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The SHORT WAVE LISTENER AND TELEVISION REVIEW

DEVOTED TO
SHORT WAVE RADIO RECEPTION
AND AMATEUR TELEVISION

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THE SHORT WAVE LISTENER
AND TELEVISION REVIEW

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EDITORIAL

Hiatus

It is a matter for regret that—for the second time since we commenced publication in November 1946—this has to be an issue combined for two months. As readers will of course be aware, many other weekly and monthly periodicals have been affected by the same circumstances—the printing dispute in London.

This issue is actually that which should have appeared on September 21, dated October. As we could not publish on that date, the only course open to us was to hold everything over until publication could be resumed. Hence, this issue contains mainly material which should have appeared last month. However, with the December issue (due November 16) we hope to be abreast of events once again, and to come out regularly on the "third Thursday" thereafter.

New arrangements have been made for printing *Short Wave Listener & Television Review*, and our readers will no doubt notice the change in general appearance occasioned thereby. But we need hardly add that the change is a matter of appearance only—in every other respect *Short Wave Listener & Television Review* is as before.

On another point, we are extending by one month (to cover the break) the subscriptions of all readers, and members of the BSWL, who obtain their *Short Wave Listener & Television Review* direct from us, as annual subscribers.

Transmission for Beginners

PART I

A GENERAL INTRODUCTION

(This is the first of series of articles which we hope will be of interest and practical value to all embarking on amateur transmission as a hobby. The treatment will be essentially simple and factual, and will cover fully the requirements of the first-year CW-only man. The author of this series is himself a well-known transmitter with considerable experience of the particular needs and problems of the beginner. —Editor).

THE majority of short-wave listeners, whether they realise it or not, are on the first step of the ladder leading them to the final stage of becoming a fully-licensed transmitter. Some know this as soon as the SWL bug first bites them; others become more and more enthusiastic as listeners, until they finally decide that a transmitter is needed to keep that receiver company. Yet a third category become listeners for the express purpose of gaining the experience of the bands which is such a necessary part of a transmitter's mental equipment.

The amateur transmitter who has had an enthusiastic career as a short-wave listener is in very much the same position as the motorist who learnt road-sense in his young days on a push-pike; he has acquired something very valuable and is in consequence a better motorist as well as a quicker learner.

How Much?

This important question is one of the first to be posed, and it applies equally to gear or to money! Fortunately, it can be said in all truth that Amateur Radio is *not* a rich man's hobby. It is open to all with the necessary knowledge and intelligence; and once you have started, your progress may be dicated not so much by the state of the purse or bank account as by the amount of enjoyment you derive from Amateur Radio as a hobby.

Your "station" may occupy a small corner of a bedroom, with either an indoor aerial or an almost imperceptible outdoor wire; on the other hand it may fill a good-sized room and be balanced on the outside with rotary beams, Sterba curtains and all the *de luxe* equipment of the amateur who really makes a serious business of it. But the degree of all enjoyment you derive from your hobby is by no means proportional to the amount of time or money you put into it.

On the other hand, the pleasure to be gained from making worldwide contacts with the very simplest of home-made gear probably exceeds, by far, the pleasure of working all over the world with really elaborate equipment designed for that very purpose.

In other words, a contact with Sweden or Finland, using 5 or 10 watts to a simple crystal oscillator and an indoor aerial, gives you a thrill that is, by now, lost to the DX-chaser with his aerial farm and 150-watt transmitter. Every time he works an exotic one he thinks "And so it should, with all the trouble I've taken over it"; but when you make your first modest contacts you will be on top of the world, even if you can't work the whole of it.

Basic Requirements

If you are a keen short-wave listener you already have a good receiver, a knowledge of how to listen, a working acquaintance with the various frequency-bands and their habits, and, probably, a reasonably good aerial of some sort. To become a transmitter you will need, in addition, a simple form of transmitter, a frequency-meter, and a power-supply. The transmitter itself is much simpler than the average receiver; even the 150-watt telephony job is less complicated than, say, a double superhet, unless you deliberately go in for so-called "refinements," which I prefer to call complications.

The simplest transmitter is a crystal oscillator, which lets you in for precisely one valve! And with that you will not even have to possess a frequency-meter, provided that you use a crystal of certified frequency. To make this transmitter into something more potent it is only necessary to add one stage of amplification (a "PA") and you will really be able to go places.

Get Acquainted

Nowadays, there is no excuse for starting up in complete ignorance and playing

a lone hand, as so many of us had to do in the old days. The Club movement is very strong now, and wherever you live you will be within fairly easy reach of an active club which has both transmitters and listeners among its members. If the transmitting members are newly licensed, so much the better; their gear will be straightforward and simple and won't frighten you by its complexity or apparent expense.

Many a first effort has been built from one of the popular "TU" series—tuning units from the BC375—which are ideal for housing a complete two-valve transmitter. Indeed, they *are* practically two-valve transmitters without the valves. Even the latter may be receiving types like the 6V6, 6L6 and 807; in fact, for a first 25-watt station these are probably the best types to use.

There are many 25-watt stations in existence which, with a single 807 in the final stage, have worked the world and collected, for the owner, QSL cards from more than 100 countries.

So meet up with all the transmitters that you can find at your local Club; talk the whole thing over with them, and you will acquire the real practical "gen" for which there is no substitute.

Once you have got yourself started, with the simplest gear, the rest will follow in easy stages. You will not be unpopular because you might be regarded an other potential source of interference; you *will* however, be mighty unpopular if you do not behave considerately towards others once you *are* on the air. This is where the twelve months' experience on low power is so essential and so valuable.

Essential Literature

Many excellent handbooks are available these days. To mention only a few, you may refer to the *Radio Amateurs' Handbook*, published by the American Radio Relay League; the *Radio Handbook*, published by another American firm; the *Antenna Manual*; the *Antenna Handbook*; *Hints and Kinks*; the *Radio Amateur Newcomer*, and all sorts of simpler publications available in this country. The larger books are complete works of reference, covering every possible aspect of Amateur Radio. Complete constructional details for transmitters and receivers of every size, as well as all the ancillary equipment such as frequency meters, monitors, 'scopes, electronic keying devices, speech amplifiers and so on are given, and a series of theoretical articles starting with fundamentals and ending up not far short of nuclear physics give no excuse for saying "I don't know how it works."

Our own *Short Wave Magazine* keeps this standard literature "topped up," so to speak, with technical articles embracing all modern developments, as well as news features for the DX man, the ultra-short-wave enthusiast and the gadgeteer. There is always something of interest to be learned in addition to one's present total of knowledge, and there is, fortunately, no lack of the means of dissemination of all this mass of information.

In future articles in this series it is proposed to describe (without a great wealth of detail) a simple transmitting set-up; a simple all-band aerial system; the question of station layout; and the whole question of what to do when you get on the air.

Meanwhile, do some serious thinking and decide whether you are a transmitter-to-be, or whether you propose to remain a short-wave listener.

CHANGE OF ADDRESS

We are informed that Q-Max Electronics, Ltd., formerly of Little Turnstile, W.C.1., are now to be found in larger premises at 95 Villiers Road, London, N.W.2.

A Versatile Loft Aerial for TV

AN EXPERIMENTER'S DESIGN

by **W. N. STEVENS (G3AKA)**

ALTHOUGH commercial TV aerials are now reasonably inexpensive, particularly indoor types, the dyed-in-the-wool experimenter usually likes to build up his own aerial system. Those who are able can construct a simple dipole or "H" type for outdoor installation or, where the signal strength is adequate, a simple indoor dipole with either solid or flexible elements.

Many, however, are faced with the problem of being forced to use an indoor aerial due to being forbidden the permission to erect any outdoor system. In some cases, of course, this is no hardship, but where interference is heavy or where screening affects the field strength the indoor dipole is not always suitable.

The best possible location for an indoor aerial is in the loft or attic. The system about to be described is such an installation and it has the advantage of being very versatile ; several different arrangements being possible. Although no originality is claimed and the method suggested is not put forward as the ultimate, the television enthusiast will find it inexpensive, simple to construct and leaving scope for trial and error adjustment which may result in greatly improved reception.

Possible Variations

The electrical nature of the aerial is basically the simple dipole, but it can be adjusted to give such variations as the "T," "L" or "V." Also, "inverted" versions of either. Used as a simple dipole it will, of course, be bi-directional. Used as a T or inverted T it will again be mainly bi-directional but in some locations this arrangement will give better results than the standard dipole. As a V or inverted V the results are interesting. It will be found useful in minimising interference coming from a source at right angles to its plane. The arms of the V should be at a 90-degree inclusive angle ; in this way the aerial is independent of the angle of polarisation of the incident wave.

The inverted V system will show a slight loss over the ordinary dipole but the improved signal-to-noise ratio (in areas of high interference) will offset this disadvantage. The inclusive angle can, of course, be varied—some surprising results are often obtained by so doing. The aerial can also be made as an L or inverted L. The assembly of parts enables a change over to any alternative system within a few minutes ; all one has to do is to unfasten a few nuts and bolts and change over the elements.

Construction

The main parts are simply a mounting board (either of wood or plastic), two metal brackets, a small clip and the actual aerial tubes. The whole assembly can be screwed to any convenient vertical wooden member of the loft roof construction such as a joist or truss post. The constructional dimensions of the two brackets as shown in Fig. 1, the flange holes being required for bolting to the mounting board and the other holes for accommodating the aerial element bolts. The small clip is to clamp down the feeder cable and should be made accordingly. All these metal parts should be of sturdy material.

When the bracket assembly has been completed, it can be bolted to the mounting board with the bolt heads on the underside. Ideally, the board bolt holes should be countersunk so that the bolt heads when in position are below the surface of the back face ; this is not, however, essential but makes for a neater finish. Note that a soldering tag is fitted to one of the fixing bolt holes of each bracket (*see* Fig. 2).

The mounting board can then be fixed to the roof truss or post by ordinary wood screws of a suitable size. One of these screws must also accommodate the small clip which is used later for holding down the feeder cable and so should be left slack until the cable is fitted. Wood screws could be used for the brackets as well, but this is somewhat a disadvantage should the complete junction unit be changed around in different arrangements.

The actual aerial elements can be prepared as follows : Two holes are drilled right through at one end as shown in the sketch of Fig. 3. It is advisable to file two flats around the centre line positions

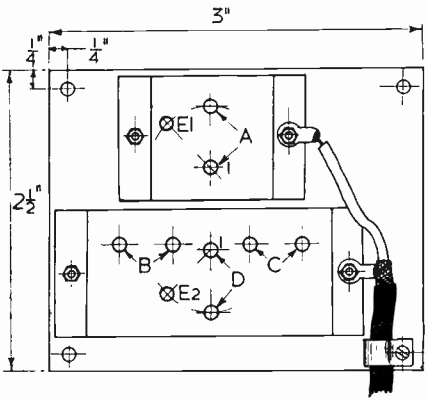


Fig. 1. Dimensioned sketch of the two metal brackets and cable clip.

as this will not only give a better bearing surface for the washers but will enable the fixing holes to be drilled more easily. The bolts should be reasonably large and OBA is recommended. The preparation of the three required aerial elements is identical as regards drilling requirements.

For complete versatility, three elements are needed, but the initial fixing will depend on the type of arrangement to be used. Each element is secured by two fixing bolts, which for convenience have been lettered up in pairs (Fig. 2).

Ringing the Changes

For an ordinary vertical dipole aerial, one rod is fitted to holes "A" and the other to holes "D." If a T arrangement is wanted, one rod is retained in holes A and the other two in holes B and C. For an L system, one rod each in holes A and B (or A and C) are required. Should a V or inverted V be desired it will be necessary to reverse the position of the board ; the two elements then being fitted in holes E1/A1 and E2/D1.

The E holes are dimensioned on the sketch of Fig. 1. If the angle is to be experimented with, then the elements could be fitted only to holes A1 and D1, but owing to the length of the tubing this is not recommended unless really heavy bolts are used. The single hole fixing could be tried, but its success will depend on the material used.

An alternative method is to find some means of insulating holes B from holes C, such as by fitting rubber grommets to the holes or other similar methods. This would obviate the need to turn the whole junction unit around when the V or inverted V system is tried.

In changing from one system to another it is not necessary to unsolder the feeder connections as each conductor is permanently fitted to each element by virtue of its connection to the metal brackets. The feeder may be either twin balanced cable or unbalanced (coaxial) line, according to the input arrangements of the receiver, and it is easily fitted. The cable is run under the clip provided and the wood screw tightened up. The outer sheathing (if coaxial cable is used) is soldered to the tag provided on the large bracket and the inner conductor taken to the tag on the small bracket. It should go by the shortest practicable route to the receiver, stapling at regular intervals to avoid swaying. The length is not critical up to around 80 feet or so ; after which the extra length may result in the appearance of ghost images on the received picture. Also, of course, the attenuation increases with the length but this should not be of undue importance in areas having a high field strength. An impedance of 72 or

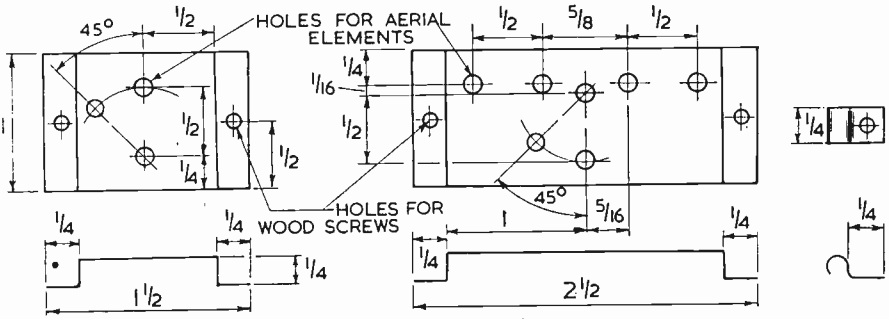


Fig. 2. Showing the completed assembly, less aerial elements, ready for mounting to the roof post.

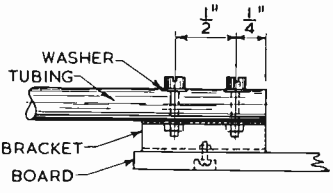


Fig. 3. Details for drilling and fixing the aerial elements to the brackets.

80 ohms will match reasonably well into all the arrangements suggested.

The Elements

The choice of aerial elements rests largely on the individual. Aluminium tubing is the firm favourite on account of its extreme lightness. Dural is electrically suitable but it has the disadvantage of being a heavier metal. Steel would be altogether too meavy for the simple mechanical arrangements suggested. Even though the system is to be erected indoors, it is advisable to coat the elements with anti-corrosive non-metallic paint to protect them and maintain aerial efficiency. All elements should be 62 inches for Alexandra Palace transmissions or 47 inches for Sutton Coldfield.

Theoretically speaking, the elements should be of as large a diameter as possible in order to ensure adequate bandwidth characteristics. However, owing to the simplicity of the mounting system the diameter should not be excessive. A good compromise is $\frac{1}{4}$ inch or $\frac{3}{8}$ inch diameter.

And that is about all. The assembly could, of course, be fitted in the viewing room itself but this is not likely to arouse much enthusiasm with the XYL! The whole idea may appear somewhat "Heath Robinson" to the fastidious but practical tests have shown that it works well enough in practice. The inventive reader may well think out a much improved general version, but the basic details will provide a versatile aerial for those confined to indoor systems. The writer would be interested to hear from readers who manage to work out, and prove successful, alternative mechanical arrangements for similar aerial systems.

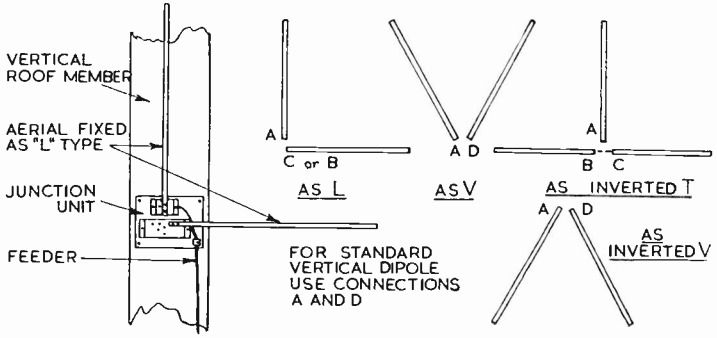


Fig. 4. Sketch showing the aerial assembly fitted in an L arrangement. Other suggested arrangements, with bolting hole references, are also given.

NEW IDEA FOR LINE SCAN TRANSFORMERS

An interesting development is incorporated in a new Murphy TV receiver. The normal transformer, when used for supplying EHT from line fly-back pulses, must have considerable insulation properties to avoid breakdown. This now reaches an even higher magnitude as the EHT requirements are becoming greater ; some 8 or 9 kV is required for modern tubes.

Standard practice is to employ wax or bitumen as insulating materials, but certain difficulties such as wax shrinkage and, under working conditions, melting wax, have imposed limitations on the efficiency. Murphy Radio have overcome some of the problems by introducing a line-scan transformer in which the insulating material is oil. The oil filled transformer is enclosed in a glass container with a moulded bakelite cap and an oil-tight seal.

Television for Beginners

AN OUTLINE OF THE SYSTEM

DISCUSSING THE DESIGN OF THE VISION RECEIVER

PART VI

By W. N. STEVENS (G3AKA) and L. E. HOWES (G3AYA)

THE sound and vision receivers in a television set are basically the same as in normal radio practice. That is to say they provide RF amplification, demodulate the signal to remove the carrier wave, and amplify the audio frequency modulation which remains.

There are, however, practical differences brought about by the nature of the television signal. These are best observed by dealing with the receiver section stage by stage.

Assuming that a superhet circuit is used, it is normal practice to provide a common frequency changer with at least one stage of RF amplification. The RF stage, using a high gain RF pentode, is there to improve the signal-to-noise ratio and prevent re-radiation effects. Little amplification is obtained but this is of secondary importance at this stage. If unwanted signals (either fundamental or harmonics) are not discriminated against but are passed on to the frequency changer, interference patterns will be observed on the tube face.

Circuit Design

Since this RF stage is common to both sound and vision channels it follows that it must have a sufficient bandwidth to accommodate substantially the radiated modulation. A typical circuit is shown in Fig. 19. On the London transmissions a bandwidth of some 6 mc would be required but owing to the difficulties in reaching this desirable condition a compromise is usually effected, the stage normally being tuned nearer to the vision channel mid-point since a little attenuation of the sound signal is relatively unimportant.

Low stage gain is due to the wide bandwidth required and to the low dynamic resistance possessed by tuning inductances at television frequencies. The aim, therefore, is to obtain the maximum possible gain consistent with adequate bandwidth.

Examining the circuit, the dipole aerial is coupled to L1, the primary winding of the grid transformer. The electrostatic shield between the windings assists in maintaining a good signal-to-noise ratio as it prevents capacitative coupling. The secondary winding L2 has a resistor R1 across it ; this is inserted to increase the damping (due to the valve and the loading of the L2 coil) in order to secure the required bandwidth.

The grid coil has no parallel condenser for tuning, variation in inductance being effected by a metal-core slug. This is to obtain a high L/C ratio, since the grid/cathode capacity and "strays" represent a capacity which cannot be increased otherwise the Q of the circuit will be lowered. The Q also depends on the dynamic resistance of the tuned circuit, with which the shunt resistances due to the valve, wiring and holder must be taken into account. The resistances are caused by the dielectric losses, which increase in proportion to frequency and are of considerable magnitude at VHF.

This is one reason why a low stage gain is obtained. Add to this the necessity of including damping resistors (to increase the bandwidth response) and it will be seen that the signal needs several stages of amplification before demodulation.

Referring again to Fig. 19, L3 and L4 represent transformer coupling to the mixer stage. L3, which is in effect the tuned anode coil of the RF stage, is shunted with a damping resistor R2. As with a sound receiver, it is desirable to incorporate some form of gain control (usually called "contrast") in the vision receiver. One obvious method is to vary the bias on the RF stage but this has the disadvantage of upsetting the frequency characteristics and bandwidth. To overcome this, many receivers insert the contrast control in the mixer stage. However, a practical solution may be achieved as in Fig. 19 ; a small value resistor is inserted

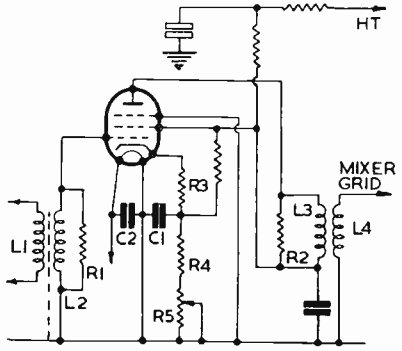


Fig. 19. A high gain RF pentode in a typical television RF stage. The purpose of the reference components are discussed in the text.

in the cathode circuit and is not by-passed —the resultant negative feedback minimises the variations of input resistance and capacity with variations in gain. This is shown as R3, the other cathode resistors R4 (fixed) and R5 (variable) being the bias components which are by-passed in the usual way by C1.

The remaining components need little comment, except to note that C2 is shunted across the heaters in order that the heater line is maintained at earth potential with respect to RF. This, and all other hy-pass condensers, should be wired as close to the pins as possible and should be a mica component. It is also worth noting that the "common earth" system is invariably used in TV receivers, all earth returns for each stage being taken to a common connecting point to avoid the introduction of impedances between the various returns.

The TV frequency changer (common to sound and vision carriers) follows orthodox methods, but it is important to maintain a good signal-to-noise ratio and adequate stability. Normally important, stability becomes a major issue in TV frequency changers otherwise traces of the sound channel will appear on the screen causing what is termed "graining"—a very annoying pattern. Negative feedback is used extensively to assist stability and some receivers use automatic frequency control.

IF Stages

Separate mixer and oscillator valves or a single triode-hexode or triode-heptode can be used equally successfully. The output from the RF stage is fed to the mixer grid so that the effect of the local oscillator will be to produce *two* intermediate frequency signals at the mixer anode, one each for the sound and vision channels. It follows that with a given IF the separation between the two IF signals will be the same as the separation between the transmitted sound and vision signals, which in the case of Alexandra Palace is 3.5 mc. Since, however, the vision signal has a wide bandwidth the actual separation of the IF signals will be less than 3.5 mc.

Two things will be noted as important. First, since it accepts a wide bandwidth input signal the frequency changer must have similar characteristics and secondly the choice of intermediate frequency will affect the performance. At VHF, a frequency changer will give little gain (sometimes even a small loss) and this is further agravated by the necessity of damping. Since noise generated within the receiver is normally due to the early stages (where the signal is weak) it is imperative that the signal should be as strong as possible so that noise in preceeding stages becomes less important. As the TV frequency changer is essentially a low-gain stage this explains the great value of an RF stage in front of it.

Regarding choice of IF, this must obviously be higher than the modulation frequency (which is just over 2.5 mc)

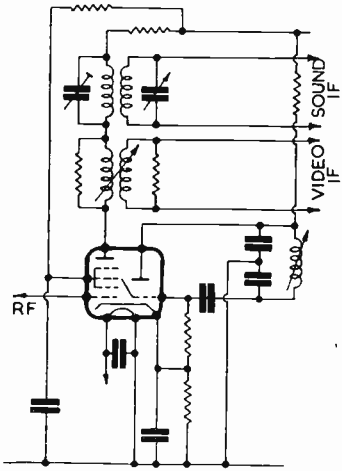


Fig. 20. A triode-hexode frequency changer stage as often used in TV receivers. The sound and vision IF signals are separated in the mixer anode circuit.

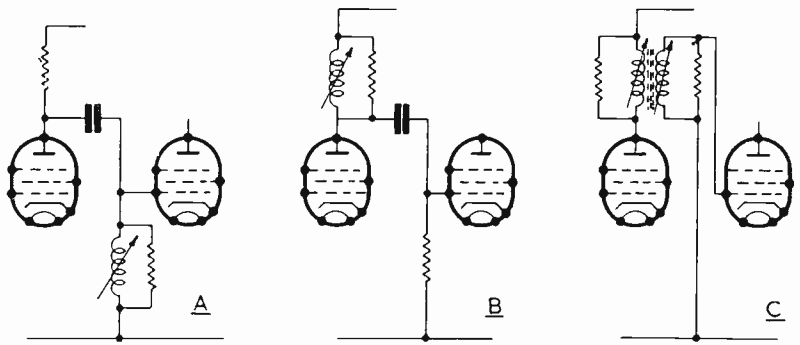


Fig. 21. Three methods of inter-change coupling between IF or RF amplifiers. (*a*) **Parallel fed,** (*b*) **Series fed and** (*c*) **Transformer coupled.**

otherwise it would be impossible to filter the IF from the vision signal in the demodulator stage. On the other hand, the whole point of the superhet would be lost if the IF were made greater than the highest signal frequency. Commercially, frequencies of between 5 and 13 mc are normal, although care must be taken to avoid frequencies which would give rise to harmonic interference. As in normal practice the lower IF's will provide a greater gain.

IF Separation

A typical circuit is shown at Fig. 20. Owing to its simplicity the Colpitts oscillator circuit is commonly used. Separation of the sound and vision IF signals takes place in the mixer anode by the simple method of inserting two tuned circuits—one resonating to the vision IF and the other to the sound IF. The signals are then fed to their respective IF amplifiers. Note that although the vision signal filter has damping resistors, these are not included in the sound signal filter. The sound channel does not require broad bandwidth characteristics for obvious reasons, although the BBC take advantage of the "wide open spaces" in the VHF region to transmit a higher frequency sideband than for normal broadcasting. Although some 15 kc is adequate this is sometime extended to about 50 kc bandpass to minimise the effect of receiver drift which has a greater effect owing to the narrower bandwidth.

By using separate valves for mixer and oscillator stages some extra gain is possible, but generally speaking the requisite amplification can easily be obtained in the IF stages which follow. The IF amplifier poses the identical problems of the RF stage—mainly the incompatability of stage gain and broad bandwidth. In order to present the detector stage with an adequate signal input three or more IF stages are usually employed.

There are three basic methods of coupling IF stages—parallel tuned, series tuned and transformer coupled. Sometimes a combination of types are used in one receiver. Although the practice of introducing resistance across the tuned circuits could be used, with the circuits tuned to the mid-position of the pass band, the efficiency of each stage is reduced impractically low even though the required broad response can be obtained. (Fig. 21).

Stagger Tuning

In practice the over coupled, heavily damped, circuits are retained and the process of stagger tuning adopted. In this system one circuit is tuned to the mid-band frequency and others are tuned either higher or lower. By careful and accurate adjustment stagger tuning will produce considerably more gain than if all stages were resonating at the mid-band frequency. Normally, of course, the resistance damping is either reduced or completely left off. In some receivers certain circuits are damped and others undamped ; it is usual in all cases, however, to provide damping in the pre-detector circuit to avoid the risk of phase distortion. Fig. 23 shows the overall effect of stagger tuning.

The IF and RF circuits may be adjusted for double sideband or single sideband acceptance with the London transmissions. In the latter instance, the circuits are adjusted to accept only one of the trans-

mitted sidebands so that a pass band of 3 mc, with its mid-position 1.5 mc above or below the carrier, is obtained. This halves the bandwidth requirements in the receiver stages but initial adjustment are more difficult. Incorrectly adjusted circuits will produce poor picture quality.

SC Reception

In the case of Sutton Coldfield (and the remaining three channels) single sideband transmission is used. The lower sideband is fully radiated but the other is mainly suppressed leaving only a vestige in the waveform (hence the expression "vestigial sideband transmission") amounting to about 0.75 mc. This achieves an economy in the VHF region and eases the band-

In this instance, the provision of a low impedance diode detector overcomes most of the trouble. (Fig. 24).

Filter Circuits

Precautions must be taken to filter RF or IF voltages superimposed on the video signal from being passed on or passed back. This can be a simple low pass filter, comprising L3, L4, C1 and C2 in Fig. 24. Since there are no less than three different outputs appearing in the detector anode, the filter must be very efficient. The carrier voltage must, of course, be rejected; the modulation signals must be retained without undue attenuation of the higher frequency sidebands; the third voltage—

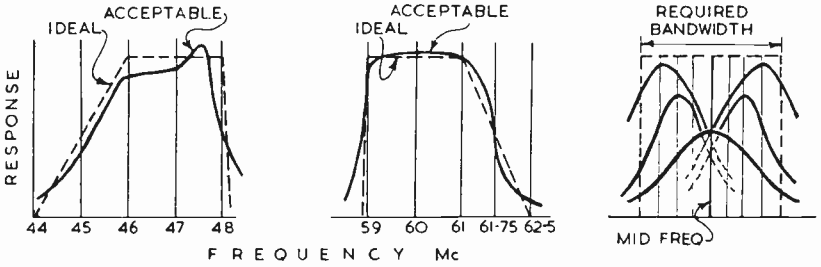


Fig. 23. Basic sketch showing how five separate tuned circuits can be resonated at different mean frequencies within the required bandwidth to give a broad overall response.

width requirements in the receiver, which must be adjusted for single sideband reception.

The non-uniform response is desirable since the higher range of picture frequencies are contained in the lower sideband only, thereby requiring maximum response, but the lower picture frequencies are contained in both the lower sideband and the vestigal sideband. If the response did not fall off in the region of the vestigial sideband the low picture frequencies would be over emphasised. With the carrier frequency mid-way along the falling response curve the voltages each side are additive, thus equalising the effective response.

The amplified IF signal is fed to the detector in the normal way, but owing to its characteristics demands a specially designed demodulator stage. In the first place a low value anode load is essential if serious attentuation of the high video frequencies is to be avoided. Parallel capacity of the valve and stray capacities cause this trouble and by overcoming it we get back to the old snag—loss of gain.

the DC produced by demodulating the carrier—should, ideally, be retained (*see* Fig. 16, September issue).

Although sensitive cathode ray tubes can be fully modulated from the output of a detector stage, it is usually necessary to insert a video frequency amplifier. Since a positive-going signal is required for application to the CRT, the nature of the demodulated signal should be observed. In Fig. 24, the output will be negative in nature so that, if a VF stage follows, the phase reversal which takes place will provide the neccessary positive input to the tube. If, however, no VF stage is used the reversed polarity can be obtained by simply reversing the diode—the anode is taken to the coil L2 and the cathode is connected to the filter coil L3. This provides a positive-going demodulated video signal.

The VHF stage, normally a pentode, usually has a partially inductive anode load in order to minimise attentuation of the video signal high frequencies. The resistive element in the anode load must

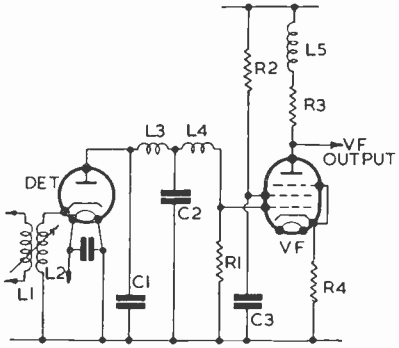


Fig. 24. Typical television detector and video amplifier circuits. When arranged in this manner, a positive-going picture modulation is obtained.

again be kept low to ensure wide bandwidth response, but the resultant loss of gain is somewhat compensated by the correction choke (L5, Fig. 24) which helps to neutralise the stray circuit capacities. R1 is the VF grid leak and also acts as the diode load.

To retain the low frequency sidebands several methods are used. The detector-VF coupling condenser is omitted, the coupling condenser from the VF stage to the CRT is made a large value (if used) and the cathode by-pass condenser of the VF stage is left out. By means such as these a flat response in the VF stage is ensured.

In Part V, the importance of the DC component was mentioned. Fig. 25 shows two methods of coupling the VF output to the CRT ; first, direct coupling in which the DC component is retained and, secondly, capacity coupled. The latter requires restoration of the DC component, as shown in the circuit by a diode valve.

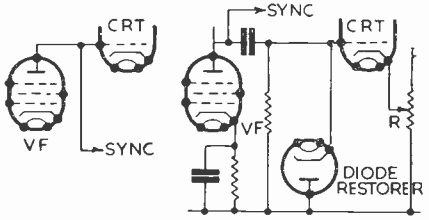


Fig. 25. Showing direct and capacity coupling to the CRT, and how DC restoration is obtained in the latter case. The resistor R is the CRT brilliance control.

Also an integral part of the VF output are the sync pulses. The video output is fed to the sync separator stage which performs the necessary function if separating the pulses from the picture modulation.

The Sound Side

We have discussed the vision receiver. The accompanying sound receiver requires little comment apart from the fact that it is fed from the common frequency changer and comprises an IF amplifier, detector and one or two audio amplifying stages. The circuits are not complicated by broad bandwidth considerations.

TRF receivers follow a similar pattern, except that the frequency changer stage is obviously omitted and the IF stages replaced by normal RF amplifiers. Sometimes two or more common RF stages are provided, though normally only one is so used. Of the two systems the superhet is more sensitive and stable, while offering simple and effective sound/vision discrimination. It is, however, more complex and may give trouble in the elimination of such difficulties as superhet whistles.

Receivers and Aerials

Summary of Types used by Regular Correspondents of

THE DX SCRIBE

Two or three months back I asked readers whether they would care to send in a paragraph or two concerning any special pecularities of their receivers or aerial systems, imagining that all sorts of idiosyncrasies would be revealed.

This, however, has not been the case. Most of the receivers, if not commercial or ex-Government, are home-made efforts of tried and tested design ; some are more complex than others, but none are particularly sensational in any way. But they have one thing in common—they all pull in the DX.

Aerial systems, it seems, are largely dictated by the space available. It is fortunate that the many readers living in "digs" or flats are able to find space for a 14 mc dipole in the roof, or across the ceiling, or even flat against the outside wall. Some of them have to do some bending, even then !

Shortage of Space

The listener with an "aerial farm" is a real rarity. Only two or three out of the 40 odd who have reported have really got sufficient space to put up the sort of things we should all like. What does stand out, however, is that those who have only 33 feet available don't all make the best use of it. Those who have put up dipoles or folded dipoles, properly fed, all seem to get better results than those who just cram as much wire as they can into the given space.

Analysis of 40 letters yields the following results, as far as aerials are concerned: For 14 mc reception there are sixteen dipoles or folded dipoles, three "VS1AA-type" Windoms, two inverted L's with 33ft. 6ins. top, two inverted L's of the same total length, and one arrangement of two 14 mc dipoles in line, fed in or out of phase to give two different polar diagrams. The rest are miscellaneous pieces of wire ranging up to a pair of 200-ft. long wires.

For 28 mc reception there are ten properly cut-and-fed dipoles and four lengths, roughly half-wave, coupled with twisted flex. For 7 mc there are very few aerials specially designed, although there was one mention of a vertical quarter-wave grounded and coupled Marconi fashion.

Special Types

If I single out a few individual cases for comment it is merely because I think they have something that might be of interest to others who, may be, could manage something similar but haven't yet thought of it. R. G. Poppi (Beckenham) mentions that a folded dipole made of, and fed with, 300-ohm ribbon gives a huge gain over an ordinary dipole fed with low-impedance line—at least where the S.640 receiver is concerned. (I think the majority of receivers like an input impedance considerably higher than 72 ohms, and 300-ohm line gives something approaching the ideal for most of them).

R.G.P.'s roof-space, by the way, is pretty full, as he has a 28 mc folded dipole (N/S) and two 14 mc FD's, one NE/SW and the other NNW/SSE. All of them consist of 300-ohm ribbon for the dipole as well as the feeder.

F. A. Herridge (London, S.W.12) uses an end-fed 40-ft. length round four sides of the shack : and this can't be as inefficient on the Top Band as you might think, because he gets excellent results up there with a O-V-1.

M. G. Whitaker (Halifax) is one of the lucky ones where space is concerned, since he has two 200-ft. long wires, one pointed at South America and the other at South Africa. R. G. Goulding (Wrexham) also has a comprehensive assortment consisting of two 14 mc dipoles (NW/SE and NE/SW ; two 28 mc dipoles (N/S and E/W) and a 75-ft. long wire. D.K. Cocking (Farnborough) uses 100 feet of wire fed with a twisted pair of 10 feet from one end. C. S. Pollington (Chichester) is a zig-zag exponent, with 142 feet of wire wrapped round a much shorter garden.

E. J. Logan (Hertford) has an inverted L with a top 33 ft. 6 ins. long and a feeder of 35-ft. This probably works as a full-wave aerial, end-fed, on 14 mc, but assumes the characteristics of the horizontal piece. On the other hand H. M. Graham (Harefield) has a 33-ft. length which is end-fed. Those using Windoms (half-wave aerials with a tap one-third of the way along, fed by a single wire) are K. Parvin (Thornton Heath) and D. L. McLean

(Yeovil), who has two of them. The owner of the two dipoles in line, with in- or out-of-phase switching, is P. H. Strudwick (London, N.W.11). This is a very useful system for a single band, as when the two are in phase they give an extra-sharp diagram in the broadside plane, whereas out of phase they look like a full-wave aerial with the familiar four diagonal lobes.

Receivers

I was pleased to find that just fifty per cent. of the receivers were home-built, although many of them are owned jointly with commercial jobs. Among the latter the S.640 is by far the most numerous, with the AR88 second. Then some the various breeds of BC-342 and 348, the rear being brought up by R.208, R.103 and R.1155. There are also one or two Hambanders, one SX28 and one SX17.

R. G. Poppi uses, in addition to an S.640, a 1-V-1 with two KF35's and a KL35. N. S. Beckett (Lowestoft) has a 0-V-0 on which he had logged 39 Zones! F. A. Herridge's 0-V-1 uses an HL2K and a 210LF; H. M. Graham always operates a 1-V-1 with plug-in coils.

R. G. Goulding has a 10-valve double-superhet, and L. Corder (Hadleigh) a double-superhet of which the 1.6 mc IF is fed into a BC 453. R. W. Finch (Ilford) runs an O-V-1 and also a most unusual 3-V-2 with a pair of push-pull EF50's on the RF side. Several readers use modified or unmodified RF Units Types 24 or 32 for ten-metre work, and F. N. Baskerville (Formby) has a home-brewed nine-valve superhet with reaction on the IF stages. He remarks that he sticks to a home-built job "because he can incorporate the special refinements he wants and leave out the fripperies he doesn't."

One or two listeners use nothing but an ordinary broadcast superhet with one or more short-wave bands; and some of them turn in remarkably consistent lists of Calls Heard, too.

Summary

One thing is certain: That there are no two short-wave listeners anywhere with identical equipment. Even if you use a standard and well-known type of receiver you can still ring considerable changes on aerial systems, in spite of lack of space.

There also seems to be very little relation between the cost, or complexity, of the gear and the results obtained. This, of course, merely proves that it is the chap behind it that counts most, where results are concerned.

A problem that is awaiting lots of keen listeners is concerned with making the best of the longer wavelengths, this coming winter, with the aid of short bits of wire! I foresee many 80-metre dipoles being wound round and round inside roof spaces of barely sufficient size for a 20-metre effort. We will have another inquest later in the season and see who is being most successful along these lines.

OPPORTUNITIES IN CANADA

It is reported that TV set manufacture is a rapidly growing industry in Canada, where the aim is to produce a home receiver in direct competition with the United States. Many large electrical companies are willing to train men who are adaptable, and there is plenty of work for experienced TV service and maintenance engineers. Readers who may be interested in this proposition can find out all about it on application to: Immigration Department, Ontario House, 13 Charles II Street, London, S.W.1.

LINES OF THOUGHT

It is often suggested—in our view, quite wrongly—that there is now nothing much left for the amateur in the way of technical development. This ignores the vast new field which we can expect eventually to be opened to us when amateurs in this country are allowed to use pulse transmitting techniques on VHF, when amateur TV transmission is permitted, and when we can use enough power to make moon reflection a practical method of DX communication on the VHF bands.

Have you heard?

AMATEUR BAND COMMENTARY *by the DX Scribe*

ONCE more it is my sad duty to record that August was a pretty bad month. Conditions, taking the bands as a whole, have been uniformly dull, and the only bright patch has been the way the 14 mc band has suddenly awakened from time to time. Never, at any period, has it been more than a mere shadow of its former self, but the DX-chasers who don't remember 1946 and 1947 must have thought the band quite brilliant on these odd occasions.

To my great surprise our 28 mc SLP was *not* a wash-out. Some of the listeners who stuck to it have even congratulated me on a "long shot" that came off. But I assure you that it was pure guess-work-with-my-fingers-crossed. Nothing much was really there except South Americans, OQ5's and AR8's, but, after all, they *are* more interesting than OK's, I's and DL's. Apart from the OQ5's the only Africans logged seem to have been ZD4AH and ZE3JT—and not many of you heard them!

Still, it was by no means an hour wasted; nor was the Sunday morning period on the Top Band, judging by the lists sent in. But I *would* like to see a little more support for the SLP's; the only ones that really bring in large numbers of lists are those on 14 mc when conditions are good. And they are the very ones that mean so little.

I have already warned readers that more and more CW listening will be called for in the SLP's, and the lack of enthusiasm for it still puzzles me. Probably the reason is that it doesn't really "get you" until you have tried it; and until you try it you don't know what you're missing.

DX on 14 mc

I will deal first with the 14 mc band, which, naturally, has carried most of the interesting DX during the month. There have even been a few new countries around for some of the keenest chasers. I heard ZS8MK myself—anyone want him?

B. W. Sutton (Liverpool) logged FN8AD, HZ1KE, SU1MR and VK1AC—all on phone—for new ones, and says that VE8MP is the most consistent 14 mc station, having come through S8 to S9 plus nearly every night during the month. M. Milne (London, E.18) says his best phones were HC1BW, KH6DY and 61J, KL7ADN, ZD1SS, ZS5IW/MM and XE1CW. He also mentions VS3AA, but I think this is either a misread call from CS3AA or a phoney. M.M. asks whether EA6AR, in the Balearics, counts as a separate country. Yes, he does.

The best for D. L. McLean (Yeovil) were FF3CN, HZ1KE, KH6DY and 6GR, VP2DC, VS7BR and ZD1SS—all phone. K. Smeeton (Barnton) mentions only ZC4DC on 14 mc CW; others also mention these ZC4's, who appear to be the old MD7's with new calls.

E. J. Logan (Hertford) continues to pull in new ones for this year's Four-Band Marathon. Instances: HE1JJ, VP7NL, VP2DC, VS1ES, XE1AC and H17WF—all phone. He also reports hearing a W9 working 9S4AX, which call puzzled him a lot. The answer here is that stations in the Saar have taken to using "9S" as a prefix instead of the old "EZ". (But I look on the whole thing as phoney at present, because the Saar is not yet recognised as a country, and these are just DL stations taking the opportunity of using a more exotic call-sign!). E. J. L. also remarks that VP3HAG and VP4TH were both heard each night that he was able to listen.

J. R. Paul (Lymington) thinks 14 mc is a peculiar band—one day full of DX and the next day full of nothing: He hasn't yet caught up on that CS3 prefix—it's just the Azores. LBCR, calling "CQ Twenty," sounds like a Norwegian commercial. J. R. P. has also been receiving the 90 mc transmissions from

the BBC's FM station at Wrotham, and is rather mystified as to their origin. Wrotham, Kent, is the answer ; there are two transmissions, one A—M and one F—M, quite close together between 90 and 93 mc.

R. A. Hawley (Goostrey) is another who gives a consistency award to VE8MP, who seems to be audible when no other DX is coming in. R. A. H. adds that EQ3FM appeared again, and he noted several good days for Central America, with VP3, VP6, VP4, and YV all roaring in ; he also heard HZ1KE towards the end of the month.

J. C. Beal (N. Wembley) says the band was "simply wonderful" for a few days after the "Aurora" week-end, but very mediocre for the rest of the time. He finds VK's beginning to come back in the mornings and has also heard very strong signals from KH6 on occasions. Best bag : *Phone* :— FN8AD, KG6FAA, PK1SH, VS2CU (S9 plus) ; *CW* :— CR7AG, VP8AO, ZK1AB and 1BC. P. H. Strudwick (London, N.W.11) mentions only FN8AD, KG6AD and 6USA, and PK1SH. He thinks conditions for the Far East are improving.

D. K. Cocking (Farnborough) thinks Twenty has been "right back to form", but leaves his Calls Heard list to speak for itself. On the other hand A. H. Edgar (Newcastle) says "Twenty has been in the poorest shape I've ever known." He has noticed that when the noise level is low, one may as well switch off right away ; when it's high there is usually some DX tucked away underneath ; his best for the month were FU8AA, UM8AB and VP8AM, all on CW.

W. J. C. Pinnell (Sidcup), on holiday with only a family broadcast receiver to keep him in touch, proceeded to log a new country on it—HV1A. Before leaving home he heard two others—CR8AB and YA2B. (I am very suspicious about all YA's :) A couple of puzzlers were HY7Q and 9S4AX, but I have already explained the latter. ZC4TF and 4XP sound like genuine Cyprus stations with new calls.

R. S. Stott (Upminister) has found the band excellent at times : he has logged KC6WC for a new one, but is very peeved at not being able to find ZA1A, who, it seems, has been on quite a lot, but not at the right times for R. S. S.

R. Lamble (Bosham) has heard several new countries and noticed an abundance of VK's on some mornings. On September 2 he logged eight in eleven minutes.

DX at Odd Times.

One sometimes hears DX stations coming through at such peculiar times that one feels they are worth an extra point or two : R. G. Poppi (Beckenham) mentions several examples, such as TI2OA at 1130, AP2N at 0630, PK1RI at 1116, VP3NC at 1000, PY4AY at 1628, KH6OR at 1500—and many others. He queries HV1A—as far as I know, this one is genuine.

J. L. MacDonald (Kingussie) gives the consistency prize to VP6SD and adds that CX2CO comes over very well most nights. He has a location 750 ft. high, but with hills all round. No amateurs within 50 miles, but plenty of ignition QRM from the main road. Queries from J. L. M. include YM1AT, OL3NJ, AK5BA and YDOAM—a sinister-looking bunch if ever there was one.

R. W. Finch (Ilford) would like the QTH of VP8AO. VP8AP, says R. W. F., gives his as South Orkneys. R. W. F. castigates a really bad G phone operator on 14 mc. This character was discussing the previous night's binge (with a local station, of course) for about ten minutes,

GM2BUD, Mauchline, is one of the only two Top Band stations in Ayrshire. This view is of the outfit when he went/A at Lamlash, Isle of Arran, with a B2 transmitter.

FOUR-BAND DX

(STARTING JANUARY 1, 1950)

Listener	28 mc (1)	14 mc (2)	7 mc (3)	3.5 mc (4)	Total Countries (5)	Total Score *
R. S. Stott (Upminster)	129	180	91	43	186	443
J. C. Beal (N. Wembley)	120	169	85	31	174	405
D. W. Waddell (Hitchin)	110	149	72	22	165	353
W. J. C. Pinnell (Sidcup)	111	153	61	22	160	347
P. H. Strudwick (London N.W.11) ...	124	141	28	27	161(P)	320
N. S. Beckett (Lowestoft)	73	142	76	29	145	320
D. W. Bruce (Eltham)	116	130	38	22	144	306
E. J. Logan (Hertford)	125	114	33	20	138(P)	292
L. Singletary (Bicester)	95	123	50	21	142	289
R. A. Hawley (Goostrey)	98	127	42	17	142	284
D. S. Kendall (Potters Bar)	114	113	25	27	135(P)	279
A. Bannister (Manchester)	101	125	30	21	136(P)	277
S. A. Mann (Long Island, N.Y.) ...	113	137	10	3	149(P)	263
A. M. Norden (London N.W.11) ...	114	103	23	23	127(P)	263
M. G. Whitaker (Halifax)	97	109	34	21	136	261
L. Corder (Hadleigh)	92	113	21	15	128(P)	241
L. Tombs (Swindon)	92	107	24	15	129(P)	238
T. Spencer (Slimbridge)	92	108	21	17	127(P)	238
J. P. Warren (W. Croydon)	89	114	14	14	128(P)	231
J. M. Graham (Glasgow)	85	74	32	25	112(P)	216
E. J. Parish (Watford)	86	96	16	17	122(P)	215
E. Trebilcock (Victoria, Australia) ...	7	125	77	5	137	214
H. M. Graham (Harefield)	70	101	24	16	118(P)	211
K. M. Parry (Sandwich)	93	103	4	8	128(P)	208
P. Bysh (London, N.10)	67	81	27	18	132	193
D. E. Tomkinson (Brighton) ...	60	93	19	20	112	192
K. Smeeton (Barnton)	40	99	37	13	110	189
R. A. Fowler (Marlow)	59	73	28	16	106	176
F. Pilkington (Colwyn Bay)	35	99	24	14	104	172
E. A. Parkinson (Leeds)	68	77	16	10	96(P)	171
J. Cartwright (Letchworth)	56	81	14	16	98(P)	167
D. G. Martin (Cheltenham)	59	63	21	12	93(P)	155
G. Murray (Newcastle)	53	70	15	16	89(P)	154
F. A. Herridge (London S.W.12) ...	33	59	38	15	76(CW)	145
D. K. Cocking (Farnborough) ...	42	76	16	6	86(P)	140
A. L. Higgins (Aberkenfig)	33	70	16	17	88(P)	136
G. Musk (Blackpool)	18	82	15	14	86(P)	129
F. M. Spence (South Shields) ...	4	90	19	13	92	126
R. Lamble (Bosham)	31	65	15	13	83	124
A. R. Holland (Malvern)	29	74	10	6	86(P)	119
T. Ward (Ilminster)	20	72	11	10	83(P)	113
A. O. Frearson (Birmingham) ...	40	50	15	8	71	113
O. R. F. Mason (Prittlewell)	7	33	14	14	40(P)	68
D. E. Hayes (Hoddesdon)	25	13	3	4	28(P)	45

* *Sum of figures in Cols. 1, 2, 3 and 4*

and remarked "the lads 1000 miles off must be cursing our net to-night, but why worry?" Then he proceeded to say that he *must* get off to bed (for the best part of an hour) but, of course, didn't go. This was at a quiet period, with long skip "on" and short-skip "off." Yes, there are such as these; and they tend to give everyone a bad name

A spurt of new countries pleased M. G. Whitaker (Halifax) who was rewarded with FK, FM, KW, EA6, UG and HV. J. W. Cave (Parkstone) found a big improvement in the band, particularly in the early mornings; his best were HV1A, VP7NH and YN4HI. He, too, has heard a ZC4—this time ZC4HV.

K. Parvin (Thornton Heath) found the band wide open at various times; the best of his bunch were KW6AO, PK1SH and LU1ZC (Antarctica). He also comments on the spate of TI and VP6 stations, and adds that two unusual ones were 11NMC/MM and ZS5IW/MM.

A very short one from O. A. Good (Oswestry) expresses the opinion that August was the worst month on 14 mc since 1946. The only stations heard that he considered real DX were CR6AI, VQ3BVF and EQ3FM—all on phone. D. Pool (London S.E.23) didn't find much of interest, either, but interesting ones were DL4ZE (Airborne) and CN8E1 (Portable) running 40 watts in a car going along the coast of Morocco.

F. W. Durham (Cookham) found the VK's beginning to roll in at breakfast time towards the end of August. He vainly tried to find VK1RD, who was called into a QSO by a VK2, but couldn't unearth him at all. Most reliable phone stations for F. W. D. were VP6SD and VP4TH; new countries heard were EA7BB, YS1GM and VP9UU (although I feel I should point out that EA7BB is "just another EA" and that Rio de Oro is now represented by EA0). A 3 a.m. rise was rewarded, also, by YS1GM and several YV's.

T. G. Spencer (Slimbridge) found the band pretty good; one morning in twenty minutes round about 0800 GMT he logged VK 2, 3, 5 and 6, ZL2, KH6 and KL7—all phone. He, too, finds VP4, 6 and 9 good in the evenings H. M. Graham (Harefield) makes sundry interesting comments. He found signals from OX and VE8 very hefty indeed at times; the other best countries were FF, VQ4, ZD1, ZD4 and ZS; AR8, EQ, HZ and ZC1; PK1; HK, HP, TI and VP3, 4, 5, 6 and 9. VP6SD, on August 28, provided H. M. G. with the loudest signal he had ever heard from that area.

J. P. Warren (W. Croydon) is another who has been on holiday, and trying to listen on the family's 5-valve all-wave receiver. He also collected a new one (HV1A again) and heard PK1SH, KG6AD KH6DY, KL7ADX, and some other DX. He thinks conditions on 14 mc are "vastly improved". It certainly is rather a humorous thought that so many of these quite efficient all-wave receivers, rarely moved off the Light Programme or Home Service, are capable of bringing in PK1's, KG6's and the like. Either their owners simply don't don't suspect such capabilities, or they know vaguely about short waves but couldn't care less!

Ten Metres

Very little of note on Ten this month; some of its faithful followers have spent a few hours on the band, but nothing really interesting has happened. H. M. Graham found three new countries (CT2, H139 and OE) among the short-skippers, but says that apart from dozens of I's, all at S8-9, the bulk of the signals came from OQ5, LU, CX, PY, and Europeans.

A definite improvement was noted by K. Parvin, with a lucky patch for the SLP. J. W. Cave found an improvement towards the end of the month, with the band opening up sometimes at 1630 GMT. D. K. Cocking found August 28 a good day, the rest of the month pretty grim. He is worried because he hears the BBC programmes on 28200, 28950 and 29200 kc; his receiver is an S.640, so it shouldn't be due to that. Can anyone elucidate?

P. H. Strudwick fared better than most on the band, and he logged OA8OA, ZP1AE and 5BA, and ZS3G. He remarks that the band is sometimes open as late as midnight. This seems the .right moment to add that I have twice heard W4's coming in well after midnight; but no one else seems to have been so misguided as to be listening on the band at that time. J. C. Beal's best, all on phone, were CX, VP4 and 6, PZ1, HC, KZ5, OA, VQ2 and 4, AR8 and ZS.

J. R. Cartwright (Letchworth) did quite well, and found Ten particulary good before and after the SLP. From 1520 to 1655 he logged ten ZS's ZE1JO and ZS3G; after the SLP he heard two FF8's. D. L. McLean logged AR8, CR4, MP4, ZD1 and 2, and ZP, and tells us (along with some others) that TA3GVU is now running 1 kW. And that seems to be all the 28 mc news. (*over*)

DX on Forty

There is no doubt that 7 mc is the band that really carries some DX even in these trying times. Only a handful of listeners take it really seriously, but those who have the patience certainly get results. (I *could* make some wicked remark here about "fortitude").

J. C. Beal says it has been *the* band, and quotes this DX to prove it : XE1HB (phone), FM8AD, HC2IH, TI2VM, YV6AO, HK5DH and CR5AC (CW). He also heard lots of ZL's and other countries such as UF6, EA9, LU, UN1, KZ5, KP4, W6 and 7. He asks whether TI8 is Costa Rica or Cocos Is.; the answer is that the latter is TI9 and that TI8's are "just Costa Ricans".

N. S. Beckett also fared well ; on two nights he heard HH2JC, PY1NC and 6AK, VP4TB, CO2PD and TA3GVU. R. S. Stott heard YV and HK for two new ones, but hasn't yet found an IS. Funnily enough I heard IS1FIC on the band early one evening.

A. H. Edgar took a look one early morning (0140) and heard W1 and 3 plus LU8AE and PY7WS—all S9 on CW. K. L. Parvin logged FA3GA, PY1AVM and a new country (SVOBW), all on phone. J. R. Cartwright heard PI1RT, working an F on phone. This is either one of the Dutch weather ships or a scientific establishment in Holland. Finally, K. Smeeton logged ZL2JT on CW at 0645 one morning.

Top Band Topics

T. G. Spencer reports "nothing in the way of DX but all parts of the British Isles on phone". And that, after all, is more or less what the Top Band is for. He was pleased to have a QSL from G3FGT and to find that he had been using 0.6 watt on phone when reported S9 at some sixty miles. M. G. Whitaker hands the biscuit to GW2BG for a consistent signal on phone.

F. A. Herridge (London S.W.12) devoted quite a lot of time to the band. G2BMU (ex-GC2BMU but now in Westmorland) gave him a new county and he, too, had a QSL from G3FGT concerning his 0.6 watt transmission. Best DX of the month was DL2HK on CW.

G. C. Allen (Thornton Heath) logged LA7ZB at 2315 one night, for his 19th country on the band. R. Iball (Worksop) found QRN and QRM troublesome, but logged GD3UB at RST 599, and also GI3GQA, GW3ALV, GW3EFZ and a number of "semi-DX" G's. He, and most of the other keen Top-Band Types, are eagerly looking forward to the DX tests in January, February and March.

Notes from Overseas

Eric Trebilcock (Victoria, Australia) sends in his revised scores, and harks back to the queries about UA9KCA. He has his QSL, clearly marked "Sverdlovsk City"—this, by the way, for reception on 7 mc CW. Recent additions were FB8AA (Madagascar) and FB8AX (Antarctica). Eric concludes "I like 7 mc best of all—I still hear Europeans there *every* day, from 1600 to 2330 GMT."

Steve Mann (Long Island, N.Y.) has been a reader of this piece for some three years, but doesn't often send in a report. He promises more regular letters in future, but says he does little listening between May and August. He favours Ten and Twenty, using an HQ120X and a preselector, and hopes to enter for some SLP's this winter.

General News

E. Catley (Great Yarmouth) heard HZ1KE telling a Canadian that H.R.H. Prince Abdullah would be on the air soon with the call HZ1AF. H.R.H. was in 'KE's shack at the time and said a few words.

D. G. Hayter (Shaftesbury) is worried by what he describes as a " noise " at the high end of the 28 mc band. If, by this, he means a raspy musical note of about 400 cycles, this is a navigational aid which has recently reappeared on that frequency after having "been away" for some time. A good noise-limiter will almost remove it.

F. N. Baskerville (Formby) acknowledges the correctness of J. L. Hall's note last issue ; he *was* wrong about Bangka Island, which is near Sumatra, not Java. Continuing the "I was there . . ." theme, he says that anyone hearing a PY8 from the Amazon region is doing pretty well. He was up there on a ship with a good 200-watt outfit, but the moment you get in those forests, "You've had it." The only other comparable dead spot, says F.N.B., is the notorious graveyard in the Indian Ocean, not far from Christmas Island. That is a patch about 800 miles long with no signals percolating into it at all. (And yet the famous Cocos Islands station G6CU/ZC2 got out marvellously from that very patch in 1946, and on ten metres.)

D. L. McLean says that Steve Mann (whom I mentioned just now) has informed him that FW7WE is hoping to operate portable from FG8 (Guadeloupe) soon ;

"ZONES HEARD" LISTING
(POST-WAR)

Listener	Zones	Countries
PHONE and CW		
M. E. Brazley (Kidderminster)	40	229
A. H. Edgar (Newcastle) ...	40	219
E. Trebilcock (Victoria Aust.)	40	216
D. W. Bruce (Eltham.) ...	40	213
O. A. Good (Oswestry) ...	40	212
R. S. Stott (Upminster) ...	00	211
R. A. Hawley (Goostrey) ...	40	197
W. J. C. Pinnell (Sidcup) ...	40	192
D. W. Waddell (Hitchin) ...	40	191
J. C. Beal (N. Wembley) ...	40	187
A. W. G. Boulton (Norwich)	40	184
M. Shortland (Sunderland) ...	40	172
B. Davies (Beckenham) ...	40	166
R. A. Fowler (Marlow) ...	40	162
N. S. Beckett (Lowestoft) ...	39	177
R. G. Goulding (Wrexham) ...	39	148
L. Singletary (Bicester) ...	38	177
F. A. Herridge (London, S.W.12)	37	156
K. Smeeton (Barnton) ...	37	156
G. H. Coulter (Dover) ...	36	138
C. J. Goddard (Coventry) ...	35	123
PHONE ONLY		
E. J. Logan (Hertford) ...	40	200
D. W. Bruce (Eltham) ...	39	187
R. G. Poppi (Beckenham)	39	167
K. Parvin (Thornton Heath)	39	165
R. A. Hawley (Goostrey) ...	38	184
A. Bannister (Manchester) ...	38	174
D. Kendall (Potters Bar) ...	38	170
L. Tombs (Swindon)	38	155
M. G. Whitaker (Halifax)	38	150
D. Vincent (Beckenham) ...	38	140

Listener	Zones	Countries
PHONE ONLY		
D. L. McLean (Yeovil)	37	176
O. A. Good (Oswestry) ...	37	173
P. H. Strudwick (London, N.W.11)	37	161
J. C. Beal (N. Wembley) ...	37	154
J. M. Graham (Glagsow) ...	37	154
J. P. Warren (W. Croydon)	37	149
G. Moses (Crewe)	37	149
A.M. Norden (London N.W.11)	37	148
K. M. Parry (Sandwich) ...	37	142
R. J. Line (Birmingham) ...	37	139
E. J. Parish (Watford) ...	36	163
D. G. Martin (Cheltenham) ...	36	149
R. A. Fowler (Marlow) ...	36	141
C. S. Pollington (Chichester)	36	147
T. E. Botham (Walsall) ...	36	136
B. W. Sutton (Liverpool) ...	36	127
D. J. Williams (Pontyberem)	36	116
S. Mann (Long Island, N.Y.)	35	163
H. M. Graham (Harefield) ...	35	142
A. L. Higgins (Aberkenfig) ...	35	136
P. Bysh (London N.10) ...	35	132
H. F. Webster (Darlington) ...	35	129
L. B. Bailey (Stockton) ...	35	124
A. R. Holland (Malvern) ...	34	122
C. J. Goddard (Coventry) ...	34	112
A. O. Frearson (Birmingham)	34	111
D. K. Cocking (Farnborough)	34	108
W. C. Askew (Melton Mowbray)	33	122
D. C. Stace (New Zealand)	33	116
G. Musk (Blackpool)	33	114
B. L. Stedman (Hawkhurst)	33	103
R. Lamble (Bosham)	32	83
O. R. F. Mason (Prittlewell)	32	82
G. Murray (Newcastle) ...	32	106

that an expedition is already at the *other* Cocos Island (off Costa Rica) and supposed to be operating; and that CR5AC is active from Bissao, Portuguese Guinea.

F. G. Goulding (Wrexham) is leaving our ranks and blossoming out shortly with a G3 . . . call, having passed both his tests. Congratulations! D. K. Cocking was very worried about QRN—genuine static, not man-made—but at the time he wrote his letter I think we all were. We had plenty of thunderstorms over the country this year, and, after all, they are hardly QRP!

L. Corder (Hadleigh) heard a station signing J8A . . . and giving his QTH as P.O. Box 244, Seoul, Korea. This sounded very phoney to him—and no less so to me. I should doubt it, very much.

Harking back to PY9's (see last month's query), R. G. Poppi replies that he heard PY9AP in the Matto Grosso some time back. For a further query, he asks whether anyone has heard a CO1 or 4, CE7, OA2 or 5, HC3, 4, 5 or 6—on phone? H. M. Graham says he logged PY9AG (Campo Grande) on 14 mc phone in 1939 and on 28 mc phone in 1949.

K. Parvin, who propounded the original PY9 query, now asks when, where and how people hear such DX as CR4AC, 5AC, 5AD, 8AG, FP8AC and UJ8BW on 14 mc phone? K.P. also tells us that AP5B/YA (the only authenticated station ever on the air from YA) made thirty contacts during his portable spasm; that XU2CX claims to be in Harbin, Manchuria; that EA8JM was formerly EA8AO and EA9EDZ. EA8AO is reported to be on 14 mc phone from Spanish Guinea.

A. H. Edgar heard, over the air, an account of conditions in the South of England, as compared with his part (Newcastle), given by an amateur who had been in London for a year. He said that the DX was four or five times as strong, and the Europeans much weaker, than in the North. Furthermore the

G3FTW of Dulwich, S.E.21., runs the "Transmitter for Beginners" described in the November—December, 1949, issues of our Short Wave Magazine. It is the unit top right of the S.640 receiver, and feeds into dipoles for 40-and 20-metre opertion.

noise was less! I think conditions vary a good deal from time to time, and am convinced that for certain periods the conditions are *better* in the North than down South. But there is doubtless something to be said for either end.

J. C. Beal did a bit of listening on Eighty and emerged with VO3G, LU3EL, KP4CC and some W's and VE's. He heard HZ1KE say that MD9AA would be operating from Yemen for a short time after September 25. Other queries from J.C.B.: Is VS8MP genuine? Does anyone know the Qth of VP5BL? Or the Zone of UA9OB? Was FB8ZZ in Madagascar? And what are the boundaries of the 21 mc band, as at present used by ZE, SV and one or two other countries? The 21 mc band is supposed to be 21,000 to 21,450 eventually, but whether the ZE's are allowed the whole of it I don't yet know.

R. S. Stott would like to know whether anyone ever hears I, IS or MF2 on 3.5 mc; and does anyone know whether Russian stations work on that band?

M. G. Whitaker has received ZE2KH's QSL for his 21 mc report to that station—the first for that band. B. W. Sutton wants the QTH of VE8MP.

W. Giles (Upwell) queries the increased postage rates to certain countries; he heard a note about in in a news bulletin, but is rather vague about the whole thing. Well, any Post Office will by now have the full gen., but briefly it boils down to the fact that most foreign countries to which the postage was formerly threepence will now cost fourpence. British Empire and U.S.A. rates are unchanged.

Contests and Competitions

Several readers have expressed the opinion that we have quite enough competitive events as it is, and that, although they would like to see such events altered around for the novelty of the thing, they don't want any more. They prefer, on the whole, to do their listening the way *they* want it, and not to be forced to listen on that band or this at times that don't interest them. And why should they?

R. W. Finch wishes to make it clear that when he suggested that the SLP's should become a "scoring" feature on the

"Points" scheme, he didn't mean that this should become another long-period or Marathon score, but simply that the existing short-period SLP's should be expanded in this way. I am bearing this one in mind, and also have another light-hearted "Points" scheme whereby a complete "set" (e.g. VP1-9, VQ1-8, ZS1-9) would score a handsome bonus for the successful collector thereof. But more of that anon.

Set Listening Periods

October 28, 1800-1900 *GMT*—14 *mc CW and Phone.*

October 29, 1500-1600 *GMT*—28 *mc CW and Phone.*

November 25, 2230-2330 GMT—7 mc CW.

November 26, 0800-0900 GMT—14 mc Phone.

Deadline for December issue will be **first post on Oct. 25th.** Please address everything to DX Scribe, *Short Wave Listener and Television Review*, 53 Victoria Street, London, S.W.1. Keep the Calls Heard lists to 25 calls at the most. Until next time, 73, Good Hunting and BCNU.

DX QTH'S

CR4AE	Box 17, Sao Vicente, Cape Verde Islands.
CR5AC	A. Vicente, c/o REP, Nesta Cidade de Bissao, Portuguese Guinea.
CR5AM	A. Mariano, c/o REP, Nesta Cidade de Bissao, Portuguese Guinea.
HP1HW	Box 2041, Panama City.
HP1MM	Mauricio Maduro, Box 94, Panama City.
PJ1UF	Box 80, St. Nicholas, Aruba, Dutch West Indies.
PK6NL	c/o Post Office, Biak Island, Dutch New Guinea.
PK6LN	Box 76, Macassar, Celebes.
ST2RD	Box 99, Port Sudan, Anglo-Egyptian Sudan.
ZS8MK	Dr. R. L. Markham, Qachas Nek, Basutoland.

CALLS HEARD

SET LISTENING PERIODS

28 mc

Aug. 26, 1800-1900 GMT

J. R. Cartwright, 146 Icknield Way, Letchworth, Herts.
PHONE: **CX**3AA, 4CS, **LU**1BC, 4DD, **PY**1AVM, 1KL, 2AUC, 5AL, 5DI, 5DX. (*Rx: HRO*).

J. R. Killeen. 101 Derby Road, Hinckley, Leics.
PHONE: **CE**3BZ, **CX**4CS, **LU**1AVM, 1BC, 3BAC, 3BR, 4AK, 4EZ, 4BF, 4BJ, 5EV, 5DL, 7CB, 8DV, **PY**1AVM, 5AL, 5DI, 5DX, **W**3OZA/MM, **ZP**1AE. (*Rx: AR88D*).

K. Parvin, 98 Winterbourne Road, Thornton Heath, Surrey.
PHONE: **CE**3BZ, 3CZ, **CX**3AA, 4CS, **LU**1BC, 3BAC, 5DL, 8DB, **PY**1AVM, 2AVC, 2DV, 4LK, 4NS. (*Rx: S.*640.)

J. W. Cave, 12 Hilda Road, Parkstone, Dorset.
PHONE: **CX**4CS, **LU**5EV, **PY**2AUC, **W**3OZA/MM. (*Rx:* 0-*V*-1.)

T. G. Spencer, Cherry Tree Cottage, Slimbridge, Glos.
AR8AB, 8UN, **CX**4CS, **LU**3BAC, 8DB, **OQ**5AO, **PY**2DU, **W**3OZA/**MM**. (*Rx: Commander.*)

D. G. Hatter, 40 Salisbury Street, Shaftesbury, Dorset.
PHONE: **AR**8UN, **CX**4CS, **LU**3BAC, 6AJ, **PY**5DX. (*Rx: S.*640.)

E. A. Parkinson, 8 Hawthorn Drive, Rodley, Leeds.
PHONE: **AR**8AB. **CX**4CS, **LU**5DC, **OQ**5EB, **PY**2AUC, 5DX, **ZE**3JT. (*Rx: S.*504.)

D. L. McLean, 9 Cedar Grove, Yeovil, Somerset.
PHONE: **CX**4CV, **LU**3BAC, **PY**2AHN, 2AUC, 5AL, 5BN, **W**3OZA/MM, **ZP**1AE. (*Rx: AR88LF.*)

P. H. Strudwick, 159 Hampstead Way, London, N.W.11.
PHONE: **CT**1CL, 1CX, 1SQ, **CX**4CS, **FA**7EA. **LU**3BAC, **OQ**5AO. 5CJ, 5EC, **PY**2AUC, 4NS, 5AL, 7AV, **ZD**4AH, **ZP**1AE. (*Rx: S.*640 *and Pre-Amp.*)

Ray A. Hawley, "Torview," Brookfield Crescent, Goostrey, Cheshire.
PHONE: **AR**8AB, 8UN, **CX**4CS, **LU**3BAC, 4BA, 5DC, **OQ**5CJ, 5EB, **PY**2AUC, 5AL, 5DI, 5DX, **TA**3GVU, **ZE**3JT. (*Rx: AR88 and S.*504.)

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

28 & 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 callsign; (*c*) callsigns 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.

1.7 mc

Aug. 27, 1100-1200 GMT

F. A. Herridge, 95 Ramsden Road, Balham, London, S.W.12.
PHONE: **G**2BQY, 2FLG, 2KT, 2Y, 3AA, 3BWQ, 3CRR, 3DXA, 3EAY, 3ECX, 3EDF, 3ENY, 3EVV, 3FEW, 3FNZ, 3FPS, 5VY, 8UJ.
CW: **G**3ABB, 3ERA, 3FGP, 3FRF, 3GDZ, 3HRH, 3WL, 4GT, 8JR. (*Rx: Modified. R* 103.1)

J. R. Cartwright, 146 Icknield Way, Letchworth, Herts.
PHONE: **G**2FLG, 2YI, 3DWQ, 3EAI, 3EBF, 3ERV, 3FEW, 3GW, 4BY, 4GT, 4RD, 5UM, 5XY, 6AG, 6RQ, 8UJ. (*Rx: HRO.*)

J. R. Killeen, 101 Derby Road, Hinckley, Leics.
PHONE: **G**2ACV, 2AFZ, 2AQV, 2BVW, 2CVV, 2FMO. 2FMP, 3ACJ, 3BOF, 3DGV, 3FFC, 4BB. (*Rx: AR88D.*)

Ray A. Hawley, "Torview," Brookfield Crescent, Goostrey, Cheshire.
PHONE: **G**2CXW, 3BZF, 3CGT, 3FMA.
CW: **G**3FXC. (*Rx: AR-88 and S.*504.)

G. Roberts, 4 Kellett Lane, Leeds 12, Yorks.
PHONE: **G**2BH, 2CGR, 3CVG, 3EGN, 3ESP/P, 4JB, 6NP, 8BL, 8CB, 8OK. (*Rx: SH5.*)

D. K. Cocking, B.S.W.L. 3505, Old Meadow, Farnborough Park, Kent.
PHONE: **G**2BQY, 2LG, 3BWQ, 3EMC, 4BY. (*Rx: S.*640.)

D. L. McLean, 9 Cedar Grove, Yeovil, Somerset.
PHONE: **G**2BAR, 2BHN, 2GD, 2XQ. 3CHW, 3EEY, 3MT, 5FJ, 6GU, 6JB, 8DN, **GW**2BG, 2CUT, 2IP, 5VX, 8SU. (*Rx: AR88LF.*)

E. A. Parkinson, 8 Hawthorn Drive, Rodley, Leeds.
PHONE: **G**2BH, 2CGR, 2HBH, 2VO, 3BHV, 3EGN, 3ESP/P, 3MQ, 4GJ, 4JB, 8BL, 8CB, 8OK, 8UO. (*Rx: S.*504.)

GENERAL

3.5 mc

J. W. Cave, 12 Hilda Road, Parkstone, Dorset.
PHONE: **W**1AQK, 2PGT, 4OC, 4CYC, 5KYC, 8IKH, 8OZP. (*Rx:* 1-*V*-0.)

7 mc

J. C. Beal, 24 Woodfield Ave., North Wembley, Mddx.
PHONE: **CM**8OA, **CO**2CE, 5CM, **PY**1NC, 1RC **XE**1HB.
CW: **CM**7FH, 8CM, 9AA, **CO**2QZ, 3BU, **CR**5AC, **EA**9BB, **FA**8RJ, **FM**8AD, **HC**2IH, **HK**5DH, **KP**4DO, 4JK, **KZ**5RG, **LU**3DI, 3DM, **SU**2AG, **TI**2VM, **UA**9KCC, **UF**6AB, 6KPA, **UN**1AE, **W**6HMA, 7JO, **YV**6AO, **ZL**1BY, 2CP, 2JB, 2MM, 3GQ, 3LL, 4FT, 4HI, 4IZ, 4KR. (*Rx: BC-224-B, August* 12-31.)

R. S. Stott, Upminster, Essex.
PHONE: **HK**4AM,
CW: **CO**3BU, **FM**8AD, **VK**3MC, 6DJ, **YV**5DL, **ZL**1ST, 2BJ, 2FA, 2MM.

28 mc

K. Parvin, 98 Winterbourne Road, Thornton Heath, Surrey.
PHONE: **AR**8PO, **CE**3BZ, 3CZ, **CR**4AC, **CX**3AA, 4CS, **FA**3KC, **HC**1FG, **KP**4KJ, 4MG, **KZ**5AB, 5CP, **OA**4AF, **OQ**5AB, **VP6**JC, **VQ**4ERR, **ZD**2SW, **ZE**2KH (*Rx: S.*640.)

Geoff Ayton, 76 St. Bernard Road, Stockton-on-Tees.
PHONE: CX4CS, LU4BF, PY2AUC, 2AHS, ZD4H. (*Rx:* S.640.)

Roger Lamble, "Chequers," Bosham, Sussex.
PHONE: OQ5CS, PY2AEJ, 2AVC, 2JC, VP6JC, W2ZBA/MM, ZS6SG. (*Rx:* SX17.)

Ray A. Hawley, "Torview," Brookfield Crescent, Goostrey, Cheshire.
PHONE: AR8AB, OQ5DK, 5EB, PY1FT, 3OI, 6DU, VP6HF, 6YB, VQ4ASC, 4KH, 4SC, 4SGC, 4VL, W3OZA/MM, ZD1SW, ZE1JE, 2KH, ZS6CY, 6NK, 6SG. (*Rx:* *AR-88 and S.504.*)

P. H. Strudwick, 159 Hampstead Way, London, N.W.11.
PHONE: HC1FG, 1KX, 2OY, HK3FF, KP4HM, 4KW, 4MK, KZ5AB, 5CP, 5IQ, 5LR, 5NM, OA8OA, TI2CG, VP4TH, 6HH, 6TC, YV1RY, ZD1FC, 2JHP, ZP1AE, 5BA, ZS3G. (*Rx:* S.640 *and Pre-Amp.*)

D. K. Cocking, Farnborough, Kent.
PHONE: CX4CV, LU4DD. (*Rx:* S.640.—*Aug.* 26.)

J. W. Cave, 12 Hilda Road, Parkstone, Dorset.
PHONE: AR8UN, CX4CI, LU1BC, MI3XX, OQ5SC, PY2AHS, 4DH, ST2KR, VP6AL, VQ4ASC, VS9AH, W3OZA/MM, 5AXI/MM, ZC6UNJ, ZD4AD, ZE2JE, ZS1CI, 6NX. (*Rx:* *0-V-1.*)

E. J. Logan, Linten Cottage, Fanshawe St., Bengeo, Hertford.
PHONE: AR8AB, LU3BR, MP4BAB, MD2AD, OQ5CJ, VP6JC, VQ2JO, 2VP, 2VR, VS9AH, ZD1SW, ZE3SY. (*Listening Time—1 hour, 20 mins. only. Rx: BC342-J/RFU32.*)

D. L. McLean, 9 Cedar Grove, Yeovil, Somerset.
PHONE: AR8AB, CR4AC, HC2OT, KP4HE, 4LE, 4MG, KZ5CP, MP4BAB, OA1D, OQ5AB, 5BR, 5EC, 5EC, TA3GVU, TI2TG, VP4TAB, ZC6UNJ, ZD1SW, 2JHP, 4AH, ZE1JE, 2JJ, 2KH, ZP1AE, (*Rx:* SX28 *and AR88LF.*)

R. D. Downs, Yapham, Pocklinton, E. Yorks.
PHONE: AR8AB, 8PO, CN8EH, FA3KC, KP4JM, LU3DJD, 4CD, 4DD, OQ5AB, 5BR, 5LL, PY1AEB, 1AMU, 1FT, 2ADT, 2AHS, 2ATG, 2JU, 3OI, 7RD, VQ4ERR, ZD1SW, 4AH, ZE6OY, ZS5A. 6EH, 6EU, 6SG, 6TE. 6Z. (*Rx: R.F. unit Type 24 into 4 valve superhet.*)

14 mc

K. M. Parry, 6 St. Bart's Rd., Sandwich, Kent.
PHONE: AR8BS, CE1AM, CO2IB, CS3AA, EA6AF, 9AI, FF3CN, HC1JW, 1XG, KP4HF, PZ1PZ, TI2OE, 2RC, VE2FU/VO6, VO6AN, VP3HAG, 6AL, 6MO, VQ3BVF, 4AA, XE1AC, YU1CAF, YV1AA, ZD4AD. (*Rx: RF24 into modified R208.*)

J. R. Paul, "Nethercourt," Sway Rd., Lymington, Hants.
PHONE: AR8BS, CO7RQ, CS3AA, CX1CG, FF8CN, HC1EE, HK1EE, HP1JH, HZ1KE, KH6DY, KL7ADN, OQ5DZ, SU1MR, TI2RC, VP2DC, 3HAG, VQ2HN, 8EL, VS2CU, 7BR, VU2CP, XE1AC, YN4CB, ZL4CP, ZS6TE, (*Rx:* S.640.)

J. R. Cartwright, 146 Icknield Way, Letchworth, Herts.
PHONE: HC1FG, HP1EA, KH6DY, 6IJ, MD2MD, 2PJ, SU1MR, TI2ES, 2OA, 2RC, VP6MO, VK1RB, W5MRV, ZC6JM, ZL4AV, 4CP, (*Rx: HRO.*)

J. P. Colwill, Hay Common, Launceston, Cornwall.
PHONE: AR8BS, CP5EL, EK1WX, HC1JW, LU7FS, MI3AB, OQ5CA, PK1SH, PZ1QM, SU1MR, TI2OA, VK2ZB, 5NG, VP4TH, 6HL, 9G, VQ2HN, 5GM, ZD4AB, ZE2JE, ZL4AV, 4CP, ZS1BV, 6TE, 4X4BP.

J. L. MacDonald, Glenfield, Kingussie.
AR6AS, 8AB, 8AP, 8BS, LE3AE, CO8MP, CT3AN, CX2CO, EA8AP, 8AE, HI6EC, KP4IF, MD2MD, OX1SC, 2WH, 3DD, 3MC, OY3IGO, SV5UN, TA3FAS, TF5TP, VP3CB, 3CW, VP4TH, VP6AN, 6HM, 6OS, 6SD, 6YB, YV1AA, 5AB, 5AY, 5BC, 5BT, 5BZ, 5PQ, ZA8AZ, ZB1A, 2A, ZC6D, 6JM, 4X4AS, 4DE, .

Geoff Ayton, 76 St. Barnard Road, Stockton-on-Tees.
PHONE: EK1AD, KH6DY, VK3HG, 7AJ, YO3GH. (*Rx:* S.640.)

A. H. Edgar, 15 Dene Terrace, South Gosforth, Newcastle-on-Tyne 3.
CW: CR7BC, FU8AA, KR6ES, UA9KSB, UG6KAA, UM8AB, VP8AM, VS1BY, 7NG, VU2GB, 2JP, ZS3K. (*Rx:* S.640.)

R. S. Stott, Upminster, Essex.
PHONE: CP5EL, HH2X, HZ1KE, JA2HB, PK4DA, 4KS, SU1MR.
CW: F8QA/AR, FQ8AC, KC6WC, KH6YL, PK1RI, TG9AD, VP1AA, 5BJ, 5BL, VU2BK, 2ET, 2FH, 2JP, YI6BD, ZS7C.

K. Parvin, 98 Winterbourne Road, Thornton Heath, Surrey.
PHONE: EQ3FM, FF3CN, KH6AY, 6DY, 6IJ, KL7ADN, KW6AO, LU1ZC, PK1SH, PZ1PZ, 1QM, VP2DC, VQ3BVF, 5GM, VS7BR, 7NG, VU2JP, 2LJ, YS1MS, ZD1SS, 2JHP, 4AB, 4AD, ZE2JE, ZS51W/MM. (*Rx:* S.640.)

F. M. Spence, 69 Morton Street, South Shields.
PHONE: CN8EH, 8EJ, CX4CS, LU1BS, 6ST, 7FS, OA4CR, PY1FT, 4KL, 4VX, VP3AG, 4TH, 6SD, VQ3BVS, ZD4AD, 4X4BL (*Rx:* R1155.)

P. Bysh, 86 Barrenger Road, London, N.10.
CO2SG, CX2CO, HC1IK, HZ1KE, KL7ADN, KP4FF, OX3BD, PY1AQM, 6DJ, 7AY, 7EE, SU1MR, VE8MP, VK2QR, VP6CDI, 6FR, 6SD, W6KFQ, 6PBL, 7JMY, ZS6OY, 4X4AC. (*Rx:* SX 24.)

R. G. Poppi, 274 Kent House Road, Beckenham, Kent.
PHONE: AP2N, FN8AD, JA2BA, 2BH, KG6AD, 6USA, KH6DY, 6IJ, 6OA, KL7ADN, KX6BA, PK1DN, 1SH, VK6DX, VP2DG, VS2BU, 2BS, 7BR, 9AH, VU2CJ, 2JP, W7ZHJ/KX6, XZ2KN. (*Rx: Battery* 1-V-1.)

D. Pool, 8a Ebsworth St., London, S.E.23.
PHONE: CN8EH, CO2CM, EK1WX, FA8CF, HZ1KU, LU4BH, MD2MD, OX3BD, PY2CK, SU1MR, TA3AF, TF5GP, VK1JC, 3APD, 5NG, 5RM, VP3HIG, VP4TB, VP6SD, VQ3BVF, VQ4AA, YN1AB, YV5BZ, ZD4AD. (*Rx: Sky Champion.*)

M. G. Whitaker, Stile-House, Shelf, Nr. Halifax.
PHONE: CE2CC, CP5EL, EA6AR, 9AI, HP1LA, HV1A, HZ1KE, OQ5DZ, UA4CB, VP3HAG, 3MCB, VU2MA, ZD4AD, ZS6JB, 6Q.
CW: ET9X, FK8AD, FM8AD, KZ5AU, UG6KAA, KW4KD, VS2CP, VU2BC, 2NG, YS3AA, ZE3JQ, ZS6J.

F. W. Durham, 1 Station Hill, Cookham, Berks.
PHONE: CO7RQ, 8MP, CX1CG, EA7BB, 8AV, KP4EE, 4HF, MD2MD, OX3BF, TI1KW, 2TG, TF5TP, VE8MP, VK2QR, 2AH, 3AW, VP4TH, 6CC, 6HM, 6SD, VQ2HN, 4AO, 4X4DR, ZB2A. (*Rx: R. 1155A.*)

R. W. Finch, 36 Bathurst Rd., Ilford, Essex.
CW: CT3AA, FK8AA, 8PK, 8RI, VP8AO, 8AP, W6KEK, 6LW, 7NPU, ZB1CH.
PHONE: CX2CO. (*Sept.1-3 only. Rx:* 3-V-2.)

H. M. Graham, 28 Park Lane, Harefield, Mddx.
PHONE : **AR8**BC, **CO2**JK, **EA6**AR, (Balearic Is.), 8LP, **FF8**CN, **HI8**WF, **HK3**FA, **HP1**LA, **HZ1**KE, **KP4**EE, **MT2**E, **PK1**SZ, **SV0**WM, **TI2**KW, 2TG, **VP3**LF, 4TI, 5AL, 6FR, 9G, **VQ4**AA, **YV1**AA, **ZC1**AL, **ZD1**SS, 4AD, **ZS6**OY. (*Rx :* 1-V-1.)

O. A. Good, 1 Western Drive, Oswestry, Shropshire.
PHONE : **AP2**N, **CR6**AI, **EQ3**FM, **HC1**FG, 1JW, 1RK, **HZ1**KE, **KG6**USA, **OQ5**CF, **VE8**MP, **VP3**HAG, 6MO, **VQ3**BVF, **VS2**BS, 2CU, 7BR, **ZE2**JE.
CW : **KG6**GA, **KH6**FQ, **PK1**RI, **PZ1**AL. (*Rx : S.*640.)

B. W. Sutton, 117 Utting Ave., East Liverpool, 11.
PHONE : **AR8**JT, **EA8**HS, **EK1**AD, 1RW, **FN8**AD, **HZ1**KE, **MD2**AR, 2MD, **MI3**AB, **PK4**KS, **PY2**AHS, **SU1**MR, **TI2**OA, **VE8**MP, **VK1**AC, 3JD, 8CF, **VU2**CP, **4X4**TF. (*Rx :* 0-V-1 *Battery.*)

H. Froggatt, 28 Lea St., New-Mills, Stockport, Cheshire.
PHONE : **LU4**BH, **VQ3**BVF, **VQ4**AQ, 4SC, **VP6**SD, **YB5**AB.
CW : **CE3**AG, **CO2**BM, **FF8**JC, **LU1**EK, 7CD, **PY1**ARZ, 6AI, **VQ4**AQ, 4BB, **VP8**AO, **YV5**AE, **3V8**BD. (*Rx :* 358X.)

Roger Lamble, "Chequers," Chequers Lane, Bosham, Sx.
PHONE : **AB8**BC, **CE1**AM, 1EA, **CN8**EH, **EA8**BO, **FO8**AB, **LU4**CD, **PY1**MK, **TA3**FAS, **VK2**ABX, 2JD, 2QR, 3ASD, 3ES, 3HW, 3ND, 3WR, 3ZW, **VP6**SD, **VS2**CV, **VQ3**BVF, **YN4**CB, **ZD4**AB, 4DR. (*Rx : SX*17.)

H. J. Berryman, Briar Cottage, Blackwater, Truro.
PHONE : **CE3**JJ, **CO7**VP, **CX2**CO, **EQ3**FM, **HZ1**KE, **KG6**AD, **MI3**LV, **OQ5**BZ, **SU1**MR, **TI3**ES, **UG6**KAA, **VE8**MP Baffin Is., **VP3**HAG, 4TH, 9XX, **VQ2**WD, 3BVF, 4AA, **VS1**AY, 7BR, **YS1**MS, **ZE2**JE, **ZS2**FA, 6OY, 6TE. (*Rx : R*1116*A.*)

J. P. Warren, 14 Francis Road, W. Croydon, Surrey.
PHONE : **EQ3**FM, **HV1**A, **KG6**AD, **KH6**DY, **KL7**ADX, 7GQ, **PK1**SH, **SU1**MR, **TF5**TP, **VO6**AN, **VS7**BE, **YV5**AB, **ZE2**JE. (*Rx : 5 valve superhet.*)

G. Murray, 6 Agricola Road, Newcastle-on-Tyne, 4.
PHONE : **CN8**EH, **CX2**CO, **EA8**BC, **HZ1**KE, **MD2**AN, **OX3**BD, **PY2**CK, **VE8**MP, **VP3**HAG, **VP4**TI, **VP9**VV. (*Rx : Homebuilt Superhet.*)

S. Smith, 40 Stoneleigh, Road, Kenilworth, Warwick.
PHONE : **CN8**EJ, **CX2**CO, **EA8**AX, 8HS, **FA8**DE, 9ML, **OX3**DX, **PY7**GZ, **SU0**WX, **TA3**GVU, **TF5**TP, **UA1**BE, 4CB, **VE8**MP, **VP3**HAG, 4TH, 4CH, 5GU, 6SD, 6TX, 6YV, **VG3**BVS, **ZD1**SS, 4AD, **4X4**AD, **3V8**BB. (*Rx : R*1084.)

P. H. Strudwick, 159 Hampstead Way, London, N.W.11.
PHONE : **FN8**AD, **HZ1**KE, **KG6**AD, 6USA, **KH6**RJ, **KL7**YZ, **OQ5**CF, 5DZ, 5NK, **PK1**SH, 1TH, **VK6**DX, **VP3**HAG, **VQ2**WV 3BVF, **VS2**CU, **VU2**CP, 2JB, 2JF, 2LJ, **XZ2**SY, **ZE2**JE, 2JK, 2KI, 2KZ. (*Rx : Modified S.*640.)

D. K. Cocking, Old Meadow, Farnborough Park, Kent.
PHONE : **CO** 2WV, **HC1**RK, **MD2**PJ, **SU1**MR, **TA3**GVU, **VE7**TM, 8MP, **W7**JMY, **ZD4**AD, **ZE2**JE, **ZS1**BV, 6LY, **4X4**AS, 4BL. (*Rx : S.*640.)

E. J. Logan, Linten Cottage, Fanshawe St., Bengeo, Hertford.
PHONE : **CO7**RQ, **EQ2**L, **HC1**FG, **HH2**A, **HI7**WF, **HZ1**KE, **KH6**DY, **KZ5**WG, **LU7**DX, **OA4**DW, **OQ5**CF, **SU1**MR, **TI4**JG, **VE8**MJ, 8MP, **VP2**DC, 3LF, 4TH, 6FO, 7NL, 9XX, **VQ4**AA, **XE1**AC, **YS1**ES, **ZE2**JU. (*Aug.* 20-*Sept.* 2.) (*Rx : BC.*342-*J.*)

K. Smeeton, 36 Runcorn Rd., Barnton, Nr. Northwich, Cheshire.
CW : **CM6**AH, **CR6**AQ, **EA9**AQ, **SP3**AU, **UA4**KCC, 9KCA, **UB5**KAA, **UC2**KAB, **VK3**JT, 5BO, **YU3**FMI, **ZC4**DC. (*Rx : S.*750.)

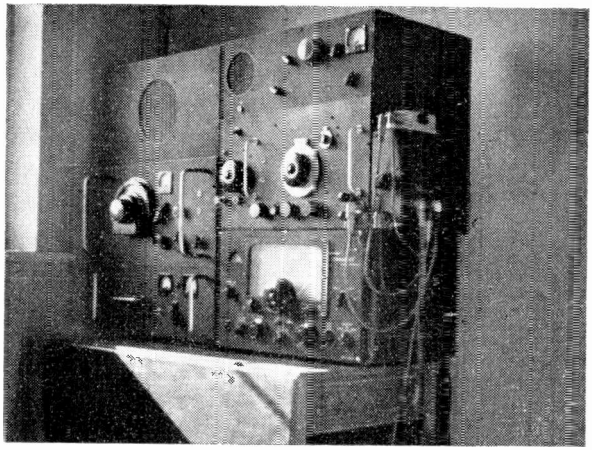
D. L. McLean, 9 Cedar Grove, Yeovil, Somerset.
PHONE : **FF3**CN, **HC1**FG, **HH2**X, **HZ1**KE, **KH6**DY, 6GR, **MD2**MD, 2PJ, **TA3**GVU, **TI2**ES, **VE8**MP, **VP2**DC, 4TH, 6FR, 6HM, 6SD, **VQ3**BVF, 4AQ, 4SC, **VS7**BR, **ZD1**SS, **ZE2**JE. (*Rx : SX*28 *and AR*88*LF.*)

D. G. Hayter, 40 Salisbury St., Shaftesbury, Dorset.
PHONE : **CE3**CZ, **CO2**CE, **EA9**AI, **HC1**FG, 1JW, **HP1**LQ, **OQ5**DZ, **TG9**AD, **TI2**KW, 2OH, **VP2**DC, 3HAG, 3MCB, 4TH, 6FR, 7NH, 9XX, **VQ2**JC, **YN4**CD, **YS1**MS, **ZD4**AD, **ZE2**JE, **ZS1**BV, 6AY, 6TE. (*Rx : S.*640.)

C. J. Rourke, 130 Ravenhill Ave., Belfast, N.I.
PHONE : **AR8**JT, **CO7**RQ, **CX4**CS, **EA6**AR, 8HS, **HC1**JW, **HK1**EE, **HZ1**KE, **KP4**JO, **LU9**CR, **MD2**MD, **OQ5**DZ, **SU1**MR, **TA3**GVU, **TI2**TG, **VE8**MP, **VK3**JD, **VO2**CX, **VP2**DC, 3HAG, 4TH, 6FR, 6YB, **ZS6**DW, **4X4**AT. (*Rx : Ferguson* 461.)

John Jones, 13 Boswall Terrace Edinburgh 5, Scotland.
CW : **AP2**N, **CR8**AB, **HZ1**AB, **JA2**KK, **KH6**IG, **KP4**JW, **KP6**AE, **VK2**GS, **VS1**BQ, 1DR, **VS7**NG, **ZD7**AN. (*Rx : S.*640.)

Have You a Zone Map?



SWL Stations

NO. 35

THIS is a general-coverage station operated by D. E. Riches and his father at Iranee, Maundeville Road, Christchurch, Hants., where activities started in 1947 with an R.1224A receiver.

Now, all the equipment is mounted in rack fashion, with black crackle panels. The main receiver is a Commander, above which is the original R.1224A modified for operation from the mains ; to the left of this is an RF26 Unit which is working on Two Metres, and above a home-built TRF receiver. Additionally, there is an R.1132A for general VHF reception (mainly the local airport !).

The location of the station is rather low-lying, and aerials are a difficulty ; however, with an end-connected 66-ft. wire and a 3-element beam for Two, D.E.R. remarks that they manage quite well when conditions are favourable. QSL card collecting is not an interest with D.E.R. or his father, as they run their station mainly with the idea of co-operating with local amateurs. So here we have yet another slant on SWL activity. D.E.R. himself is at present serving with B.A.O.R. and says that he is fortunate enough to have been appointed second operator at DL2SS, who is a near neighbour.

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.

CT1MQ *Rua Emilia das Neves* 29, *Lisbon, Portugal.* 14 mc phone, Sunday 1000-2100 GMT. Modulation.

CT1UT *Rua dos Mouros* 8-4, *Lisbon, Portugal.* 7, 14, 28 mc phone, 1400-1700 and 2030-2359 GMT.

CX3CN *Av. Brazil* 3116, *Montevideo, Uruguay.* VFO-controlled 7 and 14 mc phone.

DL1CR *Katharinenstr.* 64, *Esslingen, Germany.* 14 mc QRP phone, 1700-2300 GMT and weekends.

DL1IA *Gruner Hirsch, Lensahn, Kr Oldenburg, Germany.* 3, 5, 7, 14 and 28 mc phone and CW.

DL3BE *Gruner Grund* 45, *Munster/Westf, Germany.* 3, 5, 7, 14 mc CW, 0500-0800 GMT and weekends.

DL3DC *Hessenring* 86, *Bad Homburg V.D.H., Germany.* 3, 5, 7, 14 and 28 mc phone and CW, weekends.

DL7AH *Gielowerstr.* 33, *Berlin, Britz, Germany.* Detailed reports on CW operation, all bands.

EA9AQ *Arturo Quirell Soto, Aguada, Los Geranios. Tetuan, Span. Morocco.* 14080-14100 kc CW, 0500-0700 and 2300-0200 GMT.

EK1JC *J. M. Coriat, Brit. P.O. Box* 7. *Tangier.* 14 and 28 mc phone, 2000 GMT onwards.

FA3TN 2 *rue Thiers, Constantine, Algeria.* Reports on 14 and 28 mc phone.

G2AZC 17 *Cowick Lane, Exeter, Devon.* 7012 and 7032 kc CW, evenings and weekends.

GM2CRV 21 *Burnhill Street, Rutherglen, Lanarks.* 7 mc QRP phone, VFO, 1800-2000 GMT.

G2CYN 8 *Grainger Avenue, Prenton, Birkenhead, Ches.* 144.16 mc phone, MCW and CW.

G3BLE 12 *Oxford Road, Witney, Oxon.* 28 mc phone, 1700-2000 GMT and weekends. Rpts outside U.K.

G3FIH 41 *Bath New Road, Radstock, Somerset.* 145 mc CW, 2000-2300 GMT. Comparative reports; any chirp or drift; stations calling G3FIH.

G3GHI 3 *Hillcroft Avenue, Purley, Surrey.* 144, 146 mc CW, evenings and weekends.

GW3GIN 50 *Romily Road, Cardiff.* 7010, 7025, 7050 kc CW, 1800-2200 GMT and weekends.

G3GSV 244 *Chorley Old Road, Bolton, Lancs.* VFO-controlled 1980 kc CW, at 1900 GMT.

HB9JB *Buelrainstr.* 56, *Winterthur, Switzerland.* 3, 5, 7, 14, 28 mc phone and CW. Modulation.

HB9LH *Bellariarain* 4. *Zurich* 2/38, *Switzerland.* 3, 5, 7 and 14 mc phone and CW, 2200-2359 GMT.

HB9LR *Dammstrasse* 25. *Burgdorf/Bern, Switzerland.* 3, 5, 7, 14 and 28 mc phone and CW.

HP1MM *P.O. Box* 94, *Panama, Panama Republic.* Reports on 14 and 28 mc phone.

K2USA/A2MON *c/o Post Signal Officer, Fort Monmouth, N.J., U.S.A.* Reports on 3, 5, 7, 14 and 28 mc phone and CW.

LA2MA *P.O. Box* 111, *Skien, Norway.* Reports on VFO-controlled phone and CW Modulation..

LA7PB *Tamburbakken* 3, *Drobak, Norway.* 3, 5, 7 and 14 mc phone and CW, 1400-1700 GMT.

LU6FC *Moreno* 335, *Canada de Gomez, Santa Fe Argentina.* 28450 kc phone, at 1800 GMT.

OH3PX *Kontiontie* 6, *Riihimaki, Finland.* 14050-14075 kc CW, Monday, Wednesday and Friday 1900-2100 GMT. Keying, Stability and Tone.

OH5OK *Pappilansaari* 1, *Hamina, Finland.* 7 and 14 mc CW, 1430-1500 and 2000-2200 GMT.

ON4HN 122 *Stenenburg Borgerhout, Antwerp, Belgium.* 7, 14 and 144 mc phone and CW, 2000-2300 GMT.

OQ5CJ *Rev. McLean, A.P.C.M., Lubondai. Tshimbulu, Belgian Congo.* 28 mc phone, 1700-2100 GMT.

PA0IS *Bosweg* 15, *Apeldormo, Netherlands.* 14 mc CW, and modulation of 14 mc NB.FM phone.

PA0SP *Zaanweg* 87, *Wormerveer, Netherlands.* 3, 5 mc phone and CW, 1900-2359 GMT. Modulation.

PA0VGR *Wally Moeswegu, Laren (N.H.). Netherlands.* Quality of 14 mc phone, 2000-2300 GMT.

PK3SP *Daendelstraat* 73, *Sourabaia, Java, Indonesia.* Reports on 28 mc phone and CW.

PY1SA *Rua Tereza* 1174, *Petropolis, E. do Rio, Brazil.* Reports on 28240 kc phone.

PY5AQ *Rua Pres. Dr. Carlos Cavalcanti* 641, *Curitiba, Parana, Brazil.* 14 and 28 mc phone.

PY5QB *P.O. Box* 240, *Blumenau, S. Catarina, Brazil.* 3, 5, 7, 14 and 28 mc phone and CW.

PY5QZ *P.O. Box* 240, *Blumenau, S. Catarina, Brazil.* 3550, 7079, 14156 and 28346 kc phone.

VE2XD 35 *Lapointe Avenue, Nitro, Valleyfield, Quebec, Canada.* 3750-3850 kc phone, 0300-0600 GMT. Comparative reports with other VE2 stations.

VE7CE 3114 *Qu'appelle Street, Victoria, B.C., Canada.* 14 mc CW, VFO, 0200-1000 GMT.

VK6EL 9 *Simpson Street, Geraldton, W. Australia.* 28 mc phone. VFO. Modulation quality.

VO2CM *P.O. Box* 151, *Gander Airport, Newfoundland.* 14150-14350 kc phone, 14000-14400 kc CW, 2130-0400 GMT. Modulation quality and tone.

VP3CW 25 *Upper Norton Street, Wortmanville, Georgetown, Brit. Guiana.* 14.1-14.2 and 28.2-28.5 mc phone. Modulation and stability.

VQ2WR *Box* 121, *Luanshya, N. Rhodesia.* 14 and 28 mc phone, 1500-2000 GMT. Quality, stability.

VU2BC 10 *Barrow Road, Lucknow,, U.P., India.* 7, 14, 28 and 56 mc phone and CW, 1030-1330 and 1600-2100 GMT.

VU2GJ 640*B Parsi Colony, Dadar, Bombay, 14, India.* 14 and 28 mc phone and CW, 2130-0430 GMT.

W1RIL *P.O. Box* 141. *Rochdale, Mass., U.S.A.* 28520-28700 kc phone, 1030-1300 GMT, Sundays 1100-1430 GMT. Comparative reports with W1.

W2KXK 616 *Prospect Ave., Asbury Park, N.J., U.S.A.* 28 mc phone, 14 and 28 mc CW, 1200-1330 GMT.

W2WAT/MM 115 *Broadway, N.Y.C., U.S.A.* 28700, 28852 and 29016 kc phone, 1800-2300 GMT.

W2YTH 23 *Jefferson Avenue, Morristown, N.J., U.S.A.* 7, 14 and 28 mc phone and CW.

W5PWO 811 *Alabama Street, Beaumont, Texas, U.S.A.* 28 mc phone. Comparative reports.

W6EAL 10811 *Ashby Avenue, West Los Angeles* 64, *Calif., U.S.A.* 28600-28608 kc phone.

W9AND 624 *College Avenue, Dixor, Ill., U.S.A.* Reports on 3503 kc CW, 0500-0800 GMT.

W9GET 4541 *N. Sheridan Road, Chicago, Ill., U.S.A.* Reports on 28 mc phone, operating weekends.

W9IPZ 116 *North 44th Street, Belleville, Ill., U.S.A.* 14 and 28 mc phone, 1300-2359 GMT.

XE2KW *P.O. Box* 147. *Monterrey N.L., Mexico.* 14 and 28 mc phone. Comparative reports.

YI3ECU *W. King, Officers' Mess, R.A.F., Basrah, Brit. Forces in Iraq. M.E.A.F.* 20. 14 mc phone and CW, 1600-2100 GMT.

YK1AH *Fadel Shehabi, Mazraa Street, Damascus, Syria.* 14020 kc CW and 14314 kc phone, 0200-0500 and 2000-2359 GMT.

YU1CAB *Box* 48, *Belgrade, Yugoslavia.* 3, 5, 7, 14, 28 and 52 mc phone and CW. Quality of modulation. Comparative reports.

THE VHF END

by **A. A. MAWSE**

Results & Conditions—

Progress on Seventycems—

Individual Reports & Tables—

AT the last appearance your conductor commented on the problem as to whether activity or conditions could be blamed for the lack of signals on many nights. The conclusion reached was that poor conditions restricted the range of many VHF stations and this gave rise to the apparent decrease in activity. As a result of observations during a few weeks of August-September one was at first tempted to rescind all that. For example, on one very wet evening in early September both C2CPL (Lowestoft) and G3WW (Wimblington, Cambs.,) were audible and readable on the South Coast, the former at 170 miles, and the latter 130 miles. No other DX stations were heard. Searching over the rest of the 2-metre band revealed five local or semi-local stations and nothing else. Inactivity? It looked like it, for conditions were good as proved by the two DX signals that were being received. Then it was realised that G3WW was working a Cambridge station whose frequency your conductor knew quite well. A careful search on this frequency at the appropriate moment failed to reveal even a squeak of a carrier. Next a weak G6VX, off the back of his beam, was found to be working G2IQ (Sheffield), but not a trace of G2IQ could be heard by A.A.M. Further it soon became obvious that the five locals previously mentioned were not hearing G2CPL or G3WW, and therefore presumably not being heard themselves in East Anglia. One of them however was hearing G3EHY, who was inaudible at your conductor's QTH. So apparently activity was more widespread than appeared at first, and conditions were not as good as one might have been led to think. It was one of those nights when the station with the good high aerial and an open location still gets through to what are considered DX ranges, but when the less fortunately placed man, behind the hills, or surrounded by buildings, or with his aerial in the roof space, just does not get anywhere. And all this applies at the receiving end of the path as well as at the transmitter.

As regards activity, the latest Activity List in the *Short Wave Magazine* shows 194 stations, and there is ample evidence that all these were on the band during July and August, so if you did not hear many of them, perhaps that aerial is not so good, or maybe you had better move to a new QTH!

Seventycems

It is encouraging to find an increasing number of listeners with receiving equipment for 70 cm. A. W. Blandford (Mitcham) has heard eleven stations on the band, and is now using a 13-element Yagi which shows a tremendous improvement over the plain dipole which he had previously. G4CG, for instance, gave a reading of .13 mA on the diode current meter when received on the dipole, but gives .95 mA when the Yagi is used! It is up at 32 feet and feeds into a modified 1294 receiver. As he says, when a spell of really good conditions comes along he should be able to compile a very fine log of calls heard. F. A. Herridge (Balham) was with A.W.B. on August 20 and as a result has been encouraged to modify a 1294, and hopes to send along some news of what he has heard in time for next month's "VHF End."

A. L. Mynett (Wembley) has also been hearing a number of signals, including G2CIW at 24 miles and G5TP at 31, the latter's CW being RST589 on August 22. So far G2XC and G5BY have eluded him, although a trace of what might have been G5BY's CW has been heard. However, conditions have been far from suitable and like others he awaits a good spell. In the meantime he has improved his receiver, particularly by matching the output of the RF stage into the crystal, and ignition interference from cars is now only a little less than it is on 2 metres.

THE SHORT WAVE LISTENER
TWO-METRE RECEIVING CONTEST

INFORMATION

This Contest is being run in conjunction with the Two-Metre Transmitting Contest organised by the *Short Wave Magazine*. Entrants in the transmitting contest are required to exchange RST, reference number and QTH. Each contestant allots himself a 3-figure reference number which remains unchanged during the period of the Contest. This reference number (say 342) is sent *before* the RST or RS report in the following manner : 342RST569, or 342RS86 in the case of a phone report.

RULES

SWL SECTION

(1) The period of the Contest will be Saturday, November 11, 1200 GMT to Sunday, November 12, 2359 GMT.

(2) Points will be claimed for reception of either British or Continental stations using the 144-146 mc band.

(3) Stations may be logged on either 'phone or CW.

(4) (*a*) For full points, SWL's must log correctly callsign of station heard ; and RST, reference number and QTH *given by station* for which points are being claimed. RST's given by the SWL receiving are *not* required.

(*b*) If this full information is received from both ends of one QSO, full points may be claimed on both stations.

Full points will be as follows :—

Stations up to 25 miles	1 point
25 to 50 miles	2 points
50 to 75 miles	3 points
75 to 100 miles	5 points
100 to 150 miles	8 points
150 to 200 miles	12 points
200 miles and over	20 points

plus five points for each additional ten miles of distance : proportions of these additional 10-mile distances will not count for points in proportion.

(5) Reduced points may be scored for the reception of stations *more than 50 miles distant* heard calling CQ, or from whom the complete information required by Rule 4 is not received. These reduced points will be as follows :

50 to 100 miles	1 point
100 to 150 miles	3 points
150 to 200 miles	6 points
Over 200 miles	8 points

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

(6) Stations may be logged *once* only for points.

(7) Point-to-point distances will be taken from the Ordnance Survey, "Ten-Mile" Map of Great Britain or calculated from latitude and longitude in the case of Continental stations.

(8) Results should reach A. A. Mawse, *Short Wave Listener and Television Review*, 53 Victoria Street, London, S.W.1. by November 20, 1950, latest, set out as follows :—

(*a*) Log for period of Contest, showing only calls claimed to count, with time of reception, reference number, RST and QTH given by transmitting station, call of station being worked, distance and points claimed. (The distances and points must be entered on the log by the contestant and not left to be calculated by the Contest organiser). The total score must be shown at the end of the log.

(*b*) A short description of equipment used and general notes on impressions and experiences of the Contest.

Results of the SWL section of the Contest will be reported in the January 1951, issue of the *Short Wave Listener and Television Review*, due out on December 21.

E. A. Lomax (Bolton) is another experimenting with 70 cm receivers. He is working in collaboration with G8SB. A BC788 has been tried, but proved difficult to tune and has been discarded for that reason. Both the G5BY and G3EJL converters have been constructed and are "on the band," but as yet no signals have been received. A 16-element array, a city-slicker and a corner reflector have all been built for aerial tests. The last-named is fully adjustable and should provide some interesting results. E.A.L. says that there are at least seven stations experimenting on 70 cm within 20 miles of him, and a postscript to his report mentions that a one-way contact has been made between G8SB and G3DA over a 25-mile path, but which way he does not say.

Finally, R. Rew (Birmingham), an experienced 70 cm listener by now, has once again been active with G3BUR/P on Walton Hill. For their latest tests con-

ditions were far from good. It rained all day, and as a result three operators and the gear had to spend the day inside an Austin 10 saloon. To make matters worse the car refused to go up the hill until two bodies and four heavy accumulators had been removed, and on the return journey so much damp had got into leads, plugs, etc., that the engine refused to start! But R.R. says that in spite of all that, they enjoyed themselves. Stations worked included G3APY/P at 50 miles, G4LU 51 miles, G8JI 6 miles and G8QY/P 19 miles. Driving rain and cloud reduced visibility to 100 yards at times but this made little difference to the strength of signals from G3APY or G4LU. The receiver in use was a modified ASB8, with the first oscillator lines on the LF side of signal and tuned at the remote end by a 5 plus 5$\mu\mu$F split-stator covering the whole 70 cm band. First IF was one stage at 56.3 mc and then followed a second IF consisting of two stages at 10 mc. This gave a 50 kc bandwidth. The oscillators were run from 180v dry batteries to elimate drift on standby periods. The aerial was 4 stacked folded dipoles at $\frac{5}{8}$-wave spacing backed by half-inch wire mesh screen at $\frac{1}{4}$-wave.

Two Metres

J. E. Harman (Eastbourne) has found things rather erratic on two-metres, Continental openings being few and far between. He has a crystal-controlled converter on test, the output frequency being 24 to 26 mc, but so far finds its sensitivity down. It uses 6J6 valves and is a mixture of circuits described by G2IQ and G6VX and others. He suspects the trouble may lie in the main receiver which he is using as the IF amplifier, and in any case he finds the new converter superior on the points of stability and ease of tuning. He recently tested the

TWO-METRE DX

G. E. Magrow (Dawlish)	**PAOUW**	**387 miles**
E. A. Lomax (Bolton)	**PAOIK**	**340 miles**
R. Hastie (Hayes)	**F3DC**	**221 miles**
P. Finn (Iver)	**G5BY**	**172 miles**
R. A. John (Swansea)	**G3BLP**	**168 miles**
A. F. Hayton (Palmers Green)	**G5BD**	**116 miles**
R. L. Bastin (Coventry)	**G3BLP**	**110 miles**

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

VHF CALLS HEARD

Seventy Centimetres

A. L. Mynett, 29 Sunleigh Road, Alperton, Wembley, Mddx., G2CIW, 2DD, 2FKZ/P, 2QY, 3FZL/A, 4CG, 5TP.

Two Metres

W. E. Askew, Burrough, Melton Mowbray, Leics.
G2ATK, 2BFT, 2FNW, 2HCG, 2IQ, 2RI, 3ALC, 3APY, 3BLP, 3BOB, 3CGQ, 3DUP, 3EHY, 3ENS, 3FMI, 3FUM, 3GHI, 3GMX, 3WW, 4CI, 4HT, 4LU, 4LX, 4MW, 5BY, 5CP, 5JU, 5RW, 5VN/A, 5WP, 6LC, 6LI, 6NB, 6VX, 6XM, 6ZQ, 8SB, 8TR, GW2ADZ, 3KY. (*August 1 to 31, 6J6 converter into AR88. Aerial City-Slicker 40 feet high*).

J. E. Harman, 10 Royal Sussex Gardens, Eastbourne.
DL3FM, 4XS/3KE, F3DC, 3LQ, 8AA, 8BY, 8GH, 8JR, 8LO, 8MX, 8OB, 8OL, 9DI, 9MX, G2CIW, 2CPL, 2FNW, 2HDZ, 2IQ, 2KF, 2MV, 2UJ, 2XS, 2XV, 3ANB, 3BK, 3BLP, 3BOB, 3BTP, 3CAZ, 3CQL, 3DGN, 3DT, 3DUP, 3GBO, 3GHI, 3GSE, 3WW, 4AU, 4CI, 4HT, 4KD, 4MW, 5IB, 5LK, 5MA, 5MI, 5UD, 5UM, 5VM, 6LI, 6LL, 6LO/A, 6LX, 6NB, 6PA, 6UH, 6VX, 6XM, 8AX, 8KZ, 8SY, 8VR, ON4BZ, 4HC, PAOIK, OLDG. (*CC converter 6J6 type, into 24-26 mc. IF; 4-ele. w.s. beam*).

L. A. Whitmill, 762 Kenton Lane, Harrow Weald, Mddx.
F8MX, G2AHP, 2ANT, 2AVR, 2BMI, 2BN, 2CIW, 2CPL, 2DD, 2DTO, 2FMF, 2HDZ, 2KF, 2MV, 2XC, 2XV, 2YC, GW2ADZ, 3ABH, 3AEX, 3AHB, 3AZJ, 3BHS, 3BK, 3BLP, 3BVA, 3CFB, 3CGQ, 3CVO, 3BTB/P, 3DAH, 3DEP, 3DGN, 3DT, 3DUP, 3EBW, 3EHY, 3FAN, 3FD, 3FP, 3FUN, 3GBO, 3MI, 3SM, 3WW, GW3EJM, 4AU, 4CI, 4DC, 4FB, 4HT, 4KD, 4MR, 4MW, 5AA, 5BY, 5CD, 5DS, 5LI, 5LN, 5MA, 5NF, 5PY, 5QB, 5RD, 5RO, 5TP, 5UF, 5YM, G6AG, 6CB, 6HG, 6KB, 6LK, 6LO/A, 6LR, 6LX, 6NB, 6NF, 6OH, 6SC, 6VX, 6WP, 6XM, 6YP, 8DM/A, 8GX, 8IL, 8IP, 8KZ, 8LG, 8MX, 8SY, 8QC. *6AK5, EF54.6J6 converter into S640: (3 element beam and modified 27 unit and preselector. August 4-September 2*).

A. L. Mynett, 29 Sunleigh Road, Alperton, Wembley, Mddx.
50-100 miles: G2ATK, 2AVR, 2DSW, 2FNW, 2HCG, 2XC, 2XS, 2XV, 3ABH, 3AKU, 3ALC, 3ANB, 3AVO/A, 3BHS, 3BK, 3BNC, 3CFR, 3DAH, 3DEP, 3DIV/A, 3DUP, 3EBW, 3EJL, 3FAN, 3FUM, 3WW, 4MW, 5RO, 5UD, 8DM/A, 8IL, 8SY.
100-150 miles: F8MX, G2CPL, 2IQ, 3DG, 3DMU, 3EHY, 3VM, 5BD, 5UF, GW3EJM.
150-200 miles: G2BMZ, 2OI, 3COJ, 3COC, 5BY. (*6J6 converter aerial: two 3 ele. very widely spaced Yagis, stacked at 35 ft. August 2-September 4*).

R. L. Bastin, 101 Aldermans Green Road, Coventry.
0-50 miles: G2AOK/A, 2ATK, 2BFT. 2HCG, 3ABA, 3BJQ, 3BVJ. 3DJQ, 3DUP, 4NB, 4RK, 5PP. 5SK, 6CI, 6SN, 8QK, 8QY.
50-100 miles: G2BUJ, 4HT, 5TP. 6XM, 8ML.
Over 100 miles: G3BLP, 3EHY, 8SB, GW3EJM. (*August 2 to 20, RF27: Aug. 21 to 29, G2IQ type. 4-over-4*).

E. A. Lomax, 28 Welbeck Road, Bolton, Lancs.,
G2BUJ, 2FCV, 2HCG, 2OI, 2XV, 3ABH. 3AGS, 3AHT, 3AOO, 3APY, 3ATZ, 3AYT, 3BLP,

TWO METRES
BEST TEN OF THE MONTH

(August 1950)

Operator	Location	Total Miles	Best DX (Miles)
E. A. LOMAX	Bolton	1,968	240
A. L. MYNETT	Wembley	1,664	181
R. L. BASTIN	Coventry	1,087	111

For this monthly table send details of the best ten DX signals heard on two metres. Signals may be logged once per day (0600 to 0600). Give date, time and details of all signals.

Short Wave Listener wide spaced beam with a grid dip oscillator and found the radiator element was slightly too long for resonance in the band.

E. A. Lomax (Bolton) comments that August produced double the normal rainfall in his area, a week of thunderstorms and abnormally low barometric pressure. As a result it is hardly surprising that he has found conditions poor. G3EHY, G3BLP and G6VX, though, have managed to push signals through to him from the South. He wonders how much further the wonderful signal from G3BLP goes. A bouquet is offered to G4HT (Ealing) for a regularly good signal from a very adverse operating location. Best days for Southern DX were August 3 to 7, and 22.

A. L. Mynett (Wembley) considered there was little general improvement and nothing was heard from over 200 miles. More and more of the "veterans" of the band seemed to drop out, but he was glad to hear G5BD active once again. F8MX, "on the coast of the English Channel," was a remarkably consistent signal and at 130 miles was readable on 'phone on no less than 11 evenings. He sends a list of some DX paths which are always open from his QTH and wonders what is the explanation as they appear to be unaffected by weather.

A. W. Blandford (Mitcham) found conditions a little better and August 22 and 23 were very good to the West, G3EHY, G8IL and GW3EJM being good signals with him. His station score is now 206. L. A. Whitmill also thought conditions good and is one of the few to say activity was good also. August 7, 8, 21 and 22 were his best days. He heard F8MX on 18 different days, frequently at S9. His station score has reached 215, and for L.A.W.'s information, /A /P calls count additionally in calculating stations heard scores.

R. L. Bastin has a new aerial and a new converter but has heard little DX. Even G3EHY, the most consistent DX signal in the Midlands, has been beaten at times. His new Rx is a G2IQ converter and he is comparing it with his original RF27. So far a good T9x note has eluded him on the new job, but nevertheless it has pulled in some good DX when conditions have been fair. He has two of our wide spaced beams stacked as described in the *Short Wave Listener*, (June 1950).

In the North, L. B. Bailey (Stockton) thanks L. A. Whitmill for letting him have some details of the construction of a 6J6 pre-amplifier and intends constructing it shortly. A 2-element rotary has been installed with good results. A. H. Edgar (Newcastle) hopes to be the most northerly VHF SWL in England. A RF26 unit is being modified in accordance with the details given by G3GFN (*Short Wave Listener*, May 1950). His location is badly screened, but he has some hopes of hearing the GM's, as he has only to walk 300 yards to see the Scottish border.

Thanks to G2FNW, W. E. Askew (Melton Mowbray) has become active on Two with a G2IQ converter and a 4-element Yagi. He sends his first list of calls heard which include some quite good DX. P. Finn (Iver) who has risen up the "Two Metre DX" table, tells us he has confirmation of every one of the 17 counties he has heard. A 6-element stack and a 6J6 pre-amplifier have produced good results.

In Conclusion

And that must be all for this month as the quota of pages for "VHF End" is already exceeded. Next month's mail **by October 25,** please, to A. A. Mawse, *Short Wave Listener and Television Review*, 53, Victoria Street, London, S.W.1.

TWO-METRE COUNTIES HEARD

Starting Figure, 10

A. L. Mynett (Wembley) / P. J. Towgood (Bournemouth)	36
E. A. Lomax (Bolton)	33
R. Rew (Birmingham)	30
L. A. Whitmill (Harrow Weald)	28
A. W. Blandford (Mitcham)	26
R. L. Bastin (Coventry)	19
P. Finn (Iver)	17
W. E. Askew (Melton Mowbray)	15

Sorting Out Russian Zones

By K. PARVIN

(The Russian callsign system has for long been full of baffling anomalies by reason of the confusion between their call areas and the Zone Convention as now accepted throughout the Western amateur world. Our contributor sheds some light on the situation in his notes below. Editor.)

MANY queries seem to arise in "Have You Heard" concerning the Zones of the various Russian amateur stations. It was therefore felt that a short article setting out some information gleaned from a number of sources might be of value to other listeners.

In the same manner as the United States of America, the Soviet Union may be considered as being divided into ten call areas, but instead of counting as one country these areas are split into seventeen "countries" for Amateur Radio purposes. The unfortunate part of it all is that in some cases the boundaries of the accepted Zone System cut across both the call area *and* the Russian "country" boundaries, thus splitting the Soviet Union between seven Zones. A clearer picture will be given by referring to Table I, which shows the Zones and the various areas or stations therein.

From this table it can be seen that the main difficulties lie in the separation of UA1, UA9 and UA0 stations; so each of these areas will be considered in turn. At this stage, it seems appropriate to note that stations whose calls contain K as the first letter of a three-letter suffix, *e.g.* UB5KAG, are club stations, and the K callsigns may therefore crop up anywhere.

Turning first to UA1 stations, it will be seen that with the exception of UA1PA in Zone 17, one difficulty is with the series of club stations—UA1KEA, and so on; of these there only seem to be four, which are in three separate Zones as shown.

From the point of view of UA9 stations, these are all in Zone 17, with the exception of UA9KOA at Novosibirsk in Zone 18. Any other stations at Novosibirsk would also naturally be located in Zone 18.

Lastly we come to the UA0 stations, which are more complicated, but an indication may be given by the first letter of the suffix, (excluding the club letter K); if it is B, O, P, S, U or V, it usually shows that the station is in Zone 18. Stations in Zone 19 frequently have as the first letter of their suffix F, G, K, L or Q. There are exceptions to this as stations having the letters A and T as the first letters of the call are to be found in both Zones!

Whilst all this information is as com plete as can be ascertained from the various sources it must be emphasised that the only certain way to find out the Zone of a particular station is to look up its location on the map and to check back on the Zone Map.

In closing, the author will always be interested to receive any further information on this subject.

Table I

ZONE	AREA or STATION
15	UP2
	UQ2
	UR2
16	Most UA1's including UA1KEA (Archangel)
	UA3
	UA4
	UA6
	UB5
	UC2
	UN1
	UO5
	Novaya Zemlya
17	UA1, PA, 1KEB (Amderma)
	UA9
	UH8
	UI8
	UJ8
	UL7
	UM8
18	UA9KOA (Novosibirsk)
	UA0AA, 0KAA, 0KBA, 0KSA, 0KSB, 0KTB, 00A, 0PA, 0SF, 0SG, 0SH, 0SI, 0SJ, 0UA, 0UB, 0VA, 0VB, 0VC, UA0AT, 0FB, 0FG, 0FJ, 0FL, 0FP, 0FR, 0KFA, 0KFB, 0KFC, 0KFD, 0KGA, 0KKB, 0KQA, 0KTU, 0LC, 0LD, 0LN (Wrangel Islands)
21	UD6
	UF6
	UG6
40	Franz Joseph Land UA1KEC, 1KED,

WORLD WIDE RECEPTION OF SHORT WAVE PROGRAMMES

DX *broadcast*

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

WE have received letters from two readers who have been interested in short wave broadcasting over a period of many years, who feel that they are not getting results comparable with their successes in the past. R. F. Gardner (Knowle, Bristol) has been logging short wave stations since 1930, in which year he heard VK2ME on a one-valver! Nowadays, his first-class communications receiver manages to capture the Australian transmissions directed to this country, but he has yet to hear broadcasts from New Zealand and South Africa. V. H. Abraham (Tilehurst, Reading) experiences the same difficulty in logging DX stations, yet his Communications Receiver is of a reliable type used extensively by the Services during the late war.

Their problem is not at all an easy one to solve, for their past experience should be sufficient to indicate that it is not a case of too rapid knob-turning! Aerials, too, are sometimes at fault; if you specialise in 10 or 20-metre listening you will have your aerials cut accordingly, but for all-band short wave broadcasting, the old fashioned inverted-L is sometimes best after all. There is no shadow of doubt that conditions on the high-frequency bands are not as good as they were some two years ago, but more and and more broadcasters have increased their power, so that the deterioration is scarcely noticeable except in the case of real low-powered DX stations.

Of course, many stations do, from time to time, suffer from seasonal deterioration. For example, Radio Australia's 15200 kc beam to the United Kingdom at 1400 has been scarcely audible during the past weeks, and most listeners know how powerful this transmission can be at the back end of the year. Perhaps we may be allowed to make the suggestion that the most suitable times for listening to DX stations are those quoted month by month in this space. For instance, Radio New Zealand's signals over ZL3, 11780 kc are normally much better heard here during our summer than in the winter months but only during the small hours can you expect a good signal, with peak listening around 0400 and gradual fade-out over the next four or five hours. Cape Town on 5885 kc frequently suffers from severe Morse interference during the summer months with a consequent loss in signal strength, but there are occasions when its clock chimes at 2100 literally reverberate from the four walls of the room.

It was indeed unfortunate that the Swiss National Tourist Office's letter advising us of the broadcast from the summit of the Matterhorn arrived too late to give our readers notice of this epic event beforehand. No doubt many logged the direct transmissions over HER3, 615 kc and HER4, 9535 kc, and it was certainly a thrill to hear the voice of the English schoolmaster Johnny Lamb greeting us from the summit, 14740 feet above sea level. That this was possible was due to the two midget 1.5watt portable transmitters operating on a wave-length of two metres which, with their folding aerials, had been designed and built by the Swiss amateur, Marcel Chasset.

Australasia.

There have been frequency alterations for Radio Australia's United Kingdom beams; for the period 0655-0815, VLB 3 11760 kc has replaced VLB4, 11850 kc;, for the 2000-2300 period, VLA8, 11760 kc is now in use; for the afternoon session, 1400-1500, VLB6, 15200 kc is a welcome additional transmitter. Radio Australia's Saturday Sporting Session on August 5 included a New South Wales Rugger match at 0545 over VLG6, 15230 kc, but on August 26 at 0655, a horse racing commentary in this feature

was better heard over VLB5 on 21540 kc.

P. Inman and E. Strangeway (Cottingham, Yorks) spotted Radio Australias' Amateur (Talent) Hour over VLC, 15200 kc at 2045 on July 1.

C. A. Billington (Holywood, County Down) would like to know Radio Australia's full address. It is : Radio Australia, Post Office Box 480H, G.P.O., Melbourne, Australia.

Radio New Zealand's daily schedule has likewise been altered, according to "Australian DX'ers Calling." They broadcast from 1800 to 2100 over ZL3, 11780 kc and ZL8, 9620 kc ; from 2100 to 0700 over ZL4, 15280 kc and ZL10, 15220 kc ; and from 0700 to 1120 over ZL3, 11780 kc and ZL8, 9620 kc. P. E. Woomer (Grantham) gives only 11780 kc and 15280 kc, in use throughout the entire daily session, and the address : The Director, Radio New Zealand, P.O. Box 3045, Wellington, N.Z. The studios of Radio New Zealand are at 38, The Terrace, Wellington, and the short wave transmitters at Titahi Bay, some 17 miles distant. Each transmitter gives a radiated power of 7.5 kilowatts, and they employ high-level modulation using two 889R type valves as Class B modulators, and two 889R valves as the final modulated RF stage. As the programme service is primarily intended for Australia and the Pacific Islands, all the present aerials are designed for a total beam width of 68° : the majority of these aerials consist of two-tier, two-bay 5 wave-length-long horizontal radiating elements with reflectors.

Asia

The Communist controlled Radio Peking has been putting in some excellent signals on 15060 kc, usually from 1330 to 1400, but A. E. Nichols (North Shields) has heard it with announcements around 1935 on its 10260 kc channel. On August 3 at 1400 we heard the following clear direction : "You have been listening to Radio Peking. Our News in English is broadcast daily at 2130 Peking Time, 1330 GMT on 428 metres (700 kc), 29.25 metres (10260 kc) and 19.92 metres (15060 kc). Until tomorrow, Goodbye Everybody."

The two broadcasting stations in North Korean hands have been heard recently. On August 27, the Pyongyang station on 7784 kc was logged at 2010 with Western Marches, followed by a man at 2020 and a woman at 2030 reading news bulletins in Eastern languages. Seoul, south of the 38th Parallel, on 7960 kc opened up with a March at 2100 and a male announcer gave directions in the Korean tongue.

F. Pilkington (Littleport, Cambs.) logged YDC, 15150 kc one afternoon at 1500, when the direction ran : "You are listening to the Voice of Indonesia." C. P. Turner (Crewe) has a card for reception of The Voice of America, Manila, Philippine Islands on 11890 kc, and P. E. Woolmer submits their schedule which is : 0900-1545, 2300-0100 on 6120 kc, 11890 kc and 15250 kc. The United Nations have daily broadcasts from 0715 to 0845 over Manila, 17760 kc and 21570 kc, over Honolulu on 17840 kc, and over KRCAI, California on 15130 kc and 9650 kc.

Radio Ceylon was engaged in a BBC relay transmission when R. J. Riding (Wednesfield, Staffs) heard them at 1700 on 15120 kc : he gives their schedule as : 1230-1700 : To Malaya on 21620 kc and to India and Pakistan on 15120 kc. Radio Ceylon's distinctive interval signal can usually be spotted on the latter frequency at 1600. R. J. R. reports that Radio Pakistan broadcasts in English from 1700 to 1745—music followed by the News at 1730 over 11885 kc ; we find the 11570 kc channel good for the English bulletin at 1515. C. P. Turner has received their card for Dacca and Karachi on 11885 kc and gives the address as : Radio Pakistan, 6 Intelligence School, Queen's Road, Karachi, Pakistan. All India Radio, Delhi claims the attention of several correspondents. R. J. Riding mentions as worth while their 11760 kc English transmission at 1900, and D. G. Claxton (Wimbledon, SW 19) says this broadcast can also be heard over 15350 kc and 17760 kc—there is a special Request Programme on Saturdays. We logged VUB2, Bombay, 4840 kc with native vocal music followed by a studio clock striking eleven at 1730 ; and VUC2, Calcutta, 4880 kc with instrumental native music at 1725 and closing announcements made by a female at 1730.

R. J. Riding kindly supplies Radio Teheran's schedule, printed on paper headed with the coat-of-arms of the Imperial Government of Iran.

Foreign transmission broadcasts are given on 15100 kc with a power of 20kW as under : 1900 : Persian programme for Iranians abroad ; 1930 : French ; 2000 : English ; 2030 : Russian ; 2100 : National Anthem. Beirut, Lebanon, 8038 kc was logged at 1950 with an orchestral concert by A. E. Nichols, and Damascus, Syria, 6000 kc, 9550 kc and 12000 kc has supplied J. C. Catch (South Shields) with a QSL letter and full schedules : English broad-

casts are given at: 1100-1110 Daily (News); 2130-2140 Daily (News); 0930-1000 Sundays only (Musical Programme).

J. S. Bollard (Chester) has received Kol-Israel's card, and C. P. Turner mentions that "The Voice of Zion" on 9000 kc is coming in at good strength at 2100.

Africa

ZRK, Cape Town, 5885 kc may not always produce readable signals, but the evening of August 2 was an exception. Being a Wednesday the transmission was in English and at 2000 we heard a "pips" time-signal followed by a news talk. At 2100 came the clock chimes and epilogue, including a hymn with the clear words: "God Be With You All."

The final direction was: "This is the South African Broadcasting Corporation closing down until a quarter-to-seven tomorrow morning. Goodnight, Everybody," and the two National Anthems followed. J. C. Catch, has logged ZNB, Mafeking, Bechuanaland with organ melodies at 1800, and has checked their frequency, which is 8242 kc; there was an announcement at 1845. He also notes Lourenco Marques, Mozambique on the new channel of 9808 kc with regular good signals around 1745; P. Inman and E. Strangeway spotted this one with an S8 signal and identification. "Lourenco Marques, Radio Clube de Mozambique" at 1815; their 15190 kc outlet is not now in use, apparently.

Radio Clube de Sao Tome è Principe has been heard by J. C. Catch on 4809 kc with clock chimes at 2000, followed by a varied assortment of Portuguese and English songs; it signed off at 2100; F. Pilkington found them on the same channel, but has anyone received their verification card? J. C. Catch has two choice Africans in FIA6 and CR4AA. The former, located at Douala, French Cameroons operates on 9149 kc and has a clear identification: "Ici Radio Douala." J.C.C. heard dance music at 2000 and received a verification from the station within twelve days; it gives the frequencies as: 9150 kc (600 watts) and 7287 kc (1000 watts) and the schedule: 1730-2030 daily. The address is: Radio Douala, Service Radioélectrique du Cameroun, Centre d'Emission de DLA, Douala, Cameroun Francais. CR4AA, Praia, 5897 kc gives this direction at 2030: "Radio Clube do Cabo Verde" (Cape Verde Islands), and has musical programmes and talks in Portuguese. F. Pilkington noted CS9CME, Ponta Delgada, Azores, 4845 kc with an S8 signal at 2100, and P. Inman and E. Strangeway spotted Radio Dakar for the first time on 15345

Round the Clock English News Casts

TIME. GMT	STATION	LOCATION.	FREQUENCY.
0100	**ZFY**	Georgetown	5980
0200	**KCBR2, KCBR3**	Los Angeles	17770, 15310
†0215	**ZQI**	Kingston	3480
0300	**CHNX, CJCX**	Halifax and Sydney, N.S.	6130, 6010
0400	**KWID2**	San Francisco	11860
0500	**VED**	Edmonton	8266
0545	**YUC**	Belgrade	9506
0555	**LRY**	Buenos Aires	9455
0600	**KWID1, KWID2**	San Francisco	11900, 11860
0710	**Karachi**	Pakistan	17840, 15270
0730	**Australia**	Melbourne	Various
†0830	**ZL3** (Ex. Suns).	Wellington, N.Z.	11780
0915	**BFEBS**	Singapore	Various
1000	**KGEI**	San Francisco	9670
1015	**Rome**	Italy	15120, 11810
1100	**BBC Overseas**	London	Various
1100	**Rome**	Italy	15120, 11810
1200	**KCBR3**	Los Angeles	15310
1215	**Helsinki**	Finland	Various
1300	**KWID2**	San Francisco	11860
1330	**Peking**	China	15030, 10260
1400	**V.O. America**	Manila	15250
1430	**Australia**	Melbourne	Various
1545	**Athens**	Greece	15345
1550	**YDC**	Indonesia	15150
1615	**YUC**	Belgrade	9506
1700	**CBC**	Montreal	Various
‡1700	**RAD**	Tashkent	6825
1730	**Omdurman** (Fris)	Sudan	9764
1800	**BBC Overseas**	London	Various
1830	**HBQ**	Geneva	6672
1845	**TAP**	Ankara	9465
1845	**Paris**	France	6200
1845	**CBC**	Canada	Various
1900	**Dakar**	Senegal	11896
1900	**AIR**	New Delhi	Various
1900	**V.O. America**	New York	Various
2000	**BBC Overseas**	London	Various
2015	**Madrid**	Spain	9368
2030	**Australia**	Melbourne	Various
2030	**Prague**	Czechoslovakia	9550
2130	**Sofia**	Bulgaria	7670
2130	**Damascus**	Syria	12000
2130	**V.O. America**	New York	Various
2130	**Warsaw**	Poland	6215
2130	**Budapest**	Hungary	6247, 9820
2130	**A.F.R.S.**	New York	Various
2145	**Australia**	Melbourne	15160
2200	**CBC**	Montreal	Various
2230	**Athens**	Greece	15345
2245	**FZI**	Brazzaville	11970
2245	**Australia**	Melbourne	15160
2300	**BBC Overseas**	London	Various
2315	**VP4RD**	Trinidad, B.W.I.	9625
2345	**YVKF**	Caracas	4880

†—Reception difficult ‡—Irregular

BBC Overseas may include Relays by Nairobi, Kenya and Salisbury, Southern Rhodesia, etc.

kc, their comment is: "A most entertaining reception of dance music with clear identification at 2045." R. J. Riding gives full station details as set out on a verification card recently received: Radio Dakar, Federal Broadcasting Station, Senegal, French West Africa broadcasts from Monday to Saturday inclusive over 11895 kc at 0700-0800, 1200-1330, 1800-2300; and on 15345 kc at 1900-2030. News in English is from 1900 to 1915 on both frequencies.

We welcome S. A. Mann (Westbury, Long Island, N.Y., U.S.A.) who writes "I have been an avid reader of *Short Wave Listener* for several years now." He asks if ZDJ4, Bathurst, Gambia, 9530 kc is still on the air and if so, is it heard in the United Kingdom? Though we have nothing definite, it is our firm belief that this one is not now operating; it certainly is not being heard here.

J. C. Catch has a letter verification from VQ7LO, Cable and Wireless Ltd., Electra House, Kabete, P.O. Box 777, Nairobi, Kenya, which states: "Our transmissions take place on 857 metres and 4885 kc simultaneously at the following times: Monday, Tuesday, Thursday, Friday: 1000-1100, 1500-1900; Wednesday: 1000-1100, 1500-2000; Saturday: 1000-1110, 1500-2000; Sunday: 1500-1900." On August 3 at 1820 we listened to an account of a football match played recently between Kenya and Uganda in Nairobi; it formed part of the daily local news bulletin. The Sudan's weekly (Friday) English news was heard at 1730 on August 4 over 9746 kc; after a musical interlude the station closed down at 1800 with the direction: "This is Omdurman Calling!"

G. Howell (Swaffham, Norfolk) in his search for 20-metre amateurs at 1800 came across SUW77 and SUV88; these Egyptian commercials were conducting a point-to-point transmission with Hamburg; does anyone know their exact frequencies? P. Inman and E. Strangeway consider that Tangier on 15210 kc, relaying the Voice of America programmes, is a very consistent signal every Saturday night with the "Hit Parade" feature at 1715 and English news at 1745.

North America

S. Neeld (Walton-on-Thames) listened to the World Wide Broadcasting Foundation's station WRUL, Boston, 15350 kc giving the latest stock market prices at 2055. R. J. Riding sends along the Pacific Zone Armed Forces Radio Service master schedule; this is a complicated affair, too lengthy for entire publication, but we can comment on the information contained therein. The revised station call letters have been assigned to all transmitters with a single call-sign, being designated for use by all transmitters at each of the licencees' major geographical locations. On the 1st and 15th of each month there is a schedule reading of current transmitter periods, frequencies, beams, and programme variations. Listen to the Conference Period daily at 0130 and 1015 for complete daily schedules. KCBR2, 17770 kc; KCBR3, 15310 kc; and KWID2, 11860 kc operate from 0115 to 0515; KGEI1, 15105 kc and KGEI2 11730 kc are on the air from 0530 to 0730; KRCA, 15250 kc until 0745. From 0800 to 1400 the following transmitters operate: KCBR2, 9700 kc; KCBR3, 15310 kc; KGEI, 9670 kc; KWID2, 11860 kc: KWID2, 11860 kc is on the air continuously from 0115 to 1400, but KWID1, 11900 kc closes down at 1100.

C. P. Turner has received cards for KRHO, Honolulu and Manila, both on 11890 kc; he listened to a splendid talk by Martyn Estall, Professor of Philosophy, Queen's University, Kingston, Canada, wrote to the CBC thanking them for this fine presentation, and for his pains he has received in reply a charming letter from the learned Professor.

YED, Edmonton, Alberta, 8266 kc was logged at 0300 on August 26 with direction: "This is the Canadian Broadcasting Corporation" and a local identification signal in a much weaker tone. The full schedule is: Weekdays: 1500-0800; Sundays: 1600-0800.

Central America

The new El Salvador station YSC has been reported by J. C. Catch on 6014 kc with announcements in Spanish after a series of chimes from 0320 onwards; it closed with March at 0500. YSUA, 6250 kc has been heard with a news and programme preview at 0455, but it did not close until 0515. J. C. Catch also mentions receipt of a large pictorial letter verification in English from TIPG, 9619 kc; there is a map of Central America, a photograph of the transmitter and the words: "200,000 Radios in Guatemala, Honduras, El Salvador, Nicaragua, Costa Rica, Panama, Colombia and Venezuela tune in to TIPG, La Voz de la Victor, Central America's largest and most popular Radio station, which is affiliated with the NBC and also re-broadcasts the programs of the Voice of

America, and the United Nations." The actual letter is signed by Perry Girton, the proprietor, who states that T1PG uses 5 kW power on 9618 kc and 10 kW on 625 kc; the address is: T1PG, La Voz de la Victor, Apartado 225, San José, Costa Rica.

On August 26 at 0400, YNWW, Radio Sport, Granada, 8150 kc gave the exact time with two strokes of a gong, this being followed by four descending vibraphone notes and the direction: "Yay-Ennay-Dooblevay-Dooblevay;" the station then closed down. In Guatemala, TGWA, 9760 kc was heard by A. E. Nichols at 0415 with call: "La Voz de Guatemala en Centro America" and Latin-American music. J. C. Catch logged HOHN, Panama City, 6044 kc with direction: "Radio Continental en Panama" at 0415; it closed with a March at 0500.

We have received by air-mail a letter verification for Radio Station 4VEH, Box 1, Cap Haitien, Haiti from G. T. Bustin, Director of Radio of the East and West Indies Bible Mission. To quote from it: "Our station is not a strong one as the transmitter puts only 700 watts into a half-wave antenna. This station is inside our new Gospel Tabernacle, about five miles south of Cap Haitien, Haiti. We have programs in English: Monday from 0200 to 0300 GMT, Wednesday: 1115 to 1200 GMT; Spanish: Every day from 1200 to 1300, Every day (except Monday) from 0000 to 0200; Sunday Night from 2300 to 0030 and from 0130 to 0200; Creole: Monday from 0030 to 0130."

We heard 4VEH again on August 26 at 0205 with a Sankey and Moody Mission hymn, after which came the announcement: "This is Radio Station 4VEH, Cap Haitien, Haiti; please write and tell us how our signals are coming in. We shall be on the air tomorrow morning at 7 a.m. and tomorrow night at 7 p.m. Eastern Standard Time. Until then, Good Night." S. A. Mann has logged this new one on 9885 kc, and says that though broadcasting is mostly in Spanish, there are English and French identification announcements at intervals. S.A.M. also tells us that ZQI, 4950 kc and 3480 kc now uses the direction: "Radio Jamaica" and is a commercial station employing both male and female announcers from 2130 to 0400 daily. We logged it on 3480 kc at 0400 on August 5, when the time was given as "11 p.m."; the address is: Jamaica Broadcasting Company Ltd., Broadcasting House, 32 Lyndhurst Road, Cross Roads, Jamaica.

H11L, Trujillo, employing the slogan: "La Voz del Tropico" has been logged by us on several occasions on a new frequency of 3280 kc; typical vocal tangos were a feature at 0335 and the station left the air at 0500 with the words: "Buenas Noches" and the National Air. COCH, Union Radio, Havana, 9437 kc was giving English direction and "Goodnights" when J. C. Catch logged it at 0500 on August 6.

South America

In Chile, CE1180, 12000 kc was observed by J. C. Catch at 2200 with direction: "Radio Societe Nacional de Agricultura, Santiago-de-Chile," and CE960, 9595 kc was logged between 0555 and 0640 with dance music and call: "Radio La Americana." We noted CE622, 6223 kc with a series of rumbas in a sponsored programme at 0345, and three pleasing chimes preceded the final direction: "Radio Mineria" at 0405. In Argentina, LRY, 9455 kc was heard with English announcements at 0245, and LRS, 9315 kc had a concert at 0040, according to A. E. Nichols. We logged LRY with the final news cast in English in the North American transmission at 0555 on August 4, with a good signal.

The English broadcasts to Europe are: 1715-1830 over LRU, 15290 kc; 1905-2000 over LRS, 11880 kc (No Sunday transmission); and 2205-2250 over LRY, 9455 kc. As this year is the Centenary of the death of the Argentine Liberator, General San Martin, you may expect to hear programmes featuring the heroism, ambitions and sacrifices of this beloved patriot.

The Peruvian OAX4V, 5908 kc concluded a programme of variety and its transmission at 0555 on August 8 with the slogan: "Radio America" and the words "Muy buenas noches." J. C. Catch has received a verification in English from HC2AK, 4655 kc, Compania Radiodifusora del Ecuador, Avenida da Olmedo 110, Guayaquil Signed by the Managing Director, Leonidas Avilés, it reads: "Dear Mr. Catch: Greetings to England, and please forgive the almost unforgiveable delay in answering your note of May 30th, 1949 regarding reception of our Radio Programmes. We'd like to answer all our friends from abroad just as soon as we hear from them, but although we are the largest and most powerful radio station in Ecuador (Commercial), our personnel is small, and concentrating on putting out good pro-

grams for our listeners. Thanking you for writing to us and best wishes to England's amateur receivers."

We heard HC4EB, Manta, 6875 kc with the Merry Widow Waltz at 0305 and closing immediately after a final direction at 0430 ; we also noted HC2BK, Guayaquil, 4673 kc with vocal dance numbers at 0312, and HC1AC, Quito, 6210 kc with a single gong note before the slogan : "Emisora HC1AC, La Voz de la Democracia en Quito, Ecuador" at 0345.

Brazilians have been numerous ; P. Inman and E. Strangeway noted PRL7, 9720 kc at 2145, and A. E. Nichols heard ZYC9, 15365 kc with Latin-American music and frequent slogan : "Radio Tupe" around 2015.

J. C. Catch received a letter from the Ministerio Da Educacao E Saude, Rio-de-Janeiro which verified reception of PRL5 and stated : "Since last month we have been transmitting through PRL4 on 9770 kc ; our transmitter is RCA, 1 kW." J.C.C. then proceeded to log PRL4, actually on 9772 kc, around 2240 ; he also spotted PSF, 14690 kc at 2245 with News in Portuguese and closing with March at 2300.

We have identified eight Venezuelans, as follows : YVKX, La Voz de la Patria, Caracas, 3505 kc—Call and close down at 0325 ; YVMQ, Radio Barquisimeto, 4940 kc closing at 0330 with National Anthem ; YVKB, 4890 kc, after a programme of negro spirituals giving six chimes and final direction "Yay-Vay-Kah-Ah onda larga y Yay-Vay-Kah-Bay onda corta" at 0427. YVKR, Radio Caracas, 4919 kc using slogan "Ondas Popular" closed at 0430 ; YVOG, 3310 kc gave four ascending vibraphone notes before the call and location "en Trujillo, Venezuela" at 0215 ; YVQL, 3330 kc mentioned both medium and short wave transmitters before the close at 0230 ; YVMI, La Voz de la Fé, Maracaibo, 3370 kc gave soprano songs at 0235 ; and YVQN, Puerto La Cruz, 3380 kc, after an orchestral concert, closed at 0330 with the direction : "Transmite Ondas del Puerto" and the Venezuelan National Anthem.

Europe

W. G. Gore (Monkton, Ramsgate) has logged Warsaw, 6220 kc with their English News at 1940 ; the English schedule is now changed, however : 1715-1735 over 6215 kc and 9525 kc, 1830-1900 over 6215 kc only.

C. A. Billington has received a letter from the USSR signed by Ivan Petrov ; it reads : "This is a verification of your report on reception of Radio Moscow." C.A.B. has further heard from the Vatican Radio who enclosed some green photo-gravure impressions of their aerials and schedule ; on Sundays at 1030 they broadcast Holy Mass from the Shrine of Blessed Peter over 11740 kc, 9646 kc and 5968 kc—reception reports are welcomed. R. Kirlew (Edgbaston, Birmingham) gives the times of their weekday transmissions in English : 1500 and 1815 over 15095 kc, 11740 kc, 9646 kc and 1529 kc (196 metres).

C. A. Billington heard Radio Luxembourg on 6090 kc between 2100 and 2200 one Sunday with an English broadcast sponsored by a well-known Football Pools organisation. C.A.B. also spotted Monte Carlo's English feature on Saturdays, 2045-2200 over 6035 kc, and has received from Radio Sweden a 36-page book about broadcasting in that country ; their 12 kW short-wave transmitters are : SBO, 6065 kc ; SDB2, 10780 kc ; SBP, 11705 kc and SBT, 15155 kc. J. S. Bollard has Radio Norway's QSL and English schedule which reads : LKV, 15170 kc (100 kW). Sunday : 1200-1215, 1400-1415, 2000-2015, 2400-0015, 0200-0215 (Monday).

KZCA, Salzburg has lately been observed by J. C. Catch on a frequency of 9618 kc, and D. G. Claxton adds that it was logged at 0900 with the direction : "This is the Blue Danube Network broadcasting from Vienna." M. A. S. Race (Alton, Hants) has just received their card which gives the following details : "KZCA, Salzburg, 350 watts is on 9617 kc ; BDN, Salzburg, 1 kW on 1313 kc ; BDN, Linz, 1 kW on 773 kc ; BDN, Vienna, 1 kW on 1142 kc—all operate in the American Armed Forces Radio Service." F. Pilkington likes this *medium-wave* DX business and has logged Riga on 575 kc and Zagreb on 1133 kc. J. C. Catch informs us that Yugoslavia, using YUC on 9506 kc, gives English bulletins at 0545 and 1615 daily.

P. E. Woolmer hears HBQ, United Nations Radio, Geneva, 6672 kc with News in English at 1830 and 1845 daily ; W. G. Gore also spotted this one. S. Neeld wants to know if the station he heard on 6580 kc at 1730 on August 13 was Radio Jannina, Greece. Most certainly ! Actually, it is Radio Epiros, the official frequency is 6550 kc, and the schedule : 0500-0530, 1200-1230 and 1700-2000. C. P. Turner has been hearing the Forces Broadcasting Service Malta Garri-

son transmissions on 7270 kc at 2100, and D. G. Claxton listens to the English broadcasts, 1830-2000, from Paris each evening over 6200 kc and 11845 kc. Have you heard TFJ, Reykjavik, Iceland, 12175 kc with pleasing orchestral music before its Norwegian News on Sundays at 1615, and the new Lisbon, Portugal outlet, CSA34 on 15015 kc at 110-1400, 1500-1700 and during the evenings ?

J. C. Catch has sent us a "Round The Clock" News-cast schedule which we think will prove most valuable to our readers. With a few minor alterations and additions we reproduce this elsewhere.

All short wave broadcast information will be gladly welcomed for next month's Comments. Please send to R. H. Greenland, *Short Wave Listener and Television Review*, 53 Victoria Street, London, S.W.1 to reach this office not later than November 15th for the January issue.

TV MICROWAVE LINKS

The very successful telecast from Calais on August 27 was the culmination of considerable research by BBC engineers and radio manufacturers. The use of VHF links for extending the range of Outside Broadcasts was seriously considered over a year ago ; that the succeeding months were the witness to intense experiment was proved when viewers saw scenes from Calais as clearly as in normal short range work.

The Calais-London venture spanned a distance of some 90 miles with three intermediate stations and terminal stations at Calais and Dover. A micro-wave link was used across the Strait and, as was to be expected, signal strengths during tests fluctuated considerably with changes in weather conditions and tides. The passage of ships through the Strait presented another source of interference. Further micro-wave links carried the signals to Lenham (where the equipment was set up on top of the Mid-Kent Water Company's tower), and thence to Wrotham. The last lap was covered by a VHF link.

Now that the tests have shown the method practicable, orders for permanent equipment have been placed. Till this arrives the BBC will use "loaned" equipment from the manufacturers concerned. Incidentally, the BBC are not anxious to over-publicise the frequencies used in these micro-wave and VHF links because a number of enterprising short wave enthusiasts have built up super-regenerative receivers in order to pick up the sound direct ! This is all very well as far as it goes, but the trouble is that the effect of the super-regen is to lower considerably the signal/noise ratio of the received signal for viewers. Thus, we trust readers will refrain from experiments on these lines !

FOR QSL'ing DX

A copy of the latest issue of the *Radio Amateur Call Book* is absolutely necessary. It is now established practice for SWL's to send their cards outwards direct to those addressees from whom a return QSL is expected—even if cards inwards arrive mainly through the Bureaux. To carry out this procedure effectively, an up-to-date address list of amateur stations throughout the world is obviously essential—and this is exactly what the *Radio Amateur Call Book* provides.

★

UNITED NATIONS TELECOMMUNICATIONS

It is reported that H. B. Rantzen, lately head of the BBC's Engineering Designs Department, has been appointed Director of Telecommunications Services to the United Nations. This is a most important post, carrying responsibility over a wide field—from PA facilities at U.N. conferences to the technical supervision of short wave news and information broadcasts in some 23 different languages.

★

THE BC-348 CONVERSION

We can still supply copies of our issues for June, July and August this year, containing in three parts a long, fully detailed article on BC-348 conversion and modifications. This is probably one of the most complete treatments of its kind ever published on the BC-348 and makes this well-known receiver even more effective on the amateur communication bands.

★

KNOWING ABOUT DX

Every keen operator interested in the fascinating subject of DX, with its triumphs and disappointments, its snags and worries and the never-failing thrill it will always give to those who have the "feel" for contact with distant places, will find something to help him understand more about it if he reads the *DX Operating Manual*. So far as we know, it is the only attempt that has yet been made to reduce the problem of DX to understandable print. It is, in fact, a standard work of reference on the subject, and in its 36 pages will tell you all you want to know (and a great deal more than you suspected) about the art of DX. The price is 2s. 8d. post free, of The Circulation Manager, Short Wave Magazine, Ltd., 53 Victoria Street, London, S.W.1.

★

APPLICATION OF SPEECH CLIPPING

It is coming to be understood that the principle of Speech Clipping makes more modulating power available over a narrower band of audio frequencies, without affecting speech intelligibility. The proper application of speech clipping is most marked at the receiving end. A useful practical article on the whole subject appeared in the May 1950 issue of our *Short Wave Magazine*.

★

NEW CATALOGUES

The attention of readers is drawn to the new catalogue now in issue by Webbs Radio of Soho, price 9d., and listing a wide range of essential parts and equipment of interest to every radio amateur and SWL.

Then there is List No. 7, available at 6d. from Clydesdale's of Glasgow, which will be of particular interest to those who want the best in high grade surplus gear, moderately priced and fully described in this list.

SHORT WAVE BROADCAST STATIONS

Revision 49.50-61.49 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 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
6060	49·50	GSX	London.
6055	49·55	CXA14	Colonia, Uruguay.
6054	49·56	HJEX	Cali, Columbia.
6050	49·59	GSA	London.
			Tiflis, U.S.S.R.
6045	49·63	YDF	Djakarta.
		HOHN	Panama City.
		XETW	Tampico, Mexico.
			Moscow.
6040	49·67	CE604	Santiago, Chile.
		GSY	London.
		COBF	Havana, Cuba.
		HI1N	San Domingo, D.R.
		DZH6	Manila, P.I.
6038	49·69	OAX6B	Arequipa, Peru.
6035	49·71	CXA30	Montevideo.
			Monte Carlo.
			Rangoon, Burma.
			Lagos, Nigeria.
			Noumea, N. Caledonia.
6031	49·74	HP5B	Panama City.
6030	49·75	XEKW	Morelia, Mexico.
		CFVP	Calgary, Canada.
			Stuttgart.
6026	49·78	CP37	Oruro, Bolivia.
6025	49·79	PGD	Hilversum.
		HC1IR	Ibarra, Ecuador.
			Kuala Lumpur, Malaya.
6024	49·80		Brazzaville.
6020	49·83	HROW	Tegucigalpa.
		XEUW	Vera Cruz, Mexico.
			Moscow.
6019	49·84	HJCX	Bogota, Columbia.
6016	49·87	PRA8	Recife, Brazil.
		JKK	Nazaki, Japan.
6012	49·90	XEOI	Mexico City.
6010	49·92	OLR2A	Prague.
		VUD3	Delhi, India.
		CJCX	Sydney, Nova Scotia.
		HS8PJ	Bangkok, Thailand.
		CE601	Antofagasta, Chile.
		OAX4Q	Lima, Peru.
6007	49·94	HI1J	San Pedro de Macoris.
6006	49·95	CNR3	Rabat, Morocco.
6005	49·96	VE9AI	Edmonton, Alberta.
		CFCX	Montreal.
6004	49·97	HP5K	Colon, Panama.
6001	49·99	OAX2A	Trujillo, Peru.
6000	50·00	HJKD	Bogota, Columbia.
		HI9B	Santiago, D.R.
		DZH4	Manila, P.I.
			Dornbirn, Austria.
			Damascus, Syria.
			Moscow.
5998	50·02	PRI3	Belo Horizonte.
5990	50·08	TIQ	Limon, Costa Rica.
			Karachi, Pakistan.
5989	50·09	HC1B	Quito, Ecuador.
5986	50·12	LRS1	Buenos Aires.
5982	50·15	YSW	Santa Ana.
5981	50·16	ZFY	Georgetown, B. Guiana.
5970	50·25	CBNX	St. Johns, Newfoundland.
		HI4T	San Domingo, D.R.
			Moscow.
5969	50·27	HVJ	Vatican City.
5965	50·29	OAX4S	Lima, Peru.
5960	50·34	HJCF	Bogota, Columbia.
		RW109	Moscow.
			Mecca, Saudi Arabia.
5957	50·36		
5951	50·41	4V2S	Port-au-Prince.
5950	50·42	OAX4P	Huancayo, Peru.
			Panama City.

Frequency	Wavelength	Callsign	Location
5942	50·49	OX1	Godthaab, Greenland.
5940	50·51	HRA	Tegucigalpa.
5920	50·68		Moscow.
5908	50·78	OAX4V	Lima, Peru.
5896	50·88	OAX4Z	Lima, Peru.
5895	50·89	CR4AA	Praia, Cape Verde Is.
5885	50·98	ZRK	Cape Town.
5880	51·02	YNCS	Managua, Nicaragua.
5875	51·06	HRN	Tegucigalpa.
5870	51·11	TIPGH	San Jose, Costa Rica.
5855	51·24	CP15	La Paz, Bolivia.
5840	51·37	OAX1B	Piura, Peru.
5800	51·72	CE8AA	Santiago, Chile.
5758	52·10	PZH5	Paramaribo, Surinam.
		YNJAT	Leon, Nicaragua.
5726	52·41	HC1PM	Quito, Ecuador.
5620	53·38	YBJ	Djokjakarta, Indonesia.
		OAX2A	Trujillo, Peru.
5580	53·76	HCJ	Tulcan, Ecuador.
5515	54·40	YDH2	Semarang, Java.
5260	57·03		Ulan-Bator, Mongolia.
5200	57·69	YSCP	San Salvador.
5060	59·29	YVKD	Caracas, Venezuela.
5045	59·46	HI8Z	Santiago, D.R.
5040	59·52	YVKM	Caracas, Venezuela.
5030	59·64	YDQ	Makassar, Celebes.
5020	59·76	YVKO	Caracas, Venezuela.
5010	59·88	PJC1	Willemstad, Curacao.
5000	60·00	WWV	Washington, D.C.
4989	60·13	YVMO	Barquisimeto.
4985	60·18	HCQRX	Quito, Ecuador.
			Singapore, Malaya.
4980	60·24	DYB2	Bacalod, P.I.
		HI1A	Santiago, D.R.
		OQ2AC	Elizabethville.
4967	60·40		Karachi, Pakistan.
4965	60·42	HJAE	Cartagena, Colombia.
			Malta.
4960	60·48	VUD2	Delhi, India.
		YVQA	Cumana, Venezuela.
		HC5HP	Riobamba, Ecuador.
4959	60·50	HJCQ	Bogota, Columbia.
4950	60·61	ZQI	Kingston, Jamaica.
		HI1L	San Domingo, D.R.
4949	60·63	HJCW	Bogota, Colombia.
4940	60·73	YVMQ	Barquisimeto.
		JKM	Kawachi, Japan.
4935	60·79	HJAR	Manizales, Colombia.
4931	60·84	HJAP	Cartagena, Colombia.
4930	60·85	CR7BU	Lourenco Marques.
		HC4LI.	Santa Maria, Ecuador.
4920	60·98	VUM2	Madras, India.
4919	60·99	YVKR	Caracas, Venezuela.
4918	61·01	VLM	Brisbane, Queensland.
4915	61·04	ZOY	Accra, Gold Coast.
		YDB2	Djakarta, Indonesia.
4910	61·10	JKI	Nazaki, Japan.
4907	61·14	YVMM	Coro, Venezuela.
4900	61·22	ZOH	Colombo, Ceylon.
		YVQE	Bolivar, Venezuela.
		HJAG	Barranquilla.
4898	61·26	VLX	Perth, W. Australia.
4895	61·29	YDZ	Biak, New Guinea.
		ZRH	Johannesburg, S.A.
		HJCH	Bogota, Colombia.
		PRF6	Manaos, Brazil.
4890	61·35	YVKB	Caracas, Venezuela.
		HI3C	La Romana, D.R.
4885	61·41	HJDP	Medellin, Colombia.
4880	61·48	VUC2	Calcutta, India.
			Salisbury, S. Rhodesia.
4879	61·49	YVKF	Caracas, Venezuela.

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, November 1, addressed Advertisement Manager, *Short Wave Listener*, 53 Victoria Street, London, S.W.1.

QSL CARDS AND LOG BOOKS. APPROVED G.P.O. SAMPLES FREE. ATKINSON BROS., PRINTERS, ELLAND, YORKS.

EDDYSTONE 504. FB condition. 2 RF S-Meter, etc. £30 or offers. Buyer collects. M. Norton, 1, Emily Street, West Bromwich, Staffs.

BC433G RF27 (modified 10 metres) BC454, TU10B, SCR522 N.L. with circuit. All good condition. £4/0/0, or sell separately. BSWL 3548, The Bows, Earles Lane, Winchani, Northwich, Cheshire.

S.640 Good condition, purchased new April, 1949. First reasonable offer. Letters only please. A. Machin, 147, Usk Road, Battersea, London, S.W.11.

R.1224A in excellent condition, little used, with circuit diagram, earphones and accumulator. £3/10/0. No offers. Brooks, 23A South Brink, Wisbech

EDDYSTONE AW4 battery TRF, complete set coils, £4/0/0. AC Mains power pack, 315v DC 70 mA, 6.3v output. As new, £2/5/0. Box No. 036.

R.1155 Built-in AC mains power pack, output stage and midget speaker. Nearest £8. Sugden, 44 Gores Lane, Formby, Liverpool.

PHILIPS communication receiver Type PCR, broadcast band, self-contained loudspeaker, with power pack. New condition, £11. Peto, 4 Downs Road, Canterbury.

PREMIER Electrostatic TV. Time base 30/-, power pack £5. Both wired and tested. Tube and assembly 30/-. Brownlow, 51 Oakley Gardens, Chelsea, S.W.3.

BC348 with self-contained 230v AC power supply, and 6V6 output, complete with spare set of valves, and speaker. Condition as new, £18. Wheelhouse, 284 Granville Road, Sheffield.

1132A partly modified 2 metres, power pack, 2-metre beam, as new, £6. No. 8 Transmitter ex-Army, batt. op., 2 valves, £1. Power Unit, 500v 200 mA 2-6.3v 2.5 amps., 1-6.3v 4 amps., cable form wiring, £4. 42 Kings Road, New Haw, Weybridge, Surrey.

SURPLUS valves—all new and boxed. 6V6, 5Z4, 6J7, 6F6, 2X2, VU111, 6B8, 6AC7, 6X5, KT44, 5U4, EBC33, 41, 6SK7, 6SG7, 6N7, EF39, HP4106, 6K7, 6SH7, AC6PEN, 6Q7, all at 5/6 each. Morganite V/C W/S ¼, ½, 1, 2 Meg. 4/-. Silver Mica Condensers, all values, 3/6 dozen. .0001, .0002, .0003, .0004, .0005 moulded, 3/6 dozen. 5" Rola L/T, 10/6. 8" Plessey L/T, 11/6. 10" Rola L/T, 21/-. 10" Plessey L/T, 17/6. Send for Lists. Alpha Radio Supply Co., 5/6 Vinces Chas., Victoria Square, Leeds, 1.

S.640 with Eddystone speaker. 15 months old, little used, £25/0/0. L. Roberts, Munslow Cottage, Maesbury, Oswestry.

R.208 for sale. 40-60 mc., mains, noise limiter, speaker. Very good condition. £12. Also BC-624A, new, 30/-. Wanted : Converters from 28-146 mc. Buyer collects. Bliss, 12 Elmsleigh Avenue, Kenton, Middlesex. (*WORDSWORTH* 7544).

BC348 Q Model, fitted internal AC power pack, £12 or nearest offer. Buckby, Sun Inn, St. Austell, Cornwall.

EDDYSTONE 640 — recently re-aligned and tested, complete with S-meter and speaker. £20 or best offer. Write, phone or call—Cave, 16 Herbert Road, Bexley Heath. (*Phone* 8130).

SALE, Eddystone 640, matched speaker, superb condition, £20 or near. Regenerative Super, 4 valves (less power pack) 7, 14, 28 mc, £6. S.A.E. details. G3BII, Harrias Cottage, Beaconsfield, Bucks.

EDDYSTONE S.640 and speaker, £20. BC342 and speaker, £15. Both perfect. Will deliver up to 20 miles. (*Phone MALDEN* 0859).

FOR Sale. A bargain. Owing to re-arrangement, 1224A, Mark 18, eliminator, all working. Two old mains sets and Type 18, not working. Two accumulators, pair headphones. Box odds and ends. £6 the lot. The Haven, Georgeham, Devon.

2 metre convertor. Eddystone circuit and components. Professionally aligned and tested. In good condition. What offers? McIntyre, 5 Bayswell Park, Dunbar, East Lothian.

G3ALA teacher and wife, require accommodation North London. Unfurnished preferred, or reasonable furnished. Share gear with SWL. Holt, Coldfall School, Muswell Hill, N.10.

HALLICRAFTER SX24 42 mc-550 kc, S-meter, complete with matched speaker in Hallicrafter cabinet. Also adjustable reed phones. All very good condition. Can be heard 3 Stainmore Place, Seacrott, Leeds, Yorks. Nearest £21.

SALE. R1082 battery receiver excellent internal condition. Offers? Plenty spare coils for same. Also control units for CRV46151 (ARB receiver) and full details. Conversion gen for TCS receivers and BC454, etc. A. Seed, 8 Withert Avenue, Bebington, Wirral, Cheshire.

INFORMATION. Are you held up for accurate details, calibration or components? Individual service covers all equipments and conversions, commercial, constructional and surplus. S.A.E. please. A. J. Schofield, A.M.I.E.E., 3 Sussex Chambers, Havelock Road, Hastings.

£500 for? Two all-band complete stations R.C.A. Marconi, National units for sale, with equipment from 15 kc-450 mc ; also selected surplus Rxs, power packs, masts, etc. Send S.A.E. stating wants and best offer. Schofield, 80 Lower Park Road, Hastings.

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