

of the

16

SHORT WAVE LISTENER AND TELEVISION REVIEW



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DECEMBER 1950
VOLUME 4 · NUMBER 12

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THE SHORT WAVE LISTENER AND TELEVISION REVIEW

VOLUME 4

DECEMBER 1950

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EDITORIAL

Balance

The next issue of *Short Wave Listener & Television Review* will see us entering upon our fifth year of publication. After the fullest consideration of all the factors involved, it has been decided that no major changes are called for in the style, range of contents or the make-up.

Individually, many readers have made suggestions regarding these points, and though we are, of course, always very glad to have such opinions (it shows a positive interest, for one thing), we find that these ideas tend to cancel one another out. There are those who would like to see even more space devoted to the DX features, others who consider these articles already get too much space; some readers think we are too technical for the SWL, and those who consider we should regularly print articles much more technical in character; others, again, feel that we should not use space to discuss Amateur Radio from the transmitting standpoint, but there are a great many who say that *Short Wave Listener & Television Review* should cater specifically for the SWL who hopes eventually to get on the air.

All these viewpoints are interesting and all have their merits. Taken alone, the arguments for or against any one of them could be built up into a formidable case.

But we conceive it our business to try to please as many readers as possible with every issue, so that in the end it becomes a matter of holding the balance. And it is this that we shall endeavour to go on doing. On the other hand, readers may be assured that their views and opinions are always interesting and will continue to be welcomed.

CONTENTS

DECEMBER 1950

Editorial	401
Transmission for Beginners, Part I	402
Practical Spotter Circuits	405
Television for Beginners, Part VII	408
Making Tuning Scales	412
Have You Heard?	416
BSWL Review (<i>Members only</i>) facing pp.	420-421
Calls Heard	425
"Pse QSL"	428
TV Questions and Answers	429
SWL Stations-No. 36	430
The VHF End	431
DX Broadcast	434
Broadcast Station List, Revision 61.54-121.2 and 11.49-16.90 Metres	439

A COMPANION PUBLICATION TO "THE SHORT WAVE MAGAZINE"—
THE JOURNAL FOR THE RADIO EXPERIMENTER AND TRANSMITTING AMATEUR

Transmission for Beginners

PART II

THE TRANSMITTER ITSELF

IN the first article of this series it was stated that the simpler forms of transmitter were considerably less complex than the average receiver. This undoubtedly is so, since with a single valve, used as a crystal oscillator, one can literally "work the whole of Europe," and such a transmitter has only *one control*.

The sketch (Fig 1) shows, not merely the basic necessities, but the whole works. The valve can be as large as an 807 or a 6L6; or it may be a smaller tetrode like a 6V6 or 6F6. The crystal determines the frequency and supplies the grid excitation, the anode circuit resonates and supplies the RF power which is drawn by the dipole aerial *via* a length of 72-ohm line.

With an input of 10 watts on the 160-metre band, and such a set-up as this, one can cover the whole country after dark—although the number of amateurs who could sport a dipole for this band is admittedly small. Aerials 270-ft. long are not within everyone's grasp, and other types necessitate a further tuned circuit for coupling purposes. Let us, therefore, consider the 40-metre band. The crystal may have a frequency between 7000 and 7080 kc, and when the spot-frequency is clear (which won't be very often) this simple set-up will undoubtedly bring returns from most parts of Europe.

Tuning Procedure

The anode circuit is tuned to resonance by observing the behaviour of a meter in series with the HT feed; this will show a sharp dip as the resonant frequency of the crystal is approached from one side, with a broader dip on the other side. By coupling a small bulb, across a single turn of wire, fairly loosely to the anode circuit, the position of maximum output will be easily determined. The link joined to the

(Though it has often been explained that in amateur practice, and within the power limits allowed to amateurs, the modern transmitter can be a simpler piece of equipment than the communications receiver, many people find it very hard to believe this. An amateur transmitting station is visualised as a roomful of complex and very expensive apparatus presided over by a genius deeply versed in the technicalities. In fact, the average amateur spends far less on his transmitter than on his receiver, and many extract an enormous degree of enjoyment from Amateur Radio using very simple gear.—Editor.)

72-ohm line to the aerial may then be coupled, and it will be seen that the amount of RF in the tuned circuit falls off; also that the meter dip becomes much less pronounced and less sharp. In common parlance, the aerial is now "drawing."

More of this later, when we are discussing aerials and their coupling. For the time being, we have shown that the behaviour of a simple crystal oscillator circuit does not exactly involve one in higher mathematics!

Frequency Control

Now the obvious difficulty of finding a "quiet spot" in a crowded band involves either (a) the use of a multitude of crystals or (b) the substitution of a Variable Frequency Oscillator (hereinafter known as VFO) for the crystal. This, of course, is cheaper and more practical than the use of scores of crystals, but it does involve one in slightly more technical trouble, for this reason: Whereas a crystal gives one a "Tgx" note almost automatically, a VFO must be very carefully built and designed if it is to do the same. In other words, the oscillator must only be of the variable variety when the operator wants it to be so; when it is set on one frequency *it must stay there* and it must be extremely stable. It must be free from ripple, free from wobbles of all sorts and free from creep or drift as it warms up.

There is no magic circuit that does all these things for you. Some, it is true, are inherently more stable than others, but all need careful construction and the use of good components.

Generally speaking, it is considered unsound to couple such an oscillator directly to the aerial, although this can

TABLE OF VALUES

Fig. 1. The Crystal Oscillator Circuit

- C1 = .0003 μ F
- C2 = .01 μ F
- C3 = .001 μ F
- R1 = 50,000 ohms
- R2 = 20,000 ohms
- RFC = 2.5 mH RF choke

be done with care; but the little transmitter circuit shown in Fig. 2 uses a VFO and a buffer-amplifier, the latter being coupled to the aerial.

When the time comes for higher power and more ambitious gear to be used, any effort in building such a transmitter will in no way be wasted. Without any modifications whatever, the VFO-and-Buffer unit may be used to drive a larger power-amplifier. Thus, a 10-watt driver unit of the kind shown can form the basis of a 150-watt transmitter after the usual twelve-months' "probationary period" has expired. In fact, all that is required to make the conversion is a single-stage power amplifier using a single valve. If the driver unit has performed well and is stable when coupled to an aerial, the chances are that it will be equally satisfactory when driving the 150-watt stage.

So far, by tacit agreement, we have been considering only one frequency range—the 7 mc band. But it is a very simple matter to make the two-stage transmitter of Fig. 2 operate on twice that frequency, merely by changing coils. The buffer amplifier

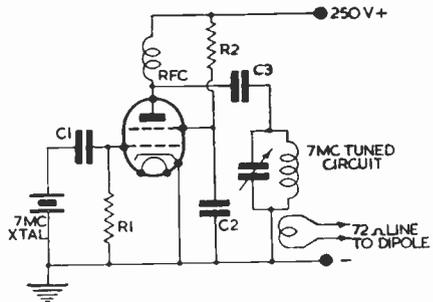


Fig. 1. Circuit of the simplest form of amateur band transmitter—the single valve crystal oscillator. Values are given in the table and details are discussed in the text.

may be operated as a frequency-doubler, the output from its anode circuit being taken out at 14 mc instead of 7 mc. True, its efficiency will be reduced somewhat, but it *will* work. And in this series we are, after all, only considering

TABLE OF VALUES

Fig. 2. The VFO-Buffer Exciter Unit

- L1, C1 = Tuned circuit for 7 mc band
- C2, C3 = .001 μ F
- C4, C6 = .0005 μ F
- C7, C8 = .01 μ F
- C9 = .001 μ F
- R1, R2 = 50,000 ohms
- R3 = 1,000 ohms
- R4 = 20,000 ohms
- RFC1, RFC2 = 2.5 mH RF chokes
- V1 = 6J5
- V2 = 6F6

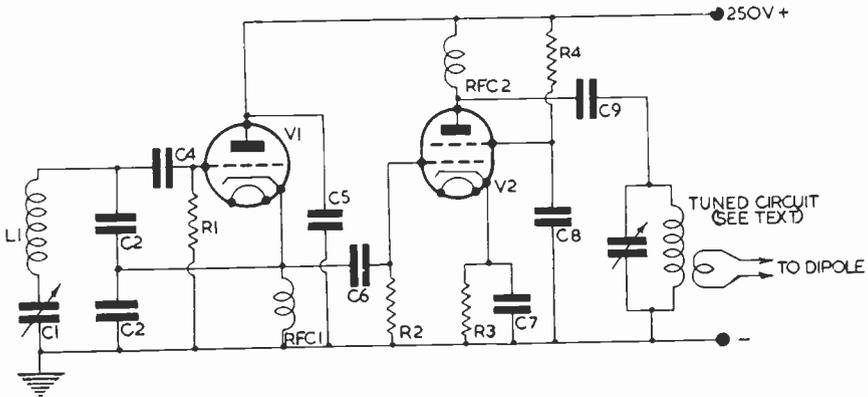


Fig. 2. A driver-buffer amplifier unit to take the place of a crystal oscillator; the advantage is that operation is not tied to the one frequency provided by a single crystal. But more careful construction is called for, and for best results this unit should be employed to drive a succeeding RF amplifier.

the basic essentials for getting started.

Frequency Doubling

A frequency doubler is, perhaps, the simplest piece of equipment with which the transmitting amateur is ever faced. It differs from a power amplifier only in one respect—that its anode circuit is tuned to *twice* the frequency of its grid circuit. To increase its harmonic development it is often more heavily biased than a normal PA, but this is only a matter of adjusting voltages.

The FD is simpler than the PA, because the latter is sometimes unstable by virtue of the fact that its grid and anode circuits are tuned to the same frequency. If the valve used is a triode, it must be neutralised; if it is a tetrode or pentode, it must often be laid out carefully and well screened, and may, in extreme cases, need neutralising as well. But a doubler is usually the tamest thing.

To reduce the number of stages in use, doubling is often carried out in the actual oscillator stage. Many types of oscillator do, in fact, prefer such treatment; the grid-cathode circuit generates RF at, say, 7 mc, and the anode circuit is tuned to 14 mc and thence coupled to the next stage. There is thus less interaction or "pulling" between grid and anode circuits than if the output were taken at the actual oscillator frequency.

For VHF and UHF work, of course, we sometimes resort to trebling and quadrupling in a single stage, and we then have to deal with very small outputs which need careful "nursing" and the use of efficient components. Fortunately, most modern valves operate at such high gains that a few milliwatts of RF at a particular frequency will suffice to drive the next stage. Amplification is cheap!

Many small problems crop up as we go along. A transmitter which oscillates with vigour and stability on the particular frequency desired is still unable to convey any intelligence across the ether! It must be *keyed* in some way, and many an oscillator that is a perfect pet in a stationary condition turns out to be an absolute plague when we want to apply some "make and break." Chirps, clicks, parasitics, frequency shifts—all these are apt to descend upon the hapless operator if he hasn't made a sufficiently good job of the oscillator. But such little problems are beyond the scope of this particular article. Sufficient, for now, to study the circuits.

The VFO shown, by the way, uses a series-tuned Colpitts or "Clapp" circuit, which is extremely stable and does not react violently to slight changes in HT voltage or to the tuning of succeeding stages. It is almost accepted by common consent as the standard circuit for VFO's in amateur transmitters, and beginners will be well advised to start correctly by using a circuit as simple and stable as this.

Aerial systems will come under review in the next instalment of this series.

CORRECTION LIST

In the scurry of getting out on time with the last issue, one or two regrettable errors managed to creep in. Most readers interested in that useful article on Russian Zones will have noticed the omission of Zone 19; in the table on p. 391, the Zone 19 section should have started with calls UAQAT, OFB *et seq.* Then on p. 365, captions Fig. 1 and Fig. 2 should have been reversed—and an apology is also due to G3AKA for making him say, on p. 364, that a vertical dipole is bi-directional; of course, being vertical, it is omnidirectional. We hope we have found them all and that honour is now satisfied!

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This is now available, price 16s. 10d. post free, and contains many hundreds of corrections and amendments to the previous lists. The G section is complete for all entries appearing in "New QTH's" up to and including the July issue of our *Short Wave Magazine*.

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L10b

Practical Spotter Circuits

REDUCING PULSE INTERFERENCE IN TV RECEIVERS

By W. N. STEVENS (G3AKA)

INTERFERENCE from the H/V spark discharge of the petrol engine ignition system is one of the commonest sources of spoilt TV pictures. Naturally, until suppression at the source is universally adopted, the viewer must attempt some alleviation of the trouble at his end. The siting and location of the aerial can, of course, materially assist, but even when the best possible position has been determined, the familiar near-horizontal bands of random distributed dots will still flit across the screen. And when the interference is heavy the CRT is often driven well past the peak white amplitude with resultant large white patches and sometimes defocussing of the scanning spot.

There are several methods which can be adopted by the home constructor to minimise these effects, but the basic principle is the same in each case. In brief, spurious signals are clipped off at a point just beyond the 100% modulation (*i.e.*, peak white) amplitude. It must be realised from the onset that it is not possible completely to eliminate ignition interference (unless it is not severe), and it is also worth remembering that these circuits should only be incorporated where siting of the aerial cannot reduce the level of interference to tolerable limits. The reason is that there will be some degrading of the picture elements due to the loss of some high frequencies, since the peak whites will be slightly clipped.

A Good Circuit

Probably the simplest spotter circuit for the home constructor is that depicted in Fig. 1. This arrangement, which appears to be becoming rather popular, consists simply of a metal rectifier and a condenser. The action is simple to follow: The spotter functions in much the same way as a peak volt-

meter with the condenser charging up through the backwards resistance of the rectifier to a voltage equal approximately to that of the peak white modulation. Should an interference pulse arrive, the rectifier will conduct through its forward resistance, so that the signal appearing at the modulating electrode of the CRT is attenuated, in view of the fact that a relatively low resistance in series with a capacity is shunted across the VF amplifier anode load. This only applies, of course to pulses which exceed peak white amplitude. Therefore, in common with all such circuits, the interference is reduced to tiny white spots—in many cases practically unnoticeable on the picture.

The diagram shows three ways in which the device can be fitted to the receiver. There is little to choose as far as efficiency is concerned, although by installing it between the VF amplifier anode and the HT positive line some protection is afforded to the rectifier, since the initial charging current will flow through it in the forwards direction. On the other hand, by connecting it across the CRT electrodes the two components can be neatly mounted at the tube base. The value of the condenser can be $0.1 \mu F$, whilst the metal rectifier may be either a WX3 or a WX6—the latter being favoured since it is obtainable as a "surplus" item at a very low cost.

Valve Circuits

The more usual method of vision interference suppression is to use a valve diode. In this system, the diode is biased in such a way that it only conducts when interference pulses in excess of peak white amplitude are present. The VF amplifier (or the CRT) is driven more negative, thus reducing the gain of the amplifier during interference pulses. A more elaborate method uses a diode as a "gate," which passes on the pulses to the CRT so that it demodulates the beam, *i.e.*, it operate against the modulation. For cathode modulation the excess voltage is applied to the grid, and *vice versa*.

A well-tried circuit using a diode is shown in Fig 2. The potential divider network is controllable by the 100,000 ohm potentiometer, which is fitted as a pre-set control. It is adjusted so that the bias on the anode is equal to the voltage on the cathode, *i.e.*, at the VF amplifier anode at normal signal levels. In this

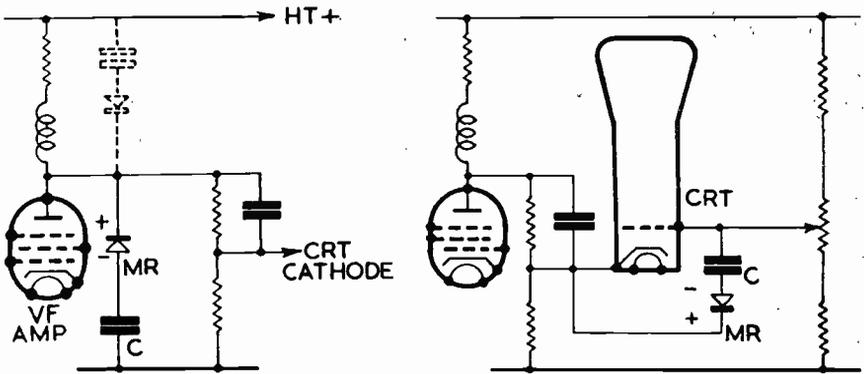


Fig. 1. Three methods of fitting a fixed-level interference suppressor (third method in dotted outline). The metal rectifier can be a WX3 or WX6 and the value of C is 0.1 μ F.

way the diode will be inoperative. However, on the arrival of an interference pulse, the output voltage will drop below peak white level (assuming a negative-going signal output), so that the potential on the diode cathode will fall below that applied to the anode and the valve therefore conducts during the length of the interference pulse. This prevents the output voltage from dropping much further, thereby clipping excessive peaks.

The advantage of a system of this type is that there is some control over the clipping level. For normal use the potentiometer is set so that the clipping level corresponds to peak white modula-

tion, but this can be raised or lowered according to individual requirements. In cases of really severe interference, the level can be lowered, but, naturally, picture quality will suffer due to the attenuation of the modulation frequencies in that region. At normal contrast settings, the voltage appearing at the anode of the video amplifier and, consequently, at the cathode of the diode, will be somewhere in the region of 215 volts in a typical receiver. Thus, one must take heed of the various HT feed lines when connecting the spotter circuit. For instance, if, as is usual, the vision receiver is fed from an HT positive line of 250 volts, it is no use returning the spotter resistor network to this point, since there will be insufficient voltage to bias the diode to cut-off.

The network is best returned to the main 350-volt line so that, with the circuit of Fig. 2, rotation of the potentiometer will enable voltages of between approximately 90-256 to be obtained at the diode anode. Since the VF amplifier anode voltage will be within the limits of 175-225 volts, this arrangement will cater for any existing television.

The circuit described is suitable in cases where a negative going signal output is used, e.g., for cathode modulation of the tube. Where grid modulation is used (that is, with a positive sense signal) the diode must be reversed—the anode to VF amplifier anode and the cathode via Cr to chassis.

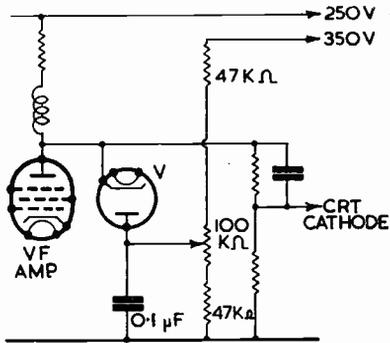


Fig. 2. Diode limiter with adjustable clipping level. In certain cases the 47,000 ohm resistor can be returned to the VF amplifier HT feed line (see text). For CRT grid modulation, the diode connections must be reversed. V can be an EA50, D1, 6D1 or similar.

Negative Feedback

Other types of spotter take advantage

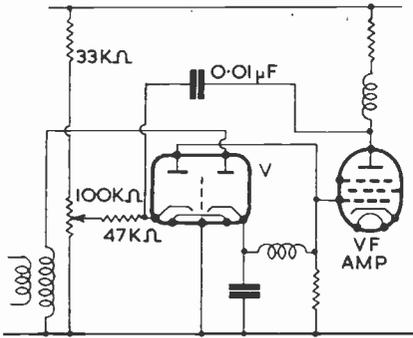


Fig. 3. Combined demodulator and interference suppressor, the left-hand diode being the limiter section. The valve can be a D77, EB91, 6AL5, 6D2, or DD6, or separate diodes may be used.

of a negative feedback system, as for instance the circuit of Fig. 3. The right-hand diode is the normal video demodulator and the first diode is the clipper valve. The potentiometer R_1 is adjusted so that the cathode is biased sufficiently to hold the valve in a non-conducting condition at signal amplitudes up to peak white level, *i.e.*, so that the cathode voltage is the same as that at its anode when a peak white signal is received. At levels higher than peak white (that is, during interference pulses) the diode conducts and a signal of opposite phase is fed back to the signal grid of the video amplifier. This, of course, is our friend negative feedback, and the effect is the same; the two signals—each of opposite phase—cancel each other out.

The diagram shows a twin-diode, but where it is proposed to incorporate this circuit in an existing television, a small diode of the EA50 (VR92) variety can be used for the suppressor stage. If twin-diodes are used, it is advisable to choose a valve such as the D77 or EB91, as these have a screen between the two diode sections. A valve with separate cathodes is, of course, essential.

A similar circuit is shown in Fig. 4, but here no adjustment is possible, although it has the advantage of simplicity. As in the previous example, the suppressor diode is non-conductive during signal modulation, but conducts on large amplitude interference pulses. Negative feedback is introduced—coupling the anode and grid circuits of the video amplifier, thus considerably attenuating the pulses. The two con-

stituent components, (R_1 and C_1) comprise a long time constant, thus preventing the suppressor diode from following any rapid changes of VF amplifier anode potentials.

General Points

These are the main types of video noise suppressor arrangements—all of which are simple enough for even the novice at television construction. There are, of course, other systems. One of these uses a triode valve so arranged that interference pulses considerably over-bias the tube, thus reducing the bright spot to a black one. The main purpose of any such circuit is to *reduce* and not necessarily eliminate transient interference and to counteract the defocussing of the scanning spot which occurs at high amplitude pulses.

Where spotter circuits of an adjustable nature are used, great care must be taken in initial adjustment. The procedure, however, is quite simple: With the potentiometer in such a position that heavy interference is experienced, slowly rotate the control until the spots begin to diminish in size. At a certain point it will be noticed that the picture highlights begin to be reduced, due to clipping of the high frequencies, showing that clipping level has been dropped below peak white. The potentiometer should be set *slightly before* the highlights begin to reduce.

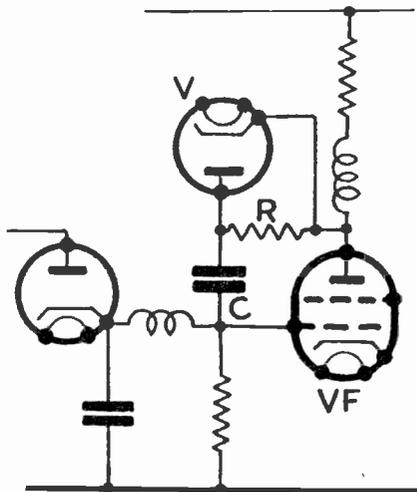


Fig. 4. Fixed level feedback type interference suppressor. The time constant components are C , $0.1 \mu F$ and R , 10 megohms. The valve type can be as in the other circuits.

Television for Beginners

AN OUTLINE OF THE SYSTEM

SYNC SEPARATION AND SEPARATOR CIRCUITS

PART VII

By W. N. STEVENS (G3AKA)

WE have seen how the television signal is amplified, demodulated and applied to the CRT—the resultant modulation creating the various shades which go to make the complete picture. The signal appearing at the anode of the VF amplifier also contains the sync pulses, and this composite signal is fed to the sync separator. This stage is inserted in order (a) to separate the sync pulses from the picture modulation, (b) to separate the line pulses from the frame pulses, and (c) to feed the pulses to their respective time base generators.

There are many ways of arranging the sync separator stage, but the most popular methods are by using a diode or a pentode, typical circuits of which are shown in Figs. 26, 27 and 28. At this point it is as well to mention the importance of the signal phase. Generally speaking, soft valve scanning generators require a positive-going input and hard valve time bases a negative input. If the CRT is grid modulated, positive phase is required, but cathode modulation requires a negatively phased input. The choice of sync separator, then, is subject to wide variation and can be selected according to the VF output signal and the "sense" required for the scanning generators.

Pentode Separator

A typical basic pentode separator is shown in Fig 27. Before discussing its operation, it would be well to "re-cap" on the nature of the composite signal which will be applied to the grid. Speaking in terms of amplitude (as the signal may be either positive or negative in phase) the sync pulses occupy the blacker-than-black portion—that is, from zero to 30% amplitude—and the picture modulation from 30-100% amplitude.

Thus, in order to "lose" picture intelligence, some electronic method which will filter out the signal above

30% amplitude and pass the lower 30%, is required.

The pentode separator, if fed with negative sync pulses, will provide positive output pulses in the following manner: The valve is biased in such a way that the picture modulation brings the operating point beyond "A" (Fig. 26) so that no variation of the anode current and anode potential takes place. However, when the sync pulses (which are negative) arrive, the operating point will be below "A" and anode current will consequently increase. Since the sync pulses are the only part of the composite signal which affects the anode current, pulses will appear in the output corresponding to the input sync pulses.

This type of separator must be R/C coupled from the VF amplifier anode and a DC restoration diode fitted. The series resistor R₁ should not be unduly large, otherwise the leading edges of the line sync pulses will be destroyed. On the other hand, if too small, inadequate picture modulation discrimination will result. The grid resistor R₂ is necessary to reduce the load on the signal grid of V₂.

Improved Circuit

A better arrangement is by using the pentode as an anode bend detector. A positive running sync pulse is required and negative output pulses are obtained. The circuit (Fig. 29) shows that the grid is not biased, the circuit being so arranged that the sync pulses cause grid current to flow, the bias being sufficient to maintain cut-off conditions when the signal reaches black level. Should the sync pulses be of sufficient amplitude (thus drawing appreciable grid current) the need for DC restoration will not arise.

With these types of separator it is necessary to keep the operating potentials low. This will ensure that the grid base is kept down to a few volts, thus

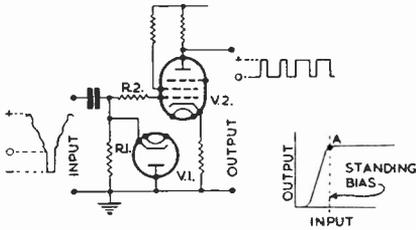


Fig. 26. Sync separator operating as a shunt-type diode separator and amplifier (V2), with DC restoration (V1). A negative going sync pulse is required, giving a positive voltage output. The operating characteristic of V2 is shown inset.

ensuring steep sided output pulses, and will reduce noise output between pulses. It is also obvious that to effect a clean separation of the picture modulation and the sync pulses the input signal must possess a DC character. Should the DC component be lost, the black, or reference, level, will not be at a constant amplitude.

Another type of separator uses a diode (Fig. 28), and there are several variations on the theme to allow either negative or positive output pulses. It is important to note, however, that unlike the pentode separators, no phase reversal takes place between input and output voltages. Probably the best arrangement is to use the diode both for sync separation and DC restoration, as shown in the diagram. The resistor R1 is tapped into the main HT line in order

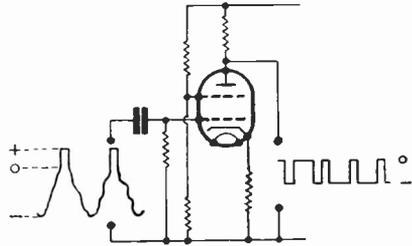


Fig. 27. Basic pentode separator circuit showing input and output voltages.

to present a small positive bias on the anode. This bias is equal in value to the 30% amplitude of the sync pulses; thus the diode only conducts during the sync pulse periods and cuts off when picture modulation is applied.

High- or Low-Level Separation

Although it is usual to feed the sync separator from the VF amplifier, it can, under certain circumstances, be fed from the demodulator output. The two methods are called high and low level separation, respectively. The choice rests largely on the signal level available, but where a VF stage is used, the sync separator is normally fed from that stage. However, if low-level separation is used, a diode valve is normally encountered. It is biased so that it conducts only on sync pulses and can be likened to AGC in reverse. Unless adequate signal is obtainable at the demodulator, there is a grave risk of the pulses being too weak to provide satisfactory synchronisation.

In the circuits discussed, we have seen how the sync pulses are separated from the picture modulation. But it still remains to isolate the frame and line pulses from each other. Extreme care is needed to ensure adequate discrimination, since interaction between the two scanning generators will cause triggering at incorrect times. Thus, if line pulses were present at the frame oscillator grid, the frame oscillator would fire at each scan or line, with disastrous results!

Another essential requirement is that the pulses must retain their shape—particularly the leading edges—to ensure accurate triggering and good interlace. The use of normal frequency filters is therefore precluded, since such networks would not give the discrimination required without introducing distortion

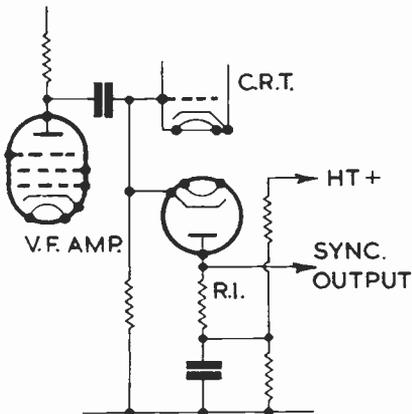


Fig. 28. Diode separator which also functions as a DC restorer.

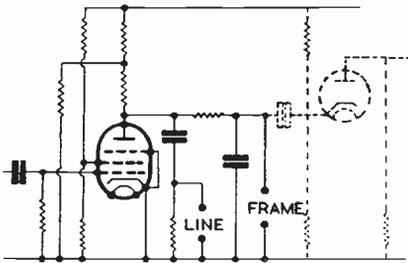


Fig. 29. Pentode separator arranged as an anode bend detector, showing application of filter network for separating the line from the frame sync. pulses. (A line suppression diode is shown dotted). The pentode requires a sync pulse in the positive sense and provides a negative output.

and admitting the high harmonic content (as in all "square waves"). Also, of course, the two frequencies are not numerically related; nor is the sequence.

Integrator Networks

In actual practice, Differentiator and Integrator networks are used, these relying more on the duration of the pulses rather than the frequency. The line pulses are taken off through a differentiator network (Fig. 30B), which is usually a simple high-pass filter comprising a resistor and condenser. The resultant output will contain practically the full line pulse component, but only

a small portion of the frame pulse owing to the high reactance of the condenser at frame frequency (50 c.p.s.). The circuit will respond to the leading edge of every pulse and then rapidly drop to zero (due to the charging and discharging of the condenser). The negative-going pulse edges charge the condenser in the opposite direction.

From the resulting output, it will be seen that the frame pulses are now simply peaked pulses of short duration, and that the filter tends to "sharpen" the line pulses and retain the vestige of the rising or leading edge.

Separation of the frame pulses is not quite so simple in practice. It is normally achieved by an integrator circuit, which (see Fig 30C) is a low pass filter arrangement. The reactance of the condenser is high at 50 c.p.s. and at line frequency (10,125 c.p.s.) it is low. The time constant of the components is much more critical than with the differentiator circuit. Owing to the long duration of the frame pulses, and the relatively short interval between them, the condenser only partially discharges, thus building up a considerable voltage across it (see sketch). The shorter duration line pulses, however, have little effect on the condenser. In this way the frame pulses will provide a sufficiently large voltage to trigger the frame generator, whereas the line pulses have no effect.

The disadvantage, inherent in the integrating circuit, is that, unlike the

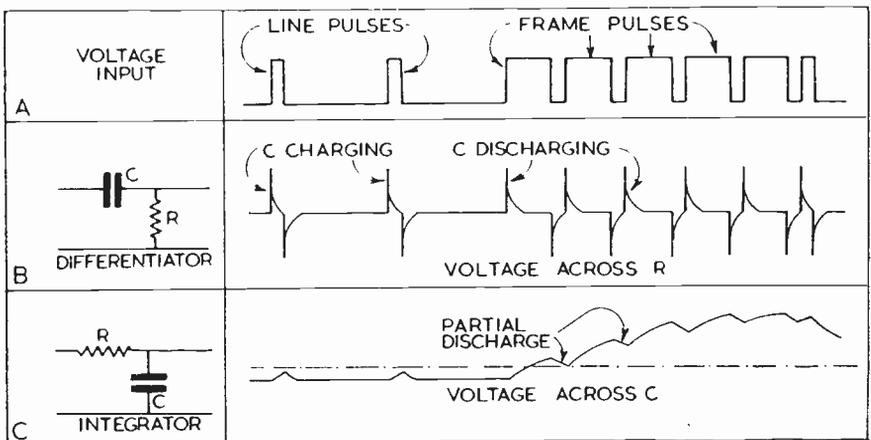


Fig. 30. (A) Combined line and frame sync pulse input to filter network. (B) Output from the differentiator network for application to the line scan generator. (C) Output from integrator network for application to the frame scan generator.

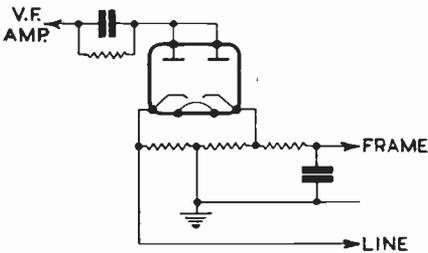


Fig. 31. Twin diode used as sync separator, with incorporated filters.

differentiator, the pulses lose their leading edge and become somewhat rounded. This means that the frame time base is liable to be more unstable than the line time base and adjustments are more critical. In commercial receivers, however, more complicated networks are used to overcome this difficulty. The circuit of Fig. 29 shows a typical arrangement of the filter network from which the respective time bases are fed.

Further Development

The whole question of sync separation is subject to considerable research by commercial undertakings, and even in the past year greatly improved

systems have been evolved. With a pentode separator, some circuits feed the line time base from the anode and the frame from the screen-grid, or suppressor grid. Others use a special transformer for feeding the frame time base, the transformer automatically discriminating against the line pulses. Another popular circuit uses a twin-diode (Fig. 31), in which the two outputs are taken from each cathode.

In some circuits a limiter stage is incorporated; sometimes it acts as separator as well. It is an RF pentode arranged with an extremely small anode potential (usually about 10 volts), thereby maintaining both the input and output at a low level. Should the specified input be exceeded, the grid current cuts off and pulse amplitudes above the rated input will have no effect on the output. Thus, pulses of constant amplitude are obtained for feeding to the time bases. It is usual to make part of the cathode bias resistance variable in order to control the limiting amplitude. (See also Fig. 30C). Diode pulse limiters are quite common and are usually inserted between the integrator and the frame scan generator, in order to ensure adequate suppression of the line pulses. The basic circuit is shown in dotted outline in Fig. 29.



extensive interconnected TV network.

There are now 103 stations operating in 60 "markets." This leaves only six stations and three new markets with construction permits outstanding. When these three cities receive TV service there will be no new markets until the F.C.C. resumes assignment of television transmitting facilities.

AMATEUR TELEVISION TRANSMISSION

On October 25 the PMG announced in the House that amateurs will be permitted to transmit television on the bands 2300 to 2450, 5650 to 5850 and 10,000 to 10,500 mc. Though this is a concession wrung from the authorities after a hard fight by the interested parties, the bands allotted have themselves yet to be developed for amateur working, apart from the problems inherent in any possible TV receiving system at such frequencies.

AMERICAN THIRTY-STATION NETWORK

Station WJLM-TV at Lansing, Michigan, has been signed as the 30th member of the National Broadcasting Company's inter-connected TV network. This station, which began operation a few weeks ago, will be on the air six days a week, Sunday to Friday, from 6 p.m. to 11 p.m. local time.

With a record increase of over a half-million television sets supplied during the month of March, total American TV receivers installed rose to 5,343,000 by April 1st. Hugh M. Beville, NBC Director of Plans and Research, considers that four-fifths of these homes receive NBC network programmes simultaneously, since the 30 NBC stations with a total of 4,235,000 sets are now connected by cable or relay, thus making up the nation's most

AMATEUR RADIO EXHIBITION

The Fourth Annual Amateur Radio Exhibition organised by the Radio Society of Great Britain will be held at the Royal Hotel, Woburn Place, London, W.C.1. during the period November 22-25. As in previous years, *The Short Wave Magazine, Ltd.*, will be there, and we look forward to meeting readers of *Short Wave Magazine* and *Short Wave Listener & Television Review* at our Stand, which will be manned by staff members throughout the period of the Exhibition. Admission is by catalogue, price 1s. at the door.

Making Tuning Scales

METHOD OF CONSTRUCTION]

Suggested by

D. SIMMONITE, Ph.C., A.R.I.C.,
M.P.S.

THE amateur is frequently confronted with the task of providing suitable tuning scales for the various pieces of equipment which he constructs and there is no doubt that the addition of a neat, easily read scale can add the last touch of refinement to any piece of apparatus as well as being convenient in use. All too often, however, it has been the writer's experience that the final appearance has been somewhat spoilt by a tuning dial that looks obviously home-made when viewed from any angle. If one only needs a simple 0-180 deg. linear scale then the commercial engraved metal ones are admirable. On the other hand, individually calibrated scales are not so easy to provide and inevitably have to be constructed.

During some recent work on the modification of the R.1155 (which involved the provision of mechanical band spread tuning) it became necessary to construct a pair of calibrated scales—one for the main tuning calibrated in degrees and five frequency bands, the other also in degrees and three frequency bands for band spreading the amateur bands in the 3.5, 7, and 14 mc region. Several types of experimental scale were tried out, including paper and matt surface aluminium ruled with black drawing ink, metal scales with painted graduations, and even engraved metal scales. All had one thing in common, namely, the home-made appearance.

Finally, a method was evolved which resulted in a neat, clear, accurate scale of semi-professional appearance and it was felt that the details might be of interest to other amateurs faced with a similar task.

Practical Solution

Briefly, the method consists of engraving the scale on the surface of opaque white Perspex sheet, afterwards filling in the marks with a suitably coloured grease

(This article will suggest to many readers the practical advantages to be derived from a knowledge of the accurate use of tools. Small lathes, of a type very suitable for the radio workshop, are nowadays readily obtainable; on a lathe of this kind much useful work can be turned out by the home constructor of radio equipment.—Editor).

pencil of the type used for marking laboratory glass-ware. Certain precautions have to be observed in the technique of carrying this out if a good accurate finish is to be obtained; prominent among these is the use of an engraving tool of suitable shape, and a specially designed cursor to ensure that the engraving is carried out in exactly the right place.

In order to illustrate the method it is proposed to describe the manufacture of the main tuning scale of a communications receiver calibrated 0-180 deg., 200-500 kc, 600-1,500 kc, 1.4-3.2 mc, 3-7.5 mc and 7.5-18 mc.

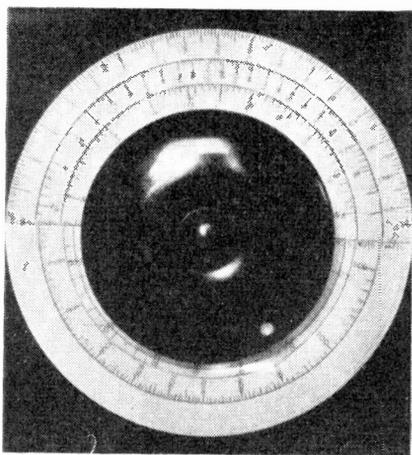
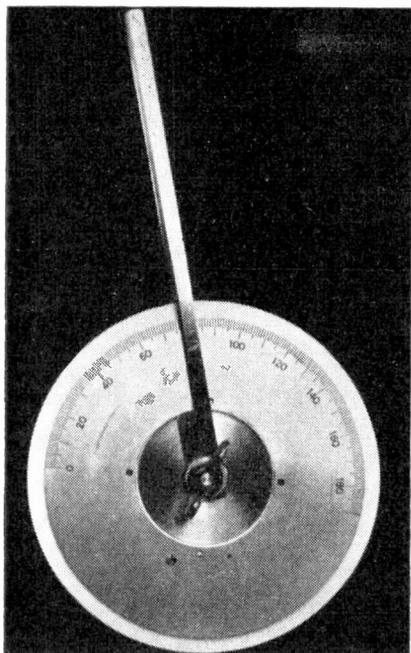
The scale was made from $\frac{3}{8}$ -in. thick opaque white Perspex sheet, the final size being 5 in. in dia. with a central hole $2\frac{1}{4}$ in. in dia., so that it could be used in conjunction with a standard 3 in. Muirhead slow motion dial.

The cutting to shape was carried out in a lathe using a thin parting tool with a steep top rake, such a method being accurate and easy. If a lathe is not obtainable, the scale could be marked out with dividers and carefully cut by means of a fretsaw, being finished off using files in the ordinary manner. This latter method yields good results if carefully carried out but has the disadvantage of being tedious.

For the benefit of readers having access to a lathe, the following details may be of interest. The Perspex was attached to the faceplate by means of a wide adhesive tape which is "sticky on both sides." Alternatively, a disc of wood can be fitted to the faceplate and the material screwed to this.

After cutting to shape the scale was engraved in the following manner: A stepped brass disc was turned up of suitable size to fit tightly the central hole of the Perspex scale and also a commercial metal scale of the Muirhead pattern engraved 0-180 deg., so that the two scales could be mounted against each other concentrically.

A double-sided marking cursor was made of 16-gauge brass sheet and attached to the brass disc by means of a central bolt fitted with a wing nut so that the cursor arms could be rotated round the



Examples of engraved dials produced by the author using the methods discussed in his article.

scale and locked in any position. The two scales were fastened together by means of an 8 BA nut and bolt so that their position with respect to each other remained constant.

A 0-180 deg. linear scale was engraved on to the Perspex surface on the extreme outer edge, using the front cursor for setting to the graduations on the standard scale and the rear cursor for engraving the lines on the Perspex. In this way the divisions of the standard scale can be transferred without loss of accuracy to the scale under construction. The length of the engraved lines is regulated by marking off along the cursor a series of graduations which can be compared with the position of the cutting tool.

The Cutting Tool

In order to make the engraving relatively easy a special type of tool is used as illustrated, so that its flat side slides accurately along the edge of the cursor and wandering is minimised. The cutting edge is sharpened to give the required width of cut.

When the engraving was finished a grease pencil of the chosen colour was rubbed over the scale at right angles to

the marks until they were well filled. The excess colour was rubbed off by means of a soft cloth, and a neat easily seen scale resulted. The numbers were engraved by hand with the same tool—but they should preferably be stamped, using small metal number punches, afterwards being filled in as before.

The scale was fitted to the receiver and a calibration graph relating the frequency of the various ranges to the linear scale was constructed, utilising a frequency meter for the purpose.

When the requisite number of points had been obtained, the scale was removed and mounted together with the adjustable cursor: the frequency scales were then engraved as before, this time using the previously engraved 0-180 deg. scale as a standard to which the cursor was set in conjunction with the calibration graph.

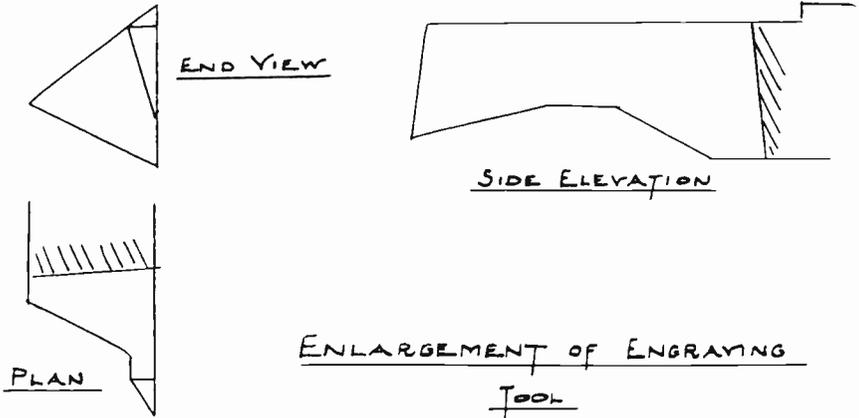
It is advantageous to use different colours for the various ranges and the scale described is finished in blue, red and black. The concentric circles on the scale were engraved by means of dividers and arc best drawn in before the appropriate scale is engraved, since they form an accurate termination for the graduation marks.

If several frequency ranges are required it is useful to arrange half of them in half of the scale, the others in the remaining half, since the space is limited and the scales would otherwise be unduly cramped. In the scale shown the 0-180 deg., 3-7.5

mc and 7.5-18 mc ranges are engraved in the top half, the 200-500 kc and 600-1,500 kc ranges being in the bottom half. The dial is used with horizontal cursors placed at "nine o'clock" to read the top half and "three o'clock" to read the bottom half and care should be taken that the numbers are placed in the correct position for reading. Transparent Perspex cursors with an engraved line filled in with red

grease pencil are used with the scales on the receiver.

The writer has made several scales of the above type for receivers, signal generators, absorption wavemeters, etc., and finds that they are strong, attractive in appearance and can be read easily and accurately, and considers that the time spent in construction gives results that are well worth while.



Sketch of the home-made engraving tool.

Daylight Filters

Discussing Lighting Effects on Cathode Ray Tubes for TV

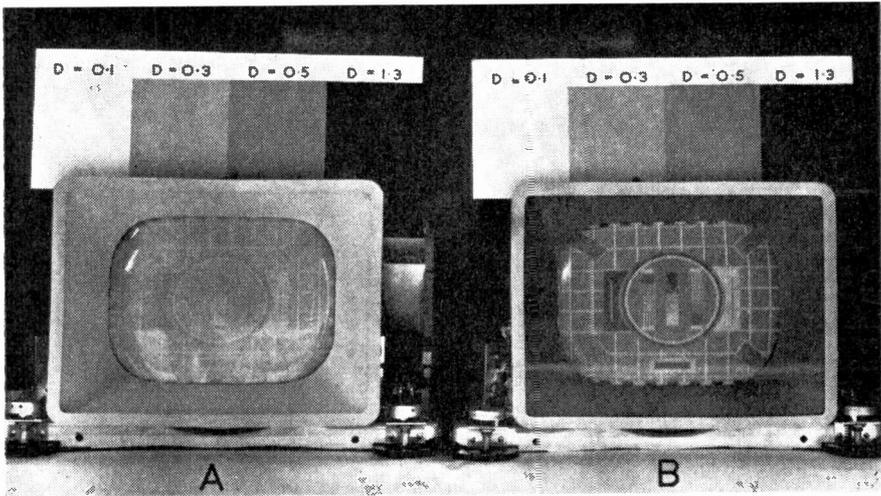
SOME enthusiasts appear to be a little sceptical concerning the current vogue of daylight filters, or, as it is sometimes rather incorrectly called, "black screen" technique. The fact of the matter is, however, that they are extremely efficient. Briefly, the basic principle is that ambient room lighting passes through the filter, is reflected off the face of the CRT and passes back through the filter again. In this way the effect of reflections, which result in a greyish picture, is reduced some four times. On the other hand, light due to the radiations of the CRT phosphors pass through the filter only once—thus, improved contrast and a reduction of interference from reflected light is obtained.

The black picture elements are, in actual fact, the unexcited sections of the

tube phosphors as appearing according to the ambient room light during viewing. If the lighting is fairly high, considerable loss of contrast is experienced, since the light reflected from the phosphors suggests a grevish colour. Removing the room lighting is not a very satisfactory answer, partly in view of the inconvenience and also due to the risk of eyestrain.

By putting on a *daylight filter* these problems are solved; actual experience shows that in many cases the switching off of room lighting makes very little difference to the apparent contrast.

These filters also reduce the effect of flicker, and certain of them are so designed as to provide adequate protection against imploding tubes. Due to the loss of light through the filter, the brilliance (and sometimes contrast) control must obviously be advanced beyond normal settings, but not necessarily to a great degree. This is due to the fact that the actual colour of the filter is not a true "straight line" neutral, the transmission curves proving that there is a considerable increase in the blue



Two identical TV receivers, A with clear tube guard and B with the new I.C.I. daylight filter. The squares behind the receivers compare the effect.

and red ranges—the average overall transmission of a neutral-tinted acrylic filter is between 50-55%. Transmission rises in the blue to around 70% and in the red to more than 80%. As the visible light from excited tube phosphors also peak in the red and blue, the filter transmits approximately 70% of the phosphor light as compared with 50% of daylight or other external lighting.

In actual fact, the comparison of transmission is not, say, 70-100% but more like 70-90%, since any type of clear glass or plastic guard (with which all sets are fitted) only transmits some 90% of light passed through it.

The photograph shows two identical sets—each adjusted for maximum picture under existing conditions—“A” having a standard clear guard and “B” fitted with a neutral tinted perspex acrylic filter manufac-

tured by I.C.I. Plastics Division. External illumination for the photograph was quite high, so that in more subdued ambient lighting even better results can be expected.

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**JOHNSONS (RADIO) N/2 - MACCLESFIELD
CHESHIRE - ENGLAND**

Have you heard?

GREETINGS once more, and it's nice to be back with you all again. This time, owing to those "circumstances beyond our control," we have two months' news to cope with. In a sense it was fortunate that September was a pretty poor month and is not worthy of much in the way of comment. October, however, has been showing a considerable brightening of the outlook, and many of the regular DX-chasers complain that the bug has bitten them as badly as ever and that they almost imagine themselves back in the palmy days of 1947.

The September SLP's were very badly supported and are now ancient history anyway, so I will not comment upon them. The October ones did not occur until after closing date, and so they will be dealt with next month, together with the November periods. After that, I hope we shall be able to proceed on an even keel once again.

DX of the Month

This has been spread over the bands fairly evenly, so readers must speak for themselves under the appropriate headings; worthy of special mention, however, is the appearance, on 14 mc phone and CW, of 3A2AB in Monaco. I have the full story on this station, which was operated by DL4FS and DL4UI as a kind of busman's holiday. The notable fact is that it was the *only* genuine station ever to operate from Monaco; the notorious CZ2AC of a year or two back was exposed as a pirate, and even the plausible 3A1A, heard by many this summer, has now turned out to be quite phoney. The station, I am told, was operated from Heidelberg and was never in Monaco at all!

So—if you heard 3A2AB, you are entitled to add Monaco to your list. If you didn't, you aren't! Another item worth noting is that several listeners who have reported HV1A have received

letters from the Vatican City radio station saying that HV1A was a pirate; some of these letters have added the rather sad news that there never has been a licensed amateur station in the Vatican City. This, I understand, is shortly to be remedied by a well-known IT, who has permission to operate portable therein.

DX on Forty Metres

I shall deal with Forty first this month, as a tribute to the staying powers of those who consistently extract interesting DX therefrom. J. L. Hall (Croydon) sends a list of Calls Heard which speaks for itself, and appeals for more concentration on the LF bands. R. S. Stott (Upminster) also put in a list, but unfortunately it arrived just after the deadline and was squeezed out. It contains countries like CE, FM8, HC, HK, HP, KL7, KV4, OA, PK4, TI, VE7, VP8, VQ2 and ZK1, which suggests, surely, that 7 mc is worth cultivating. He has heard 11 new countries on "40," bringing his total beyond the century mark for this year.

M. G. Whitaker (Yatesbury) also sent a squeezed-out list with all sorts of nice pieces. His best DX was VP8AP (South Orkneys). He adds that the following stations are known to be active on the band: FK8AI, JA2DD, JA2CT, KJ6AJ, KS4AC, UA0's in Zone 19, VK5XK (Kangaroo Island), VR2AA, VP5BF and ZK1AZ/MM.

All this nice DX is, of course, on CW—yet another reason why the "phone-only" men should get cracking!

W. J. C. Pinnell (Sidcup) found 7 mc opening up and heard KZ5, TI, VP7, VP8 and YI. D. G. Martin (Cheltenham) says the early mornings have been good for the further European stations which may be wanted for filling gaps. N. S. Beckett (Lowestoft) found the period 0700-0800 produced some interesting DX, and collected two new ones



General impression of the receiving position at G6LR, London, S.W.1. This station was described in the June 1950 issue of our "Short Wave Magazine."

with T12PZ and VP5BM. A. M. Norden (London, N.W.11) heard CT3AC, CN8BV and OH2QM on phone. K. Parvin (Thornton Heath) logged phone from FA3DS.

Just sort out the foregoing and you have to admit that the band has boundless possibilities. Those who are practised enough to read weak DX signals through the European QRM will find VK's at 1530 GMT—and not always so weak, either. I heard VK4EL one Sunday afternoon at 579. ZS3Q is another interesting CW station on the band, and he is received best at about 1830.

Eighty Metres

While we are on the LF bands, let's deal with Eighty. Most of the Forty-Followers also have a bash up there from time to time, as one might expect! J. L. Hall deserves special mention for achieving an "HAC" on 3.5 mc in just under two hours, with PY7WS, TA3FAS, FA8IH, W1AW, G3EIZ and ZL2FA—all logged between 0405 and

0603 on October 1. R. S. Stott thinks his best DX of the month was the logging of PJ5RE on 3.5 mc; he got the tip from the "Amateur Programme" (Voice of America).

N. S. Beckett struck one morning on which ZL's were coming in simultaneously on 3.5, 7 and 14 mc. 7 mc produced the best signals, with the other two bands about equal, although there was some QSB on 3.5 mc. R. Lamble (Ardingly) heard an SP, an OH and an HV for new ones on the band, although I'm afraid he can strike out the latter as a phoney.

Many other readers mention W stations on phone and CW, both late at night and nearly in the morning, but these are hardly DX any longer, although, naturally, well worth hearing and logging as a change from the "easy stuff" on 14 mc. I prophecy that the ZL's will be coming in well for the next three months between 0700 and 0830 GMT, who is going to send in the best log of ZL's on CW, and who is going to be the first to hear them on phone?

FOUR-BAND DX (STARTING JANUARY 1, 1950)

Listener	28 mc	14 mc	7 mc	3.5 mc	Total Countries	Total Score
	(1)	(2)	(3)	(4)	(5)	*
R. S. Stott (Upminster)	131	184	102	44	188	461
J. C. Beal (N. Wemhley)	120	169	85	31	174	405
W. J. C. Pinnell (Sidcup)	112	157	70	25	167	364
D. W. Waddell (Hitchin)	110	149	72	22	165	353
N. S. Beckett (Lowestoft)	80	150	82	32	154	344
P. H. Strudwick (London, N.W.11) ...	125	146	28	27	164(P)	326
D. W. Bruce (Eltham)	116	130	38	22	144	306
E. J. Logan (Hertford)	125	119	33	20	140(P)	297
R. A. Hawley (Goostrey)	98	135	44	18	149	295
M. G. Whitaker (Halifax)	97	113	58	21	143	289
L. Singletary (Bicester)	95	123	50	21	142	289
A. M. Norden (London, N.W.11) ...	119	116	24	23	134(P)	282
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, New York)	113	137	10	3	149(P)	263
J. P. Warren (W. Croydon)	93	126	19	19	137(P)	257
L. Corder (Hadleigh)	92	120	22	15	132(P)	249
T. Spencer (Slimbridge)	92	110	23	17	128(P)	242
K. M. Parry (Sandwich)	94	120	13	12	138(P)	239
L. Tombs (Swindon)	92	107	24	15	129(P)	238
E. J. Parish (Watford)	88	102	16	17	126(P)	223
J. M. Graham (Glasgow)	85	74	32	25	112(P)	216
H. M. Graham (Harefield)	70	105	24	16	120(P)	215
E. Trebilcock (Victoria, Australia) ...	7	125	77	5	137	214
R. J. Line (Birmingham)	80	77	23	15	144(P)	195
P. Bysh (London, N.10)	67	81	27	18	132	193
D. E. Tomkinson (Brighton)	60	93	19	20	112	192
B. W. Sutton (Liverpool)	40	120	15	14	127(P)	189
K. Smeeton (Barnton)	40	99	37	13	110	189
R. A. Fowler (Marlow)	59	73	28	16	106	176
E. A. Parkinson (Leeds)	69	79	16	10	96(P)	174
F. Pilkington (Colwyn Bay)	35	99	24	14	104	172
J. Cartwright (Letchworth)	56	81	14	16	98(P)	167
D. G. Martin (Cheltenham)	60	66	22	13	96(P)	161
G. Murray (Newcastle)	53	70	15	16	89(P)	154
D. K. Cocking (Farnborough)	50	78	16	9	90(P)	153
F. M. Spence (S. Shields)	10	98	21	19	99	148
F. A. Herridge (London, S.W.12) ...	33	59	38	15	76(CW)	145
A. L. Higgins (Aberkenfig)	33	74	16	17	92(P)	140
R. Lamble (Ardingly)	36	74	16	17	90(P)	133
G. Musk (Blackpool)	18	85	15	15	89(P)	133
A. O. Frearson (Birmingham)	45	54	17	11	77	127
A. R. Holland (Malvern)	29	74	10	6	86(P)	119
T. Ward (Ilminster)	20	72	11	10	83(P)	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

The DX on Twenty

And so, back to Old Faithful, which has carried the bulk of the DX, as always, and has been in all degrees of activity from "brilliant" to "blank." The trouble is to know where to start, with so many letters practically duplicating the lists of Calls Heard which accompanied them.

Let's make it plain at the start that IT is the new prefix for Sicily, but does *not* mean that it is accepted as a separate country. Maybe the "authorities" will decide about this in due course, but I'm not going to jump the gun, or be the only one out of step. K. M. Parry (Sandwich) logged IT1THW and had his QSL back in six days; he also added HS1SS, FN8AD and 3A2AB to his collection. Others heard for the first time this year were DU1AL and PK1SH—all these on phone, by the way.

J. P. Warren (W. Croydon) also collected some good phone DX, with HS1SS, DU1AP, PK1SH and 4DA, KG6's, NZ2SY, VU7AH and UG6WD. The latter must have given lots of phone listeners a new country—he has been putting in a terrific signal. J.P.W. remarks that the best time for 14 mc seems to be 1200-1600 GMT.

D. L. McLean (Yeovil) logged UG6KAA and ZD1SS (both phone) in September. In October his phone log brightened up to the extent of CR6AI, some EA6's, HZ1KE, KG6GD, VP2DC, VS7BR, ZS3M and 3A2AB. He has found conditions patchy but very good at times. W. G. Gore (Yatesbury) complains of the short skip and the relatively few bursts of real DX, but remarks that it is now opening for W's between 1800 and 2030.

J. R. Paul (Lymington) considers that the noise level has been high, and in September he found Africa the best place for good signals, although the Australians came up well towards the beginning of October. H. Froggatt (Stockport) uses a 42-ft. "V-beam" slung across the ceiling of his shack, and is very pleased with it. He has a rotary for 28 mc and is anxiously waiting for that band to get going again. (It probably has, by now).

H. M. Graham (Harefield) thought September the worst month this year (and therefore, I presume, the worst month since the war). But during the month he collected CE2CC, CP1AD, HK1DW, UA4CB, VU2JP and a couple of MI3's. Early in October he logged

DU1AL. The band has proved variable for T. G. Spencer (Slimbridge)—sometimes "quite a bit of DX" and sometimes "nothing but overmodulated 11's."

A. H. Edgar (Newcastle) heard VS1, 2 and 7 at S6/7 on CW, and says he noticed lots of European phones calling lots of Far East phones, but couldn't find the latter. M. Milne (London, E.18) found a few, including FN8AD, DU1AP, AP2N, PK1SH, KG6AD, NZ2KN. He remarks on an abundance of W4's and wonders whether it is due to his location; but I rather think that conditions have that tendency at present, the Southern and South-Eastern States being more frequently heard than the others.

D. Pool (London, S.E.23) found the most consistent stations to be CX2CO, HZ1KE and MD2AC; B. W. Sutton (Liverpool) snagged 3A2AB, CT3MB, EA6 and EA9, MP4BAO, UN1AD, ZC6UNJ and the phoney HV1A. He

CALLS HEARD

It is obviously time for another appeal to readers to study the text at the top of the first page of "Calls Heard." Many lists have had to be scrapped recently because of the utter impossibility of sending them to press without having them completely reshuffled and typed out in proper form.

The Calls Heard page gives you the information on the order in which they should be set out: numerals repeated, prefixes *not* repeated, and so on.

Here are the other simple requests we wish to make:

- 1- Write or type your lists exactly in the form in which you see them reproduced, *i.e.* across the page, not vertically.
- 2- Give your name and address immediately above the list—not at the bottom of the page or at the end of a letter.
- 3- State the type of receiver, in brackets, at the end of the list.
- 4- Somewhere away from the main list, *i.e.* above your name and address, state what band refers, and whether Phone or CW. Also any other comments, which should *never* be mixed up with the list itself.

Setting these lists is a very difficult job for the printers, and if you will accept these few simple rules you will make everything twice as easy. Also, needless to say, please write or print the calls *legibly*. Remember that the individual calls mean nothing to the man who sets them up, and if your "Y" looks like a "J", your "5" like an "S" or your "U" like a "V" it will certainly emerge as one!

The standard has been falling lately, and many lists were dropped out this month. Please let us see an improvement.



The station of G3CLM, Barking, Essex, was first licensed in August, 1947, since when it has been fitted for full power operation, with a separate Tx and modulator complete for the Top Band.

has received a card from SU1MR, removing the last doubts on that score. Three nice twenty-metre phones for P. H. Strudwick (London, N.W.11) were KN6BA, VK1RB and ZM6AA.

A. Levi (Belfast) added UG6 and HS to his phone list, and had one of those letters from HVJ saying that no authority has ever been issued for an amateur to operate from The Vatican City. He heard an extremely phoney one calling himself VK1JM, but as the S-meter showed "the usual reading for an II," he drew his own conclusions.

E. J. Logan (Hertford), who is still the "Phone Champ," put his score up to 201 with the aid of 3A2AB. He had a personal visit from PK3XE, who is returning to Java but leaving his gear in Holland until he knows what the official attitude out there will be. R. A. Hawley (Goostrey) found VS2CU an outstanding signal during September.

and was interested to hear W7LCR/MM, but couldn't get his location.

J. L. Hall has received QSL's from FP8AC and HC8GRC, and admits that without the "advance dope" which we published he would probably never have heard the former. R. S. Stott rolled in four new countries and has found 14 mc very good "just after lunch," having winkled out PK5, 6 and 7 and KN6. M. G. Whitaker was at home for the VK/ZL Contest and was surprised to hear them coming through at all times of day, with signals at S9 plus at 1600.

N. S. Beckett found the band so interesting that he was even driven to forsake his beloved 7 and 3.5 mc bands! Loggings included VK9FM and oJC. VR1C, Z10EF, ZS8MK, VP8AO and many Far Eastern representatives.

A. M. Norden, listening to phone, heard UG6KAA, EA6AF and FN8AD for new ones, as well as KG6USA, PK1SH, SU1MR, TF3MB, VS1AY and other nice ones. K. Parvin, also dealing with phone, bagged FN8AD, HS1SS and a lot more Far Eastern stations in September, adding some more good DX in October. But among those that got away were CR5AC, FO8AB, VR1B, ZK2AA and ZS7C—all on phone.

Summing up the differences of opinion about Twenty, it seems to me as simple as this: The CW listeners thought it was terrific, and the Phone-Only enthusiasts were somewhat disappointed. Am I right, or is that an over-simplification? If I *am* right, I will once more plug the idea that those who ignore CW are missing the best of everything.

Ten Metres Wakes Up

Probably by the time you read this, the band will have been wide open for a couple of weeks; at the time of writing it is opening spasmodically but is still very unreliable. J. P. Warren was glad to hear the Far East breaking through, with PK1TH, AP5A, VU2LJ as well as TI2EV and CR4AC. By the way, *all* my remarks on Ten may be taken to imply phone, because there just isn't any CW on the band nowadays. D. L. McLean's best were a ZC4, KV4AQ, MP4BAB, SVOWU/Mobile and OWZ/Mobile (both in Athens with 10-watt transmitters in their cars), ZD1's and 2's, and VS7's and 9's. The W4's were heard regularly after October 10, and one VK6 emerged, but nothing from the Pacific area.

T. Ward (Ilminster) says about the same, also mentioning TG9AD and

XE1PO. T. G. Spencer confirms that the W's have been breaking through, also mentioning VK and ZS. D. Pool found the band wide open one Sunday afternoon and logged HC1JW and HK3AP—among others. P. H. Strudwick's best were FD3RG, MP4BAB and PJ5FN.

E. J. Logan got in on an opening as early as September 9, on which day he heard all U.S. call areas, but says the best day up to the time of writing was October 22, with four VK6's, Far East, Africa, North and South America all coming in. R. S. Stott added three to his total, with ZS3, CR6 and EI.

R. A. Hawley considered his most interesting logging was the SV Mobile (ØWU). He is the Chief Medical Officer at the American Embassy in Athens, and he was working a G station from his car, all the way from the Embassy to his home in the mountains ten miles out. W. J. C. Pinnell heard FD3RG for a new country, but has not been too pleased with the band on the whole.

Best for A. M. Norden were FD3RG, PK1TH, VU and VS7, VP5AY, KV4AQ, MP4BAB and CE6AB. He also remarks on the large number of TI, KZ5 and HP stations on the band. K. Parvin logged HK4DF, MP4BAB, ON3BI, TG9AI, VS9AI, NZ2EM and TA1AT (regarded with some suspicion!)

J. W. Cave (Parkstone) sends another of his families of graphs showing band-conditions from the end of July until October 23. Briefly summarised, it shows a steady improvement in signal-strength from Asia and Africa; a fairly steady condition for Central and South America; one single opening for Oceania; and about eight separate openings for North America. But he says that after comparing the average strengths, even on the good days, with those for September and October, 1949, there is no doubt that the band is declining.

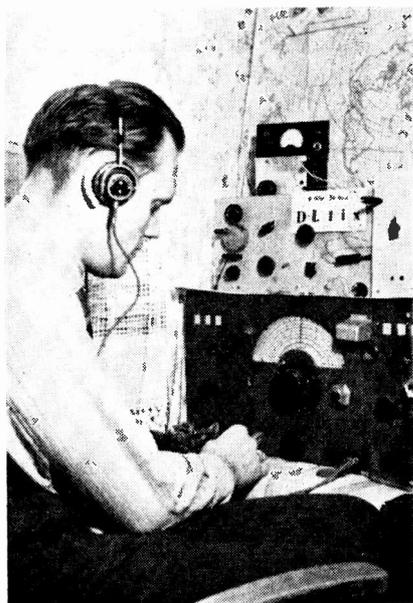
All that remains is to see what November brings forth. No doubt the openings will be more frequent, but don't expect anything marvellous on Ten until 1954!

Top Band Topics

Now that the DX bands have become tolerable again, the Top Band has suffered, judging by the scarcity of correspondence on the subject. During September F. A. Herridge (London, S.W.12) heard Dumbarton, Shropshire, Isle of Man and Jersey for new "scorers," but he regards his best catch

as G2FL in Bristol, using 0.15 watts of phone. DX included DL2HK and 2QM, plus GW's, GM's, GC and GD. In October F.A.H. added Angus, Cornwall and Stirling and raises the eternal query about Berwick-on-Tweed. Berwick is a Scottish county, but Berwick-on-Tweed is an English town, and the amateurs therein should not be using the GM prefix. F.A.H. also reports that G2BMU, who was in Westmorland, is now giving his QTH as Lancs.

R. Iball heard a station describing itself as "Royal Sovereign," and wonders what manner of thing that could be. It was, of course, the *Royal Sovereign* Lightship, off Eastbourne, one of a large number of light vessels which operate on about 1860 kc. R. Lambie and others often query the counting of countries on the Top Band. The quick reply is that GC, GD, GM and so on *are* all separate countries on this band (or any other) and that the islands of Jersey, Guernsey, Isle of Man and so on also count as separate *counties*. We shall have to start a County Marathon on this band again to liven up the



DL1IX, Husum, 25 miles south of the OZ boundary. He runs a 10-watt ECO-FD-PA job and on CW has more than 50C confirmed, operating on Eighty and Twenty. He has been on the air under various calls since 1932, and all contacts are QSL'd with a hand-printed card.

interest. Very often, though, the business of definitely identifying stations is difficult; they don't always announce and you may not have the latest Call Book.

Miscellany

Now for the collection of Bits and Pieces; answers to queries; further queries; general "binds"; criticisms; and flat contradictions. Let 'em all come, and your Scribe will try to iron them out, as long as his eyesight lasts.

Interesting tit-bits from K. Parvin: AC3SQ is said to be on 14 mc phone. HF end; FB8ZZ was on New Amsterdam Island, not so far listed as a separate country; VE1BV/8 is on Resolution Island, Zone 2; UA1BQ is on Dickson Island, Zone 18; FP8AF is genuine; SV1TW is reported to be on Crete; and AP5B/YA operated for two days only—April 1 and March 31. (And let me add that this was the *only* authenticated operation ever from YA, so if any of you are still counting those

YA2B and YA3B affairs, delete them).

Incidentally, as you will see elsewhere, K. Parvin's masterly analysis of Russians and their Zones, in last month's issue, was practically wrecked by an unfortunate error which lumped together Zones 18 and 19. You will find the correction this month, if you didn't deduce it for yourself, which was really quite easy.

From N. S. Beckett: HY7L and IY2B have been heard. Are these also Hungarians? From W. J. C. Pinnell: What on earth is CU7AL, heard on 14 mc CW? And from M. G. Whitaker: What about UW3DY, on 7 mc CW? He also asks whether the separate VP8 countries all count. They certainly do: Falklands, South Orkneys, South Shetlands, South Georgia and Graham Land.

One or two queries answered: Italians *have* been heard on 3.5 mc, both phone and CW; PA0's are not genuine if heard on the Top Band; ITR's are in Sicily, but not yet a separate country;

**"ZONES HEARD" LISTING
(POST-WAR)**

Listener	Zones	Countries	Listener	Zones	Countries
PHONE and CW			PHONE ONLY		
M. E. Bazley (Kidderminster) ...	40	229	D. L. McLean (Yeovil) ...	37	177
A. H. Edgar (Newcastle) ...	40	219	O. A. Good (Oswestry) ...	37	173
E. Trebilcock (Victoria Aust.) ...	40	216	P. H. Strudwick (London, N.W.11) ...	37	164
D. W. Bruce (Eltham) ...	40	213	J. P. Warren (W. Croydon) ...	37	155
O. A. Good (Oswestry) ...	40	212	J. C. Beal (N. Wembley) ...	37	154
R. S. Stott (U'pminster) ...	40	211	J. M. Graham (Glasgow) ...	37	154
R. A. Hawley (Goostrey) ...	40	199	G. Moses (Crewe) ...	37	149
W. J. C. Pinnell (Sidcup) ...	40	194	K. M. Parry (Sandwich) ...	37	149
D. W. Waddell (Hitchin) ...	40	191	R. J. Line (Birmingham) ...	37	144
J. C. Beal (N. Wembley) ...	40	187	A.M. Norden (London N.W.11) ...	37	152
A. W. G. Boulton (Norwich) ...	40	184	E. J. Parish (Watford) ...	36	163
M. Shortland (Sunderland) ...	40	172	D. G. Martin (Cheltenham) ...	36	149
B. Davies (Beckenham) ...	40	166	C. S. Pollington (Chichester) ...	36	149
R. A. Fowler (Marlow) ...	40	162	R. A. Fowler (Marlow) ...	36	141
N. S. Beckett (Loweoft) ...	39	184	T. E. Botham (Walsall) ...	36	139
R. G. Goulding (Wrexham) ...	39	148	B. W. Sutton (Liverpool) ...	36	128
L. Singletary (Bicester) ...	38	177	L. B. Bailey (Stockton) ...	36	125
F. A. Herridge (London, S.W.12) ...	37	156	S. Mann (Long Island, N.Y.) ...	35	163
K. Smeeton (Barnton) ...	37	156	H. M. Graham (Harefield) ...	35	144
G. H. Coulter (Dover) ...	36	138	A. L. Higgins (Abercreeff) ...	35	137
W. Neal (Birmingham) ...	36	131	P. Bysh (London N.10) ...	35	132
C. J. Goddard (Coventry) ...	35	123	H. F. Webster (Darlington) ...	35	129
PHONE ONLY			A. R. Holland (Malvern) ...	34	122
E. J. Logan (Hertford) ...	40	201	C. J. Goddard (Coventry) ...	34	112
D. W. Bruce (Eltham) ...	39	187	A. O. Frearson (Birmingham) ...	34	112
K. Parvin (Thornton Heath) ...	39	167	D. K. Cocking (Farnborough) ...	34	110
R. G. Poppi (Beckenham) ...	39	167	W. C. Askew (Melfon Mowbray) ...	33	122
R. A. Hawley (Goostrey) ...	38	186	D. C. Stace (New Zealand) ...	33	116
A. Bannister (Manchester) ...	38	174	G. Musk (Blackpool) ...	33	103
D. Kendall (Potters Bar) ...	38	170	B. L. Stedman (Hawkhurst) ...	32	90
L. Tombs (Swindon) ...	38	155	R. Lamble (Ardingly) ...	32	106
M. G. Whitaker (Halifax) ...	38	151	G. Murray (Newcastle) ...	32	82
D. Vincent (Beckenham) ...	38	140	O. R. F. Mason (Prittlewell) ...	32	82



G5PQ, Hull, has the outfit in the kitchenette of his aluminium prefab, the gear occupying only 5-ft. by 2-ft. 6ins. of precious space. Of particular interest is the fact that he uses a ground plane aerial, as no poles are allowed. The score is 90 countries worked, using the full 150 watts into an 808 in the output stage.

G5PAA and the other G5's are in the Saar—likewise not yet a separate country.

From Overseas

D. C. Stace (Spring Creek, New Zealand) says that VK6MR is now in the Admiralty Islands, and that he hears a rumour that the Islands may be separated from New Guinea for scoring purposes. KZ5AU and VR1D were new countries for him. M. J. D. Wills (Gibraltar) had a shot at the 7 mc SLP, but the result was disappointing, nothing but W's being heard. He finds conditions there in ZB2 much poorer than in the U.K. and says one has to depend on America, West Africa and Australia for DX, as Eastern signals are rarely found. When he has occasionally heard them, he suspects them of coming from the West. Recent listening brought him VP8AI and 8AO, VE8SM, KR6CF and VP3TF—all on 14 mc.

General News

J. S. Davies (1127 Hazelwood Lane, London, N.13) writes: "If anyone has heard W1MAA on any band since the war ended, will they please communicate with me at the above address by letter or p.c." (I scent a mystery here!)

W. Neal (Birmingham) queries the "goodness" of CR8AJ, FP8AB and VQ8AU—can anyone help? Also he wants the Zones of UA9CR and 9DP; both, I imagine, in Zone 17.

A. T. Cheesley (Darlington) returns to the fold after a longish absence. He bought himself a new receiver and managed to score 30Z and 95C off it in the first fifteen days, so he is feeling fairly happy about things. During a DX opening on 14 mc he heard a "ZC3AA" at 80 plus, and not a soul replied; he wonders whether anyone else *did* hear this type?

H. J. Hill (Whitley Bay) says "The higher the frequency, the less there is to hear," so he has been pretty active on the Top Band and hasn't bothered with 28 mc at all! He has been surprised by the strength of the signals from London and from Wales on the Top Band. He is a bit apprehensive about what will happen if all the normal 28, 14 and 7 mc boys start crowding themselves into 3.5 mc and the Top Band. Don't worry, H.J.H., they won't! There's plenty of DX on the higher frequencies still, and many people used to working it have no experience of the LF bands at all, nor have they any desire to acquire it.

W. Giles (Upwell) sympathises with D. K. Cocking about BBC break-through on the 28 mc band. He experiences the same and finds that it builds up as the evening wears on. Unless these things are harmonics of short-wave broadcast stations, I have no idea about their cause—it seems like a receiver fault to me.

D. K. Cocking (Farnborough) after resigning himself to a QRT for the winter, now finds that he can keep on the air. He mentions the recent ro-metre openings, but found nothing special on the other bands.

The new printing arrangements mean that we shall occasionally be a little short of time between the publication of one issue and the deadline for the next. In some cases this will mean that your listening will only cover the first three weeks of the month. Please watch the dates carefully and time your letters and Calls Heard lists accordingly.

IMPORTANCE OF THE AERIAL

At the National Radio Exhibition, the GPO had an interesting exhibit designed to illustrate the importance of providing a good aerial. Its inspiration was the fact that last year the Engineering Department dealt with 94,272 complaints of TV/BC interference. Of these, no less than 15,000 were explainable by the fact that poor aerials were in use with the receivers affected by the interference.

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The steady increase in the membership of our British Short Wave League is a sure sign that SWL's generally recognise not only the value of the work the BSWL is doing for them, but also the advantages of membership. One of these is the *BSWL Review*, incorporated with the *Short Wave Listener & Television Review*, the subscription thus covering the combined journal of 52 pages, free to all League members.

For Further Information and Form of Application write:

The Manager,
British Short Wave League,
53 Victoria Street,
London, S.W.1.

Set Listening Periods

November 25, 2230-2330 GMT—7 mc CW.

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

Deadline for the December issue is **first post on November 28**—immediately after the SLP's. So please write up your Calls Heard lists in good time and make sure of catching the post! And for the issue dated February, it must be December 22, to allow for the Christmas break and the early appearance in January; this date is within a day of the publication of the January issue, so we are giving early notice!

Address everything to DX Scribe, *Short Wave Listener & Television Review*, 53 Victoria Street, London, S.W.1. And please read the instructions in the "box" about Calls Heard. So, for now, 73, Good Hunting, and may conditions improve still more.

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PHONE: CN8EJ, FA8BE, 8BG, MD2AC, 2PJ, MT2E, ZD2JHP, 3V8BD. (Rx: S.640).

H. M. Graham, 28 Park Lane, Harefield, Middx.
PHONE: FA8BE, 9KZ, MD2AC, MT2E, SP5AB, UG6WB, 3V8BD. (Rx: 1-F-1.)

7 mc

Sept. 30, 2230-2330 GMT

M. G. Whitaker, R.A.F., Yatesbury, Wilts.
FA8RJ, I1BCB (Trieste), SPIJF, U5BHV, UR2AM, W1BIL, 1B0R, 4B0D, YU2YEB. (Rx: Army 18.)

M. J. D. Wills, 3 South Barrack Road, Gibraltar.
W2BIV, 2DLQ, 21JX, 2KUS, 3JO, 4B0D. (Rx: AR77.)

N. S. Beckett, 194 Waveney Drive, Lowestoft.
I1BCB (Trieste), PY2APG, W1BIL, 21JU, 2VFD, 4AKC, 4B0D, 6SQB/3. (Rx: Hambander.)

W. J. C. Pinnell, 40 Melville Road, Sidcup, Kent.
UA9KCC, VP7NQ, W1BIL, 21JU, 3MCA, 4B0D, 4H1V, 4QN, Y13ECU. (Rx: F55R.)

GENERAL

1.7 mc

W. S. Kyle, 40 Albany Road, Leighton Buzzard, Beds.
PHONE: G2ACV, 2AQH, 2BS1, 2DPO, 2DT, 2DTD, 2FFG, 2FTS, 2HK, 2KG, 2PX, 2YS, 3ADK, 3ASD, 3B0C, 3BMD, 3EHD, 3ELV, 3ERN, 3ERV, 3EVA, 3FEW, 3FJE, 3PV, 4NT/P, 4QB, 5AU, 5HB, 5LO, 5RZ, 6DV, 6KJ, 6LB, 6LI, 6NB, 6MB, 6PF, 6UT, 8DU, 8MX, 8PX, GW2BG, 2XZ, 5VX, 8BW, GM3DZB. (Rx: Trophy 8.)

F. A. Herridge, 95 Ramsden Road, Balham, London, S.W.12.
PHONE: GD3FOC, 3TB,

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 call sign; (c) call signs in alphabetical order. For example—
VK2GW, 3CP, 4UL, VP1AA, 6CDY, VQ3HJP, 4EJT, W6ENV, 7VY. Please underline each prefix, keep each list to one band, and, in short, make your lists exactly like those below, except that the more space you leave, the better.

GM3DZB, GW2BUF, 2XZ, 3DOF, 3EPM, 5VX, 8BW.
CW: DL2DV, 2QM, GC2FMV, G3FJA, 3GQA, 3KN, 6YV, 8GK, GM3AHQ, 3EHI, 3EQY, 3OM, 6RL, 8FM, 8MJ, GW3ALV, 3EFZ, 3FWY, 3GWA. (Rx: Modified R.103A.)

G. Ayton, 76 St. Bernards Road, Stockton-on-Tees.
PHONE: G2AWH, 2AQH, 2CZO, 2FTS, 2K0, 2VO, 3ART, 3BRW, 3ERN, 3FEW, 5KM, 5XM, 6DV, 6NB, 6PF, 6ZT, GM3DZB, GW2AXT, 2BG. (Rx: S.640.)

A. O. Frearson, 66 Wheelwright Road, Erdington, Birmingham, 24.
PHONE: G2FLK, 2HIW, 2PD, 3AFT, 3EHB, 3EJO, 3EKT, 3TP.
CW: G2KO/A, 3GNO, 3GVK, 3GVS, 6QC, GM8FM. (Rx: S1640)

T. E. Botham, 4 Victoria Terrace, Walsall, Staffs.
PHONE: G2ACV, 2AWH, 2BON, 2CVV, 2FDT, 2FTS, 2MU, 3ART, 3DEW, 3DGY, 3DJD, 3EJO, 3FEW, 3FGT, 3FRN, 3ZY, 4CO, 4LS, 4MI, 5BS, 6BV, 6PF, GM3DZB, GW2BG, 3ZV. (Rx: 5 Valve S.H.)

S. Smith, 40 Stoneleigh Road, Kenilworth, Warks.
PHONE: G2ACV, 2AQV, 2B6N, 2MU, 2YS, 3ACJ, 3ACR, 3CWP, 3DGH, 3EGS, 3EQL, 3PO, 3TP, 6XA, 8SR. (Rx: R.1084.)

3.5 mc

T. G. Spencer, Cherry Tree Cottage, Slimbridge, Glos.
W1EIX, 1ODC, 3ATP, 3CIV, 3RKK, 4NRO, 4QF. (Rx: Commander.)

N. S. Beckett, 194 Waveney Drive, Lowestoft.
CW: FA8BG, PY4AHG, VE4CB, W8CSG, ZL1HY, 3GU. (Rx: Hambander.)

J. L. Hall, 2 Coombe Court, St. Peter's Road, Croydon.
CW: CT2BR, FA8BG, 8IH, KP4HU, 4KD, 4MD, KZ5DE, LU3EL, PJ5RE, PY7WS, TA3FAS, VP9UU, W2ONX/MM (off Labrador), ZL1BY, 1GG, 2FA, 3GQ, 3IA, 3JT, 3NE, 3OX, 4BO, 4GV, 4IE, 4JA.

7 mc

M. G. Whitaker, R.A.F., Yatesbury, Wilts.
CW: HA4SA, KP4DU, 4KD, UA3KWA, 4NA, 6SC, UQ2AK, UR2AM, UO5KAA, VE1GU, VP8AP (S. Orkneys), Y55AM, ZL2OI, 9S4AR. (Rx: Army 18.)

N. S. Beckett, 194 Waveney Drive, Lowestoft, Suffolk.
CW: CM8CM, CO2BZ, EA8BE, HK4DP, KP4MD, KZ5AN, LU9CK, PY5FF, 7WS, TA1RB, TI2PZ, VK3DO, VP5BM, YV6AO, ZL1GQ, 2AC, 2FA, 3JD, 3LL, 4HI, ZS5LJ. (Rx: Hambander.)

W. J. C. Pinnell, 40 Melville Road, Sidcup, Kent.
PHONE: CO2AW, EA6AT, FA9WU, PY4AA.
CW: CE4AD, 6BW, CO8FH, CX6BT, EA9AP, HC2IH, KP4KD, KZ5ES, LU9CK, PV4ACF, TA1AT, TI2PZ, UA9KCC, VE3QU, VP7NQ, 8AP, WBOEQ, Y13ECU, ZB1BE, ZL3JD, 4BQ. (Rx: F55R.)

J. L. Hall, 2 Coombe Court, St. Peter's Road, Croydon.
PHONE: CT2BR, HK5BY, 5FG, TI2TY, 6MPA, XE3AS, YV1AJ, 1BE, 4AA, 4AI, YS1ES.
CW: AP5B, CE3KN, 7AA, CX1AX, HC2IH, HK4DP, KL7YT, KV4AU, TI2PZ, UL7KAB, UN1AE, VK2AHA, 2AX, 2DG, 2GS, 3AZW, 3DQ, 4AP, 4TY, 5FH, 6DJ, VP1NW, 7NQ, 8AJ, 8AK, 8AO, 8AP, 9ZZ, XE1VA, ZD4AB, ZS5L/MM.

C. J. Rourke, 130 Ravenhill Avenue, Belfast, N.I.

PHONE : CO8MP, DU1AL, EA8BA, H18WF, HP1WE, LU5CZ, PK1SH, UG6UD, VK3LN, VP9VU, VS2CU, VQ4RF, ZS2SY, ZB1BB, ZD1SW, 4AC, 3V8BB, 4X4BL. (Rx: Ferguson 461.)

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

PHONE : AR8BS, CO7RQ, HC2JR, HK1EE, 3BH, HZ1AB, 1KE, KG6AD, KP4BI, 4HN, PY8GL, SU1MR, TI2KW, VP4LL, 4TH, 6FO, VS2BS, 7BR, VU2JP, ZL3MH, 4AW, ZS2CL. (Rx: 5 Valve S.H.)

P. H. Strudwick, 159 Hampstead Way, London, N.W.11.

PHONE : AP2N, CR6AI, DU1AL, EA9AI, FN8AD, HV1A, HZ1KE, IT1CN, K6GAD, 6U5A, KX6BA, PK1SH, 4KS, SU1MR, UN1AB, VK1RB, VS1AY, 2BS, 2CU, 6AD, XZ2KN, ZM6AA. (Rx: Modified S.640.)

28 mc

K. Parvin, 98 Winterbourne Road, Thornton Heath, Surrey.

PHONE : CE2CC, 3AE, 3AG, 3CZ, 3DW, 6AM, GR4AC, KP4MG, KV4AL/W4, M13SC, 3XX, OQ5EB, 5LL, TA3GVU, TI2BR, 2TG, VP6JC, VQ2WP, 4N, 4ERR, ZD1SW, 2JHP, 4AH, ZE2KH. (Rx: S.640.)

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

PHONE : AP5A, EQ3FM, HC1JW, KP4HZ, MP4BAB, OX3BD, PK1TH, 4DA, TI2EV, VS6AT, 7PW, 9AH, VU2LJ, W6WV, XE1PY, YS2SP, ZD1BD, 2JHP, 4AD, ZS1T. (Rx: 0-1-1.)

T. G. Spencer, Cherry Tree Cottage, Slimbridge, Glos.

AR8AB, KP4MG, LU8DB, PY2RU, VK6JW, 6KW, 6RU,

VQ2WP, 4RF, ZS6JE. (Rx: Commander.)

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

CE2CC, 3AE, LU3BAC, 6BK, OQ5AB, PY2CK, 5DL, ZD1SW, ZE2KH, ZS2KE, 9F. (Rx: S.640)

D. Pool, 8a Ebsworth Street, London, S.E.23.

PHONE : CR4AC, CX4CF, HC1JW, HK3AP, ST2AR, TA3GVU, VQ4RF, VS9AA, ZE2KH, 3JJ, ZS1FG, 5GU. (Rx: Sky Champion.)

A. Levi, 33 Old Cavehill Road, Belfast, N. Ireland.

PHONE : AP5A, AR8AB, MD2AC, MP4BAB, MT2E, OQ5BA, 5BR, 5LL, PK3SP, TA3GVU, VK6KU, 6WU, VU2BF, ZE1JE, ZS1T, 6JA. (Rx: S.504.)

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

PHONE : AR8AB, FD3RG, FF8AH, 8PG, HK4AM, TI2BR, 2TG, VQ2DT, 2WP, 4ERR, ZD1SW, 2JHP, ZE2JE, 2KH, 3JT, ZS1B, 1BV, 1CL, 1DM, 1EZ, 1FC, 1FG, 1HY, 1P, 1T, 6UR, 6WW, (September), AR8AB, IINMC/ZC4, KV4AQ, KZ5LR, 5WJ, MP4BAB, OX3BD, TI2EV, 2SA, 2TG, VK6NL, VP8SD, 9F, VQ2WP, 4RF, VS7PS, 7PW, 9AA, 9AH, W7MAL ZC6UNJ, ZD1BD, 1SW, 2JHP, 4AX, (October). (Rx: SX28 and AR88LF.)

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

PHONE : AR8AB, CX2CO, LU3AX, M13SC, MP4BAB, MT2E, VQ2JO, 4RF, ZS6IG, 6JL, 4X4BB. (Rx: S.640.)

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

PHONE : HC1JW, KZ5CD, MD2MD, M13SC, MT2E, TA3GVU, VQ2WP, 4BM, 4RF. (Rx: S.640.)

R. D. Downs, Yapham, Pocklington, Yorks.

PHONE : CX7BA, HK1DX, 4DF, LU3BAC, 4DD, 4DJ, 9CI, OQ5AB, 5AO, 5CF, 5NK, PY1FA, 2A1P, VQ2HW, 4AC, ZE1JX, 2JE, 2KH, 3JT, ZS1FG, 1JD, 1P, 6JM, 6NE, 6SG. (Rx: KF24 into 3-valve superhet.)

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

PHONE : EA8AX, KP4HF, 4MG, LU4DJ, MD2MD, OQ5AO, 5BR, PY4ANT, 5AQ, VQ2DR, 2HW, 4ERR, 4RJG, ZD21HP, 4AN, ZE2JE, 3JT, ZS1EZ, 1P, 6BW, 6IR, 6TE, 6VN, 6XT, (September), KP4MP, MD2MD, M13GH, MP4BAB, SV0WU (Mobile), PK3SP, TI2TG, VQ4JG, VS9AH, VU2DR, W2DQ/MM, ZB1AJX, ZC6UNJ, ZD1SW, 2JHP, ZE2JE, 2RI, 3JN, 3JT, ZS1JD, 1P, 4DF, 6ER, 6IR, 6OY, (October). (Rx: AR-88 and S.504.)

E. J. Logan, "Linten Cottage," Fanshawe Street, Bengoe, Hertford.

PHONE : AR8AB, CE2CC, CR7V, CX4CV, EA8AX, HK4DF, LU3BR, 4DJ, OQ5LL, PY5DI, TI2TG, VP6J, VQ2DR, 2JO, 4RF, ZE3J, 3JT, 3SY, ZD1SW, 2JHP, 4AN, ZS3O, 3G, 9F, (September), AR8AB, AP5A, CE3CZ, CR7V, HC1JW, KR6BV, LUSCW, M13SC, MP4BAB, OQ5DZ, PK3SP, PY6AG, TI2SA, VK6WU, VU2BF, ZD1BD, 2JHP, 4AN, ZE3JP, ZS3D, (October). (Rx: BC-342-J/KFV.32.)

P. H. Strudwick, 159, Hampstead Way, London, N.W.11.

PHONE : FD3RG, FF8AH, 8PG, HC1RZ, ISA, HK3CK, KP4HF, KZ5BC, 5CD, 5PB, 5UB, MP4BAB, PJ5FN, VP6FR, 6JC, ZD2JHP, 4AH, 4AN, ZE1JS, 2CW, 2JE, 2KH, 2K1, 3JJ, ZS3D, 3O. (Rx: EF54 Precamp-S.640.)

USEFUL HANDBOOK

Though American in its treatment and outlook, the *Radio Amateur Newcomer* can be recommended to those who require a manual dealing generally with the problems that beset the beginner in Amateur Radio. In 156 pages under 12 chapter headings, there is a great deal which is common ground on both sides of the Atlantic. The treatment is practical and straightforward, with plenty of illustration. A few copies are available at 8s. 4d. post free of Gage & Pollard, Publishers' Agents, 49 Victoria Street, London, S.W.1., who also operate a sterling subscription service for those readers wishing to obtain American radio or technical periodicals.



HIGH-GAIN TV AERIALS

Some of the more knowledgeable and intelligent set dealers in the fringe areas are beginning to

realise how much reception can be improved by the design and installation of a high-gain aerial system. Since a TV receiver, like any other radio receiver, depends for its proper functioning on the signal level at the input end, there obviously is scope for receiving aerial arrays capable of giving greater gain than the standard "H" — but it calls for some nice design work involving the related problems of gain, band-width, height and feeder loss.



USEFUL BOOKLET

A little manual well worth having is *Making the Most of Your Receiver*, which gives a lot of useful practical information on such matters as aerials for short wave reception, general purpose aerials, aerials on board ship, use of an earth, reducing interference and care of batteries. It is published by Messrs. Stratton & Co., Eddystone Works, West Heath, Birmingham, 31, price 1s.



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.

- CE3CU** P.O. Box 3071, Santiago, Chile. 14146, 28256, 28292 and 28324 kc phone, also 14030 and 28060 kc CW, 2300-2359 GMT. Stability, and details of modulation.
- CO2BM** Villanueva 254, Luyano, Habana, Cuba. 7, 14 and 28 mc phone and CW.
- CO2VV** Ave. Europa 51, Alt. de Miramar, Marianao, Habana, Cuba. 14318 kc phone, 2200-2359 GMT.
- CR6AJ** Adelino dos Santos, C.F.B., Nova Lisboa, Angola. Reports on 14080, 14125, 14200 and 14300 kc transmissions, 1800-2359 GMT.
- DL1QT** Elbestr. 22, Hanover, Germany. 3.5 mc phone at 0600 GMT; and 28 mc phone at 2100 GMT. Details of modulation.
- DL3CA** Orleansstr. 76, Hildesheim, Germany. 3.5 mc phone, 0630-0800 and 2200-0200 GMT. Details of modulation quality and Wx.
- DL3ZS** F. Kainz, Traunstein, Oberhaid, Oberbayern, Germany. 3.5 and 28 mc phone, weekends. Critical reports on modulation quality.
- DL4PC** Sgt. J. Prazzo, 7032 Comm. Sqdn., A.P.O. 61, c/o P.M., N.Y.C., U.S.A. 14 and 28 mc phone, 1700-2300 GMT and weekends.
- DL4QD** Cpt. J. Simmons, H.Q. Co. 759 M.P. Sv. Bn. A.P.O. 472, c/o P.M., N.Y.C., U.S.A. 3.5, 7, 14 and 28 mc phone and CW, 1900-2200 GMT. Check for 400 cycle note, direction of signal, and harmonics on 64.4 mc.
- DL4WL** Wilhelmstr. 14, Wiesbaden, Germany. 14 and 28 mc phone, 1900-2359 GMT.
- DL6EE** Heddesdorferstr. 25, Neuwied, Germany. Reports on 3.5, 7, 14 and 28 mc CW and phone, 1700-2300 GMT.
- DL7CI** Salzburger Str. 3, Berlin-Schoeneberg, Germany. 7 mc CW, 7 and 28 mc phone. Wx.
- DL7DA** Millemulder Str. 33, Berlin SW. 29, Germany. 14 and 28 mc phone and CW, 1800-2300 GMT.
- EA2CB** San Juan 13, San Sebastian, Spain. 14 mc phone, 1200-1400 and 1800-2100 GMT.
- EA2CO** Francisco Solores, Villa Ascension, Calzada de Egua, San Sebastian, Spain. 14050 and 28100 kc phone and CW, 0800-0845 GMT.
- EA3FU** Padre Laurador, 72, Terrasa, Barcelona, Spain. 7 and 14 mc phone and CW, 2100-0200 GMT. Details of modulation.
- EA3GG** Carmen 30, Badalona, Spain. 14 mc phone and CW, 2200-0100 GMT. Details of modulation.
- EA4CX** } Serrana 81, Madrid, Spain. 14 mc
EA5DQ } phone, 1200-1315 and 1700-2000 GMT.
- EA5CY** Isabel la Catolica 16, Mislata, Valencia, Spain. 7, 14 and 28 mc phone, 2100-2359 GMT.
- EA8BD** Luciano Perez Medina, Cj. Bravo Murillo 35, Las Palmas, Canary Islands. 14 mc CW and phone, 1300-1600 and 2230-0400 GMT.
- GW2BCH** Fron Heulog, Bryn Derw Road, Llandudno Junction, N. Wales. 3.5, 7 and 14 mc CW.
- G2BSA** Lamana Hanofofor, Loe, Cornwall. VFO-controlled 3.5, 7, 14 and 28 mc phone.
- GW2BUF** 23 Powell Street, Abertillery, Mon. Operating all bands, phone and CW.
- G3CYY** 6 Broadway West, Gosforth, Newcastle-on-Tyne. 3, 144.324 and 144.345 mc phone and CW.
- G3GCK** 4 Westwood Street, Peterborough, Northants. 3.5, and 7 mc CW, 1900-2030 and 2300-0030 GMT.
- GM3GLM** 110 Airbles Road, Motherwell, Lanarks. 7021, 7050, 7060, 14042 and 14120 kc CW, 0900-1400 and 1500-1800 GMT.
- GM3GUC** 262 Colinton Road, Edinburgh. 11, 1.7, 3.5, 7 and 14 mc CW. Reports over 250 miles.
- G3HRC** 8 Beech Court, Kingsground, Eltham, S.E. 9. Reports on 1.7, 3.5, 7 and 14 mc CW.
- HC1RK** P.O. Box 2181, Quito, Ecuador. 14157 and 14201 kc phone, 0030-0900 GMT.
- H1BMN** Via Garibaldi 37, Torino, Italy. 7, 14 and 28 mc CW, 0700-0800, 1300-1400 and 0001-0200 GMT.
- IIEJ** A. Galcezzi, Aviano Marsure, Udine, Italy. Reports on 7, 14 and 28 mc phone.
- IIEFG** Via Piate 45, Domodossola (Novara), Italy. 14 and 28 mc phone, 1200-1300, 1700-1800 and 1900-2100 GMT. Details of modulation.
- I1SH** Via Melchiorre Gioia 31, Milano, Italy. Modulation of 28 mc phone, 1700-2200 GMT.
- KL7YZ** F. Milan, P.O. Box 79, c/o A.C.S., Fairbanks, Alaska. 14070, 14220 and 28840 kc phone and CW, 0600-0900 GMT, weekends 2200-0100 GMT.
- KR6CW** G. M. Russell, A.P.O. 239, c/o P.M., San Francisco, Calif., U.S.A. 14000-14150 kc CW, 1300-1800 GMT.
- KZ5ES** P.O. Box 337, Diablo Heights, Panama Canal Zone. 3.5, 7, 14 and 28 mc phone and CW, 0600-1100, 1300-1700 and 2200-0500 GMT.
- KZ5GD** P.O. Box 28, Balboa Heights, Panama Canal Zone. 14 and 28 mc phone and CW.
- LA9BA** P.O. Box 52, Kolbotn, Norway. 3.5, 7, 14 and 28 mc phone and CW, 1700-2130 GMT. Reports on stability and quality.
- LU6DJD** } Arenales 1531, Florida, Buenos Aires,
LU0DJD } Argentina. Reports on 14310 and 28160 kc phone, 1800-2300 GMT.
- OH2XA** Vuorimiehenkatu, 3.A.30, Helsinki, Finland. 7, 14 and 28 mc phone and CW, 1600-2200 GMT.
- OQ5CA** Robert Jerome, agent Sokimo, Mongwalu, Nizi, Stanleyville, Belgian Congo. VFO-controlled 14 and 28 mc phone, weekends.
- OZ4GG** Victor Bendixgade 2, Copenhagen, Denmark. 7 and 14 mc CW, 1800 GMT onwards.
- OZ7KY** Prags Boulevard, 46.11, Copenhagen, Denmark. 3.5 and 14 mc phone and CW.
- OZ8BB** Kaerhavegaard, Fejenbrod, Kokkedal, Denmark. Quality of 3.5 and 7 mc CW, 0600-0700, 100-1200 and 1700-2200 GMT.
- OZ9CV** Annexgaardsvej 15, Copenhagen Van. Denmark. 3.5, 14 and 28 mc phone, after 2100 GMT, Sundays after 1400 GMT.
- PK1WW** Djalan-Tjilaki 49, Bandung, Indonesia. Reports on 28400 kc phone.
- PK5JT** J. Tamboto, c/o Radio Garuda, Indonesian Airways, Bandungmasin, Indonesia. 14.2 mc phone and CW, 0800-1300 GMT.
- PY2ARK** Av. Indianopolis 3267, Sao Paulo, Brazil. Reports on 14.3 and 28 mc phone.
- PY7DE** P.O. Box 1043, Recife, Pernambuco, Brazil. VFO-controlled phone: 14 mc, 2000-2300 GMT; 28 mc, 1500-1800 GMT.
- SM5ANY** Observatoriegatan 2.A, Stockholm, Sweden. Reports on 7 and 14 mc CW.
- SM5HI** Vaarfruagatan 7.A, Enkping, Sweden. 7025-7110 kc phone and CW, 0530-0615 GMT, and after 1630 GMT.
- SM5ZA** Mosstorpsvagen 36, Lidang, Sweden. Reports on 7 and 14 mc CW.
- SV0WZ** 4 Churchill Street, Athens, Greece. Mobile 28 mc phone transmissions.
- VE2AEG** 3070 Barclay Avenue, apt. 6, Montreal, 8, Quebec, Canada. 4, 7, 14 and 28 mc phone and CW, 2300-0330 GMT.
- VE3ABT** 207 Roehampton Avenue, Toronto, 12, Ontario, Canada. 3650, 7016, 7030 and 7069 kc CW, 2000-0300 GMT.
- VK2AMV** P.O. Box 19, Forbes, N.S.W., Australia. 7 and 14 mc phone and CW, 0700-0900 GMT.

- VK2RM** Radio Club, Royal Mil. College, Duntroon A.C.T., N.S.W., Australia. Modulation of 14350 kc phone, weekends 0900-1300 GMT.
- VK2TE** A. Boyd, Charles Street, Charlestown, N.S.W., Australia. 7.2, 14.4 and 28.4 mc phone, 0600-1000 GMT. Comparative reports, consistency of signals, modulation.
- VK4OL** F.Lt. Hine, R.A.A.F. Station, Garbutt, Townsville, Queensland, Australia. 3.5, 7 and 28 mc CW.
- VOIAN** 84 Hamilton Street, St. John's, Newfoundland. 14 mc CW, at 1515 and 2030 GMT.
- VP5AA** 44 Fort Street, Montego Bay, Jamaica. 14 and 28 mc phone and CW, 1600-2359 GMT.
- VP6IC** P.O. Box 235, Bridgetown, Barbados. 7050, 14150 and 28400 kc phone and CW. Details of modulation, Condx. Wx, and any hum.
- VS1AW** 120 Kings Avenue, H.M. Naval Base, Singapore, Malaya. CW and phone: 3515 kc. Wed., Fri. at 1330 GMT; 14100 kc. Sun., Mon., Fri. at 1530-1800 GMT. Details of any QSB.
- VS6AC** Box 541, Hong Kong. 14052, 14180, 14250, 14334 kc phone and CW, 1600-2100 GMT.
- VU2ARGI** P.O. Box 6666, Bombay, 20, India. 14.2-14.4 mc phone and CW, 1300-1800 GMT.
- W3NJT** 9421 Thornhill Road, Silver Springs, Md., U.S.A. 28 mc phone and CW, 1500-1900 GMT.
- W3OBO** 1400 Creedmoor Ave., Pittsburgh, Pa., U.S.A. 28 mc phone. 1400-1800 GMT. Modulation.
- W4DPE** c. Haston, RFD.3, Box 85, Sparta, Tenn., U.S.A. CW operation all bands.
- W5NXL** 318 Patton Street, Houston, Tex., U.S.A. 14 mc CW, at 0800 GMT.
- W6SAI** 555 Crestline Drive, Los Angeles, 49, Calif., U.S.A. 3505 kc CW, 0400-0600 GMT.
- W9WUC** 710, E.58th Street, Indianapolis, Ind., U.S.A. 28 mc phone, 1400-1700 GMT.
- WOAIIH** Box 471, Stewartville, Minn., U.S.A. 14 and 28 mc CW, 0001-0330, 1130-1245 GMT, and Saturdays. Any chirp or key-clicks.
- WOQV** 2207 W.7th Street, Topeka, Kansas, U.S.A. 7 and 14 mc CW; 3.5 and 14 mc phone.
- YU1CAG** Box 48, Belgrade, Yugoslavia. 3.5, 7, 14, 28 and 144 mc phone and CW, 0600-0800 and 1700-2000 GMT. Comparative reports.
- YU3FLL** 7 Kersnikova 7, Ljubljana, Yugoslavia. 3.5 mc CW, Sundays 1900-2359 GMT.
- YV5AE** P.O. Box 2558, Caracas, Venezuela. 7, 14, 28 and 50 mc phone and CW, 1100-1400 GMT.
- ZB1CH** C. Holmes, Hotel Point de Vue, Rabat, Malta. 14-14.1 mc CW, VFO. Critical tone reports.
- ZE3JD** 20 Salisbury Street, Salisbury, S. Rhodesia. 28 mc phone, 1400-1800 GMT, and weekends. Any signs of F.M. while on VFO.
- ZL1MP** Hairini, Tauranga, New Zealand. 14 mc CW, 0500-0900 GMT. Comparative reports.
- ZL3DK** 37 Norwood Street, Beckenham, Christchurch, New Zealand. Reports on 14 mc CW.
- ZS4DO** P.O. Box 49, Kroonstad, Union of S. Africa. 7 and 14 mc CW, 1500-2000 GMT.
- 4X4DR** 3 Gezer Street, Tel Aviv, Israel. 14 and 28 mc phone, 1700-2000 GMT.

TV Questions and Answers

Erratic Focus

I cannot agree with your remarks concerning the advantage of PM focussing rings. My commercial receiver constantly drifts out of focus, and after adjusting the ring, the picture is not central. On getting the picture right, focus is lost again.

D. D. (Ashbourne, Derbyshire)

We stick to our remarks concerning PM rings. It is true that the mechanical arrangements are sometimes not all they might be, but once correctly set, the PM ring requires no subsequent adjustment. The cause of your drifting focus is undoubtedly due to a receiver fault, if the actual mechanical system is not susceptible to vibrations which would alter the position of the ring around the neck of the tube.

Apart from such mechanical troubles, the only likely failing to be experienced from a PM ring is gradual lack of focus due to the magnet losing its strength. Although extremely unlikely, a possible cause of the poor focus is excessive heating of the ring magnet.

Other focussing faults, with a PM system, are accompanied by other receiver defects which may be obvious or difficult to discern. If you experience such occurrences (such as slight lack in brilliance, increase in brilliance, halation on picture details, variation of raster dimensions, distortion in sound receiver and so on) please supply full details and we will indicate likely causes.

R3515

Can the R3515 unit be used with a magnetic CRT and would the time base and sync separator circuits of the Premier Radio television be suitable?

D. D. (Marlborough, Wilts)

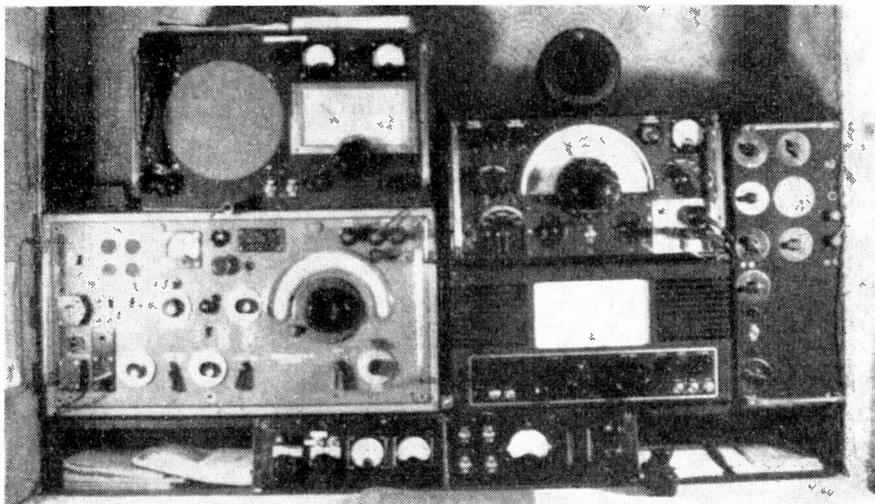
The broad answer to your query is "Yes." However, with the R3515 unit it is necessary to reverse the diode demodulator and rebuild the VF amplifier stage as described in the Premier Radio booklet.

The 3084 Receiver

Could you furnish me with details for converting the 3084 receiver for television reception?

C. E. P. (Birkenhead)

An article on this subject will appear in these pages in an early issue.



SWL Stations

NO. 36

S. R. WEBB, of 25 Avondale Road, Ashford, Middlesex, has been an active SWL since about 1932, but it was not until after he left the R.A.F. that he became seriously interested in the amateur bands.

The station has been built up from "surplus" gear mainly, and in the photograph can be seen a much-modified R.1155, with a converter for 28 mc operation; an R.107 also modified; and an Eddystone S.640. A home-built power pack and speakers for the receivers complete the main installation, and of particular interest is the fact that S.R.W. also has a modulation indicator for checking on received phone transmissions; this is to the right of the bench. The control panel carries switches for aerial selection, S-meters for the R.107 and S.640, mains voltage meter, fuses and the main on-off switch.

Aerials consist of two folded dipoles in the roof-space, cut for Ten and made up of 300-ohm ribbon throughout; these are sited at right angles and selected by

a relay operated from the control panel. The main aerial outside is a 14 mc dipole, 32ft. high and running East-West; this is coupled through 72-ohm twin feeder and likewise is taken through the station control panel.

Though his chief interest is amateur band reception, S.R.W. remarks that he "has no ambition yet to sit for the ticket"—he says he finds plenty to occupy him in being an SWL, and a careful log is kept of everything heard. As we have so often said, there will always be ample scope for SWL activity, and the subject of the story this month is not by any means alone in having no present plans to come on the air with a transmitter.



STATION PHOTOGRAPHS

We are always glad to see photographs of Amateur Radio or SWL interest, including detailed stories for the "SWL Stations" feature in *Short Wave Listener & Television Review*. Prints can be any size, but must be clear and sharp, and accompanied by explanatory notes. Payment is made at good rates for all photographs used. In the case of SWL station notes, full details should be given of gear, results and any points of personal interest.



SUBSCRIPTION RATES

Consequent upon the adjustment in the value of the pound, some overseas subscription rates for the *Short Wave Listener* are now: America, \$2.52; Canada, \$3.06; France, Fr.882; Belgium, Fr.126; Sweden, Kr.13.09; Switzerland, Fr.11.00; Holland, Gdr.9.57; Portugal, Esc.72.45.

THE V H F END

by A. A. MAWSE

SWL Triumphs on Seventycems—

Good Conditions on Two Metres—

Station News and Activity Reports—

CONGRATULATIONS to two of our seventy-centimetre followers, A. L. Mynett, of Wembley, and R. Rew, of Birmingham—the former for his achievement in logging G5BY in the London area on 435 mc, and the latter for his excellent description of the modification of the ASB8 receiver for use on Seventycems. This article appeared in the November issue of *Short Wave Magazine* and should do much to encourage still more activity on that band.

A.L.M. received CW signals from G5BY (Bolt Tail, Devon) at 1840 BST on October 18 while G5BY was calling G6LK. Signals over this 181-mile path peaked at RST539. An attempt was made by A.L.M. to alert all the South London 70 cm group, and G2DD and G6LK added their efforts. G6LK informed G2XC of what was happening and a landline call was made by the latter to G5BY to ensure that activity continued from the Devon end. As a result, G5BY put out CQ calls on 435.6 mc every quarter hour, and these were logged by A.L.M. up to 2200 when signals were peaking at RST559. Unfortunately, no new record two-way contacts were made.

The following evening G2XC (Portsmouth) was heard by A.L.M. and others in the Middlesex area. Signals were RST56/49 in Wembley, the distance being 63 miles. The excitement produced as the news of A.L.M.'s success spread resulted in increased activity in all quarters, and at 2314 BST on October 20 the record reception passed on to G2CIW (Romford), who heard

G5BY at a distance in excess of 200 miles. A.L.M., still on the job in Wembley, overheard all this. It represents a fine effort on the part of all concerned.

In actual fact, the world record had already passed from this country to the U.S.A., where, on October 2, W2QED and W4ODG worked over a 191-mile path. K2AH was also hearing W4ODG at over 300 miles, but was unable to get through, in spite of long and persistent calling.

Mid-October also saw a great improvement in conditions on 2 metres. October 19 was probably the best of a number of good evenings. During this period DL4XS was heard making unsuccessful calls to G4GR (Monmouth). Had this contact been effected it would probably have been a new European record. On other evenings the Northumberland and Durham stations were heard in the London area, and stations such as G2OI (Eccles) and G2IQ (Sheffield) were receiving S9 reports from the South Coast and Isle of Wight.

Station News

R. L. Bastin (Coventry) gives the following days in September as the best with him: 2, 10, 23, 26 and 30. Outstanding signals were G3BLP, G3EHY, G4HT and G6VX. In October the best days were 3, 4, 5, 7, 12 and 18 to 22, but he heard no Continentals and suspects there must be an Iron Curtain over the Midlands!

R.L.B. also remarks that the toughest county from which to obtain QSL's is Middlesex, with Lancashire in second place. Two G2IQ-type converters are in use, one being modified for a crystal-controlled oscillator. This is a real joy to handle, according to R.L.B., there being no snags at all. He claims that, with it, he can hear everything that G3ABA hears, and G3ABA is using a 16-element stack and a cascade converter. He is modifying an ASB8 for 70 cm and has heard G3ABA.

L. A. Whitmill (Harrow Weald) found conditions quiet until October 18,

when things became quite exceptional for about 4 days, and, in addition to receiving many GDX stations at S8-9, he heard F80B (Paris) in contact with G5RO. He asks for a good circuit for 430 mc. Recent issues of *Short Wave Magazine* have contained a number of successful circuits, and to L.A.W., and any others seeking such information, these are commended. A. W. Blandford (Mitcham) found 70 cm lively and has logged 16 stations so far. He, also, was able to enjoy the good 2-metre conditions on October 19 to 21 and, like many others, brought his counties score to a higher level.

E. A. Lomax (Bolton) confirms that the good spell was experienced in the North as well. After a number of peaks earlier in the month, conditions became excellent with him on the 19th, and continued so for the next few days. On October 21 he had hopes that Continentals would break through, but in that he was disappointed. G3ATZ/P in Denbighshire, and GW2DNN in Flint, provided two new counties. E.A.L. has been keeping a record of the weather in his log, and he comments that so far this year every time conditions have been very good there has been either

an easterly wind, or a calm which has developed into a wind from the east. As soon as the wind has swung west, conditions have deteriorated. The good conditions somewhat hindered the construction of a 70 cm converter, but this is well under way.

P. J. Towgood (Bournemouth) has been experiencing some trouble in his crystal-controlled converter. This has taken the form of an irritating "pulling," which he says seems to indicate that a 6SA7 does not like acting as a combined mixer-oscillator. An ECH21 is being tried.

A. L. Mynett (Wembley), whose successes on 70 cm are recounted above, uses a converter with a 446A lighthouse RF stage. This feeds a CV102 crystal mixer. The resonant circuits are piston-tuned concentric lines and the local oscillator is a Clapp circuit operating on 10 mc and using a 055. This is multiplied by 48 by EF54's and 6J6. The head-IF amplifier consists of neutralised and triode connected 6AG5 on 26.5 mc. The aerial is a 16-element stacked colinear array cut for 435 mc and up at 30 feet. 300-ohm tubular feeder is used. On two metres A.L.M. was one of the lucky ones who heard DL4XS/3KE on

VHF CALLS HEARD

Seventy Centimetres

A. L. Mynett, 29 Sunleigh Road, Alperton, Wembley, Middx.
0-50 miles: G2ANT, 2CIW, 2DD, 2FKZ, 2QY, 3FP, 4CG, 5PY, 5TP, 6LK, 8SM.

50-100 miles: G2XC.
100-200 miles: G5HY.

A. W. Blandford, I Biggin Avenue, Mitcham, Surrey.
G2CIW, 2DD, 2FKZ, 2FZL, 2QY, 2RD, 2WS/A, 3ANA, 3CU, 3EIV, 3FP, 3GSM, 4CG, 5DT, 5PY, 5TP. (Modified 1294 and 13-cle Yagi 32 feet high).

Two Metres

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

G2AIO, 2B0J, 2DCI, 2OI, 2XV, 3ABA, 3ABA/P, 3ABM, 3AHT, 3AOD, 3APY, 3ATZ, 3AYT, 3BDI, 3BK, 3BLP, 3BOC, 3BPJ, 3BY, 3CND, 3DA, 3DRG/A, 3DUP, 3EHY, 3ELT, 3ENS, 3FMI, 3GMX, 3WW, 4HT, 4LD, 4OS, 5BM, 5CP, 5MA, 5TP, 5WP, 6JK, 6LI, 6NB, 6VX, 6XM, 8SB, GW2ADZ, 3ATZ/P, 3DNN. (October '21, 6J6 converter into AR88. Aerial "City Slicker" at 40 feet. QTH 650f et al.s.).

W. C. Askew, Burrough, Melton Mowbray, Leics.
G2AIO, 2ATK, 2BVW, 2FNW,

2HCG, 2IQ, 2RI, 3ABA/P, 3APY, 3BK, 3BLP, 3DUP, 3EHY, 3ENS, 3WW, 4HT, 4MW, 5MA, 6CW, 6NB, 6VX, 6XM, 8UZ, GW2ADZ. (October 3-23, G2IQ converter into Commander, 4-cle Yagi, 33 feet high).

L. B. Bailey 16 Fulthorpe, Road, Norton, Stockton-on-Tees, Co. Durham.
G2ADR, 2FO, 2FXA, 3DMK, 3EHZ, 5QU, 5XT, 6PJ, 8GL.

A. L. Higgins, 64 St. Brides Road, Aberkenfig, Glams.
G2XC, 3EHY, GW2DUR, 2HH, 3EJM, 8SU, PA0IK, 0UW. (RF27 into Hambander, 4-cle c.s. beam).

R. L. Bastin, 101 Alderman's Green Road, Coventry, Warks.

0-50 miles: G2AOK/A, 2ATK, 2BFT, 2BVW, 2FNW, 2HCG, 3ABA/P, 3BVJ, 3DJQ, 3DUP, 4NB, 4RK, 5PP, 5SK, 6C1, 6SN, 8QK, 8QY.

50-100 miles: G2AIO, 2BUJ, 2IQ, 2OI, 3AHB, 3AHT, 3WW, 4HT, 4MW, 5TP, 6JK, 6NB, 6XM.

100-150 miles: G2CPL, 2NS, 3BLP, 3EHY, 3FD, 4CI, 4DC, 5MA, 6LK, 6VX, 6YO, GW2ADZ. (August 30-October 21. G2IQ Type Converter, CC, 4-over-4 (P-W-S Yagis) in roof space)

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

50-100 miles: G2AIO, 2ATK, 2AUR, 2OSW, 2FNW, 2HCG, 2XC, 2XS, 2XV, 3ABH, 3AKU, 3ALC, 3ANB, 3AVO/A, 3BHS, 3BK, 3BNC, 3CFR, 3DAH, 3DEP, 3DIV/A, 3DUP, 3EBW, 3EJL, 3FAN, 3FCM, 3WW, 4MW, 5RO, 5UD, 8DM/A, 8IL, 8SY.

100-150 miles: F8MN, G2CPL, 2IQ, 3DG, 3DMU, 3EHY, 3VM, 5BD, 5UF, GW3EJM.

150-200 miles: G2BMZ, 2OI, 3AHT, 3AUS, 3AOJ, 3CQC, 5BY.
350-400 miles: DL4XS/3KE. (6J6 Converter. Aerial: two 3-cle very wide spaced Yagis slacked, at 35 feet).

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

G2AIO, 2BMI, 2CIW, 2DD, 2IQ, 2IW, 2MV, 2XC, 2XV, 2YC, GW2ADZ, 3AEX, 3BK, 3BLP, 3CKX, 3CFM, 3DEP, 3DVQ, 3EBW, 3ECA, 3EEI, 3EHY, 3ENI, 3FAN, 3FSD, 3EY, 3FYR, 3SM, 3WW, 4CG, 4FB, 4HT, 4MW, 5DT, 5KH, 5LN, 5MA/P, 5NF, 5QB, 5SY, 5TP, 5UD, 5UF, 6JK, 6KB, 6LK, 6LO/A, 6LR, 6NB, 6VX, 6VO, 6XM, 8IL, 8KZ, 8LY, 8SM. (6J6 Presclector into Mod. RF27 into S.640, 3-clement beam, October 1-22).

TWO-METRE COUNTIES HEARD

Starting Figure, 10

A. L. Mynett (Wembley)	}	...	36
P. J. Towgood (Bournemouth)		...	
E. A. Lomax (Bolton)		...	35
R. Rew (Birmingham)		...	30
A. W. Blandford (Mitcham)	}	...	28
L. A. Whitmill (Harrow Weald)		...	
R. L. Bastin (Coventry)		...	24
W. C. Askew (Melton Mowbray)		...	18
P. Finn (Iver)		...	17

September 13. He remarks that on that evening the weather in London seemed most unpropitious for VHF DX, but he has since learnt that the weather on the South Coast and over Europe was very different. The moral is that too hasty a conclusion should not be drawn from local weather. A card has now been received from DL3NQ and this raises A.L.M. to the top of the two-metre DX Table.

L. B. Bailey (Stockton-on-Tees) has met with success this month, having logged a number of 2-metre stations, including G6PJ (Sheffield) at 83 miles. Much CW has also been heard coming from the South, some of it probably very DX, but as L.B.B. cannot yet read Morse, it had to be left to the local transmitting men to deal with! A new 3-element close-spaced beam has been brought into use, and rests on the top of a wardrobe!

A. L. Higgins (Aberkenfig) using an RF27 into a Hambander, and a 4-element c.s. beam has logged some PAØ DX, and a Frenchman, F8G-something (probably F8GH, who is a consistent worker on Two). R. B. Bosley (Manchester) is proposing to start listening on Two with a modified R1132. The one snag is the broad IF of this receiver, which makes QRM a problem. The modifications should therefore include something to make the IF response narrower.

The Best Ten of the Month

Due to the confusion arising from the non-appearance of the *Short Wave Listener* in September and the early date for receipt of reports for this issue, various readers have acted in different ways regarding the "Best Ten of the Month" table, and it is impossible to compile a listing for the period. In order to straighten things out, in future

the period of the Table will be from 0001 on the 15th of one month to 2359 on the 14th of the next. All competitors should therefore let us have an entry covering the period 0001 October 15 to 2359 November 14 for next month's report. In all other respects the rules remain as before.

Readers who are BSWL members and can confirm 20 or more Counties Heard on VHF are reminded that they can apply (to the League) for the VHF Counties Heard Certificate.

In Conclusion

Thanks to all those readers who responded to the very short notice in last month's issue and sent along a report which enabled this month's "VHF End" to be written. By the time this appears, the Contest will be over, and it is hoped conditions and activity will have been such as to please everyone.

We are glad to see, once again, some 70 cm calls heard lists. Most of the lists which we receive, both for 70 cm and 2 metres, are correctly set out, but one or two readers still fail to arrange the calls either alphabetically or numerically, and this does mean extra work for your conductor. Please help by setting out your lists in the same way as they appear in these columns. Better still, write them out on the "Calls Heard" report forms which can be obtained on request from 53 Victoria Street. Next month's reports should reach us by **November 28**, addressed to A. A. Mawse, *Short Wave Listener & Television Review*, 53 Victoria Street, London, S.W.1. Closing date for February issue, due out on January 18, will be December 22, as we have to contend with the Christmas break.

TWO-METRE DX

A. L. Mynett (Wembley)	DL3NQ	410 miles
G. E. Magrow (Dawlish)	PAØUW	387 miles
E. A. Lomax (Bolton)	PAØIK	340 miles
R. Hastie (Hayes)	F3DC	221 miles
P. Finn (Iver)	G5BY	172 miles
R. A. John (Swansea)	G3BLP	168 miles
R. L. Bastin (Coventry)	G2CPL	138 miles
A. F. Hayton (Palmer's Green)	G5BD	116 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.

WORLD WIDE RECEPTION OF SHORT WAVE PROGRAMMES

DX *broadcast*

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

WITH the November break, we have an accumulation of material, though nothing spectacular seems to have come along in the interval and conditions have not always been good.

Australasia

New Zealand figures prominently in our records! M. Milne (South Woodford, E.18) has heard ZL3, 11780 kc at fair strength around 0730, and J. M. Simpson (Hassocks, Sussex) says they improve gradually from 0700 to 0900. We logged them on September 10 at 0700, following the call of the tui, when ZL8 on 9690 kc was announced as an alternative transmitter; we could not hear signals on this channel, however. A week later, at 0730, there was an interview with a South Island sheep farmer, who told how sheep have to be brought down from the high hills to the levels of the farm when the first snow comes. The star turn was at 0700 on September 27, when the announcer said: "Radio New Zealand is three years old today. A very warm thanks to the many thousands of you who have helped us!" Our expert from Wellington, C. Costello, gives Radio New Zealand's latest full schedule, which reads: ZL8, 9620 kc, operates 1800-2035 (Mondays 1930-2035) in parallel with ZL3, 11780 kc. These stations are again in parallel 0700-1030 (Mon./Fri.), 0700-1120 (Saturday) and 0700-1000 (Sunday). ZL10, 15220 kc, and ZL4, 15280 kc, are in parallel 2035-0645 daily.

C. Costello himself has a broadcast each first Tuesday of the month at 0915; it is called: "This Radio Age," and is designed to keep listeners abreast of all developments in the radio art, trade, and hobby.

It is reported that Radio Tahiti, FO8AA, 6980 kc, is being modernised and that it will operate on 7300 kc with a French programme from 0400 to 0435

and 2200 to 2245 daily. The transmitter on 12080 kc is moving to 9053 kc and will be using a power of 24 kW in the near future.

We welcome our first French correspondent, Monsieur Robert Chear (Paris) to these columns. He has heard VLG6, 15230 kc, with News in French at 0800; also VLW3, Perth, 11830 kc at 0900 with News in English; and VLI3, Sydney, 9500 kc at 0800. C. P. Turner (Crewe) has received verification cards for VLC, 15200 kc, and for VLA10, 17840 kc, with a comprehensive description of the transmitters and frequencies in use (four pages of technical information!).

Africa

Johannesburg III, 4895 kc, had a News in Afrikaans at 1800 on September 11 when heard by J. C. Catch (South Shields), and on October 12 at 1730 we listened to an English talk on Juvenile Employment over Johannesburg IV on 4800 kc; interested parents were invited to write to the National Bureau of Information in Pretoria.

Cape Town, 5885 kc, has been heard with its Wednesday evening programmes in English; on September 6 there was a News Summary at 2015, and on September 13 at 2105 there was a particularly clear rendering of "O! For a Thousand Tongues to Sing" as part of the nightly Epilogue. September 8 saw ZNB, Mafeking, 8230 kc, at its best with vocal operatic numbers at 1735 and English announcements and God Save The King at 1930.

In Mozambique, J. C. Catch found CR7BG using 15278 kc and CR7BV on 4933 kc at 1800 with chimes and cock-crow, followed by: "Lourenco Marques for happy listening in the 61 and 85-metre bands from six in the morning till eleven at night!" In the 30-metre band, CR7BE, 9755 kc (English) and

CR7BJ, 9810 kc (Portuguese) are in use. W. R. Sparling (Bogowantalawa, Ceylon) has received Brazzaville's verification and mentions an interesting one in Saint Denis, Réunion on 7170 kc, which he heard at 1430. Radio Douala, French Cameroons, 9148 kc, has been logged by us on several occasions, but often with heavy QRM; it closes at

2000 with the usual French announcements.

S. A. Mann (Westbury, Long Island, New York) sends as two tit-bits. He has received from Radio Clube de Sao Tomé y Príncipe a beautiful multi-coloured verification card picturing a map of the island. The full schedule is given as: CR5SA, 11787 kc (1 kW)—

TABULATED SCHEDULES

I. Swiss Short Wave Service, Schwarzenburg.

English Broadcast (Daily) to the United Kingdom, 1845-2030; HEU3, 9665 kc; HER5, 11865 kc.
Address for Reports: Swiss Shortwave Service, Neueneggasse 23, Berne.

II. Radio Norway—Short Wave Division, Oslo.

(a) Norwegians Abroad: North American Waters and North Atlantic. 0100-0200 (0215 Sundays. LKV, 15170 kc; LKQ, 11735 kc; LLH, 9645 kc; LKF, 1578 kc.

(b) Home Service: North Atlantic and North Sea.

Weekdays: 0615-0730; Sundays: 0755-1445; Saturdays: 0615-0820; LKJ, 9640 kc.

Weekdays: 1020-1240; Saturdays: 1020-1255; LKJ, 9540 kc.

Weekdays: 1545-2200; Sundays: 1515-2215; Saturdays: 1430-2200; LLS, 7210 kc.

The last 15 minutes of the daily one-hour broadcast for Norwegians abroad will usually consist of Norwegian music. This Section is introduced in both English and Norwegian.

"Norway this Week" (in English): Sundays: 1200-1215, 1400-1415, 2000-2015, 2400-0015; Mondays: 0200-0215.

III. Danish State Radio, Copenhagen.

Tuesdays, Thursdays Saturdays: 0000-0100, OZH, 15165 kc.

Daily: 0200-0330, OZE, 9520 kc.

Tuesdays, Thursdays, Saturdays: 1000-1100, OZH, 15165 kc.

Daily: 1230-1250, OZU, 7260 kc.

Relay of Home Service: 1735-2230, OZU, 7260 kc.

Special DX Programme: 0315, OZE, 9520 kc.

(2nd Tuesday in month): 1100 (repeat) OZH, 15165 kc.

IV. Forces Broadcasting Station, Malta.

6020 kc: Monday-Saturday: 0400-0615; Sunday: 0400-0815; Daily: 1530-2100.

7220 kc: Weekdays: 0400-0615, 0930-2100; Sunday: 0400-2100.

11895 kc: Weekdays: 0930-1515; Sunday: 0830-1515.

V. Sharq Al Adna—The Near East Broadcasting Station, Limassol, Cyprus.

Daily: 0400-0615; 1100-1900.

11720 kc directed to Africa.

9650 kc directed to Arabia.

6790 kc directed to Egypt and the Sudan.

6170 kc directed to Lebanon and Jordan.

6135 kc directed to Egypt and North Africa.

VI. Radio Malaya.

(i) Red Network. 6135 kc: 0430-0515 (Indian), 0515-0639 (Chinese).

Singapore. Daily. 4780 kc: 0930-1130 (Indian), 1130-1330 (Malay), 1330-1530 (Chinese).

(ii) Blue Network. 7250 kc: 0430-0530 (Malay), 0530-0630 (English).

Singapore. Daily. 0930-1030 (Chinese), 1030-1530 (English).

Saturdays (Additional) 7250 kc. 0630-0925 (English), Close at 1600.

Sundays (Additional) 7250 kc. 0130-0430, 0630-0925, 0925-1600 (English).

(iii) Blue Network. Kuala Lumpur. 6025 kc. Same as Singapore Blue Network.

VII. English Programmes of Radio Ankara.

Turkish Press, Broadcasting Department, Ankara, Turkey.

Stations: TAP, 9465 kc (20 kw); TAS, 7285 kc (100 kw).

Daily.

2100-2102 Opening and Programme announcement.

2102-2112 News from Turkey.

2112-2115 Musical Interlude.

2115-2120 Turkish Press Review.

2120-2130 Talks and commentaries or music.

2130-2145 Music. Sundays: Mail Bag.

Thursdays: Feature Talks.

2145 Close Down.

N.B. On Sundays and Thursdays, programmes continue until 2200, the final 15 minutes being devoted to a selection of recorded music.

Inactive; CR5SB, 17677 kc (1 kW)—1200-1300, Thurs. and Sun. only; CR5SC, 4807 kc (1 kW)—1930-2100, Daily; CR5ST, 9615 kc (1 kW)—Inactive. From a reliable source he learns that the Liberian Broadcasting Company (President: Dr. John B. West) is operating ELB1, Monrovia, on 6025 kc with a power of 500 watts and signing on at 0800; additional transmitters for the 19, 25 and 31-metre bands are also planned. *Australian DX'ers* says that the present frequency is 6017 kc and that ELB1 is operating at 1700.

J. C. Catch has received from OTC2, Leopold ville, a letter informing him that he has won a prize for the best reception report received there in July. Our hearty congratulations! OTC's new English schedules are:—Europe: 1900-2000; U.S.A.: 0300-0515, both on 9767 kc. A. E. Nichols (North Shields) heard Radio Dakar, 15340 kc, at 1900 with News in English. Radio Omdurman still gives its English feature weekly on Fridays at 1730; on September 8 there was a talk on the preservation of the fauna of the Sudan.

Radio Maroc in Rabat sends 6006 kc, signing off at 0545, and 7214 kc from 1300-1400 with a power of 50 kW. R. A. Savill (Sevenoaks, Kent) has a letter from Radio International, Tangier, 6110 kc, in which they say that this commercial station is broadcasting daily from 1200 to 1600 and 1800 to midnight, with musical programmes in French, Spanish, English and Arabic; the address is: Radio International, 34 Rue Goya, Tangier. I. Griffiths (Sliema, Malta G.C.) has heard this one up to 2100 when the chimes for 10 p.m. are given; R. A. Savill's times may, therefore, be one hour in advance of GMT. CSQMD, Ponta Delgada, Azores, 11090 kc, has lately been logged by J. C. Catch at 1930—a pianoforte recital was then in progress.

Asia

With events moving swiftly in Korea, it is indeed interesting to note that J. C. Catch has heard Radio Pyongyang, Northern Korea, often on 4495 kc around 2200-2300. A female announcer gives items of light and classical music and Russian folk-songs; J. M. Simpson has heard Ulan Bator, Mongolia, on 8400 kc at 2225 kc with what was apparently an Eastern News, and also Peking on 15065 kc at 1340. P. E. Woolmer (Grantham) says that Radio Peking has News in English at 1330-1400 and announces a medium-wave

frequency of 700 kc and short-wave channels of 10260 kc and 15060 kc; Swedish DX reports a move from 10260 kc to 11690 kc.

C. Findley (Countesthorpe, Leices.) heard Eastern music and speech on 9655 kc at 2308 and supposed it to be a Chinese Nationalist station. We think this is more likely to be JKL2, Nazaki, Japan, which uses 9655 kc from 2225 to 0745 daily. I. Griffiths sends us the times of transmission of United States Forces stations in Japan; they are: JKL2, 9605 kc, 2045-0830; JKK, 6015 kc, 2045-1430; and JKL, 4860 kc, 0835-1430 daily. Radio-France, Asie in Saigon, Vietnam, has been logged by A. E. Nichols on 9524 kc at 2105 with French and English directions and asking for reports; they closed down at 2130 but asked listeners to re-tune to 17875 kc; but A.E.N. was unable to locate them there. We understand Indo-China also to be using 11780 kc as under: 2245-2300, 0030-0100, 0915-1015, and 1400-1510. They have also been testing on 9495 kc, though 9524 kc was announced.

In the Philippine Islands, the Far Eastern Broadcasting Company in Manila operates the following transmitters from 0600 to 1605 daily; DZAS, 680 kc (medium wave); DZB2, 3320 kc ("The Tropical Broadcast Band), and DZH6, 6020 kc, and DZH8, 15300 kc ("The Call of the Orient"). Medium-wave DZBC operates a short-wave station DZ12 with a power of 500 watts on 9550 kc, and has for its slogan "Bilbolinao Broadcasting System in Manila"; it closes at 1500.

In Indonesia, the Djakarta transmitter YDC., 15150 kc, was heard by J. M. Simpson with English News at 1545. B. P. Middleton (Clapham, S.W.11) noted it with organ melodies at 1500, followed by a talk entitled "Arts and Culture of Indonesia." The same evening he heard YDF2, 11785 kc, with light music by Victor Herbert at 1900; we found them at 1500 with the direction: "This is the Voice of Indonesia broadcasting in English from Djakarta on 11785 kc (YDF2) and on 4865 kc (YDF2)."

Our biggest thrill has been the logging of Eastern speech and music at 1404 on 15910 kc; final remarks were given by a female at 1508 and a National Anthem, part sung, brought the proceedings to a close at 1510. We have assumed this to be HSJ4, Bangkok, Thailand.

However, a new correspondent, F. Courtney (Hull, Yorks.) says that

Thailand is on the air from 1000 to 1130 with English programmes over 6115 kc, 11960 kc and 15910 kc, according to a verification card he has just received from the Overseas Broadcasting Station, HS8PD in Bangkok, Siam.

R. A. Savill reports receipt of a letter from Radio Ceylon confirming reception on 1520 kc and asking for reports and suggestions; these should be addressed to: W. R. Fletcher, Chief Engineer, Radio Ceylon, Torrington Square, Colombo 7. R. Chear says that this station is usually S9 until Rome comes on the air at 1600—and we would add that we have heard Radio Ceylon on 9520 kc with an orchestra concert at 1515, News from London at 1600, and an Epilogue at 1615.

All-India Radio has sent R. A. Savill their attractive card in duplicate (for two separate reports) from Broadcasting House, New Delhi; it reads: "The Director and Staff of External Services Division, All-India Radio, gratefully acknowledge your communication and take great pleasure in confirming your reception report." M. C. Cobb (Harrow, Middsx.) wishes to know if VUB₂ VUC₂ and VUM₂ have their own programmes or do they relay Delhi? Generally speaking, all four programmes are quite separate! On October 7, at 1600, for instance, whereas Delhi was giving a gardening talk in English over VUD₂ on 4960 kc, the others had their own distinctive native orchestras and singers. Mysore, on 6065 kc, also has separate broadcasts as under: 0130-0300, 0700-0900, 1200-1630. We regularly hear Pakistan at 0710 on 15270 kc with the announcement: "This News is coming to you from Radio Pakistan."

Nearer home we have Jerusalem with "The Voice Of Zion" daily broadcast in English from 2100 to 2145 over 9000 kc, according to R. A. Savill. C. Findley has received their letter verification. S. A. Mann gives Saudi Arabia as being on the air from 0500 to 0530 (except Fridays) on 5957 kc, 9650 kc, 11750 kc, 11950 kc and 11850 kc, according to a letter signed by John E. Morrow, of the Saudi Arabia Broadcasting System, Djeddah. P. E. Woolmer gives Radio Beirut, Lebanon, on 8036 kc at 0500-0630, 1030-1230 and 1500-2100; we heard their English transmission opening up at 1500 on September 10 with the Trumpet Voluntary and the words: "Good Evening, Everybody! This is the evening programme in English from the Lebanese Broadcasting Station in Beirut on 8036 kc." P.E.W. also

spotted Damascus, Syria, with News in English at 1100 and 2130 on 12000 kc, 7160 kc and 6000 kc. News in Arabic from Limassol, Cyprus, was heard by R. Chear at 1830 over ZJM8, and he also logged ZJM7, 11720 kc, also, between 1130 and 1600.

Harry Allinsson, of the Goteborg DX Club (Sweden), sends as some interesting news about Turkey. TAQ, 15195 kc, operates the Home Service from 1030 to 1200, and TAP, 9465 kc, an Overseas Service from 1600 to 2100. New 100 kw transmitters are: TAX, 21660 kc; TAV, 17840 kc; TAU, 15160 kc; TAO, 11880 kc; TAT, 9515 kc; and TAS, 7285 kc. Our latest from Ankara is that the daily English News will be given at 1945, and the Thursday talks and Sunday Mail Bag at 2130 over TAP on 9465 kc. An experimental service over TAS and TAP now includes English daily at 2100, but other channels will be used instead from time to time.

North America

CBNX, Saint Johns, Newfoundland, 5970 kc, was logged by J. C. Catch at 2220 with local News items, and J. M. Simpson heard them at 2240 with a Lifebuoy Soap programme. J.M.S. mentions CBLX, 15090 kc, with a Canadian Church service at 1545, and J.C.C. writes of CHOL, 11720 kc, with the Sundays only broadcast to the South Pacific at 1000. We logged both CJCX, 6010 kc, and CHNX, 6130 kc, with the same CBC News at 0300: the latter closed down at 0315 with God Save the King after giving its address as: Short Wave Radio Station CHNX, P.O. Box 400, Halifax, Nova Scotia, Canada. J. C. Catch spotted VED, Edmonton, 8265 kc, with Weather Reports at 0510; on September 1, at 0500, we heard VED with a Newscast from Vancouver.

In the U.S.A., KWID₁, San Francisco, 11900 kc, gave "Home Town Highlights" at 0615, and KWID₂, 11860 kc, World News at 0600, according to M. Milne. D. K. Cocking (Farnborough Park, Kent) noticed KCBR, Los Angeles, 15130 kc, with a Voice of America News at 1400; and KCBR; Manila, 15250 kc; Tangier, 15210 kc and 15240 kc all take on a Russian language broadcast from 1415 to 1445. The jamming then occurs in real earnest, but are the perpetrators of these obnoxious yet childish devices aware that their own broadcasts are in like manner eliminated on all but the most sensitive and therefore expen-

sive receivers? R. Chear hears News in French from Manila on 15260 kc at 0745, and the same broadcast is carried over KRCAZ, San Francisco, 9650 kc, which has an English News at 0800.

Central America

R. Chear says that in Mexico, XEWW, 9500 kc; XEBT, 9625 kc; and XEQQ, 9680 kc, are perfectly received towards 0500. In Honduras, HROW, Radio Monserrat, Tegucigalpa is a new one on 6020 kc and 6675 kc from 1100 to 0500. Guatemala this month offers a sufficiency. TGWA is heard by R. Chear on 15170 kc at 1230 and on 9760 kc after dark; TGWB, 6442 kc, has given dance music with marimba accompaniments around 0405. TGBA, Mazantenango, a new station on the air on 8100 kc, operates as follows: 0100-0300, 1300-1500 and 1700-1900. TGNA, 6040 kc, is also a newcomer; it closes at 0315 daily with a request for reports to be sent to: TGNA, P.O. Box 601, Guatemala City; an English programme is given at 0300. It is an International Missionary Station using the slogan: "Carrying The Good News Abroad," and it hopes soon to be operational on 11850 kc and later on 9660 kc.

In Nicaragua, YNVP, Managua, 6758 kc, was heard at 0330 by J. C. Catch with chimes and the call: "La Voz de Nicaragua." YNWW, 8150 kc, was A. E. Nichol's find at 0015 on September 2; four chimes preceded the direction: "Radio Sport, Centro America."

Europe

A. Halvorsen (Oslo, Norway) kindly sends us information about Radio Norway's special transmissions for Norwegians abroad and of their Home Service programmes, details of which are given elsewhere.

According to H. Allinsson (Goteborg, Sweden), a new transmitter has been installed by the students of the Physics Faculty in Oslo University and regular transmission commenced on September 1. The time is 2200 to 2230, the frequencies are 7240 kc and 11850 kc, and the address is: Fysisk Institut, Universitetet, Blindern, Oslo, Norway.

F. Courtney has received the card of Oy. Yleisradio Ab., the short-wave service of the Finnish Broadcasting Corporation. Their English News is broadcast daily (except Sunday) over 9555 kc, 15190 kc and 17800 kc at 1215-1225, and the address is: Oy. Yleisradio

Ab., Helsinki, Box 180, Finland. The Danish State Radio broadcasts over OZH, 15165 kc, OZF, 9520 kc, and OZU, 7260 kc (schedule elsewhere), and the address is: Danish State Radio, Radio House, Copenhagen.

Warsaw III is now using 9526 kc regularly, according to J. C. Catch and B. P. Middleton. B.P.M. gives the English schedule as: 1715-1745 on 9526 kc and 6220 kc; 1830-1900 on 6220 kc, and the official slogan is: "The Polish Peace Station." J. M. Simpson has logged Budapest on 11013 kc with News in English at 2100.

S. Neeld (Walton-on-Thames) informs us that Radio Luxembourg, 6090 kc, is a good signal around 1900, and M. C. Cobb says that Radiodiffusion, Française, Paris, now broadcasts in English to the British Isles every evening from 1845 to 1945 over 6200 kc and 6145 kc.

The Blue Danube Network in Austria has sent B. P. Middleton a verification card for KZCA, Salzburg, on 9617 kc; he says that this 350-watt transmitter is S₉ between 0615 and 0630 daily. B.P.M. also advises us that Radio Italiana has an English News at 1100 daily on 17860 kc, 17750 kc, 15380 kc, 15150 kc and 11810 kc; S. Neeld heard: "Rome Calling The British Isles" at 1850 on 6010 kc, and not on 6085 kc, as listed by us in a previous number. P. E. Woolmer tells us that Radio Mediterraneo, Valencia, 7037 kc, now gives English programmes at 1940 on Tuesdays and Fridays. Finally, three correspondents have spotted the new Portuguese transmitter CSA₂₁ on 15015 kc; the schedule appears to be: 1100-1400, 1500-1600 and 1630-2030. C. P. Turner notes that the items are punctuated with a gong; C. Findley heard Westminster chimes at the half-hour and the Portuguese National Anthem at the beginning and end of each transmission; and J. M. Simpson comments on the powerful signal!

We conclude by wishing all our correspondents and readers greetings for the Festive Season, with the hope that everyone will be blessed with good listening conditions over the period of the Christmas holiday. Please send your comments and reports for the earlier part of December to: R. H. Greenland, *Short Wave Listener & Television Review*, 53, Victoria Street, London, S.W.1, to reach this office by December 15 at the latest. News for the latter part of the month should be sent to us before January 15, 1951.

SHORT WAVE BROADCAST STATIONS

Revision 61.54-121.2 and 11.49-16.90 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.

Fre- quency	Wave- Length	Callsign	Location	Fre- quency	Wave- Length	Callsign	Location
4875	61.54	HJFH	Armenia, Colombia.	3335	89.96	VUV	Hyderabad.
4865	61.66	PRC5	Belena, Brazil.	3325	90.23	YVQL	El Tigre.
		HJFA	Pereira, Colombia.	3320	90.36	YVOG	Barcelona.
		YDD2	Djakarta.	3310	90.63	YVOG	Trujillo.
4860	61.73	YVPA	San Felipe.	3240	92.59	YDI	Sourabaya.
		JKL	Yamata, Japan.	3228	92.95	HDZ	Riobamba, Ecuador.
4855	61.79	VO7LO	Nairobi, Kenya.	2810	106.8		Garoot, Indonesia.
		YDK	Palenbang.	2600	115.4	YDD	Djakarta.
		HJCA	Bogota.	2475	121.2	PJC2	Willemstad, Curacao.
		YVMS	Barquisimeto.				
4847	61.90	HJGF	Bucaramanga.	26100	11.49	GSK	London.
4845	61.92	CSA93	Punta Delgada.	25750	11.65	GSQ	London.
4840	61.98	VUB2	Bombay.	21750	13.79	GVY	London.
		YDH4	Sourabaya.	21740	13.80	KCBB2	Los Angeles.
		YVOI	Valera.				
		HJKE	Bogota.				
4835	62.05	HJKE	Bogota.	21730	13.81	WRCA6	New York.
4828	62.14	YVOA	San Cristobal.	21710	13.82	GVS	London.
4825	62.18	ZYE7	Parnaiba, Brazil.	21675	13.84	GVR	London.
		HJED	Calif, Colombia.	21670	13.85	LFP	Oslo, Norway.
			Singapore.	21650	13.86	WLAV07	Cincinnati.
4820	62.24	CR7BV	Lourouco Marques.	21640	13.86	GRZ	London.
		YVRC	S. Fernando de Apure.	21615	13.88		Colombo, Ceylon.
		CE482	Antofagasta, Chile.	21610	13.88	WRCA3	New York.
4815	62.31	HJBB	Cucuta, Colombia.	21590	13.90	WGEO2	Schenectady.
4810	62.37	YVMG	Maracaibo.	21570	13.91	WABC1	New York.
4805	62.43	HJDU	Medellin.				
		ZYSS	Manaos, Brazil.	21550	13.92	GST	London.
		YVME	Maracaibo.	21540	13.93	VLB5	Shepparton.
			Johannesburg IV.	21530	13.93	GSJ	London.
4795	62.56	HUB	San Salvador.	21520	13.94	WLW03	Cincinnati.
4790	62.63	YVOC	Bolivar.			HER8	Berne.
4785	62.70	ZYM6	San Luiz, Brazil.	21510	13.95	VUD11	Delhi, India.
		HJAB	Barranquilla.	21500	13.95	WABC8	New York.
4780	62.76	YVLA	Valencia.	21480	13.96		Hilversum.
			Singapore.	21470	13.97	GSH	London.
4777	62.80	HJGB	Bucaramanga.	21460	13.98	KRCA1	San Francisco.
4752	63.13	YVMA	Maracaibo.	21010	14.28		Brazzaville.
4738	63.30	HC11M	Ibarra, Ecuador.	20950	14.32	WWJ40	Tangier.
4725	63.49	HC5BE	Punta, Ecuador.	19980	15.02	WER29	Tangier.
4721	63.53	HC6VT	Anibato, Ecuador.	17890	16.77	HCJB	Quito, Ecuador.
4712	63.66	HC2ET	Guayaquil.	17850	16.81	PRL9	Rio de Janeiro.
4651	64.50	HC2AK	Guayaquil.				
4373	88.00		Johannesburg.				
4370	88.05	YDI2	Sourabaya.	17840	16.81	VUD5	Delhi, India.
			Tananarive.			VLA10	Shepparton.
4170	71.94	TGOA	Guatemala City.				Brazzaville.
3950	75.95		Djeddah, S. Arabia.	17830	16.83	WABC3	New York.
3935	76.24	HC5EH	Cuenca, Ecuador.			KRCA3	San Francisco.
3914	76.65	ZOP	Lusaka, N. Rhodesia.	17825	16.83	LLN	Oslo, Norway.
3800	78.95	ZEB	Bulawayo, S.R.	17820	16.84	CKNC	Saskville.
3790	79.16	JOAK	Tokio, Japan.				Colombo, Ceylon.
3658	82.01	ZEA	Salisbury, S.R.	17810	16.84	GSV	London.
3620	82.87	YVLG	Maracay.	17800	16.85	WLW02	Cincinnati.
3550	84.51	YVOC	San Cristobal.			WLW07	Cincinnati.
3530	84.99	YVKT	Caracas.			HON1	Honolulu.
3505	85.59	YVKX	Caracas.	17797	16.85	OIX5	Helsinki, Finland.
3498	85.76	CR7IC	Beira, Mozambique.	17790	16.86	GSQ	London.
3490	85.96	CR7AB	Lourenco Marques.	17784	16.87	HER7	Berne.
		YVRA	Maturin.	17780	16.87	VUD10	Delhi, India.
		ZOI	Kingstown, Jamaica.			VUD11	Delhi.
3480	86.21	YVLE	Puerto Cabello.			WRCA5	New York.
		YVLD	Valencia.				Manila I.
3450	86.97	YVOI	Barcelona.	17775	16.88	PHI	Hilversum.
3430	87.60	YVMC	Maracay.	17770	16.88	KCBB3	Los Angeles.
			Stanley, Falkland Is.			HED8	Geneva.
			Merida.				Rome.
3420	87.72	YVOE	Merida.	17765	16.89	WGEO3	Schenectady.
3410	87.98	YVMK	Cabinas.				Paris.
3400	88.24	YVKP	Caracas.				
3380	88.76	YVQN	Puerto la Cruz.	17760	16.89	VUD3	Delhi, India.
3370	89.02	YVMI	Maracaibo.			VUD5	Delhi.
3360	89.29	YVOC	San Cristobal.			VUD10	Delhi.
3356	89.40		Johannesburg.			KWID1	San Francisco.
3340	89.82	YVMU	Carora.	17750	16.90	WRUL5	Boston, Mass.

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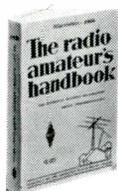
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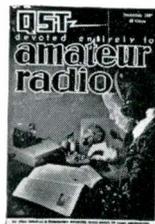
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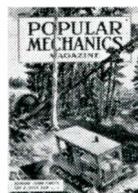
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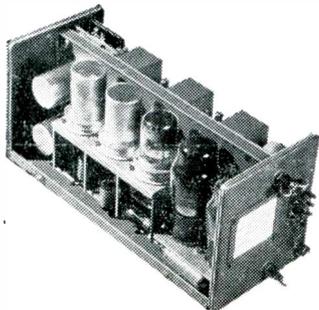
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Bargains in Tx Series Radio and Electronic Equipment

Clydesdale Aids You with V.H.F. and U.H.F. Equipment



ON "144" WITH BAGS OF GAIN

The P.40 Receiver by Stratton. As with the majority of surplus V.H.F. receivers the P.40 has a crystal controlled oscillator stage and in its present form is ideal for fixed channel operation between 85 and 95 Mc/s (3.15-3.53 Metres), modifying this stage for variable operation should not prove a 'snag' the pruning of the coils for '144'—EASY!

The receiver employs a 2.9 Mc/s I.F., and a valve line-up of 1 EF54 (RF), EF54 (Mixer), EC52-EF54-EF54 (Oscillator and multiplier stage), 2 EF39's (I.F.), EB34 (Det and AVC), 6J5 (1st Audio), 6V6 (Output).

Enclosed in die-cast frame, with louvred cover. Dimensions 11½ x 5½ x 4½ in. Finished in grey.

Power requirements: HT 170 V.D.C. 60 M.a and 12.6 V. LT.

CLYDESDALES PRICE ONLY **39/6** EACH CARRIAGE PAID

2 METRE QSO's WITH R5 REPORTS

Literally thousands of operators are using RF27 Units as their first stages on "TWO" these days, and rightly so, for the RF27 provides one of the finest V.H.F. values for money.

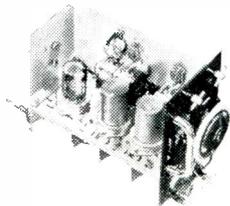
The RF27 is a tunable converter covering 65 to 85 Mc/s. No snags are encountered in modifying this unit for use on '144.' The output of this unit is about 7 M/c/s and can be fed into practically any receiver which tunes 42 metres S.W.

The power requirements are 300 V.H.T. at 20 M/a and 6.3 V.L.T., it is probable that the receiver in use can supply this current.

Valves include: EF54 (RF), EF54 (MIXER) and EC52 (7 Mc/s OSC).

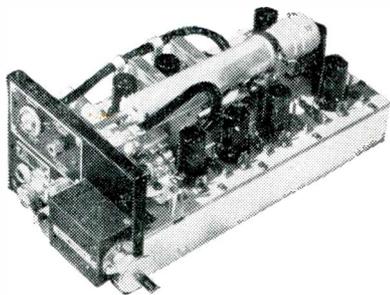
Enclosed in a metal retainer. Dim.: 9½ x 7½ x 4½ ins.

CLYDESDALES PRICE ONLY **35/-** CARRIAGE PAID



DON'T BE ALOOF OF 420 Mc/a

The CLYDESDALE can supply you with a receiver which brings 70 Cm. QSO's into your shack. The A.S.B.8 is the receiver which really gets going on "420."



This unit is a 12 valve double superhet originally designed for use on 515 Mc/s. Modifications which even the novice "70 cen" man can accomplish will bring this receiver onto that illusive V.H.F. 'ham band.'

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/P MOBILE ON '2'

Modifications to the R28 ARC5 10 valve V.H.F. receivers oscillator stage and the general tuning up onto 144 Mc/s shouldn't prove to be terribly difficult, and a compact "car radio" style 2 Metre receiver is the result.

Valves include: 4 717A (mushroom) pentodes, these valves have an extremely favourable signal/noise ratio, with high gain, and provide the RF amplification of the R28 ARC5.

Power requirements: 220 V.D.C. at 70 M.a H.T., and 28 V. L.T.

This unit is in the same class as the Command Receivers. CLYDESDALES PRICE ONLY

EACH **47/6** POST PAID

The receiver employs a 446A Lighthouse Triode in the RF stage which is followed by a 955 1st osc.—460 Mc/s, 955 Mixer, 2/6AC7 1st and 2nd I.F.—55 Mc/s, 6J5 2nd osc.—39 Mc/s difference, 6AC7 2nd Mixer, 2/6AC7 1st and 2nd I.F.—16 Mc/s, 6H6 Diode Detector, 6AC7 Video Amplifier and a 6AC7 Cathode Follower. Details can be supplied for the change over of this set to 420 Mc/s, and modifications to the last three stages to provide ANL, "S" meter and Audio Output, the details of a mains power pack are also included. Dimensions: 13½ x 5½ x 7½ ins.

CLYDESDALES PRICE ONLY **£4/10/-**
CARRIAGE PAID.