3SC, 3SI, OX3BF TA3FAS, 3GVU, VO6VB, VP4LL, 6JC, 6LD, 6SD, 6YB, VQ2JF, 2JO, 2PL, 4IMS, 4K1F, 4RF, VS6BC W7KER, 7LTR, MGI, 7MPN, YK1AC, ZD1FB, ZL2FY, 4HE, 4HP, 4JO, 4KH, ZS9F, 3V8AN 8AP. (*Rx: BC*342 *and RF*32.)

D. W. Waddell, 53 Orchard Road, Hitchin, Herts.

'*PHONE:* AP2G, 2J, CR5UP, FF8AH, HC1OY, 2JR, HZ1AB, 1KE, KG6FM, MP4BAB, 4BAO, OA1D, OQ5AO, 5LL, PK2JL, 3MR, 3WH, 3XE, 4DA, ST2KR, TI2HP, VK6HL, 6LL, 6NL, VP6GQ, 6SD, 9F, 9G, VQ3KIF, 4NJ, VS1AX, 9AH, ZC1HA, ZD1FB, 1PW, 4AU, ZS3Z.

CW: AP5B, MS4FM, UA9CF, VU2MD. (*Rx: S*.640.)

P. H. Strudwick, 18 Elm Court, Finchley, London, N.3.

'*PHONE:* FF8FP, HC1OY, 7CR, KG6AD, 6SF, KP4AY, KR6CO, 6CF, MI3GH, MP4BAB, OQ5AO, UB5BV, VE5RD, 6JD, VP6SD, 6GJ, VQ4AC, W2AXW/MM (Spain), 3OZM/MM (nr. Malta), 4PQV/KP4/P, 5AXI/MM (Saudi-Arabia), 6YYK/MM (Jamaica), ZC6DZ, ZD1ZD, 4AU, ZE2KH, 4X4AD. (*Rx: S*.640.)

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

'*PHONE:* AR8BC, EK1RW, FF8FP, HC1OY, HZ1AB, 1KE, KG6SF, KR6BV, 6CF, OA1E, 4AM, OQ5BA, ST2AM, 2KR, VK5BV, 5KG, 5PW, 6DD, VP4LL, 6SD, VQ2JV, VS9AH, VU2LJ, W2LDH/MM, 2WWL/MM, 2ZFE/MM, 3NCV/MM, 3NKS/MM, 3OZA/MM, 5AXI/MM, 5HQP/MM, 5OTF/MM, 6DYT/MM, 6YYT/MM, YV4AM, ZP5BL, ZS9F. (*Rx: AR*-88, *S*.504.)

A. W. White, 38 Cliffsea Grove, Leigh-on-Sea, Essex.

'*PHONE:* CM9AC, EK1BC, HC2JR, HZ1KE, MD2MD, MI3SC, MP4BAB, OQ5AO, 5CH, PY7VD, TA3GVU, TF3EA, VE6EB, 6JD. VK2EQ, 5ZR, VP6SD, 6JC, VQ4ERI, ZD1PW, 1FB, 4AH, 4AU, ZL4AA, 4BW, ZS5HV, 6JF, 6LR, 6JZ, 9F. (*Rx: Denco DR*21, *with one EF*50 *pre-amp.*)

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

'*PHONE:* 4X4AA, CO2LW, 7GM, EK1RW, FA9OW, FF8P, HC1OY, 2JR, 2OT, HI6EC, HP1WM, KP4FS, MI3GH, OA1F, OQ5AB, SVØWZ/P.M. Corfu, TF3SF, TG9AD, TI2VO, VE5JV, 5OT, 7WL, VP5AR, 6IC, 9G. (*Rx: AR*88.)

P. Bysh, BM/GSWL, London, W.C.1. QTH 6 miles north of London.

'*PHONE:* CN8ET, EK1DL, HC1OY, 2JR, HZ1AB, 1KE, MI3AB, 3SC, OA1D, OQ5TT, PY1FK, TA3GVU, TF3EA, 3MB, 3SF, TI2RC, VP6SD, 9F, 9G, VS9AH, ZE2JB, ZC6UNJ, ZS3Z, 6JF, 6PR. (*Rx: SX*24.)

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

'*PHONE:* AP2J, CR5UP, HZ1AB, KG6FM, KR6RO, MI3FC, 3SI, OH3PP, PY2CK, SVØAJ, UB5BV, VQ4IMS, 5ALT, VS7PS, 7PW, ZE2KH, ZS6IH, 6LF. (*Rx: S*.640.)

R. L. Bastin, 83 Guphill Avenue, Coventry, Warwicks.

'*PHONE:* CR9AG, HZ1AB, 1KE, KG6FM, 6FX, 6SF, KR6BF, 6BV, MI3NC, 3SI, MP4BAE, 4BAO, OQ5AB, PK1UA, 3SJ, ST2KR, VP6JC, VQ5ALT, VS6BI, VS7PS, W2LDH/MM, 2VJW/MM, 2WWL/MM, 3NCV/MM, 3NKS/MM, 3OZA/MM, 5OTF/MM, XZ2SY, YK1AC, YS1RR, ZS9F. (*Rx: 24 unit into Hambander.*)

R. G. Goulding, 10 Earle Street, Wrexham, Denbighshire.

'*PHONE:* AP2J, CO7GM, CR5UP, 9AG, CX5AO, HC1OY, HZ1AB, KH6VU/KG6, KP4AY, MD7HV, MI3GH, OQ5LL, ST2KR, TF3SF, TI2EV, 2VO, VP2GG, 5AR, 6SD, 9F, VS9AG, YK1AC, ZC6DZ, 3V8AP. (*Rx: Home built double S/het plus RF*26 *Converter.*)

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

'*PHONE:* CO7GM, CR7IL, FF8AH, 8FP, HH2W, HZ1KE, KP4AY, KR6BV, 6CF, LU4CD, MI3GH, OQ5CH, ST2KR, VK2TS, 3ADF, 3QW, VP6CC, VP9G, W2WWL/MM, 5OTF/MM, ZD1PW, ZE1JE, ZL3DS, 3LE, 4AK, 3V8AJ. (*Rx: AR*88*LF.*)

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

'*PHONE:* AP2J, CO7GM, FF8AH, HZ1KE, MI3NC, TF3MB, 3SF, UA3AF, 3AM, UB5BV, VO6VB, VP6CDI, 6SD, 9F, VQ4AC, VS7PS, 9AH, YO7WL, ZD1FB, 4AH, ZE2JE, 2KZ, ZL4BO, 4HP, ZS9F. (*Rx:* 14-*valve Superhet.*)

K. Twibell, 20 Gildingwells Road, Woodsetts, Worksop, Notts.

'*PHONE:* AP2J, CN8ET, EK1AD, 1BC, HZ1KE, MI3SC, MT2BFC, OQ5LL, SVØAJ, ØWY, TA3FAS, 3GVU, TF3EA, VO2N, W5OTF/MM, 7GRU, 7JKY, YO3RF, 7WL, ZB1BD, 1FK, 2A, ZD4AH, ZE2JV, ZS6BW, 6JF. (*Rx: RF*24 *into R*107.)

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

'*PHONE:* HC1OY, HZ1AB, 1KE, KP4HM, KZ5CP, MD2MB, MI3GH, MP4BAB, PK3WH, ST2AM, TA3GVU, TF3EA, 3MP, 3SF, UA3AM, VK3AGX, 5AE, VP6SD, VS9AH, ZD4AH, ZE2QH, ZS2BB, 4X4AD. (*Rx:* 1-*V*-1 *Mains.*)

14 mc

Miss D. M. Winstanley, 8 East Hermitage Place, Edinburgh 6.

'*PHONE:* CR6AI, EA8AE, 8TM, JA4AG, KL7ZM, KP4AZ, LU8PA, PY2CK, 7AJ, 7EY, 7QG, TI2OA, VE7VO, 8BZ, VK2AGW, 3AJC, 3HG, 5RN, 7AJ, VQ2JD, 4AI, 4SC, W6ENF, 7MPY, ZL1BQ, 4HP, ZS1BV, 1JG, 2DY. (*Rx: 5-valve S.H.*)

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

'*PHONE:* CR5UP, 6AI, DU1AL, HH3DL, HI6EC, JA2BL, KH6YL, KL7JK, 7JS, 7ZM, KR6BB, VE8GH, 8MC, 8MI, 8MJ, VK6PJ, 7AZ, VP7NU, VQ3KIF, ZS4AF, 5GU, 5IQ, 5YF.

CW: DU7AHS, FY8AA, HC7KD, KV4AA, UAØUB, VP8AP, VQ8AX, ZD9AA. (*Rx: S.*640.)

D. Rickers, 97 Ruabon Road, Wrexham, N. Wales.

'*PHONE:* CT3AC, DU1AL, EA8AE, 8RM, EL5B, FF8FP, HR2RF, HZ1KE, KR6BS, 6BV, VK6PJ, VP4TB, VS7BR, ZL4HP.

CW: EA9AI, KL7GG, KZ5WZ, PJ5TR, TF5TP, UAØKFD, UC2KAB, UN1KAA, UO5KAA, UP2KB, UR2KAA, VQ8AX. (*Rx:* 208.)

G. A. Toms, 43 Waterloo Road, Barkingside, Essex,

'*PHONE:* CO8MB, HR2RF, KL7DD, KP4AZ, 4CI, PY4JO, 8RJ, TI2OEC, VP9F, W7JMY, YK1AC, YV1BB, 3V8AP. (*Rx: 5-valve Superhet.*)

B. L. Stedman, Gun Green, Hawkhurst, Kent.

'*PHONE:* CE3PZ, CR5UP, EK1QV, FA3GZ, JA2BL, 4AG, KP4AZ, MT2E, SVØWF, VE7VL, 8MI, VK7AZ, VO1VI, VP3MCB, W7LAH, ZB2B, ZL1BQ, 3V8AA, 4X4BCI. (*Rx: B.2. modified. December* 16-30.)

A. H. Edgar, 15 Dene Terrace, South Gosforth, Newcastle-on-Tyne, 3.

'*PHONE:* CR5UP, CT3AK, VK6BY, VQ2BC, VS7SV, ZS1HD, ZS4AS

CW: AP2S, CO6VS, CR6AQ, FM8EA, JA2AU, KB6BB, KL7ZL, KR6BK, PK6MT, TF3AB, UC2AG, UJ8AA, UA9KCA, VQ3SS. 8AX, VR1AB, ZE2NG, ZK1AA, ZL2FA. (*Rx: S.*640.)

G. Moses, 65 Railton Avenue, Crewe, Cheshire.

'*PHONE:* CO7AA, CT2AB, FN8AD, KG4AK, KP4AZ, 4JF, VP3MCB, VQ4AI, W6DI, 7MBX, 3V8AA. (*Rx: S.*640.)

B. L. Jones, 98 Babbacombe Road, Torquay.

'*PHONE:* CE3AE, CN8BA, 8EO, 8MI, CO2SG, 7VP, CR5UP, CX2CO, EA8CO, EK1EA, 1MP, FA8CF, 3DS, 9KI, HI6EC, HP1PV, HZ1KE, KG4AK, KP4AZ, 4SF, KZ5AA, PY2BN, 2CK, 4VX, 6CO, TG9RU, TI2AEC, 2O, VE7EF, 7OO, 8MI, VK3CA, 3MM, VP3MCB, 4TZ, 4TW, 5AR, 9F, 9VA, VQ2WP, 4SC, VR1S, XE1ID, YV5AY, ZL4HP, ZS1BN, 1GD, 3BY, 5GU, 6FD, 6SB.

D. J. Williams, Cwmllethryd, Pontyberem, Carms.

'*PHONE:* CR6AI, KP4JA, OQ5DZ, PY7XC, VE7VO, VK7AZ, 6GA, VO6EP, VQ2JD, 4AI, 4SC, VU2ET, W7FPY, ZC1AZ, ZL3GU, ZS1GG. (*Rx: 5-valve Superhet.*)

H. Froggatt, 9 Knoll Street, New-Mills, Nr. Stockport, Cheshire.

'*PHONE:* CX2CO, PY4VX, 4BU, 6DJ, VP3NCB.

CW: CN8AG, KP4AZ, OQ5BQ, PY1DH, PY1ARZ, PY7LN, VQ8WU, ZB2I, ZS5KM, 6XO. (*Rx: R.*1155A.)

J. W. Cave, 12 Hilda Road, Parkstone, Dorset.

CO2DQ, CX1VD, EA8BC, 9AI, FA9WU, FO8AC, KH6CT, KL7FQ, KP4AZ, 4JT, LU4CN, MD2AC, MI3LV, OX3BD, PY2CK, 6AJ, 7XC, TI2OA, VE6UP, 8MB, VK2AGU, 2AGL, 2NL, 3LA, 4WJ, 5RN, 7AJ, VO6EP, VP3MCB, VQ3KI, W7LAH, ZC6DZ, ZL2BK, 3GU, ZS1GG, 5IT, 6JS, 4X4AC. (*Rx: Home-built* 0-*V*-1.)

N. Roberts, 14 Broad Street, Launceston, Cornwall.

'*PHONE:* EK1AD, HI6EQ, MD2AS, PY3GD, SVØWY. (*Rx: SX28A.*)

C. J. Goddard, Handcross Grove, Green Lane, Coventry.

CW: CN8AZ, CR7AB, CT3AV, DI2BC, EK1FP, F9QV/Corsica, FA8IH, HS1SS, HZ1HZ, I1CFE/Trieste, MD2XN, OQ5BQ, SP1CM, TF3EA, 5TP, UA6KOB, ØKF, UP2KBC, VE8NX, VQ8AX, XL2C, YO3RI, ZD2LMF, ZS1JB, 5YS, 6J, 3V8AG.

'*PHONE:* CR5UP, CX2RF, FA3JO, VE7VO, 8MI, VQ8AX, VP4TB, ZS6PZ, 3V8AA, 4X4ZC. (*Rx: Decca AW-*12.)

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

'*PHONE:* AR8AB, CR5UP, 6AI, CT2AE, DU1AL, EA8AE, EL5B, FF8DA, 8FP, FQ8SN, HI2RF, JA2BL, TI2OA, VE6AC, 7AZ, 8MI, 8MJ, VQ8AX, VS2AA, ZC6DZ, ZS3F, 3Z. (*Rx: RCA AR88LF.*)

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

CW: CE3EG, CN8MR, CR4SS, 6AQ, 7AK, CX6AD, FY8AA, HC2GR, KZ5CP, KP4KA, OQ5BQ, OX3MF, UC2KAB, VP2KM, 4LT, 4TB, 6JC, VQ2GW, 4SG, 8AX, YV5BX, ZS3R, ZD9AA. (*Rx: S.*640 *and S.*680.)

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

'*PHONE:* CO8NT, CR5UP, 6AI, 6AQ, CT3AC, 3AK, FF3CN, FQ8SN, JA2BL, KL7ZM, OY2RD, TI2OE, VE8MI, 8MJ, VP5AR, VQ2HW, 2JD, 3KIF, VU2DH, 2LA, XZ2EC, ZE2JR, 2JZ, ZS3G, 3Z. (*Rx: Converted Bendix Ra-*10-*Da.*)

G. Murray, 6 Agricola Road, Wingrove, Newcastle-on-Tyne 4.

'*PHONE:* CN8EO, CO8MP, CX2CO, EK1DI, F9QV/Corsica, FA9KI, KP4AZ, 4HG, MD2AF, PY2CK, TI2OEC, UB5BV, VE7HC, 7ZZ, 8MJ, VK2AGW, 2QR, 7AZ, VP6IS, W7FPY, 7MBX, 7RAH, YN1RM, YV5AB, ZS1GG. (*Rx:* 1-*V*-2 *all-dry portable.*)

K. Smeeton, 36 Runcorn Road, Barnton, Nr. Northwich, Cheshire.

CW: CN8MZ, CO2HK, CR6AQ, FA3QI, 8RJ, 8WH, FQ8FN, KP4KA, MD7JW, PY2RT, 7LN, SP1CM, TF3SF, UA3KAB, 6LR, UB5BV, 5DC, VP6CDI, YO3RZ, ZB1KQ, 2G, ZS2G. 6AN, 6BL, 6WS. (*Rx: Hambander and* 1155*A unmodified.*)

D. Dadswell, Hills Farm, Asburst, Steyning, Sussex.

'*PHONE:* CR5UP, 6AI, CT3AV, EA8TM, 9AE, HZ1KE, KL7JS, 7ZM, VE7VO, 8MI, VP6IS, VQ2WP, 4AI, 8AX, W7HIA, XE1AC, ZL1TJ, ZS5YO, 6HK. (*Rx: Cossor* 3-*valve all wave.*)

P. Fry, 95 Hursley Road, Chandlers Ford, Hants.

'*PHONE:* CN8TL, CO7AA, CR5UP, CX2CO, FB2G, HI6EC, KP4AZ, PY2RN, 7GO, 8GL, VP3MCB, W7GBN, 7OFB. (*Rx: Marconiphone T*14*A.*)

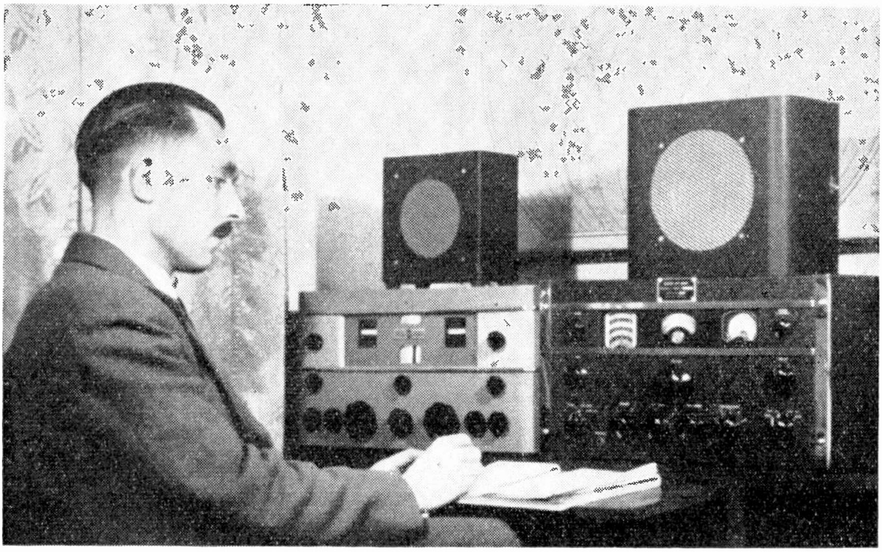
SHORT WAVE BROADCAST STATIONS

Revision 47·24-49·67 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 the 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	Wavelength	Callsign	Location
6350	47·24	HRP1	San Pedro Sula.
		OAX4H	Lima, Peru.
6345	47·28	HEI2	Berne.
6334	47·36	TGTA	Guatemala City.
6333	47·36	OAX6E	Arequipa, Peru.
6325	47·43	TGNA	Guatemala City
6322	47·45	COCW	Havana.
6321	47·46		Baden-Baden.
6307	47·57	YNAS	Managua.
6301	47·61	YSCP	San Salvador.
		CP23	Tarija, Bolivia.
6295	47·66	OTM1	Leopoldville.
		TGLA	Guatemala City.
6276	47·80	ZPA1	Asuncion, Paraguay.
6275	47·81	YSR	San Salvador.
6270	47·84	HJWO	Bogota.
6256	49·76	YSUA	San Salvador.
		TGRA	Guatemala City.
6247	48·03		Budapest, Hungary.
6240	48·08	HJCF	Bogota.
6235	48·12	HRD2	La Ceiba, Honduras.
6230	48·15	TGJA	Guatemala City.
			Jammu, Kashmir.
6223	48·21	CE622	Santiago, Chile.
6220	48·23	OAX4M	Miraflores, Peru.
6215	48·25	SP13	Warsaw.
6213	48·29	HC1AC	Quito, Ecuador.
6210	48·31	ZRB	Pretoria.
6204	48·36	YV6RD	Bolivar.
			Bucharest.
6200	48·39	HJCT	Bogota.
		HOB	Panama City.
			Paris.
6195	48·43	GRN	London.
6190	48·47	VUD7	Delhi.
			Frankfurt.
6188	48·48	TGX1	Guatemala City.
6187	48·49	HIL	Santo Domingo.
6185	48·53	LLI	Oslo.
		HC1TR	Ibarra, Ecuador.
		XECC	Puebla.
6180	48·54	GRO	London.
6177	48·56		Athens.
6175	48·58	XEXA	Mexico City.
		YSHQ	San Salvador.
6170	48·62	CXA21	Montevideo.
		LRM	Mendoza.
		DUH2	Manila.
		YDB3	Jakarta.
		HJKJ	Bogota.
			Limassol, Cyprus.
			Munich.
6168	48·64	HI9T	Puerto Plata, D.R.
6165	48·66	HER3	Berne.
		HJWD	Bogota.
		TILS	San Jose.
		4VCM	Port-au-Prince.
6160	48·70	CKOB	Montreal.
		CBRX	Vancouver.
			Moscow.
			Munich.
6156	48·73		Vienna.
6155	48·74	EQB	Teheran, Iran.
		CXA13	Montevideo.
6154	48·75	CS2WD	Lisbon.
		TIRH	San Jose.
6152	48·76	CE615	Santiago, Chile.
6150	48·78	CKRO	Winnipeg.
		GRW	London.
		VLR2	Lyndhurst.
		YSPD	San Salvador.
6145	48·82	HJDE	Medellin.
6140	48·86	DYH2	Cebu, P.I.
		XEDP	Mexico City.
		RW97	Moscow.
			Belgrade.
			Malta.
6138	48·88	HOQQ	Panama City.
6135	48·90	CE613	Punta Arenas, Chile.
			Limassol, Cyprus.
6131	48·93	COCD	Havana, Cuba.
6130	48·94	LKJ	Oslo.
		CHNX	Halifax, Nova Scotia.
		VLX3	Perth, W. Australia.
		RW96	Moscow.
6125	48·98	GWA	London.
		HRQ	San Pedro Sula.
6122	49·00		Omdurman, Sudan.
6120	49·02	OIX1	Helsingfors, Finland.
		KCBA	Los Angeles.
		LRX1	Buenos Aires.
		XEUZ	Mexico City.
6115	49·06	HI1Z	Santo Domingo.
6110	49·10	GSL	London.
			Tangier.
6105	49·14	ZYN6	Fortaleza, Brazil.
		WLKS	Kure, Japan.
		HJFB	Manizales.
6103	49·16	HJFK	Pereira.
6101	49·17	TGOA	Guatemala City.
6100	49·18	YUA	Belgrade, Yugoslavia.
		DYH3	Cebu, P.I.
6096	49·21		Peking, China.
6095	49·22	ZYB7	Sao Paulo, Brazil.
		TGLB	Mazatenango.
6090	49·26	GWM	London.
		CKOB	Sackville.
		CBFW	Montreal.
		VLI2	Sydney, N.S.W.
			Luxembourg.
			Tabriz, Iran.
			Moscow.
6085	49·22	ZYB7	Sao Paulo, Brazil.
		LRY1	Buenos Aires.
			Rome.
6082	49·32		Umtali, S. Rhodesia.
6080	49·34	WLWO	Cincinnati.
		CKFX	Vancouver.
		HI1X	Santo Domingo.
			Munich.
6077	49·36	HI1G	Santo Domingo.
6075	49·38	CXA3	Montevideo.
			Colombo, Ceylon.
6070	49·42	GRR	London.
		CFRX	Toronto.
		HJEX	Cali, Colombia.
		RW138	Moscow.
6067	49·44	EA9AH	Tetuan, S. Morocco.
6065	49·46	SBO	Stockholm.
		LRS1	Buenos Aires.
6062	49·49		Karachi, Pakistan.
6060	49·50	HORT	Balboa, Panama.
		GSX	London.
		KNBI	San Francisco.
		CKRZ	Sackville.
		FIQA	Tananarive, Madagascar.
		RW105	Moscow.
6055	49·55	CXA14	Colonia, Uruguay.
6050	49·59	GSA	London.
6040	49·67	GSY	London.
		DZH6	Manila, P.I.
		CE604	Santiago, Chile.
		COBF	Havana.
		HI1N	Santo Domingo, D.R.



SWL Stations NO. 29

IT was in 1934 that M. Norton, 1 Emily Street, West Bromwich, Staffs, first commenced SWL activities. In those days, he had to be content with making up receivers from old "straight three" BC sets—but, as he says, it did give him valuable practical experience.

As time went on, he advanced to the communication-type receiver, and now M.N. is the possessor of the fine installation shown above. This has been in use for about twelve months and is giving excellent results, as indeed an AR77 and AR88 (right) should !

They are operated with two long-wire aerials—a sixty-seven footer and 133-ft. Marconi, 33 ft. high—and a 12-ft. vertical wire 25 ft. above ground.

In the course of the years, M.N. has collected a very large number of QSL cards—mainly DX, and some of them of the rare pre-war issues which will never be available again. His activities cover all short wave bands and the results have frequently been reported in our DX news features.

THE VHF END

by **A. A. MAWSE**

OH Received on Two—
New Year's Day DX—
Station Reports—
Panels and Calls Heard—

THE past few weeks have produced two more instances of the unexpected rewards the 2-metre band has in store for those who refuse to give up their daily searching in spite of the generally low level of activity. On December 11 at 1935 G5QA (Exeter) logged weak signals from OH2OK. This extraordinary reception has been confirmed by OH2OK, and the distance appears to be around 1,275 miles. It has been impossible to pin-point OH2OK (although it is known he is very near Helsinki), so the figure quoted above is subject to final checking. The record reception on Two until now has been over a distance of 1,250 miles, so it looks as if G5QA has achieved a new DX record.

The most fascinating problem behind all this is, of course, how VHF signals manage to travel such long and unexpected distances. No doubt one day we shall know the answer, but in the meantime, the more evidence of such DX that can be collected the greater the chance of solving the mystery.

The second piece of DX news comes from G. E. Magrow (Dawlish) and others along the South Coast. On January 1, at 1055, G.E.M. heard PAØEO calling CQ, the signal being, S9 on 'phone, and the distance around 350 miles. The transmission from the PA was heard consistently for over an hour, and, in addition, PAØUW was heard at 1147 calling G2BMZ. This reception was certainly due to tropospheric bending, a ridge of high pressure over the English Channel producing conditions over the Southern Counties similar to those existing back in the days of November, 1948. The London TV signal was particularly strong all along the South Coast, even as far as Torquay, on December 31 and January 1.

Other News

Although complaints of inactivity are many, there are plenty of signs that interest is still keen. Both L. A. Whitmill and P. J. Towgood remain busy modifying RF26 and 27 Units for newcomers to the VHF's, while on the few evenings when the 144 mc band has opened a little there have been signals to take advantage of it. Your conductor in the course of two evenings listening at G2XC heard signals from 11 counties. Reports of interest in VHF also come from Eire, where EI2W is active in Dublin, using a vertical beam. His present frequency is 144·06 mc and he is asking for reports. Usual periods of transmission are Wednesday, Friday and Saturday evenings between 1930 and 2100.

Station News

E. A. Lomax (Bolton) has been unable to make any progress on his 2-metre beam due to the weather, and in consequence continues to have to rely on a 10-metre dipole. He feels that TV has dealt 2 metres a severe blow in the North-West and suggests to the Tx men that they come on before TV hours. On December 6, E.A.L. heard G2MV (Kenley, Surrey), G6NB (Chertsey) and G5TP (Henley). G5BD has also been logged in spite of the very mountainous Peak District directly on the Bolton-Mablethorpe path.

R. A. John (Swansea) heard GW8SU (Porthcawl) on December 31, as well as the more local GW2DUR, who unfortunately is not using crystal control and is consequently difficult to follow on R.A.J.'s superhet Rx. The next stage of progress planned is the erection of an outdoor beam. The Sutton Coldfield TV has also been heard well at R.A.J.'s QTH. (Amongst other VHF news

TWO-METRE DX

G. E. Magrow (Dawlish)	**PAØUW**	**387 miles**
R. Hastie (Hayes)	**F3DC**	**221 miles**
A. F. Hayton (Palmers Green)	**G5BD**	**116 miles**

Note: All claims for this Table must be for distances over 100 miles and accompanied by a QSL card to verify.

from Swansea is the introduction of a radio control system for the city's ambulance service.)

R. Rew (Birmingham) comments approvingly on the number of VHF listeners who are erecting multi-element arrays. Even a simple Yagi used to be an unmistakable sign of a transmitter, but that is now becoming a thing of the past, as more and more of you put up stacks-of-fours one above the other ! Activity in the Midlands is very much on the low side. In fact, R.R. says never has he heard Two and Seventy so devoid of signals. He believes G2ATK and G2BFT are still keeping schedules on 70 cm., but he has not heard them on his present indoor square corner aerial. While on the subject of 70 cm. it is worth mentioning that G2AVF and G2BMZ are now active on that band in the Torquay area and have been heard by G5BY at 23 miles or so, in spite of intervening high ground.

A. L. Mynett (Wembley) has been measuring the noise factor of his receiver, and after reducing the input circuit capacity to about 3 $\mu\mu$F, the value was found to be as low as 5 dB. Commenting on the Contest, A.L.M. says he is surprised that anyone found difficulty in reading the CW as in most cases the essential figures were sent at least three times and at a speed of about 10 w.p.m. Particularly good days since the Contest have been November 30, when the Devon stations were prominent, and December 6, when G2IQ (Sheffield) was peaking at S8 'phone. He thinks these openings were due to the meeting of warm and cold air fronts over the British Isles.

L. A. Whitmill (Harrow Weald) has been trying a 6J6 instead of an EC52 as oscillator in his RF27, but does not find any marked improvement. As mentioned above L.A.W. has been modifying RF27 units for other listeners and also giving them hints on getting these units working on 144 mc. Although most of these listeners have been most grateful for the help given them, L.A.W. is surprised at the number who fail to enclose a S.A.E. and, secondly, do not even acknowledge the help so generously given by writing to say Thank You !

J. E. Harman (Eastbourne) though disappointed with his results and activity generally, keeps at it and the VHF bands remain his chief interest ; he is about to replace his 4-element beam in the roof-space by a 6-element curtain out in the clear. J.E.H. is anxious to know how others found conditions on New Year's Day, when he heard PAØPO on 'phone at S4-5 ; at 2115 that evening, under very foggy conditions, F3DC, F8FT, F8LO and four other CW signals not identified were logged to the south-east, and F3DC and F8GH were also received on 'phone. J.E.H. says that his main hope in life now is bigger and better fogs, if this is the effect they have on conditions !

P. Finn (Iver) has been busy in recent months experimenting with an indoor beam, varying element lengths and spacings. He also has a grid dip oscillator and a crystal wavemeter with which to amuse himself, and is well set up for frequency checking. His Rx frequency range now covers everything up to 150 mc.

Two reports come from Bournemouth this month. E. Wicks heard PAØEO on January 1 while using a dipole only 17 feet up, and his QTH is very nearly at sea-level. P. J. Towgood

TWO-METRE CALLS HEARD

A. L. Mynett, 29 Sunleigh Road, Alperton, Wembley, Middlesex.

G2BMZ (160), 2IQ (137), 2XC (65), 2XS (93), 2XV (50), 3ABH (92), 3AHT (150), 3BHS (61), 3CFR (89), 3EHY (112), 3ENS (94), 3WW (72), 4MW (50), 5BD (127), 5BY (181), 6WT (160). *(Mileage in brackets. Heard since Contest.)*

E. A. Lomax, 28 Welbeck Road, Heston, Bolton, Lancs.

G2MV, 3AHT, 3BKQ, 5BD, 5TP, 6NB. *(During December.)*

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

G2ATK, 3AHT, 3AUH/A, 3BA, 3BMY, 3CLG, 3DNP, 3DUP, 6CI, 6XM, GW2ADZ. *(December 12 to January 3).*

J. E. Harman, 10 Royal Sussex Gardens, Eastbourne, Sussex.

F3DC, 8FT, 8GH, 8LO, G2CIW, 2FIJ, 2QV, 3EBW, PAØPO.

A. E. Wright, 92 Druid Street, Hinckley, Leicestershire.

G2ATK, 2FNW, 3ABA, 3AUH/A, 3BFT(?), 3ENS, 4RK, 5SK, G6CI. *(Rx : Mod. RF27 into AR88, 3-element C.S. beam.)*

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

'PHONE and CW : **25-50 miles :** G8IL. **50-100 miles :** G2BMZ, 3CVO, 3EHY, 8K2. **100-150 miles :** G2XV, 3WW, 4MW. *(During Jan. 1-2, 2245-2135 GMT. Rx : PP 6J6 RF, PP 6J6 mixer, 2 × 6C4 osc., into xtal-controlled 9-mc converter into 1·6-mc IF/AF amp. Aerial : 4-ele. c.s. beam, 22 ft. high, fed by 70-ohm co-ax.)*

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

'PHONE and CW : G2BMZ, 2CIW, 2NH, 2NM, 3ABH, 3AUS, 3AVF, 3CGE, 3RI, 4GR, 5BY, 5TP, 6WT, 6XM, 8IL, 8KZ, 8LY, GW2ADZ, PAØEO, ØUW. *(Rx : 6AK5 Preselector to Eddystone converter to BC342N. Dec. 1-Jan. 1 inclusive.)*

L. A. Whitmill, 762 Kenton Lane, Harrow Weald, Middx.

G2AAN, 2AHP, 2BMI, 2FPP, 2MV, 2NH, 3AZJ, 3BLP, 3BUZ, 3CDQ, 3CWW, 3DCC, 3FD, 3FP, 3FXG, 3GBO, 3MW, 3WW, 4AU, 4DC, 4HT, 4KD, 4NT, 4ZU, 5BC, 5CD, 5DT, 5KH, 5LC, 5RD, 5TP, 6BO, 6CB, 6HG, 6NB, 6NF, 6PR, 6WU, 6YP, 6XM, 8IP, 8KZ, 8SM, 8TB. *(Rx : RF27 Unit—S.640. Aerial : 3-element beam. Dec. 1-31.)*

TWO-METRE COUNTIES HEARD

***Starting Figure*, 10**

P. J. Towgood (Bournemouth)	33
R. Rew (Birmingham)	28
A. L. Mynett (Wembley)	23
G. E. Magrow (Dawlish)	22
A. W. Blandford (Mitcham)	16
R. M. James (Chatham)	12
P. Finn (Iver)	11

says his lack of reports in recent month was due to lack of opportunity rather than lack of interest. He listened during part of the Contest but time did not permit the compilation of an entry. He heard G2OI quite well on the Sunday evening.

G. E. Magrow (Dawlish) has a crystal converter under construction, but does not anticipate an early completion of the work. Commenting on the reception of the PA stations on January 1, G.E.M. says he has noticed that conditions usually seem good along the trailing edge of a high pressure ridge and that this was no exception.

Till Next Time

Well, that's the news for this month. The personal opinion of your conductor is that this month's mail was highly commendable considering the state of conditions and activity, and the support given by all those who have written is greatly appreciated. Many thanks also for the kind wishes which so many of you sent for Christmas and the New Year. The final date for mail for next month's issue is February 2, and the address A. A. Mawse, *Short Wave Listener*, 49 Victoria Street, London, S.W.1.

DIRECT SUBSCRIPTIONS

We are still able to accept direct subscribers to the *Short Wave Listener*, to commence with the next issue (dated March). Copies are posted on publication day, the third Thursday in the month, and the cost is 16s. for a year of twelve issues, post free. Orders, with remittance, to the Circulation Manager, Short Wave Magazine, Ltd., 49 Victoria Street, London, S.W.1.

MAPS AND MANUALS

For all SWL's who wish to understand the technique of DX working, the *DX Operating Manual* is an essential buy ; in its seven chapters the subject is discussed in an informative and interesting manner, and it is fair to say that so far as the practice of DX can be taught by the written word, the *DX Operating Manual* does it. Of 40 pp., price 2s. 8d. post free. Order on the Circulation Manager, Short Wave Magazine, Ltd., 49 Victoria Street, London, S.W.1. And if you want to know all about the Zone system, get the *Great Circle DX Zone Map* at the same time, on heavy linen-backed paper for wall-mounting, price 6s. post free.

A BEGINNER'S TRANSMITTER

The *Short Wave Magazine* is at present running a series of fully detailed constructional articles, using only branded parts which are readily available, on a number of equipments of practical interest and application for the amateur bands. The "Top Band Cabinet Transmitter" has already appeared (September) and the November-December issues of the *Magazine* carried a similar descriptive article, in two parts, on "A Beginner's Transmitter." This is a carefully prototyped design, entirely suitable from the beginner's point of view, and incorporates all those features desirable in modern equipment of this kind.

THE LOCAL CLUB

If there is a radio society in your neighbourhood, and you are not already an active member, you should consider joining it—not only because as a local organisation it deserves your support, but because you will find that you have something to learn and perhaps can teach a little. Practical interest in radio is not confined to any particular section of the community, and a radio club will always bring together those who otherwise might never meet. Apart from that, one cannot fail to learn something from contact with a number of diverse individuals all having a common interest.

STATION DESCRIPTIONS

As previously mentioned, we are always glad to see descriptions, with a good clear print, of SWL stations for the series which is now a regular feature of the *Short Wave Listener*. We write the story from your notes, and the information we want is as follows : Name and address ; summary of the equipment in use, mentioning in particular any that is home-built ; the aerial system employed ; results obtained to date, if possible in terms of Zones and Countries heard and verified ; main listening interests ; when SWL activity was commenced ; whether it is the intention to become an amateur transmitter ; and such personal notes as you may care to give. All descriptions published are paid for at good rates, immediately on appearance.

WORLD WIDE RECEPTION OF SHORT WAVE PROGRAMMES

DX *broadcast*

MONTHLY COMMENT BY R. H. GREENLAND, B.Sc.

This month's mail is again a bumper one and we thank each and everyone of our correspondents for such splendid co-operation If we are permitted to single out one letter from a regular contributor, it is that of J. C. Catch (South Shields), who informs us that he has logged 107 different countries of which 71 have been verified—surely a splendid achievement !

Africa

This continent has come into the limelight with news of two DX countries. The first is Ethiopia which has been heard on 15030 kc on Saturdays at 1520-1600 by A. E. Nichols (North Shields), J. Symes (Eltham, S.E.9) and the writer. J. S. logged News in English at 1530 and noted that before the close, they asked for reports; A. E. N. heard them on a Sunday with a Mission Service from 1515 to 1615 ; on December 10 we listened to the News followed by News talks at 1540. The latter included a description of the Addis Ababa shops decorated for the festive season and an account of the work of the Ethiopian Women Welfare Workers' Association. At the conclusion of the broadcast the announcer mentioned that they had been operating in the 19 and 31-metre bands, asked for reports to be sent to : Radio Addis Ababa, The Voice of Ethiopia, Addis Ababa, and said : "Until tomorrow, this is Radio Addis Ababa's English Hour saying Good Night !"

The other newcomer is V3USE, which we have logged regularly from 1500 until 1700 on 15070 kc but not often at good strength. This station is located at Port Louis, Mauritius, a British Crown Colony, but the language medium is normally French : on December 21, however, at 1615 we heard an account in English of the latest deliberations of the Mauritius Legislative Council and of the proroguing of that body that same afternoon by H.E. The Govenor. On New Year's Day, too, a re-broadcast of a message from the United Kingdom to the Colonies was followed at 1630 by the direction : "This is the Mauritius Broadcasting Service." V3USE signs off at 1700 with the playing of the first half of "God Save The King."

B. J. Tyson (Sheffield, 8) managed to log Cape Town, 5884 kc at 2050 one evening and J. C. Catch heard the elusive Johannesburg IV. on 4800 kc with a sports commentary, probably a cricket match, at 1750 on December 14. He has recently received verifications for Pietermaritzburg, 4878 kc and Johannesburg III, 4895 kc. We have had from the Chief Engineer of the Department of Posts and Telegraphs, Southern Rhodesia, a letter confirming our reception of their broadcasts on 3320 kc around 1730 ; this is a 15 kW transmitter which uses an omni-directional aerial, the schedule being : Weekdays : 0930-1115 (6120 kc), 1600-2000 (3320 kc) ; Sundays : 0830-1115 (6120 kc), 1800-2000 (3320 kc). The address is : P.O. Box 37, Causeway, Salisbury, Southern Rhodesia.

C. P. Turner (Crewe) has Nairobi's letter-verification giving the call-letters as VQ7LO ; to quote : "Our transmissions take place on 857 and 4885 kc simultaneously at the following times : Monday, Tuesday, Thursday, Friday—1000-1100 (or 1110), 1500-1900 ; Wednesday and Saturday—1000-1100 (or 1110), 1500-2000." Sunday times are not given, and the address is : Cable and Wireless, Ltd., General Offices, Beam Station and Broadcasting Studios, Electra House, Kabete, P.O. Box No. 777, Nairobi, Kenya Colony. D. Webber (Reading) and B. J. Tyson have logged ZOY, Accra, Gold Coast, on 4915 kc with the Weather report and News at 1745 and closing with the National Anthem at 1800 : Radio Omdurman has favoured T. H. Robinson (Hall Green, Birmingham) with a magazine together with a verification of his report; they operate on 6122 kc and 9770 kc with the schedule: Daily : 0415-0445 ; Daily except Fridays: 1630-1800, 1900-1930 ; Fridays : 0800-0900, 1400-1500, 1630-1730, 1900-1930 (All programmes in Arabic) ; Fridays only : 1730 1800 (English). Recently at 1752 we heard a recording of a speech made that same afternoon by Lady Howe, wife of the Governor,

ALL TIMES GIVEN IN THIS ARTICLE ARE GMT EXCEPT WHERE STATED

TABULATED SCHEDULES

I. Radio-Liban, Beirut, Lebanon.

Frequency: 8036 kc.

Daily: 0500-0630, 1030-1330, 1500-2030. (English: 1500-1600).

II. Near East Arab Broadcasting Station. (Sharq al Adna). P.O. Box 219, Limassol, Cyprus.

Power: 7·5 kW.

11720 kc: 0930-1300, 1430-1650.
9650 kc: 0355-0630, 0930-1300, 1430-1650, 1650-1705, 1705-2015.
6709 kc: 0355-0630, 0930-1300, 1430-1650, 1650-1705, 1705-2015.
6170 kc: 0355-0630, 1705-2015.
6135 kc: 0355-0630, 0930-1300, 1430-1650, 1650-1705, 1705-2015.

III. National Broadcasting Institute, 4 Righillis St., Athens T.1, Greece.

Power: 7·5 kW.

Daily: 9607 kc: 0530-0735, 1000-1300.
15345 kc: 2230-2330.
7300 kc: 1700-2120.

IV. Iceland State Broadcasting Service, Reykjavik, Iceland.

Power: 7 kW.

Frequency: 12175 kc.

Sundays only: 1615-1645.

V. Australian Broadcasting Commission. English News Bulletins.

Melbourne:	VLR2, 6150 kc: VLH4, 11880 kc: VLG6, 15230 kc: VLR, 9540 kc: VLH5, 15230 kc. 2000: VLR2, VLH4, VLG6. Also at 2045. 2145: VLH4, VLG6. 2200: VLH4. 0240: VLH5. 0330: VLH5, VLR. 0600: VLR. Also at 0815. 0855: VLH3. 0900: VLH3, VLR2. 1100: VLH3, VLR2. 1310: VLH3, VLR2.
Port Moresby:	VLT, 7280 kc: 0240.
Brisbane:	VLQ3, 9660 kc and VLM, 4985 kc. National bulletins as for Melbourne. 2055: Special Daily News.
Sydney:	VLI2, 6090 kc. 2000, 2045, 2145, 0900, 1100, 1300. Special Daily News at 2200 and 0855. VLI3, 9500 kc. 0230, 0330, 0600.
Perth:	VLW3, 11830 kc, VLW5, 9610 kc. VLX2, 6130 kc, VLX3. 9610 kc. 2145: VLW5, VLX2. 0230, 0330, 0600: VLW3, VLX3. 0900, 1100, 1300: VLW3, VLX2.

on the occasion of the opening of Girl Guides' Day at the Omdurman Stadium.

It is understood that programmes in Portuguese are now broadcast from Sao Tomé. Gulf of Guinea, over CR5SA, 11785 kc and CR5ST, 9615 kc (Power 1 kW); the address is: Radio Clube de Sao Tomé e Principe, S. Tomé. C. Makin (Liverpool, 20) has received a verification from SUX, Cairo, 7860 kc which states: "We are not transmitting regularly broadcasts in the English language on the short-wave band." R. T. Blackmore (Exeter) logged Algiers, 9570 kc with call, followed by "La Marseillaise" and close-down at 2300; and J. C. Catch heard Radio International, Tangier, 6110 kc with Spanish music and call: "Atencion, Atencion, Radio Tangier" at 2245. From 1800 to 1900 from Tuesday to Friday each week this station is supposed to broadcast a religious service in English, according to the Rev. S. W. Bowen (Llanllechid, North Wales).

Asia

J. C. Catch has been hearing the new Mecca station on 11950 kc, 5980 kc, and 3930 kc from 1700 to 1800, the call being: "Radio Ah-rah-bee-a." You will hear a programme in Arabic only, but there is a News for pilgrims, native music and Koran readings, and you cannot fail to hear mention of "Mahatma Mahommed." It is understood that the transmitters are located at Djedda. The Hashemite-Jordan Broadcasting station, Jordania, is on 7075 kc with the schedule: 0545-0630, 1145-1245, 1600-1930 (English 1715-1800), and R. A. Savill (Sevenoaks, Kent) heard ZJM7, 11720 kc for the first time, with Arabic music at 1620. P. E. Woolmer (Grantham) sends us their full schedule with the address: Near East Arab Broadcasting Station, P.O. Box 219, Limassol, Cyprus. R. Patrick (Oldham) has heard Kol-Israel on its new frequency of 8900 kc with English News at 2030; P. Fry (Chandlers Ford, Hants) has obtained good reception of the Haifa frequency, 8170 kc and comments on "the perfect voice of their lady announcer." M. Milne (South Woodford, E.18) heard Radio Lebanon, 8036 kc with a FB signal at 2015 with the call: "Ici Beyrouth, Station de Radiodiffusion de la Republique Libanese." We have just received (by *registered air-mail* !) their picturesque card

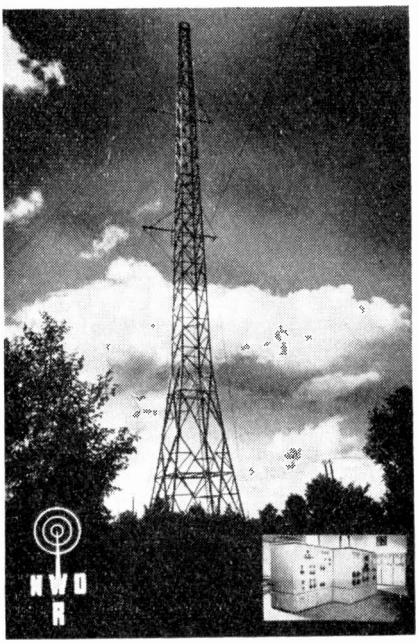
depicting a "Cedar of Lebanon"—the English programme extends from 1500 to 1600 daily. R. T. Blackmore logged EPB, Teheran, Iran, 15100 kc with News in English and identification at 1900. C. Makin has had two cards from Turkey, one for TAP, 9465 kc, the other for TAQ, 15195 kc; and E. Webb (Dumfries, Scotland) has their photograph of the Broadcasting House in Ankara.

P. R. Wyman (Feltham, Middlesex) heard Radio Pakistan, Dacca, 11885 kc closing at 1645, but B. P. Middleton (Clapham, S.W.11) —aged 13 and perhaps our youngest reader— has just received from Sahben Ahmed of Radio Pakistan a letter to the effect that the 11885 kc transmitter is located at Karachi and the 15335 kc one at Dacca. There is another in the 39-metre band, and English news bulletins are given at 0200, 0610, 0710, 1200 and 1515 on the two former channels. B. J. Tyson noted ZOH, Colombo, Ceylon recently on 4900 kc at 1700, and twice recently we have heard Rangoon on 6035 kc around 1500; it closes at 1515 after a next day's programme perview, the direction: "This is the Burma Broadcasting Service now closing down until 7.30 tomorrow morning. Good night to you all," and the Burmese National Anthem.

Bangkok, Siam, has been heard by C. Costello (Wellington, N.Z.) on its new channel of 9786 kc with an English News bulletin at 1115.

R. A. Savill and J. Brooker (Crawley, Sussex) both hear the "Voice of America" from the Philippines relay station on 11890 kc: J.B. gives the address for reports: "Engineering Section, Facilities Branch, International Broadcasting Division, 251 West 57th Street, New York." R. Iball (Langold, Notts) has also heard them on 15330 kc though he thought they announced 15·3 mc. R. I. also logged DZH2, 9640 kc at 0230 with three chimes and the direction: "Manila Broadcasting Corporation—DZRH and DZH2, The Voice of the Philippines, Manila"; P. R. Wyman also hears this one at 1545. Unexpectedly, at 2200 we heard DZH3, Radio Philippines, 9500 kc with a programme of dance music followed by the announcement: "Station DZPI (Dee-Zee-Pee-I); the time is 6 a.m." J. C. Catch logged DZH3 at 1115 on December 4 with "Beat The Band," followed by call at 1130. The Rev. S. W. Bowen sends us an interesting letter containing the news that "The Lutheran Hour" is now conducting religious services from Manila on Sundays. C. Costello supplies the details: DZH6 on 6030 kc (1 kW) and DZH7 on 9730 kc, with perhaps DZH8, 11785 kc—on the air from 1000 to 1400—all operated by the Far East Broadcasting Company.

J. C. Catch's best was YCN3, Pontianak, Borneo, 8090 kc. logged from 1405 to 1501



The transmitting tower and (inset) the equipment, at the Hamburg station.

with News in Dutch and Indonesian and some popular recordings. At 1459 the call was given: "Radio Indonesia-Pontianak," then came the playing of "Marching Through Georgia" and finally, the Netherlands Anthem. J. C. C. also heard YDK, Palembang, Sumatra, 4855 kc closing at 1530, YDC, 15150 kc with Indonesian programme at 1400, and YDE, 11766 kc with French News at 1500. His other highlights were: "The Voice of Free China," Formosa, 11725 kc around 1600, and later in the period, BED4, Formosa, on 11800 kc at the same time of day. Finally, we were fortunate in hearing ZBW3, 9525 kc amid the welter of QRM and jamming at 1400 on December 22; it was broadcasting vocal dance music.

South America

J. C. Catch has been hearing an almost unknown Ecuadorean, HC4LL on 4930 kc. The station call is given every quarter-hour; preceded by deep-toned chimes of a clock and followed by a series of lighter chimes, it reads: "Ahtchay - Say - Cuatro - Ellay - Ellay, Santa Maria." The Rev. S. W. Bowen has sent HCJB's latest schedule; this station is on the air every day except Monday with the

following English broadcasts : 1130-1300, 2200-2300, 0200-0530 on 5993 kc, 9958 kc, 15115 kc, and 12455 kc. R. Patrick thinks ZFY, Georgetown, British Guiana, 5985 kc is one of the best South Americans after Radio Andorra has closed down ; D. Webber has heard their English News at 2300, and C. Makin an "Ovaltine" sponsored programme at 0100.

OAX4P, La Voz del Centro, Huancayo, Peru, 5984 kc was discovered at 0015 on December 10 by J. C. Catch ; the call was given by a male announcer after a series of light-toned chines. J. C. C. also recorded ZPA1, Asuncion, 6276 kc, heard with direction : "Radio Nacional de Paraguay" at 0001, and ZPA3, 11852 kc with frequent mention of "Radio Teleco." J. C. C.'s Venezuelans include YVKD, Radio Cultura on a new frequency of 5050 kc ; YVPA, San Felipe, 4860 kc with clearly heard call : "Radio Yaraqui" at 0030 ; YVQA, Cumana, 4960 kc at 2345 ; YVMW, Ondas del Caribe, Punto Fijo, 4767 kc with call at 2245 ; and YVMQ, Radio Barquisimeto, 4940 kc has verified by air-mail within 21 days—the address being : Oficina y Estudios, Avenida 20, 491, Apartado Postal 76, Barquisimeto.

R. Patrick gives us YVKF, Ondas Populares, 4880 kc with News in English at 2345 ; YVKO, Radio Dispersora Nacional, 5019 kc at 0030 ; and YVME, Maracaibo, 4800 kc with slogan : "Ondas del Lago" at 2330. The Colombian HJCT, 6200 kc was logged by R. A. Savill and by R. Iball with the call at 2330. In addition, R. Iball has heard CXA19, 11835 kc with English direction : "CXA19, El Espectador, Montevideo, Uruguay" at 2200 ; CE1180, Santiago, 12000 kc at 2245 ; and CE1190, Valdivia, 11900 kc with opening direction : "La Voz de Chile" at 2330.

D. H. Smith logged the new Argentinian LRT, Tucuman, 11842 kc with direction "Radio Independencia, Tucuman" at 2220 on December 6, and J. C. Catch heard LRM, Mendoza, 5898 kc after 2300 on several occasions. R. Iball says that LRS, 11880 kc is most consistent ; once at 2320 he heard an English talk on Travel in the Argentine : J. Brooker likes their weekly chat entitled : "Come to Argentine."

Lastly, in Brazil PYZ2 on 9290 kc is a new one logged by A. E. Nichols—it closed with a March and the direction : "Departmento Federal de Seguranca Publica" at 2110 ; we note that ZYC2, Emisora de Districto Federal, Rio de Janeiro, 9220 kc opens daily at 2300 !

A.E.N. has also landed PSH, 10220 kc at 2230, and ZYK3, 9565 kc with closing announcements in English at 0155. R. Iball's best here is PRL7, 9720 kc, and he found it audible as early as 1945 : J. C. Catch offers PRC5, Belem, Para, 4865 kc logged at 2330 with call : "Radio Clube de Para" ; and PRJ4, Parahyba, 4825 kc with three gong-strokes and call at 2345. D. H. Smith heard ZYB8, 11765 kc at S7 at 2200 on December 9, and Fortaleza was logged by two of our correspondents ; B. J. Tyson heard ZYN6, 6105 kc at 2235 but C. Makin spotted it earlier at 2100 with a gong note and the direction : "Ceara Radio Clube, Fortaleza, Ceara, Republico do Brasil."

Central America

J. C. Catch comments on several of the West Indians. 4UM, Port-au-Prince, 6407 kc has been heard irregularly around 0005 with a single gong stroke and call in French, and 4V2S was noted at 0100 with chimes and call in French only. 4VRW was heard at 2350 on December 14 with a programme of English carols on a new frequency of 9790 kc ; at 0001 the direction was : "Station Radio-diffusion 4VW."

In the Dominican Republic, HI2T, 9740 kc was logged by D. H. Smith at 2300, and on 9525 kc he heard HI2L announcing as "La Voz del Tropico" at the same time. R. Iball also found this one for the first time recently. D. Webber tuned in VP4RD, 9625 kc at 0030 with the announcement : "Your Station is Radio Trinidad." C. P. Turner gives their schedule which is : Monday to Saturday : 1000-1300, 1430-1800, 2000-0300 ; and Sundays : 1000-1800, 2000-0300. R. A. Savill heard COBC announcing as "Radio Progresso" at 2330 on 9365 kc ; J. C. Catch found TGWA, La Voz de Guatemala, back on the air again on 9763 kc with News in Spanish at 2300.

North America

In Canada, VED, Edmonton, 8265 kc has again been heard by R. Iball around 0400 ; on January 1 its News from Vancouver at 0600 was moderately good. R. I. found CBFX, Montreal, 9610 kc radiating dance music at 0430, and KRHO, Honolulu, 9650 kc with the "Radio University" programme and followed at 1100 by the direction : "This is KRHO and KRHK, Honolulu operating on 9·65 and 15·25 mc in the 31 and 19-metre bands." C. P. Turner's new station is CKRZ, 6060 kc heard at 2200 ; R. A. Savill gives CKLO, 9630 kc with a perfect signal, and P. Fry CBNX, Saint Johns, 5970 kc as a clear transmission, all at the same time.

A. E. Nichols logged WABC, New York, 9650 kc with "Hit Parade" at 2215 ; K. R. Toms (Boreham Wood, Herts) asks when the U.S. Radio Amateur programme is broadcast ; their latest list puts it at 1915-1930 on Sundays on 21650 kc, 17780 kc, 15270 kc, 15250 kc, 11790 kc, 9700 kc and 6170 kc (European relay). Has anyone logged OIX, Godthaab,

Greenland, 5942 kc which broadcasts daily 2130-2245 in the Danish and Eskimo dialects ?

Australasia

G. Iveson (Deighton Eskrick, Yorks) asks if New Zealand can be heard here at night time. Our experience is that ZL stations are very difficult to log at any time of day during our winter season, but J. C. Catch heard ZL4, 15280 kc with popular songs at 1845 on November 26 (S3-4). B. P. Middleton has just received their coloured verification folder.

E. Webb kindly sends Radio Australia's latest programme sheet from P.O. Box 480H, G.P.O. Melbourne ; it contains an account of Australia's national bird, the kookaburra, whose familiar cry is regularly heard at the beginning of all of Radio Australia's broadcasts. C. P. Turner has a verification for VLB2, 9650 kc ; and R. A. Savill has heard the Sunday service at 1415 from St. Paul's Cathedral, Melbourne, over VLA6, 15200 kc and later at 1545 over VLG4, 11840 kc.

Europe

B. P. Middleton offers the following : OZH, Copenhagen, 15165 kc broadcasting in English at 1150 on Saturdays, reports to be sent to : Radiohuset, Copenhagen ; Prague with English programmes at 1745 (11840 kc), 1945 (9550 kc) and 2145 (9550 kc) ; and Radio Nederland with an English talk at 1600 on Saturdays. J. Brooker heard PGD, 6025 kc with the K.L.M. Royal Dutch Air Lines 30th Anniversary broadcast at 1800 on November 29, and P. E. Woolmer has received from Ruth Shepherd of the Czech Radio a letter which says : "If you have any question you would like answering about Czechoslovakia please send it to us so that we may reply to you in our Answers-To-Listeners programme on Sundays."

From Malta, R. A. Savill has received a card from Leslie Knight, Chief Broadcasting Officer, M.E.L.F. quoting the schedule : 0430-0700, 0930-2200 on 7220 kc, 7270 kc, 6140 kc, 4782 kc, 4965 kc and 11785 kc, all with 7·5 kW power. R. A. Savill mentions HVJ3, Vatican City, 11740 kc at 1500, and he has a letter-verification from Stuttgart, 6030 kc ; the address is : Office of the U.S. High Commissioner for Germany, Information Service Branch, Radio Section, A.P.O. 154, Stuttgart ; he has had no answer from Leipzig, 9729 kc, which appears to be in the Russian Zone. In our reply from Hamburg we note that they will be pleased to receive letters relating to their 50 kW station on 7290 kc ; the address is : Herrn Weber, Tech. Horerpost, Nordwestdeutscher Rundfunk, Rothenbaumchaussee 132-134, Anschrift (24a), Hamburg 13. M. Milne has a verification from Baden-Baden in the French Zone of Germany ; programmes are entirely in German on 6321 kc (power 1 kW).

C. Sheppard (Worcester) has a verification from Radio Budapest, 6247 kc and 9820 kc, which broadcasts in English at 2130 ; C. P. Turner has a similar letter signed by Emil Baleczky, Head of the International Relations Dept. J. C. Catch has at long last logged Ruiselede, Belgium, 17845 kc between 1615 and 1655 ; a letter from the Institut National Belge de Radiodiffusion states that this channel is the only one at present in use on short waves. Norsk Rikskringkasting, Oslo sends us a folder giving details of their broadcasting system, and the Rev. S. W. Bowen has the Swiss Broadcasting Corporation's card and mentions their feature : "Towards a Better World" given each day at 1915 for British listeners over 11865 kc. Lastly, A. E. Nichols mentions good reception of GSK, 26100 kc around 1030.

Kindly let us have your news for next month's Commentary. addressed to : R. H. Greenland, *Short Wave Listener*, 49 Victoria Street, London, S.W.1, to reach us by February 19, and in the meantime, Good Hunting in DX Territory !

BROADCAST STATION LIST

Ever since the inauguration of the *Short Wave Listener* 'way back in November, 1946 (it seems such a long time ago now !), we have regularly published in these pages an up-to-date list of short wave broadcast stations operating in a given frequency area. In any period of five months, the whole short wave spectrum is covered, with nearly a thousand active stations listed. So far as we know, this is the most up-to-date list obtainable anywhere in the world, though it is not the only such list published. But the point is that no list appearing on an annual basis can ever be right up to date, owing to the many changes constantly taking place among such a large number of stations. Hence, it is only by regular monthly surveys that anything like an up-to-date listing can be obtained —and it is that which you find every month in the *Short Wave Listener*.

ALL DIFFERENT !

To the discerning SWL interested in QSL cards, our regular feature "Pse QSL" is still one of the most useful pages in any issue of the *Short Wave Listener*. It should be noted that not only are all the entries in "Pse QSL" different every month, but also that they only appear as a result of the operator concerned informing us that he actually *wants* SWL reports ; moreover, he receives notification of appearance. Thus, there is complete co-operation all round, and owing to the very wide coverage of the feature in terms of prefix and desirable DX (which even surprises us, incidentally !) any keen SWL would have a useful and interesting month's work in winkling out all these signals and reporting on them—and provided the report gives the information asked for, he is reasonably sure of a QSL card back. Hence, careful use of "Pse QSL" amounts to reporting with discrimination, which will always produce a high percentage of returns.

SMALL ADVERTISEMENTS

CHARGES : *Readers'*, 2d. per word, minimum charge 3s. Box Nos. 1s. 6d. extra. *Trade*, 6d. per word, minimum charge 7s. All advertisements must be of radio interest only. Add 25% extra for Bold Face (heavy type) announcements. Copy date for next issue, February 6, addressed Advertisement Manager, *Short Wave Listener*, 49 Victoria Street, London, S.W.1.

FOR Sale.—Eddystone 640, speaker, phones. New March. £24 or near offer.—Apply R. Booker, 48 Lyndhurst Avenue, Twickenham, Middlesex.

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1224A battery communication receiver, 1·0-10·0 mc. Excellent condition, built-in speaker, one owner since new, plus 2-v accumulator. Carriage paid. £5/5/-.—Box No. 025.

EDDYSTONE 504 Rx. 10-500 metres. 2 RF and 2 IF stages, S-meter, crystal, BFO, noise limiter, matching speaker. Appearance and performance as new. £25 or nearest. Can be seen and tried at 3 Stainmore Place, Seacroft, Leeds, Yorks.

SALE.—*Short Wave News, Short Wave Listener, QST* 1946 onwards, approx. 70 copies, cheap ; BC453 used ; RFU31 40/65 mc ; RFU32 20/40 mc ; RFU27 mod. 55/75 mc ; all 25/- each. Wanted : 6SG7, 6AG5, EC53 in exchange for 717A, 9001, etc. Kimber, 13 Yam Road, Stockton-on-Tees.

SALE. Receiver R.1224A. Good condition, £3/15/-.—Wood, 40 Breckon Hill Road, Middlesbrough, Yorks.

SALE. Two 1155 receivers. One Model "N", which has complete coverage. Both fully modified and complete with power packs and speakers. In splendid order. Also 10-metre converter, which is really "hot". 30 watt 2-11 metre transmitter with super mains P/P. Ideal for VHF's. Above gear will be sold to first *reasonable* offers, not waiting for *highest* ones. If interested, make it what you think. Exchange lot for a really first-class receiver or other gear.—J. Woods, 13 The Neuk, Wishaw, Lanarks.

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R.F. E.H.T. We were so pleased with the quality of this unit that we have taken up the entire output of the manufacturer, the voltage can be adjusted to make it suitable for working 9 in., 12 in., or 15 in. tubes, the unique design and vacuum impregnation combine to give a trouble-free unit which will give years of satisfactory service, and, of course, the big point about the R.F. E.H.T. is that it is not lethal, the size is only 4½ × 3¾ × 4 in., price, complete ready to operate, **65/-**.

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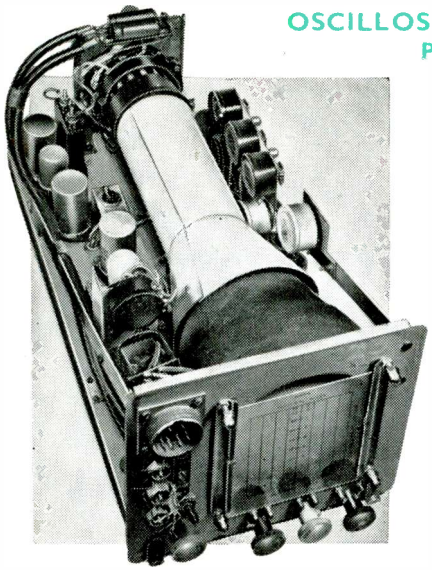
TELEVISION You can Build

MISCELLANEOUS ITEMS

Blocking Osc. Transformer, **6/6**. 9 ft. dural. tube for aerial, **4/6**. ·1 mfd. 2·5 kV., **2/6**. ·1 mfd. 5 kV., **4/9**. ·02 8 kV., **3/9**. ·17 kV., **13/6**. Vision Receiver strip (type 194), **45/-**. Varley E.H.T. Transformer, 4 kV., **67/6**. 2·5 kV., **27/6**. B7G Valve Holder, 1/3. EF50 Valve Holder, **6d.** Chokes, 200 mA. 10 henry, **10/-**. 200 mA 3 henry, **6/-** 80 mA 10 henry, **4/6** 80 ohm. feeder, thin, **10d** per yd.; thick, 8d. per yd. Plastic 8 kV. Sleeving, 3/ doz. yds.

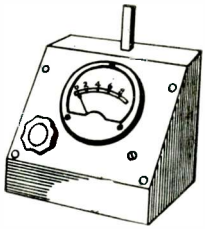
OSCILLOSCOPE PARTS



TYPE 8 INDICATOR. As specified for the "Wireless World" oscilloscope (reprint of data 9d.). Also for the "Inexpensive Televisor" (booklet 1/6), and the Mark I Televisor (constructors envelope, 2/6). These indicators are brand new, packed and sealed in manufacturer's original crates they contain VCR97 Cathode Ray Tube, 4 EF50 valves, 3 other valves, and hundreds of useful components, including wire wound pots. Price is only **£4/10/-**, plus carriage and packing, 7/6.

ELECTRONIC PRECISION EQUIPMENT

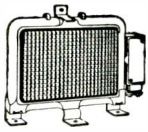
SPECIALS



SHORTED TURNS COIL TESTER. You know that it is almost an impossibility to test for shorted turns in I.F. Transformers, Coils, L.T. Transformers, etc., with an ordinary ohmmeter. Our mains operated shorted turns coil tester will reveal these faults in a second. For one month only we are offering these to you at the remarkably low price of **£5/10/-** each.

THE "SPEE-DEE" SIGNAL TRACER

A small metal case a few inches square, a flex terminating in a probe, a twin lead for connecting to either A.C. or D.C. mains, no switching, no tuning controls, and there you have the "SPEE-DEE" Signal Tracer. H.F., I.F., or L.F. checks—makes no difference: note frequency change is automatic. The fault is in the no-note stage. Yes, it's as simple as that. Price, with directions, **£4**, leaflet free.



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Suitable for intercommunication between offices, workshops, stores, garages, big houses, kitchens, etc. Each station consists of normal size Bakelite handsets and desk or wall mounting cabinet with built-in selector switch, buzzer and push. All stations can communicate with one another independently. Each installation is absolutely complete and internally wired. 3-station installation complete with 50 yards 5-core cable **£6/10/-**. 4-station installation, complete with 50 yards 6-core cable, **£8/10/-**. 2-station installation, complete with 25 yards 4-core cable, **£3/17/6**.

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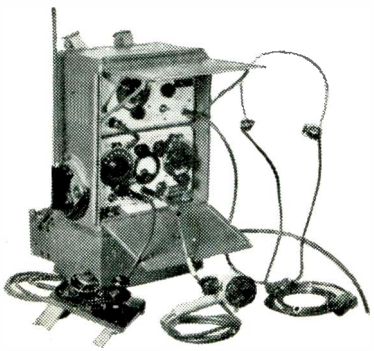
CLYDESDALE

Bargains in Ex-Services Radio and Electronic Equipment

Brand new, in maker's original packing

WIRELESS SET No. 48 MK. 1 TRANSMITTER/RECEIVER



American version of the No. 18 set, modified to U.S. Army requirements. Frequency coverage—6 to 9 mcs.—33·3 to 50 metres.

Complete equipment for "Phone" and C.W., comprising :—

Transmitter, with 1,000kc. xtal, 5 valves, 1A5, 2 1299's, 2/1LD5's, etc.

Receiver, with 6 valves, 4/1LD5's, 1LW6, 1A5, etc., etc.

Hand-driven Generator, supplying H.T. and L.T., plus 12v bias (when switches for WS18) with operator's seat, etc.

Aerial, 10 ft. rod type (11 sections), ranges 5 miles R/T. 10 miles C.W. Greater ranges can be obtained with a normal aerial. Plus cables and **Instruction Book.**

This equipment can also be used with dry batteries (not supplied) as a **Portable Walkie-Talkie.**

Power requirements : H.T. 162v 60 ma. L.T. 3.LV. 0.3A. Dimensions : Set and battery container : 11⅜" × 10½" × 17⅜".

Clydesdale's Price only

£14/10/-

Carriage paid

Ex-British Army

TELESONIC XMTR RCVR. YA4911-YA4915

Designed for the Transmission and Reception of audio frequencies. No R.F. is employed. The Transmitter Unit YA4911 with valves 2/ARP12's (VP23), 2/ATP4's (V248A) (loop aerial not supplied), H.T. V1. 60v, V2 120v, V3 and 4 180v. L.T. 2v. Space for batteries is provided inside. Size 14½" × 11" × 8", fitted with handles, khaki finish.

The receiver unit YA4915 with valves 3/XH 1·5v (H1VAC), 1/XP 1·5v (H1VAC) which are in series parallel for 3v fil. supply, H.T.67·5v space for batteries is provided inside the unit. Dimensions : 7" × 6" × 2" finish khaki, with pick-up coil.

Clydesdale's Price only **£3** Carriage paid for both units with rcvr (PU) Coil only

Receiver and PU Coil, **34/6**

INFRA-RED IMAGE CONVERTER CELL

Sniperscope. Snooperscope. The famous wartime "Cats-eye" tube used in "Tabby" for night sniping and observation.

Provides a Silver-Caesium Oxide Screen for the conversion of Infra-Red Rays to visible rays, using an infra-red light source. Data provided.

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R.F. UNIT TYPE 24 FOR 30-20 MCS. 10-15 METRES

Switched tuning, 5 pre-tuned spot freq. 3/VR65 (SP61). Output approx. 7-8 mcs. in metal case 9½" × 7¼" × 4¾".

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