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The SHORT WAVE LISTENER AND TELEVISION REVIEW

DEVOTED TO
SHORT WAVE RADIO RECEPTION
AND AMATEUR TELEVISION

MARCH 1951
VOLUME 5 · NUMBER 3

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THE SHORT WAVE LISTENER
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MARCH 1951

EDITORIAL

Experiment

It is probably true to say that though there is now a much greater, more widespread—in the sense of individuals participating—and more active interest in the practice of Amateur Radio than ever before, there is much less pure experimental work going on in the amateur field than there was 20 years ago, when our total numbers were barely a quarter of what they are now.

This is a matter for profound regret, and it is another indication of that "change in public taste" mentioned in this space last month. The individual tends to be more interested in getting results than in finding out how those results could be bettered, or even how they are obtained.

The quick answer to all this (and it would be true) is that on the SWL side at least there is now much less scope for pure amateur experiment than there was 20 years ago. But the fact remains that the individual can still do a great deal to widen his own knowledge by setting out to re-find the data—that is to say, by working things out for himself, rather than accepting all he reads and hears as the unshakable truth.

In nearly every aspect of the practice of short wave radio, this would be a profitable occupation—not necessarily to discover something new, but to extend the knowledge and widen the experience of the individual. It can be done by building equipment, experimenting with aerials of different heights, lengths and directions (always worth doing at any time), or joining the small band of VHF enthusiasts who are steadily pushing out the boundaries on our most difficult frequencies.

R.A.E. Questions Answered

FROM THE MAY 1950 EXAMINATION

PART 1

by **THE OLD TIMER**

(As in previous years, we shall be covering in this and the next two issues the questions set for the 1950 *Radio Amateurs' Examination, held in May last, when* 660 *candidates passed out of the* 833 *who sat. The answers we give to these questions—intended to assist those who are taking the* 1951 *R.A.E. —are not necessarily the only way in which particular questions could be answered ; on the other hand, they would have satisfied the Examiner, and they show how such questions should be approached. The forthcoming Radio Amateurs' Examination will be held on May* 2, *at centres in various parts of the country, for which entries must be in by March* 1*st. Apply to your local Technical College, or the Local Education Authority, or (in cases of doubt or difficulty) to the Superintendent, Department of Technology, City & Guilds of London Institute,* 31 *Brechin Place, South Kensington, London, S.W.*7.*—Editor)*

QUESTION 5. What is understood by " radiation characteristics ?" With the aid of diagrams, describe the radiation characteristics of a horizontal dipole with and without reflector.

ANSWER : By the " radiation characteristics " of an aerial system we mean the actual pattern of radiation, in both the vertical and horizontal planes, which results when the aerial is fed with power at its resonant frequency. These characteristics will be dependent upon the height above ground, electrical characteristics of the ground below the aerial, conformation of the surrounding ground, position and orientation of surrounding objects, and so on.

The actual radiation pattern is the resultant of the theoretical free-space pattern, ground reflections, and all the various screening effects that may come into play at any given site.

The vertical angle of radiation is determined by the height of a dipole above ground. The most effective heights for low-angle radiation are a half-wave and multiples thereof. The horizontal radiation pattern varies at different vertical angles, but that for a dipole at a height of half a wavelength, measured at a vertical angle of 15 degrees or less, is more or less as shown in Fig. 1. This bi-directional " doughnut " pattern is characteristic of half-wave aerials and, in fact, gives good all-round coverage except for the 30 degrees or so " off the ends " of the dipole.

By placing a reflector at a critical distance behind the dipole, radiation in one direction may be virtually cut off, with a corresponding gain in the other direction.

The optimum distance at which the reflector should be spaced from the dipole depends upon two factors : the amount of " forward " gain desired, and the amount of " backward " attenuation required. The reflector is cut to a critical length, which may be determined for various spacings by families of curves showing the relation between the two, and is excited only parasitically—*i.e.*, by radiation from the aerial itself. With a reflector, cut to the correct length, and at a spacing of between $\frac{1}{8}$ and $\frac{1}{4}\lambda$ from the dipole, a forward gain of some 5 dB over a simple dipole is obtained, with a corresponding reduction in backward radiation.

The new characteristics of the aerial are roughly represented in these circumstances by Fig. 2.

QUESTION 7. Two inductors of 10 and 20 microhenrys are connected in series ; two others of 30 and 40 microhenrys are also connected in series. What is the equivalent inductance if these series combinations are connected in parallel ? Assume that there is no mutual induction.

ANSWER : Two inductors of 10 and 20μH connected in series are equivalent to an inductor of 30μH ; two of 30 and 40μH in series are equivalent to 70μH.

Connection of these two in parallel gives a result expressed by the formula

$$L = \frac{L1.\ L2}{L1 + L2}$$

Substituting the figures 30 and 70 for L1 and L2 gives the result $\frac{2100}{100}$ or an inductance of 21 microhenrys.

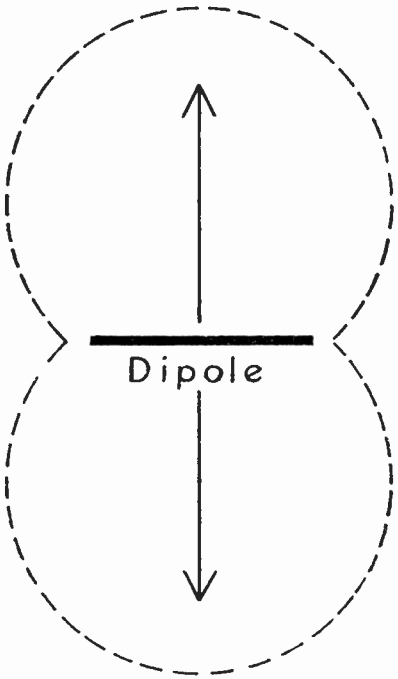

FIG. 1

QUESTION 8.

(*a*) What is the relation between the frequency and the wavelength of a radio wave?

(*b*) What are the frequencies corresponding to wavelengths 30 km, 150 m. and 10 cm.?

(*c*) Why are wavelengths shorter than 5 metres generally unsuitable for long distance communication?

ANSWER: (a) The relation between frequency and wavelength is given by the expression V = fL, where V is the velocity of the wave, f is the frequency and L is the wavelength. The velocity of radio waves is approximately 300,000 km. per sec., and thus *wavelength* may be determined by dividing *frequency* into 300,000, and *vice versa*, the units being metres and kilocycles per sec., or kilometres and cycles per sec.

(b) The wavelength of 30 km. corresponds to a frequency of 10 kc/sec. The wavelength of 150 metres corresponds to a frequency of 2,000 kc, or 2 megacycles/sec. The wavelength of 10 cm. corresponds to a frequency of 3,000 megacycles/sec.

(c) It is a safe generalisation to say that all short-wave communication depends upon reflection of the transmitted wave from one or more of the ionised layers above the earth's surface. Reflection from the surface of the layer, and refraction within the medium, combine to give certain characteristic "skip distances" to certain wavelengths for any given state of the layers.

Fig. 3 shows, in simple form, the behaviour of three different wavelengths. The longest of the three is reflected without penetrating deeply. The next penetrates the layer, but is refracted until it emerges again, giving a longer skip distance than the first. The third example, representing a wavelength shorter than 5 metres, is refracted to so small an

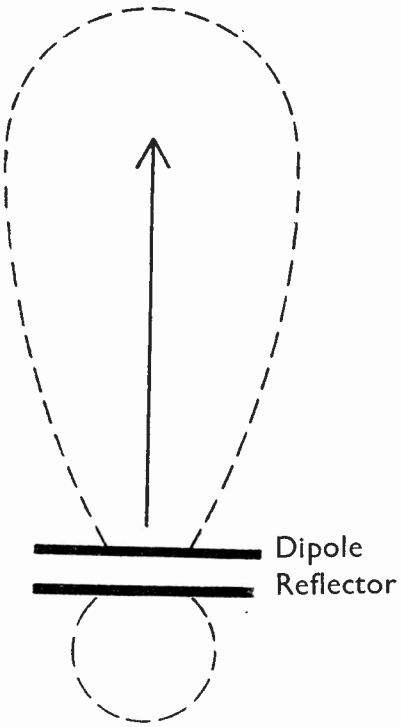

FIG. 2

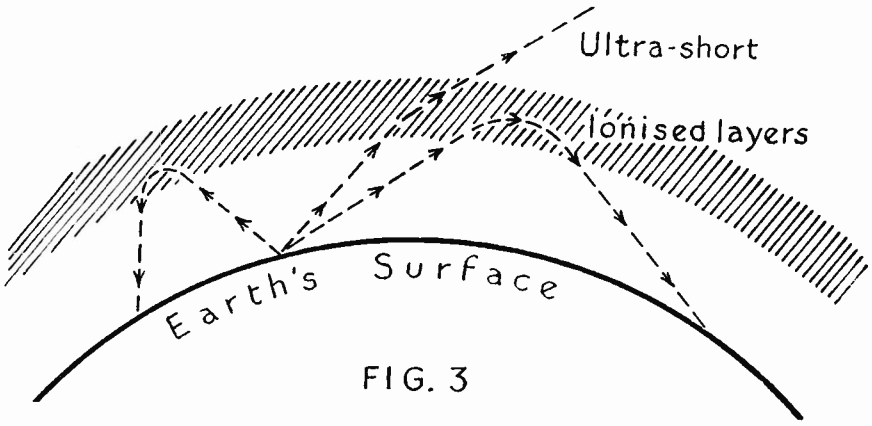

FIG. 3

extent that it does not emerge again, but penetrates the ionised layer and does not return to earth at all.

In certain circumstances, of course, it may be refracted or reflected, and communication over long distances will then be possible, but for reliable use such wavelengths are unsuitable.

Amateur Television Transmission

B.A.T.C. PROGRESS REPORT

By M. BARLOW (G3CVO)

(The notes below, by the secretary of the British Amateur Television Club, reflect the enthusiasm of the membership and the vigour with which the many practical problems surrounding amateur television transmission are being tackled. Steady progress is now being made, and some good equipment has been designed and built. The B.A.T.C. publishes "CQ-TV" as the Club magazine, and the Honorary Secretary's address is Cheyne Cottage, Dukes Wood Drive, Gerrards Cross, Bucks.—Editor.)

THE GPO is now issuing provisional television transmitting licences pending the release of a more formal licence when its conditions have been worked out. This has acted as a spur to members of the British Amateur Television Club, and by the time these notes appear in print, the first transmissions of TV signals in the amateur bands in this country will probably have taken place.

During the Christmas break, several members did some good work; in one week's leave from the R.A.F., SWL Peter Parkin made up almost all of the camera and pulse generator units he is building to use in co-operation with G5ZT. G. G. Short, of Boston Lincs., has joined the Club, and has a very nice outfit, consisting of a 5527 camera unit, with lens turret operated by servo-motors, as well as telecine equipment employing RCA 931A PEC's. We hope to have some photos of this fine gear in the near future. G3BHH, of Durham City, and G3BLV, of Sunderland, are also awaiting delivery of 5527 Iconoscope camera tubes, and hope fairly soon to be on the air with live and still pictures in the 13 cm amateur band.

As an indication of the interest that is being taken in amateur TV transmission throughout the free world, it is worth mentioning that, in addition to the United States and Great Britain, the following countries are also active with

amateur TV: The Netherlands (PAØZX and PAØXN), Canada (VE2HE), South Africa (ZS6GX), Australia (VK3XT), Fiji/New Zealand (VR2BC), Norway (LA4KA), Sweden (SM5TT), Denmark and Eire; quite an improvement on last year! Manufacturers, too, are becoming aware of the demand for camera tubes. RCA can now almost provide from stock, and Scophony-Baird have an Iconoscope at £90, which, although quite outside the amateur pocket, is at least a little cheaper than any other British product. But nothing else yet compares with the RCA 5527 in cheapness and quality. There is still no news of the very interesting-sounding Vidicon; no doubt a few snags are still being removed.

The Tx Problem

On the RF side, a lot of experimenting is in hand to find a simple and effective converter. G8IH has been doing some work with CV90's on a 2204 mc channel, for TV relay work at an Exhibition in Brighton, and his results are being applied to the 2300 mc amateur band. G3GBO is also at work, using frequency modulated CV67's in the transmitter, and a surplus No. 10 set receiver. G3CVO also has a CV67 lined up, and is using an ACR2 tube for scanning still pictures. The video amplifier is a 6AC7-6AC7-6AG7 line-up, modified from a radar jamming unit. The pulse generator is as simple as it can be —just two EF50 transitrons. SWL Tony Sale is trying out the 3 cm band, and has had some success over a short distance.

It seems that some members are despondent because of the frequency allocations for amateur TV, complaining that it is impossible to get any power into the aerial at such short wavelengths. These experimenters are, of course, those who normally never go higher than 28 mc and have yet to realise that at 2800 mc a fantastic gain can be obtained in the aerial system itself. A few milliwatts at the focus of a parabolic reflector can give an effect comparable to *several thousand watts* into a dipole, and what more is wanted than R5S9+ signals? In any case, operation at these frequencies is normally only over line-of-sight paths, and very little attenuation of radiated RF occurs. Already, plans are in hand for relaying amateur TV signals across country, and possibly also to the Continent. Many of these ideas depend on the conditions of the TV licence, and will become more positive when details are known.

Lectures and demonstrations are being given in various centres, recently, to the Television Society, in London, and on February 26 to the combined radio clubs of Cambridge in the Cavendish Laboratory. We are always glad to meet readers of *Short Wave Listener & Television Review* at these functions.

TV Attenuator Pads

REDUCING OVERLOAD ON SOUND/VISION CHANNELS

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

IN recent issues of *Short Wave Listener & Television Review* the question of insufficient signal input has been dealt with when describing the adaptation of the various RF Units as TV pre-amplifiers. But what of the other condition—too high a signal input? This can be a very real difficulty in some areas "in the shadow of the transmitter."

It is quite a common occurrence and in many cases can lead to serious deficiencies in the picture received. The effect always present is that of "soot and whitewash" pictures, in which the blacks are intense and the whites vivid, but the intermediate tonal values (the "greys") are entirely absent, due to the fact that it is not possible to counter-adjust the brilliance and contrast controls to obtain a correctly-toned picture.

Such pictures are worthless from the viewing point of view and are frequently obtained where extremely sensitive vision receivers, consisting of war surplus conversions, are used. In fact, even assuming the use of a less sensitive receiver, such overloading is normally encountered where the field strength

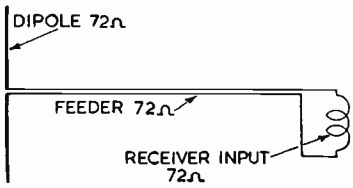

Fig. 1. Showing the elements of a television aerial system which must all be of the same impedance. Where twin balanced feeder is used, its impedance is somewhat higher (80 ohms).

exceeds some 400 microvolts. And, although the condition is usually only experienced at locations quite close to the transmitting station, it sometimes occurs at greater distances, depending on the site, the intervening terrain and the efficiency of the aerial system.

Where the signal input is excessive, conditions other than overloading the vision receiver can occur. One of the commonest is sound-on-vision or vision-on-sound; the break-through can be detected respectively by fluctuating horizontal bars, varying in intensity with the sound, on the picture and by a 50 c.p.s. hum in the sound channel.

Should the signal be extremely strong, the video frequency amplifier may become overloaded; this manifests itself mainly by the picture pulling out in sections, due to its effect on the line sync. In a great many receivers, by reducing the contrast (and, if fitted, Sensitivity) control below a certain level the sync will fail and the picture will break up. Should it not be possible to introduce this by rotation of the contrast control, it is usually an indication that the signal is too great.

It follows, then, that for maximum picture quality and stability within the receiver steps must be taken to reduce the signal input should overloading be experienced. The obvious step would seem to be to "de-sensitise" the aerial system, as it is clear that a less effective aerial will reduce the input to the vision receiver. However, one must tread warily here, because simply to reduce the efficiency of the existing system may easily lead to further troubles of a different kind.

The television aerial is, in essence, a tuned circuit; its feed impedance must be equal to the input impedance of the receiver, and this must be conveyed *via* a feeder also of the same impedance. In other words, the whole system must be correctly matched (*see* Fig. 1). Should the matching be unbalanced in any way, signal transfer will undoubtedly be less, but the presence of standing waves in the feeder system may well introduce ghost images or parasitic images in addition to such troubles as erratic synchronisation, loss of definition and general instability.

Therefore, although a *simpler* aerial may, in some instances, reduce the signal input satisfactorily, whatever system is used must be operated at *maximum efficiency for its type*. No matter what aerial is used, it must be physically and electrically correct. If standing waves are present, due to mis-matching, one set of troubles will only be superseded by another!

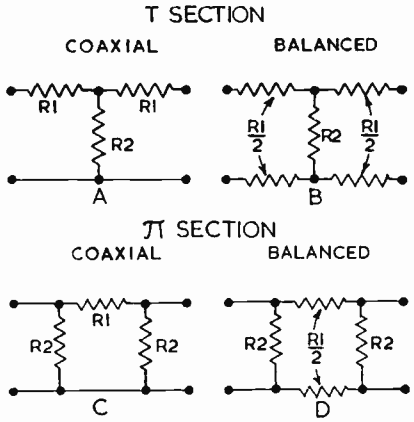

Fig. 2. Four basic types of attenuator networks as used for television purposes. These are fully discussed in the text. In examples A and C the outer conductor is taken to the lower leg of the network.

Attenuator Circuits

The only solution is to bring about a loss in signal transfer which does not affect the matching of the circuit. In practice, resistance in introduced. However, merely by inserting a simple resistance into the feeder line the system becomes mis-matched and the attendant troubles will be experienced. The solution is to use constant-resistance networks; networks so calculated that a known loss can be obtained when working between two resistive impedances which are matched.

Such a network is called an attenua-

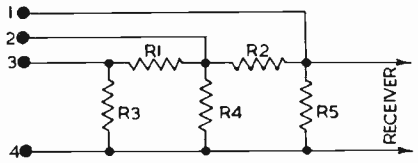

Fig. 3. A ladder attenuator made up of π-section networks. Good average values are 330 ohms (R1), 150 ohms (R2), 70 ohms (R3), 150 ohms (R4) and 100 ohms (R5). The common (outer) conductor is taken to position 4, the inner coaxial conductor being used at either of the other positions according to the ratio of attenuation required. Similar systems may be devised for twin feeder by using the appropriate basic networks.

tor, and the two impedances are those of the aerial and the receiver load. So the attenuator pad will provide a loss in signal input (which is usually expressed as a power ratio) but still retain the characteristics of the feeder system. There are various types of attenuator, the most used being the T-section "π" section and the bridged-T section—the latter not being commonly used for television purposes.

A T-section pad for coaxial cable feeder is shown at Fig. 2(a), whilst a similar network for twin (balanced) feeder is seen at Fig. 2(b)—the latter sometimes being called an H-section pad. The resistor values are calculated from the following formulæ:

$$R1 = \frac{Z\,(N-1)}{N+1} \qquad R2 = \frac{2\,ZN}{N^2-1}$$

where Z = the terminal impedances to which the attenuator is matched,

N = the ratio of the input voltage to the output voltage into the load.

As an example, assume that it is desired to reduce the signal by ten times, then

$$R1 = \frac{72\,(10-1)}{10+1} \text{ or } \frac{648}{9} \text{ or } 72 \text{ ohms.}$$

$$R2 = \frac{2\,(72 \times 10)}{100-1} = \frac{1440}{99} = 15 \text{ ohms approx.}$$

The ratio of attenuation can also be expressed in decibels. Simply multiply the logarithm of the attenuation ratio by 20; thus ratios of 2:1, 5:1, 8:1, 15:1 and 40:1 will provide losses in dB of 6, 14, 18, 24 and 32 respectively. The actual degree of attenuation will, of course, depend on the field strength at individual sites, but generally something between 10-20 dB is satisfactory.

Further Points

In practice, the resistors comprising the attenuator pad should be mounted as close to the receiver terminals as possible and should be of a non-inductive (carbon) type. This is because stray inductive effects and stray capacities (which must also be minimised) will result in unbalancing the feeder system. For this reason, it is usual to obtain high attenuation by running several low attenuation networks in series or cascade. Where such pads are connected in series, the overall attenuation will be the *sum* of the individual sections in decibels or the multiplication of individual sections in ratios. Thus, two four-to-one sections will provide a ratio of attenuation of 16; in decibels this works out to 12 + 12 = 24 dB.

Where twin-balanced feeder is used, the T-section pad takes the form of Fig. 2(b). The formulæ remain identical, however, but it should be noted that the series resistors will only be half the value of those used in the coaxial type pad. Although there is little benefit electrically, the "π" section networks are more popular, since the resistor values come out somewhat higher and are therefore easier to find. Naturally, in all calculated networks the values of resistors should not differ greatly in practice, but some error is often unavoidable owing to the odd values required. As a general guide, it can be assumed that a resistor within 10% of the calculated value will be suitable in the case of larger values and 5% with the smaller values. However, always work to the nearest round figure.

For π-section filters (Fig 2(c) and (4) the formulæ for finding the values are somewhat different and may be worked from:—

$$R1 = \frac{Z\,(N^2-1)}{2N} \qquad R2 = \frac{Z\,(N+1)}{(N-1)}$$

It has been suggested that high attenuation is best obtained by using a series of low attenuation networks, and this system can be used to provide a variable attenuator such as that shown in Fig. 3—which is known as a Ladder Attenuator. It is a two-sectioned π network, and selection may be obtained

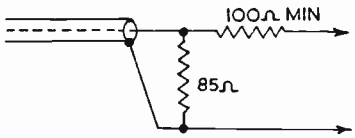

Fig. 4. Simple input pad for coaxial feeder. Attenuation through the circuit can be increased by using a larger value for the series resistor. This should never be less than 100 ohms, which is a fair average value.

by plug and socket arrangements. Alternative systems may be calculated according to individual requirements.

Suppressing Ghosts

The attenuator is also useful in some cases of persistent ghost image reception. Where nothing will cure the reflected image (assuming that this is, in fact, the cause of the ghost) and a reasonably high field strength obtains, a simple pad as at Fig 4 can be recommended. In practice, the direct signal becomes attenuated to a degree whereby

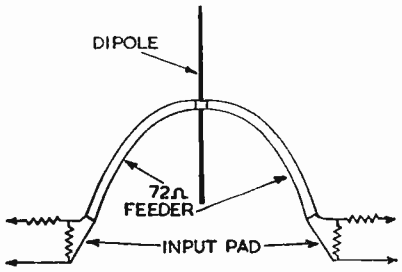

Fig. 5. Illustrating how the input pad of Fig. 4 can be used to terminate the feeders where two receivers are using the same dipole aerial.

the spurious image falls below the general noise level. Of course, if by doing this the direct signal is reduced to unusable strength, then it is of no value at all. However, the idea is always worth trying if nothing else will remove a ghost image. The value of the series resistor can be adjusted by trial and error, but it must be kept to a 100-ohm minimum; at and above that value it is impossible seriously to affect matching when the receiver load is in parallel with the 85-ohm resistor.

It is often desirable to run two TV receivers from a common aerial system in the interests of economy and avoidance of mutual interference. There are several methods of arranging this, but probably the simplest and most effective where only two receivers are concerned is the arrangement given at Fig. 5.

In using two receivers from a single aerial, care must be taken to keep the various impedances correct and to avoid interaction between receivers. The system shown ensures that both feeder lines are terminated correctly by the low-loss input pad, which completely absorbs all incoming signals so that reflections cannot pass from one feeder to the other. It is important to note that, since some attenuation is introduced, this system is not suitable for sites in the fringe areas, since the signal may be dropped below the general noise level.

ADDRESS PLEASE!

If this should catch the eye of D. H. G. Tyrrell-Lewis, formerly of Ferndown, Dorset, or of anyone who knows his whereabouts, he will hear of something to his advantage (as they say) if his present address is communicated to us "for the attention of the Editor."

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Starting Home Construction

PART II

NOTES FOR THE NEWCOMER

AS for actual wiring up, heavy gauge tinned copper wire is recommended in almost all cases, exceptions being where flexible leads such as for supply leads, speaker connections and the like, are concerned. Sleeving can be used with the copper wire where there is danger of one or more leads coming into contact with each other. Keep all leads, especially grid leads, short, direct and rigid; a lead which is "sloppy" will, in movement, cause alterations in capacity, which, though minute, can affect performance. Leads carrying RF potentials must be of absolute minimum length and well spaced from the chassis or from other earthed surfaces. Such leads, if they have to be passed through the chassis, should be taken by low loss feed-through insulators or, alternatively, through holes giving a large amount of air gap around the conductor. Other chassis holes, which do not need the large clearance required for RF leads, can be fitted with rubber grommets.

In general, pay heed to rigidity. It is a good plan to fit soldering tags to all valve-holder bolts when they are fitted; these provide plenty of short direct earth return paths for components grouped around the various valve-holders. Where two or more components must be joined together, apart from those returned to valve pins, insulated tag strips will provide anchor points so that every component can be soldered between fixed points and not allowed any "wobble."

Now to Build It!

Having learned all these essentials, the newcomer can commence actual work on the gear. It must first be realised that no components should be mounted until all the drilling has been done. This is not such an obvious comment as it may seem, for the temptation to try components for "fit" or for appearance is a very real one. The newcomer, however, must resist this impulse, because damage usually results.

A few notes on general aspects: When wiring in tubular condensers (such as electrolytics) wire the marked end, *i.e.*, the outside foil, to the earthy side of the circuit. Keep by-pass condenser leads as short as possible at both ends; keep coupling capacities well away from the chassis. Where ceramic components are mounted, it is as well to use cork or fibre washers between the ceramic and chassis (or brackets) as a precaution against the ceramic fracturing or breaking when tightening up. And always use lock-washers under nuts to prevent loosening; apart from vibration and general movement, loosening can be caused by contraction and expansion due to variations in room temperatures. Shellac could, of course, be used for this purpose, but it has the distinct disadvantage of making any future dismantling a very tricky and difficult affair! Lock-washers are also recommended for one-hole-fixing devices, and it is as well to use a second nut to lock them, unless fitted with a projecting stopper. Without such precautions, they will soon work loose.

Where extension spindles are employed, use flexible couplings; they enable wiring to be kept short and direct, provide protection against possible body-capacity effects, will give good insulation from "live" parts, and will smooth out any unevenness of drive with slight inaccuracies of mechanical alignment.

And *apropos* of body-capacity effects —the alteration of tuning caused by the presence of the hand or body near the controls—these are often due to poor earthing or lack of screening. As a precaution, chassis connections should be taken to a common point near the tuning coil; in multi-valve receivers, however, it is probably better to use one point in each stage for the associated earth connections.

Coil Assemblies

Coils are of prime importance in short wave work. Ribbed low-loss coil formers are essential if any degree of success is to be attained on the high frequency bands. Turns should be spaced adequately so as to minimise self-capacity—but spacing greater than the gauge of the wire will merely reduce the inductance.

The best spacing for such coils is easily determined by winding *two* lengths of wire, stripping off the spacing

winding after a thin coat of polystyrene dope or similar fluid has been applied. The actual coil leads, especially when applied to VHF ranges, must be reduced to the absolute minimum.

With ganged circuits, it is best to use ceramic formers which are chased with a spiral groove so as to ensure that the wire remains in position to prevent alignment being affected. If regeneration windings are required on home-wound coils, it is always better to use as few turns as possible but as closely coupled. This will give smoother regeneration control than if the windings were of a greater number of turns loosely coupled. The regeneration winding should be interwound with the grid winding, but care must be taken to ensure that good insulation exists, as a "short" between these two windings could cause serious trouble. Finally, when experimenting with home-wound coils it is useful to remember that the wavelength is roughly proportional to the number of turns, providing, of course, that the diameter and method of winding is unchanged.

Some Finer Points

Since most beginners will start their constructional activities with "straight" receivers, perhaps a few notes on that vital factor of "reaction" or regeneration will not come amiss. In such receivers smooth reaction is *essential* for operating the receiver at its most sensitive condition. The receiver must slide gently into oscillation without any signs of a "plop" or a howl. A receiver with poor or unstable regeneration control will *never* produce good results, and in extreme cases weak stations will be lost completely owing to the fact that, as the control is eased off, the signal will go—and, on advancing the control again, the set will go into uncontrollable oscillation.

When contemplating a straight receiver, particular care should be given to the operating conditions of the detector valve to ensure smooth regeneration. Small alterations in HT should not greatly affect the amplification, and to make sure that this does not occur, it is normally only a matter of experimenting with the grid leak value, grid condenser, the RF choke and the HT voltages. Occasionally, poor reaction has been cured by substituting the valve-holder for one of a low loss type.

Lastly, one point which is not always realised. Radio receivers, particularly those operating on short waves, should be housed in a metal cabinet—this being more important in relation to the size of the receiver. The only signal that should be allowed to enter the receiver circuits is the one coming in off the aerial. Signals picked up on the connecting wiring, in unscreened sets, can cause loss of selectivity, instability through interaction and many other troubles.

CLUB NOTES

Considerations of space have prevented us ever making a feature of Club notes and news in *Short Wave Listener & Television Review*, though local BSWL organisation reports are covered in *BSWL Review*. Club secretaries should note, however, that we are always glad to see items of special interest—for which they may desire wider publicity—for possible publication as news paragraphs in *Short Wave Listener & Television Review*. And we are, of course, always pleased to have photographs of Amateur Radio or SWL interest for appearance in these pages.

NEWS FROM AC4

AC4 (Tibet) is in the rare Zone 23 area, and, as every DX operator knows, much of the authentic activity in that zone has been by AC4YN and AC4RF, both British. With the changing face of things in the Far East, both stations are now QRT—AC4RF because he was detained by Chinese Communists in October last, and AC4YN because he left Lhasa, the capital of Tibet, with the Dalai Lhama when the religious heads of the Tibetan Government withdrew to Kalimpong, near Darjeeling, in North Bengal.

TIME MARCHES ON

The March issue of *Short Wave Magazine* is No. 1 of Vol. IX, and includes a complete Index to Vol. VIII, the twelve issues of which concluded with the February number. The *Short Wave Magazine* covers the whole field of Amateur Radio and is read throughout the world. It provides, each month, all the background required by any amateur for the active enjoyment of his hobby, as well as valuable services for amateurs generally. Of 64 pages with colour cover, *Short Wave Magazine* is 2s. monthly of any newsagent (to order). or 20s. by direct subscription for a year of twelve issues, with despatch by post on the day of publication. Order on The Circulation Manager, Short Wave Magazine, Ltd., 53 Victoria Street, London, S.W.1.

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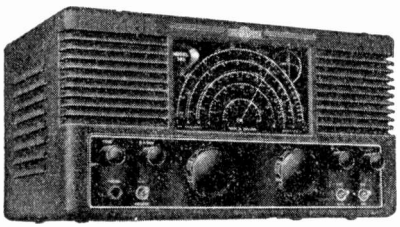

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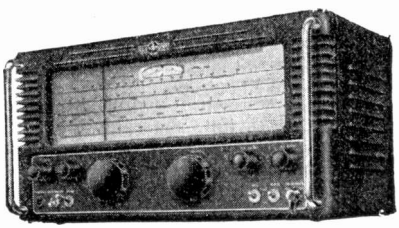

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THE MECHANICS OF PROPAGATION

All who work or listen to DX must be interested in the ionosphere, which makes it happen. The second edition of a very useful book on the subject—*Short Wave Radio and The Ionosphere*, by T. W. Bennington, of the Engineering Division, BBC—presents all the available information in simple form so that it is comprehensible to those with only limited technical knowledge. The physical processes involved are explained in plain language, the use of mathematics has been avoided, and the practical aspects of the mechanism of propagation has been kept in mind throughout. Of 138 pages with 61 illustrations, *Short Wave Radio and The Ionosphere* costs 10s. 6d., post 4d., from the Books Dept., Iliffe & Sons, Ltd., Dorset House, Stamford Street, S.E.1.

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Have you heard?

CONDITIONS on the HF bands continue to be pretty poor, even to the point of being exasperating at times. It needs a hardened enthusiast to stick to 28 mc these days, and even *he* doesn't hear much ! And, for most of the time, 14 mc isn't any better. It has its moments, but not enough of them.

We have no Set Listening Periods to discuss this month, owing to the Christmas dislocation, the calendar, and other variables—but we shall have a double dose next time. This means that Calls Heard have been on the scanty side again, but I have no doubt that they will be back in their usual fettle for the April issue.

While on the subject, let me congratulate some of the senders of this month's Calls Heard logs, particularly on the 7 mc and 3.5 mc bands. Combined operations on 7 mc have produced the following astonishing array of DX prefixes : CM, CR4, CX, FF8, FM7, FQ 8, FY7, HC, HH, HK, HP, KG4, KP4, KV4, KZ5, MP4, OA, OX, TG, TI, VP4, 5, 6, 7, 8, VQ4, VS7, XE, YV, ZD4, ZE, ZL and ZS.

Most of these, of course, were heard by CW listeners, but the Phone-Only men also turn in some remarkable DX for the band. Perhaps the most surprising DX of all has been the consistent reception of several VP8's, representing at least three different countries — Falklands, South Georgia and South Shetlands. VP8AJ, in particular, has been putting in an RST 579 signal night after night.

Before leaving the subject of Calls Heard I must mention the fine 80-metre list sent by J. L. Hall (Croydon), which includes FY7, KP4, KS4, KV4, KZ5, TA, VP5 and 6, YN and ZL. More and more new countries are appearing on that band, and J.L.H. doesn't seem to miss many of them.

Top Band DX

And now we will proceed to readers' letters, starting with those who bring news of the Top Band. Even up there, the lists of achievements are beginning to look like real DX, with such prefixes as W, VE, EK, HZ and even HC thrown in !

The latter cropped up just too late for this month's mail to bring in any news of him, but there he is—HC1JW, in Ecuador, working CW on 1785 kc with an input of 3½ *kilowatts*! He should be figuring in a good many lists by next month.

The first two legs of the Transatlantic tests gave many listeners their first taste of Americans on the band, with W1BB as the star turn, heard by almost everyone.

G. C. Allen (Thornton Heath) has a lot of interesting news. One item is that G5VB worked KP4HU on 3.5 mc and enticed him up to 1.7 mc, on which band he *heard* him but failed to work him. Another is that various G stations have heard, if not worked, W9's. G.C.A. logged W2LVA and W2BFA working each other " across town," and also W2FOF and W2WJE doing the same. Others heard at various times included VE1EA, W1AW, 2EQS, 2UKS, 3FNF, 8FLH, and, of course, W1BB. On January 20 at 2300 there was " a lovely sig " from EK1AO, and W1BB was coming across as early as 2340 that night. Final item: KV4AA will be on the band shortly, but on 1995 kc.

F. A. Herridge (London, S.W.12) estimates that it is now possible to have heard 33 countries on the Top Band since the war. During the month he has added W1BB, EK1AO, LA7WC, and SM5AXY, and his total number of stations logged on the band is now over 1,000. F.A.H. would like to know

AMATEUR BAND COMMENTARY *by the DX Scribe*

This is a photograph of a well-known DX SWL—Tan Bin Hussain, BSWL 877, who is honorary secretary of the Amateur Radio Society of Perak, Malaya. Tan Bin hears G phones on 3.5 mc on his Eddystone S.640 with DB20 preselector, and he reports regularly to many stations in this country, who are of course DX to him on most bands.

what ships own the following calls, all heard on the band — DADI, DAMB, DAOY and PHDY ; also, what are the stations signing AJC4 and SDG2 ? He has written to VERON—the Netherlands organisation—asking whether PA's are now licensed for the band, or whether those he has heard must be regarded as pirates. Or were they "overtones" from 3.5 mc ? This curious effect is not uncommon and should always be checked.

A. H. Edgar (Newcastle) passes on the news that G2YY (Berwick) worked TA3FAS, but A.H.E. says "for myself I'm quite content to listen to the locals on Sunday mornings, and that's as far as my Top Band ambitions go." I wonder whether some of the foregoing news will induce him to alter his opinions ?

J. L. Hall is now actively interested in the band, and reports the following : EK1AO, TA3FAS, VE1EA, W1BB, 1EFN, 1PLO, 2UKS and 8FLV. The interesting thing is that, as he says, all these stations were putting in good signals although conditions were very poor. If they buck up for the tests in February we may well have to exclude W1's and 2's from Calls Heard lists on the Top Band !

N. S. Beckett (Lowestoft) didn't have any luck with the Yanks, but heard them all being called, and reminds us that W3AAA was heard on *phone* by quite a few G stations. N.S.B. did hear EK1AO, so he doesn't feel that he wasted his time completely.

N. G. Robson (Newcastle) is very keen on the 1.7 mc band, although he hasn't yet heard any DX. He says this may be due to the fact that he can't get more than 60 ft. of aerial out. I should like to encourage him to keep on listening, because heaps of people have heard Top Band DX with *indoor aerials*. I checked this myself during the Tests on January 14 ; on my long wire, outside, I was getting W1BB at 569, and with the said wire earthed and a 10-ft. indoor wire (ground floor) on the receiver I could still copy him easily at about 549.

G. H. Coulter (Dover) heard UA3IS working G2YY, and asks whether he is a phoney. Personally, I don't think so ; he has been heard and worked by many G stations and is a well-known Russian station who is active on the other bands. Probably the UA's are not limited to anything like 10 watts on the Top Band.

H. J. Hill (Whitley Bay) is another devotee who likes the band enormously, DX or no DX—which is really the way to treat it. We shouldn't let this spell of DX conditions upset our opinion of

the band ; after all, we must have one band left on which local contacts can take place without the DX fraternity cursing them !

For the record, if you *do* want to cash in on the remaining Transatlantic tests, organised by *Short Wave Magazine*, these are the times to listen: February 17/18, 2200-0200 GMT ; February 25 and March 11, 0500-0800 GMT. The W's and VE's are between 1800 and 1825 kc, and KV4AA will be on 1995 kc. HC1JW, as far as we know, will continue to work on 1785 kc, where he will probably be submerged by G's. HZ1KE and EK1AO also expect to be on, but where, or when, we don't yet know.

Eighty Metres

So now let us deal with that other dual-purpose band ; haunt of the local-phone natterer and the DX-winkler-out alike. The 3.5 mc band, fortunately, has divided itself pretty sharply into CW and Phone regions, but even in the CW area (3500-3600 kc) the majority of the communication is local or semi-local. To be a real DX King on this band you have got to lose some sleep, either by staying up late or by rising early.

As I have already mentioned, most of the honours this month undoubtedly go to J. L. Hall for his logging of such DX as FY7YC, YN1AA, VP5AL and the like. His country total for the band is now 73, and he tells us that he heard W4BRB—probably the leading exponent of DX on Eighty—say that he had now *worked* 83 ! This W station has been sending 80-metre crystals to DX stations to facilitate his DX on the band, and among those to whom they have recently been despatched are EA6AF, EA0AB, OY3IGO, ZB2I and ZK2AB. During the past month J.L.H. has received 80-metre QSL's from CT2BR, PJ5RE and VP9UU.

G. C. Allen doesn't say much about this band except that he has logged KP4CC and 4KD, ZL3LP, VO2BL and IS1AHK, plus a lot of W's. R. W. Thomas (London, E.5) heard a three-way between W4BRB, KZ5DR and KS4AI. They were also calling a a KH6 station.

N. S. Beckett pulled a new country out of the bag, in the shape of OQ5CX, logged at 2150 on CW. He adds that the hours of 2200 and 0800 nearly always produced a W or VE and that he heard 21 States during the month, including W6, although he didn't listen a great deal.

K. Parvin (Thornton Heath), listening to Phone, logged VP6SD and ZC6JM for new ones, although VP9AF " got away." These were all before midnight. A. M. Norden (London, N.W.11), also on Phone, rolled in VP6SD, VP9AF, MD2MD, SP5SG, five

"ZONES HEARD" LISTING
(POST-WAR)

Listener	Zones	Countries
PHONE and CW		
A. H. Edgar (Newcastle) ...	40	223
R. S. Stott (Upminster) ...	40	222
E. Trebilcock (Victoria, Aus.)	40	218
D. W. Bruce, (Eltham) ...	40	215
R. A. Hawley (Goostrey) ...	40	200
W. J. C. Pinnell (Sidcup) ...	40	194
D. W. Waddell (Hitchin) ...	40	194
R. W. Thomas (London E.5) ...	40	183
B. Davies (Beckenham) ...	40	171
N. S. Beckett (Lowestoft) ...	39	187
L. Singletary (Oxford) ...	38	177
F. A. Herridge (S.W.12) ...	37	156
G. H. Coulter (Dover)	36	144
C. J. Goddard (Coventry) ...	36	129
PHONE ONLY		
E. J. Logan (Hertford) ...	40	201
D. W. Bruce (Eltham)	39	188
K. Parvin (Thornton Heath)	39	169
R. G. Poppi (Beckenham) ...	39	167

Listener	Zones	Countries
PHONE ONLY		
R. A. Hawley (Goostrey) ...	38	187
D. Kendall (Potters Bar) ...	38	170
K. M. Parry (Sandwich) ...	38	152
M. G. Whitaker (Halifax) ...	38	151
D. Vincent (Beckenham) ...	38	142
D. L. McLean (Yeovil)	37	179
P. H. Strudwick (N.W.11) ...	37	166
J. P. Warren (W. Croydon) ...	37	160
A. M. Norden (N.W.11) ...	37	156
E. J. Parish (Watford) ...	36	164
D. G. Martin (Cheltenham)	36	150
C. S. Pollington (Chichester)	36	150
H. M. Graham (Harefield) ...	35	153
J. P. Moore (Solihull)	35	134
A. R. Holland (Malvern) ...	34	131
W. C. Askew (Melton Mowbray)	34	130
N. Roberts (Launceston) ...	34	125
D. C. Stace (New Zealand) ...	33	116
T. R. Lamble (Ardingly) ...	33	101
G. Murray (Newcastle) ...	32	112

VO's and many VE's and W's. D. S. Kendall reports KP4GU and several VE's and W's.

T. Spencer (Slimbridge) seems to have been hearing much the same, and says that VP6SD, on 3850 kc, was logged at S9 + 20 dB as early as 2345 GMT. VO2R, with only 35 watts, was also S9 plus. H. M. Graham (Harefield) logged several VE1's—his first on the band—and also SM7AEB for his first SM on 80 !

Newcomers to Eighty should get it quite clear that although our allocation stops at 3800 kc, most of the rest of the world is given the band 3500-4000 kc, and that lots of the DX phone (if not all of it) will be found *above* 3800 kc and therefore out of our band altogether.

DX on the 7 mc Band

This, without doubt, has been the star performer of the month. Unfortunately a lot of listeners have been scared off Forty by the rather frightening welter of broadcast stations, Russian commercials, European phones of appalling quality, and all the other miscellaneous seaweed that goes to produce that typical 40-metre noise. Underneath, in between and all around this junk is some surprising DX — but, brother, you sure must dig !

I have already mentioned the prefixes reported in the 7 mc Calls Heard. Here are some of the individual observations by the chief DX-chasers.

G. C. Allen's best were ZE2JN, FQ8AC, OA4DF, ZS2A, ZS3U and ZS6KY, together with the usual South Americans—all received, by the way, on his ordinary " BCL " set.

N. S. Beckett says " by far the best month I remember on 40. 0730-0830 was invariably very good, and most evenings from 1900-2100 provided very interesting listening." Some most welcome stuff was heard, notably VK9RH (Norfolk Island) at 0730, FY8AC at 2135 and VS7NG between 2000 and 2100. MP4BAE has been heard with a 589 signal at 2100.

K. Parvin, listening for Phone, has logged EA6AS, FA8BE, 8BG and 3V8AS. A. M. Norden's Phone loggings include CE3AB, CR4AH, EA9BB, HK1DW, MD2JH and a lot of CO's, LU's, PY's (37 of these !) and three 3V8's. He also extends his challenge for the furthest phone—now CE6AX. New ones on Phone for D. S. Kendall were EA8MC, EK1BA, HC1JW, HK4DP, HP1EP, LU4DJJ and TI2TP.

A. H. Edgar listened for ten minutes one evening, and between 7005 and 7008 kc logged FA9BG, KG6GE, KP4CC, 4RS and W6FED—all CW. A fresh one for A. O. Frearson (Birmingham) was AG2AB on CW.

W. J. C. Pinnell (Sidcup) collected five new countries with CR4, HH, VP5, VP8 and VQ4. He had an all-night session on one occasion and noted that the band went dead at about 0530. J. Neal (Birmingham) makes a welcome return to the fold and tells us that he he is now a 7 mc CW addict. He thinks the band has all the others beaten for consistent DX, and notable prefixes have been HK, OX3, VP5, VP8 and YV. His pick of the month includes HH2HF, TG9AD, TI2TG, VP4TB, VP5AL and VP8AQ. During January he heard 48 countries on the band.

I. S. Davies (London, N.13) has " scratched up " 35 countries on Phone, but laments tht PY's seem to be coming in all the time, every night. I don't know how much power those boys are allowed, but it certainly isn't restricted to 150 watts !

H. J. Hill heard a funny one — " VK8AA " working an ON station. But where is VK8 ? There isn't such a prefix nowadays. I shall be interested to hear more of this one. T. Spencer asks " where do you look for the DX ? All I seem to hear is I and EA ! " The answer to that one is " underneath, two to three layers down."

Don't try Forty if you want easy DX listening—it really can be tricky, except for the CW DX late at night. But if you once master the art of ignoring the strong ones and reading the weak ones in the cracks, there's no limit to what you can find. For instance, every afternoon for a fortnight I have logged W6's and W7's on about 7015 kc between the hours of 1500 and 1600. Quite a few G's have been working them—and signals go the long way round at that time of day, too, so it's real DX.

Twenty-Metre Topics

Good old Twenty still has more friends than any other band. Even in its present " dead-but-won't-lie-down " state it can provide surprises, and the stuff that I call " semi-DX " is rolling in nearly all the time. But when one thinks of two years ago and way one could pick out VR1, VR2, ZK1, KS6, ZM, FK8, FO8 and the like, one realises

that the band isn't much more than a shadow of its old self.

"Erratic as ever but occasional bursts of interest" is H. M. Graham's description. The Middle East has been good at all times of day; otherwise his best were EL2X, HI6EC, TF5TP, VP6SD and VE8GC—all phone.

T. Spencer has found the band very good and sends in a list of 83 prefixes heard during the month. After grumbling about some of the terrible European phones, he says that CM9AA, of all people, may be going to Monaco to operate as another 3A2, and that there should be a ZD9 on the air from February onwards. (Yes, I have heard that one of the original operators of ZD9AA is returning to the island). XZ2SY has told him that the XZ's have round-table chats on 14 mc phone every Monday and Friday between 1200 and 1300 GMT. VS1AX and 1AY have been very active on phone, and ZL3JD has been heard working VR1 and VR2.

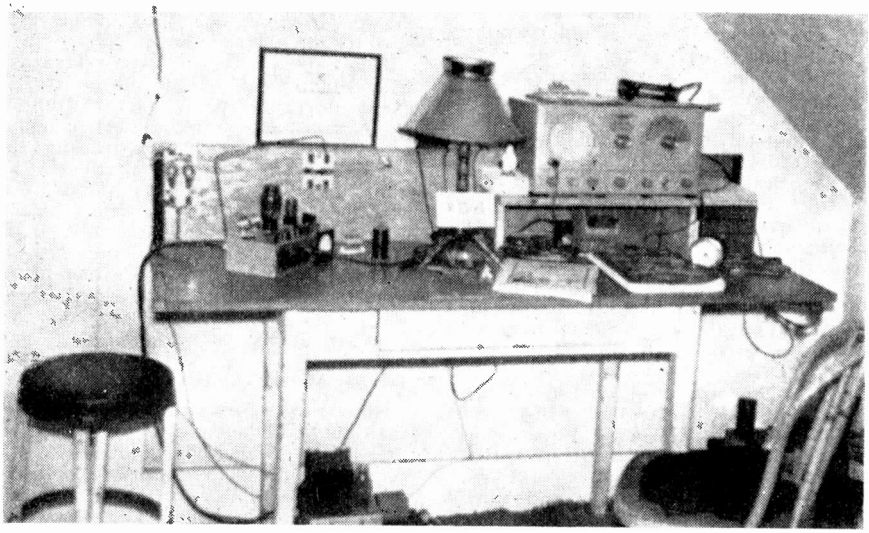
D. L. McLean (Yeovil) says the DX seems to come in and fade out very quickly, but it's there if you have time to listen—at the *right* time. His best were EA6AT (who QSL's), EA0AC, FF3CN, VP3MCB, 7NH, YN4MS, ZD1SS and ZS3M—all phone.

K. M. Parry (Sandwich) reminds us that ZS2MI, who would give most people a new country (Marion Island) is also a new Zone for many, as he's in Zone 39. So K.M.P. was delighted to hear him. He also mentions PK4DA and VQ4RF as good and consistent signals.

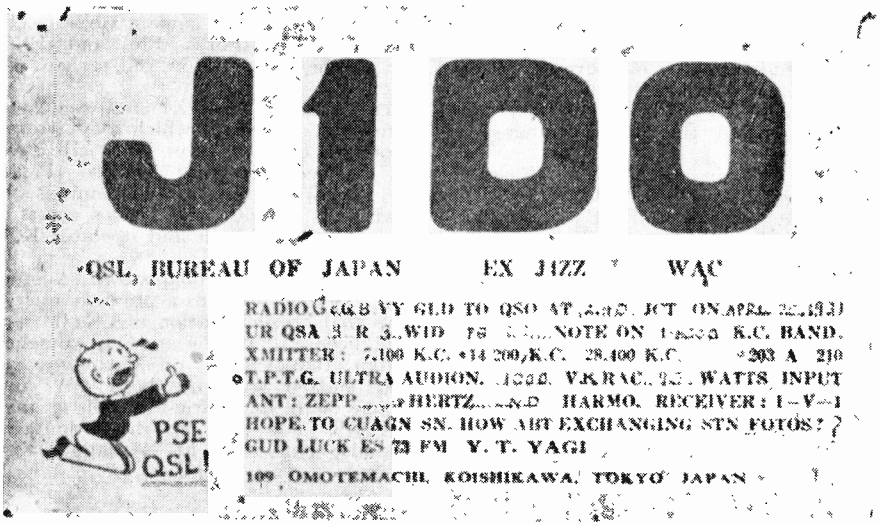
R. A. Hawley (Goostrey) thinks PK3JF and 4DA were the best stations heard, but gives full marks to EL2X for crashing through on a Sunday when the band was dead except for an unusually high noise level. I. S. Davies found PK4DA almost too strong to be convincing and wonders if he is genuine! He certainly is.

M. J. Marlow (Merrow) heard "a beautiful sig" from CO7AA, coming through very bad QRM for nearly an hour, and was also very pleased with VP6SD and ZE2KI. He asks whether ZC1AUO is O.K.? Can anyone tell him? He also queries OY3IGO, who most certainly is genuine. R. W. Thomas (London, E.5) has just got down to listening again after sixteen months' absence. (Must have been a nasty shock, too!) He collected three new ones — KR6IR, YN1AR and FM7WF.

A. H. Edgar says the band has been in such a state that he wouldn't, normally, have bothered with it; but



W1SVL of Taunton, Mass. is one of those W's who use the simplest gear. The Tx is a 6L6-6L6 oscillator doubler and the receiver an NC-57. The station is located in an attic.



An interesting DX rarity — J1DO, Tokyo, was on the 20-metre band in 1931

his log looked a bit empty, so he got down to it. He was agreeably surprised. His best on CW were AP5B, CR9AG, HZ1AB, JA2QS, KC6AB, VR1C and ZS7C—all between 1400 and 1700 except VR1C, who was at 1000. He asks whether EA0 counts as a separate country. It does—Spanish Guinea—so you can all go up one if you have heard it and haven't already claimed.

D. S. Kendall's best on 14 mc phone have been EL2X, EQ3FM, KG4AK, PK3JF, VP5RA, VS7RA, YK1AD, YN1RA and ZC4TF. K. Parvin found it quite a good month, especially for the West Indies and Central America. In the mornings the signals from JA and ZL have been quite good ; evenings have yielded MI3, OQ5, VQ4 and many ZS's who have now deserted 28 mc.

A. M. Norden logged VP2GG, AP2N, VS7SV, XZ2EM, VK6MK and 9S4AR —all phone. I must apologise to him for failing to make it clear, last month, in the Marathon table that his results were on Phone Only. That little (P) after his name was omitted somehow. He and P. H. Strudwick were the only two in the Top Ten who made it on Phone Only, and they both hail from London, N.W.11, which they now claim to have put on the map !

N. S. Beckett has still found 1600-1700 GMT about the best time to listen. The month's bag, for him, included VK1YG and FQ8AE on CW, with a large number of W6's and 7's, both phone and CW.

DX on Ten Metres

And so we come to that awkward band—28 mc. It's just as well that the band wasn't in this state when all the post-war licences were restored in 1946, for 28 mc, then, was the *only* band we had for more than six months. (And wasn't there some DX on it then, too !). How many readers were active on Ten then, when G6CU/ZC2 in the Cocos. Is. was one of the outstanding signals ? And every morning, from about 1100 on, phones from Guam Saipan, Okinawa and Iwojima fairly roared in at S9 plus, to give way, soon after midday, to the usual pack of Yanks. We shan't have those conditions back for some years, methinks.

K. Parvin says January was the worst month for Ten since he started on the band in 1948, his only DX being W1, 2, 3 and a stray KZ5. A. H. Edgar hasn't heard a sign of a signal, and pines for those very conditions I have just been describing. D. K. Cocking (Farnborough) says he has only heard one single human voice from outside London, and that was a W4. A. O. Frearson heard just one CW signal — from UA3CU.

E. H. Williams (Poole) did manage to log CO7RQ, EA8AX, EL2R, HC1SA, KG4AT, OX3BD and TF2TP—all round

about 1700 GMT on January 2 and 3. R. A. Hawley found it open for Eastern U.S.A. and Canada on several occasions. H. M. Graham heard a few W's and an odd ZS or two, but suspects that he missed the real openings—if any.

D. L. McLean mentions EL2R and ZC4XP, but also heard DL, I, HB, W1, 2, 3, 4, 8, 9 and VE3; so the old band has not been completely dead all the time. Just you wait until *next* winter and see what a dead band really can be. (I hope I'm wrong !)

J. W. Cave (Parkstone) confirms all that we think about 28 mc by another of his very painstaking analyses of conditions. This time he has produced two charts—one showing the variations on Ten throughout 1950 and the other dealing with January. The most interesting fact to emerge is that January has shown a new low level, particularly for Africa and Asia, which had, until now, remained reasonably constant.

It is also strange to note that the chart for *North America* is the most active for January, showing little difference from the preceding months, whereas South America, Oceania, Asia and Africa have virtually disappeared. (Of course North America has probably followed suit by now !)

J.W.C. is to be congratulated on his 1950 chart, which shows average signal strength from the various continents, the daily peak hour, the best continent for each week, the incidence of short skip, fading or blackouts, and much other useful information.

Miscellany

K. B. Ranger (Strood) would like to know who, or what, is OU1FF, heard on 14 mc phone. Also he asks whether all the ZS districts count as separate countries or whether they are all one under the ZS prefix. Here the answer is " Neither." ZS 1, 2, 4, 5 and 6 all count together as " Union of South Africa "; ZS 3 is South West Africa; ZS 7, Swaziland; ZS 8, Basutoland; ZS 9, Bechuanaland. And now there's that solitary ZS2MI on Marion Island for another one. Finally, in the country-counting racket one takes the six different British Isles prefixes (or seven, if you include EI) and they all count in the total.

J. P. Moore (Solihull) returns to the fold and asks whether CT2 and CS3 are different. No, they are not. Also, is EA9BB genuine? Well, there *is* a genuine one of that name. He suspects that YU3FLK, 3FME, 3FML and 3FNO are all the same station and perhaps all phoney.

D. C. Stace (New Zealand) sends in a list of Calls Heard which looks pretty exotic to our eyes over here. He says he has been receiving KC6WC (Palau Is.) very well lately and reminds us that he is a KG6, who " pops across " about once a month and operates KC6 when he can.

E. Trebilcock (Williamstown, Australia), referring back to a previous query, says that no such station as VK1JM was ever licensed; but he adds, in compensation, that VK1RF on Macquarie has just started up with both CW and Phone on 14 mc. Eric also tells us that VK9MR was not in the Admiralty Islands but was at Madang, New Guinea.

The Contest Angle

Don't forget that sundry contests, for your entertainment and education, are now under way, and that the familiar tables will be re-appearing in the next issue. As stated last month, this is the present programme :

(I) The Top-Band Marathon: This started on February 1, and will run for *three months* from that date. Send in, from now onwards, your claims for (*a*) Countries and (*b*) United Kingdom Counties heard. The two figures will be added together to decide your position on the ladder. And don't forget that " Counties " includes all English, Scottish, Welsh and Northern Ireland counties, plus the Isle of Man and the various Channel Islands but *not* the Isle of Wight ! Prefixes count as countries too, *e.g.* GC and GD and so on.

(II) The February Contest: Zones and Countries Heard, during the period January 22 to February 19. Any band, Phone or CW; position on ladder decided by *Zones*, with countries coming second.

(III) The March Contest: This has not been mentioned before, but here it is. Just a quick Four-Band Contest, but the four bands will be 1.7, 3.5, 7 and 14 mc, and we will leave 28 mc right out of it. List the countries you hear on each of these four bands, and send them in, tabulated in the usual way. The winner will be the listener with the highest total resulting from the addition of the four columns. Dates for this—Midnight on February 19 until Midnight on March 25. (Yes, I know it's more than a month, but sometimes it may have to be less, so let's be fair !)

So plug away at these various contests, and let's see a fantastic number of countries heard in that Top Band Marathon, while conditions are still good. In the Transatlantics you should,

February 17—18, 2200—0200 GMT ...	**"Short Wave Magazine" Top Band Transatlantic Tests.**
February 17, 0001—February 18, 2359 ...	**A.R.R.L. DX Contest (Phone)**
February 24, 1700—February 25, 1700 ...	**B.E.R.U. Contest (CW)**
February 25, 0500—0800	**"Short Wave Magazine" Top Band Transatlantic Tests**
March 3, 1700—March 4, 1700	**B.E.R.U. Contest (CW)**
March 10, 0001—March 11, 2359 ...	**A.R.R.L. DX Contest (CW)**
March 11, 0500—0800	**"Short Wave Magazine" Top Band Transatlantic Tests**
March 17, 0001—March 18, 2359 ...	**A.R.R.L. DX Contest (Phone)**

with luck, hear VE, W, HC, KV4, EK and TA, to mention a few.

I still have some ideas up my sleeve for these short, sharp Monthly contests, but if any readers have brainwaves on the subject I shall be glad to hear about them. Chief requirement is that the rules should not be too complicated, and that the whole thing can take place between the appearance of one issue and the deadline for the next-but-one.

With conditions in their present unstable state, it is rather difficult to think out contests that will have any guarantee of success, just as it is difficult to plan the SLP's ahead.

The little list herewith will give you some idea of the number of Contests and Tests, great and small, that are taking place this Spring.

And so it goes on ! There are doubtless other smaller contests of which I have no knowledge at present, but the table shows that every week-end from February 17 to March 17 is occupied, and most of them double-banked already.

Now let's add in a few SLP's. to show there's no ill-feeling !

Set Listening Periods

February 17, 1500-1600 GMT ; 14 mc Phone and CW

February 18, 1600-1700 GMT ; 28 mc Phone

March 17, 1700-1800 *GMT — 28 mc Phone.*

March 18, 0800-0900 *GMT — 14 mc Phone.*

All these four periods coincide wtih the Phone section of the A.R.R.L. Contest, so there should be plenty of DX phone about on the bands. Listeners who don't follow the SLP's might, with profit, take a look round the 3.5 mc band those week ends.

Note that the deadline for the April issue is first post on **February 21,** and for the May issue first post on March 28. For the April issue you will have **two** lots of SLP's for which to send your lists, as the pair we have already had (January 27 and 28) were too early for inclusion in this issue and, in fact, came after the deadline.

So Good Hunting until next month ; conditions may well be very good this Spring. Don't overlook the dates, and address everything to DX Scribe, *Short Wave Listener & Television Review,* 53 Victoria Street, London, S.W.1. 73 and BCNU.

Late Flash :

(1) G. C. Allen (Thornton Heath) scooped the pool on January 28 by hearing a WØ in Nebraska on the Top Band. Further details next month, but we know that the time was between 0300 and 0500, and the frquency in the 1975-2000 kc band. In the same part of the band G.C.A. also logged KV4AA. Many W's and VE's were heard on the 28th, although conditions from 0500 onwards were not very good.

Keep a look-out on the Top Band on February 25, even if it means staying up all night !

(2) The 28 mc band was wide open for W and VE, as well as Africa and Asia, on January 28. W5, Ø and VE4 were heard as late as 1845 GMT.

★ ★

CALL BOOK PRICE INCREASE

We are informed by the American publishers of the *Radio Amateur Call Book* that, effective with the next (Spring 1951) edition, there will have to be a price increase, making it 20s. post free in this country and the sterling area generally. The U.K. agents for the *Call Book* are Gage & Pollard, 49 Victoria Street, London, S.W.1, who also handle a wide range of American radio and technical publications, which can be ordered through them on a sterling basis.

CALLS HEARD

GENERAL

28 mc

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

PHONE : CO7RQ, EA8AX, EL2R, HC1SA, KG4AT, OX3BD, TF2TP, W3OZA/MM. (*Rx : AR.*88.)

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

PHONE : EA8AX, EL2R, KP4CD, W5KMB, W2AOU/MM, 2ZXM/MM, 41UT/MM, 41W/MM, 6ZFC/MM, ZC4XP, ZE1JE, 2KH. (*Rx : SX*28 *and AR*88*LF.*)

14 mc

D. C. Stace, Box 30, Spring Creek, New Zealand.

PHONE : CM9AA, CR9AB, FN8AD, FO8AC, HC2JR, HK5EV, KC6WC, KW6AN, 6AQ, KZ5ES, 5WA, LU5XE, PK5AA, TA3AF, VK1RB, 1RF, 9FM, VP4TH, 6FO, VR1C, 1F, 5GA, VS6BP, VU2EU, XZ2SY, ZK1BA. (*Rx : Mullard* 957.)

K. B. Ranger, 89 Station Road, Strood, Rochester.

PHONE : CN8BM, 8EM, CI3AK, HZ1AB, MD2AC, 2AN, 2JH, 2MD, 2PJ, OQ5DL, PY6DJ, VO6A, VK3RE, VP6SD, ZB1AJX ZC6JM, ZD1BW, ZS6Q, 4X4DK. (*Rx : Homebuilt* 0-*V*-2.)

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

PHONE : CR6AK, EL2R, 2X, EQ3FM, HK4JO, JA2BC, 2BL, PK4DA, TI5NA, UG6WD, VE8TC, VQ2HM, VS1AX, 7EP, 7GD, 7SG, 7SV, XE1CQ, XZ2KN, YN2RA, YS1MS, ZE1JE, 1JX, ZS3M, 3X. (*Rx : S.*640.)

F. H. Bliss, 12 Elmsleigh Ave., Kenton, Harrow, Mdlx.

PHONE : CR7AH, EA8BC, EQ3FM, HZ1AB, MI3ZX, PY4AGZ, TA3XOX, VK6WU, 6OR, ZC1AL, 6JM, ZE2JK, ZS1BV, 4X4DV. (*Rx : BC*348*M.*)

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

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

7 mc : No Europeans.

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

M. J. Marlow, 158 Epsom Rd., Merrow, Guildford.

PHONE : OQ5DZ, VP6SD, VU2JP, ZE2KI, IT1SEM, ZC1AUO.
CW : EA7CP, VK6MO, 6VX, VS7TC, VU2FH.

J. P. Colwill, Hay Common, Launceston, Cornwall.

PHONE : CE2CC, CO7AA, 7RQ, EK1AS, EL2X, HC1FG, 1RE, HP1MD, HZ1KE, KZ5KS, LU7MR, MD2EU, OQ5CF, OX3BD, PY7DO, VE8TC, VP6SD, 9VV, VQ4RF, YV5EC, ZC6JM, ZS4H, 6VJ, 3V8AK, 4X4DK. (*Rx : Roberts' P4D.*)

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

PHONE : AP2N, CE3CZ, CO8GH, CX1CA, EA8BB, EL2X, EQ3FM, HK4JO, HP1EV, 1LA, 1LB, 1MD, HZ1AB, 1KE, KG4AD, KP4AZ, KR6FA, LU1KG, MD2MD, 2PJ, SVØWU, TA3XOX, TF5TP, VE8OY, VK4XR, 6MO, VP2GG, 6FO, 6SD, 9F, 9HH, VQ4AQ, 4ERR, 4RF, VS1AY, 1AX, VU2CQ, 2EP, 2FH, 2FU, 2RX, XE1AC, XZ2EM, YS1JR, 1MS, 1ZG, 2AG, YV5BZ, ZB2A. ZC1AL, 4TF, ZE2JE, ZL3JO, ZS1KB, 1T, 2MI, 3M, 5BS, 6EB, 6CM. (*Rx : Commander.*)

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

CW : AP5B, CR7CR, 9AG, FF8AC, FQ8AC, HZ1AB, JA2QS, KC6AC, PK4DA, UAØAA, UD6KBS, UF6KAF, VK6DO, VQ3CCG, VR1C, VU2BN, 2JK, 2MD, ZD1AR, ZS3Q, 7C. (*Rx : S.*640.)

T. R. Lamble, Ardingly Cottage, Sussex.

PHONE : CS3AA, EL8EP, KG4AC, PY2AK, TA3FAS, VP4TH, W7VJS, ZS3X, 6FN, 6TE. (*Rx : SX*17 *and R.*103.)

I. S. Davies, 127 Hazelwood Lane, Palmers Green, London, N.13.

PHONE : AR8BC, CO7AA, EL2X, FF3CN, 8BA, HP1MB, HZ1KE, KP4AF, MI3ZX, OQ5DL, 5CF, PK4DA, TI2FG, VK2XH, 3RE, 5RN, 6JW, VP5RA, 6FO, 9G, 9RR, VQ4RF, VS7SG, 7SV, VU2RX, XZ2SY, YK1AE, YV5BZ, ZC6JM, ZL2JB. (*Rx : R.*208.)

R. J. Riding, Trewatha, Fibbersley, Wednesfield, Staffs.

PHONE : CN8ED, 8EM, 8EQ, CS3AA, EA8AV, 8AX, 8AZ, 9AI, FA3GZ, 3JY, MD2EU, 2MD, 2PJ, OX3BD, TF5TP, VE8CD, VP6SD, ZB1AY, 2A, ZC6JM, ZS6JM, 3V8BB. (*Rx : Home-built Battery* 1-*V*-1.)

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

PHONE : EA6AR, 6AT, 9AI, HZ1KE, 1AB, MI3LV, 3ZX, PK4DA, TF5TP, VK4RT, 4XR, 5EN, VQ4RF, VP6SD, 9G, VS7GD, 7SG, ZE2KH, ZS2M1, 6DW, 6JW. (*Rx : BC.*348.)

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

PHONE : AR8AB, 8BC, EAØAC, FF3CN, HH2X, HZ1AB, 1KE, HP1MM, MI3ZX, OQ5CF, 5DL, PK4DA, TA3AF, 3GVU, TI2TG, VE7CN, 8NX, VP3MCB, 6FO, 6SD, 6WR, 7NH, 9G, 9HH, 9VV, YN4MS, ZC6JM, 6UNJ, ZD1SS, 4AD, ZS3M. (*Rx : SX*28 *and AR*88*LF.*)

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

PHONE : CN8BG, 8BV, 8EJ, 8EP, 8ET, CS3AA, EA6AT, 8AD, 8AE, 8AS, 8AX, 8AY, EA8BC, 8BD, EK1CH, 1JC, EL2X, FA3JY, LU4BH, MD2EU, 2PJ, PY2CK, PY6AG, 6DJ, TF5TF, VE8RD, VK2AGU, 2NS, 3HW, VP6SD, 9G, 9HH, VQ4RF, W7AJS, ZB2I, ZC6JM, ZS1BV, ZS6JW. (*Rx : AR*88.)

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

PHONE: **3V8**CC, **CT3**AC, 3AE, **CO7**RQ, **EL2**X, **HH2**X, **KG4**AK **MD2**EU, **PK3**JF, 4DA, **TF3**MB, 5TP, **VE7**CN, 8NX, **VP6**FO, 6SD, 9G, 9HH, **VS7**GW, 7DL, 7JMI, **XZ2**KN, **YK1**AE, **YV5**AB. (*Rx: AR88 and S.*504.)

W. G. D. Orsler, 9 Pembroke Road, Erith, Kent.

PHONE: **CN8**BV, 8EN, **EK1**BC, 1BK, 1GH, **FA8**CC, **MB2**BJ, **MD2**AC, 2MD, **MF2**AA, **UB5**KCA **VK3**RE, **VP7**NG, **VQ4**ERR, 4RF, **W7**AJS, 7DL, **4X4**AT, CR, DK, DV. (*Rx: R208 and R1155A.*)

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

PHONE: **CN8**EP, 8EQ, **CS3**AA, **EK1**CH, **MD2**MD, **MI3**ZX, **TF5**TP, **TI2**MB, **VK6**LR, **VQ4**RF, **ZB1**AIS, **ZS6**BV, 6LW. *CW:* **CO7**AH, **EA8**AE, **KP4**JE, **KZ5**AA, **LU3**DBN, **PY7**LJ, **TF3**NA, **ZS1**GC, 1KK, **4X4**CR. (*Rx: S.*640.)

N. Roberts, Aspen View, 29 Race Hill, Launceston, Cornwall.

PHONE: **EQ3**FM, **HZ1**KE, **OQ5**DL, **VE7**AAN, 8RD, **VK3**AUP, 6JQ, 6MO, 6OR, **VQ3**BNU, 4AC, 4RF, **VS1**AY, 3JF, **W6**AM, **XZ2**EM, **ZE1**JS, **ZS1**BK, 4CT, 5II. (*Rx: SX 28A and S.*750.)

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

PHONE: **AP5**B, **JA8**AB, **PK3**JF, 4DA, **UB5**KAA, 5KAG, **VK6**DX, 6JW, 6MK, 6MO, 6OR, 6PJ, **VS1**AX, 1AY, 7BR, 7EP, 7GD, 7SG, 7SV, **VU2**CU, **XZ2**KN, (*Rx: S.*640 1-*V*-1.)

7 mc

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

CW: **CM2**PC, **CR4**AD, **CX6**BT, **FM7**WF, **HC1**JW, **HH2**JC, **HK5**EV, **KV4**AQ, 4AU, **LU2**DW, **PY2**BBX, **TG9**AD, **VP5**AL, 6CDI, 7NM, 8AO, **VQ4**KIF, **XE1**BA, **ZC4**BE, **ZL1**ST, **ZS1**EB, 2A, 5LZ, 6A, **4X4**RE. (*Rx: V55R.*)

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

CW: **FA9**BG, **KG6**GE, **KP4**CC, 4RS, **W6**FED. (*Rx: S.*640.)

D. S. Kendall, 40 Aberdale Gdns., Potters Bar, Middx.

PHONE: **CM2**OZ, 8LS, **CO2**CE, 7MB, 8JG, 8KG, **CT2**BR, 3AN, **EA8**MC, **EK1**BA, **FA3**DS, 3GA, 8BE, **HC1**JW, **HK4**DP, 4FV, 4JO, **HP1**EP, **LU2**MJ, 4DJJ, 5HX, **MD2**JH, **OH5**OF, **PY1**AKF, 2ALM, 2BBF, 3XE, 4CG, 4KJ, 7GM, **TI2**TP, **YV1**BF, 1BG, 2AO, 4AA. (*Rx: National HRO.*)

G. C. Allen, 24 Wiltshire Road, Thornton Heath, Surrey.

CW: **CM6**GD, **CO8**FH, **CX1**AX, **FQ8**AC, **HC5**HP, **HK5**DH, **KP4**KF, 4NE, 4QZ, **KV4**AA, **KZ5**BE, 5RM, **LU2**OB, 5IA, 7BI, 8AE, 9AX, **OA4**DF, **PY2**BBO, 2BDJ, 2BFD, 2CAT, 2DV, 2OJ, 2SR, 7WS, **VE1**GJ, 1PA, 1ZF, 3KE, **VP5**AL, 8AJ, 8AP, **VQ4**KIF **W5**GEL, OEEE, **YV5**DO, **ZB2**I, **ZC4**BW, **ZE2**JN, **ZL2**MM, **ZS2**A, 3U, 6AAM, 6KY. (*Rx: 7-Valve B.C.*6.)

I. S. Davies, 127, Hazelwood Lane, Palmers Green, London, N.13.

PHONE: **CN8**AR, 8AW, **CT3**AL, **EA8**AZ, 8CO, **EK1**BA, **FA8**BE, 8HS, 9KJ, **PY2**AIL, 2AK, 2AWP, 2BD, 2IR, 4AB, 4AI, 4GA, 4JJ. **3V8**AS, 8BA. (*Rx: R1155A.*)

N. S. Beckett, 194 Waveney Drive, Lowestoft.

CW: **FF8**AC, 8JC, **FM7**WF, **FY8**AC, **HZ1**KE, **LU3**DI, **MP4**BAE, **PY1**AMJ, 2BBO, 2OJ, 5RT, 7GP, **TI2**OA, **VK2**JR, 3TB, 9RH, **VP4**TB, 6CDI, **VS7**NG, **W3**ZJ/MM, **ZC4**XP, **ZD4**AB, **ZL1**ADY, 1HQ, 1ST, 2GH, 2IQ, 3KY, 3LR, **ZS1**IB, 2A, 5DE, 5U. (*Rx: Hambander.*)

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

CW: **CO6**SP, **EA6**AF, **F9**QV (Corsica), **FM7**WF, **HH2**HF, **HK4**DP, **KV4**AQ, **OX3**BG, **SV**OAB, **TG9**AD, **TI2**IG, **UO5**KAA, **UQ2**KAB, **VP4**IB, 5AL, 5BM, 8AJ, 8AO, 8AQ, **YV1**AI, **ZS6**OS. (*Rx: S.*680.)

3.5 mc

J. P. Colwill, Hay Common, Launceston, Cornwall.

PHONE: **CT1**IP, **DL1**FQ, 1HT, 1PX, 2QK, 3PO, 4VG, 6EM, **HB9**CD, **LX1**DU, **OZ7**OH, **PA0**CT, 0GVB, 0KC, **SM7**PN, **W1**AAH, 1AW, 1AZY, 1IGY, 4ZW. (*Rx: McMichael* 484.)

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

PHONE: **MD2**MD, **VE1**QW, 1RA, 1YV, **VO2**R, **VP6**SO, 9AF, **W1**ATE, 1KGE, 1LZT, 1OND, 3ABN, 3AOA, 3BFZ. (*Rx: Commander.*)

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

PHONE: **CO7**RQ, **KP4**ES. *CW:* **CT3**AB, **EK1**AO, **FA8**BG, 8DA, 8IH, 8RJ, **FY7**YC, **KP4**HU, 4KD, **KS3**AC, 4AI, **KV4**AA, **KZ5**DE, 5DR, **TA3**FAS, **VE4**NS, **VP5**AL, 5BM (Turks Is.), **VP6**CDI **W5**OQX, 5WZ, 6CEM, 0MFS, **YN1**AA, **ZL1**BY, 1HM, 3OA, **4X4**AC. (*Rx: R.*107.)

K. Parvin, 98 Winterbourne Rd. Thorton Heath, Surrey.

PHONE: **CT1**BW, **DL4**RV/ Airborne, **FA3**GA, 8BG, 8JO, 9WD, **OK1**FV, **SM7**BYB, 7PN, **SP1**SE, **VE1**QW, **VP6**SD, **ZC6**JM, **9S4**AD. (*Rx: S.*640.)

N. Roberts, Aspen View, 29 Race Hill Launceston, Cornwall.

PHONE: **VE1**AB, 1AF, 1IE, 1OQ, 1QW, 1YO, **W1**CPI, 1MY, 2FMQ, 2KP, 2KR, 3ACG, 3ACW, 3DMQ, 3FCV, 3LXG, 3NPU, 3TJ, 4CO, 8MKT. (*Rx: SX28A and S.*750.)

1.7 mc

M. J. Marlow, 158 Epsom Rd., Merrow, Guildford.

CW: **GC2**FMV, **HA4**SA, **PA0**FT **VE1**EA, **W1**BB.

R. J. Riding, Trewatha, Fibbersley, Wednesfield, Staffs.

PHONE: **G2**ABB, 2CVD, 2DPZ, 2FBZ, 2FTS, 3CNY, 3DHP, 3DUF, 4OC, 5QG, 5RO, 8KL. (*Rx: Home-built* 1-*V*-1.)

G. C. Allen, 24 Wiltshire Road, Thornton Heath, Surrey.

CW: **EK1**AO, **HA4**SA, **VE1**EA, 3AAZ, **W1**AW, 1BB, 1PLO, 2BFA, 2EQS, 2FOF, 2LYN, 2UKS, 2WJE, 8FLH. *PHONE:* **W3**AAA.

J. P. Colwill, Hay Common, Launceston, Cornwall.

PHONE: **G2**ACV, 2BCX, 2DT, 2FIX, 2YM, 3AGP/A, 3EEW, 3FEX, 3FMZ, 4SC, 5AU, 5HB, 5LO, 5RZ, 6LO/A, 6OX, 6PR, 6WF, 8TH, 8UR, **GC4**LI, **GD3**UB **GW3**ALD, 3EPM, 8BW. (*Rx: McMichael Battery Model No.* 484.)

N. G. Robson, 69 Granville Rd., Newcastle-on-Tyne, 3.

PHONE: **G2**BCX, 2CG, 2DPZ, 2FTS, 2PX, 3BIT, 4OC, 8OK, 8UR, **GW8**BW. (*Rx: S.*640.)

N. Roberts, Aspen View, 29 Race Hill, Launceston, Cornwall.

PHONE: **G2**ACV, 2AQN, 2DYQ, 3AJR, 3ESD, 3ETC, 3GFW, 4GA, 5HB, 5OZ, 5ZT, 6CL, 6GO, 6HN, 6KJ, 6NB, 8TH, **GD3**UB, **GW3**CDH, 8BW. (*Rx: SX28A and S.*750.)

F. A. Herridge, 95 Ramsden Rd., Balham, London, S.W.12

PHONE: **GD3**UB, **GM3**DZB, 3GJP, 3OM, **GW2**BUF, 3CDP, 8BW. *CW:* **DL3**OI, 6OX, **EK1**AO, **GC2**FMV, **GI3**ML, 5SJ, 6YW, **GM3**EHI, 3GUC, 3GUQ, **GW3**AJ, 3ALV, 3BFH, 3EFZ, 3FSP, 3FWY, 3JI, 3ZV, 5BI, **LA7**WC, **OK1**AWA, 1CV, 1XB, **PA0**IKM, **SM5**AXY, **UA3**AW, 3IS, **W1**BB, (*Rx: Modified R* 103*A.*)

PSE QSL

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

CO6CA *Real* 33, *Casilda, Las Villas, Cuba.* 7, 14 and 28 mc phone, 0300-0700 and 1800 GMT.

CR6AQ *Box* 79, *Launda, Angola.* 28480 kc phone, 1700 GMT : 14060 kc CW, Saturdays 1930 GMT.

CT1DH *R. Alvares Cabral* 369, *Porto, Portugal.* 14180, 14258 and 28360 kc phone, 1700-1830 and 2200-2359 GMT. Details modulation.

DL4QI *B. E. Siciensky, APO.* 742, *c/o P.M., N.Y.C., U.S.A.* 14 mc phone and CW, 0900-1600 GMT. Details modulation and check for harmonics.

DL6DW *Schluderstr.* 28, *Munich.* 19, *Germany.* 3.5, 7, 14 and 28 mc phone and CW, 2115-0300 GMT.

EA3GF 57 *Via Layetana, Barcelona, Spain.* 14 mc CW, 2200-0200 GMT. QRG, keying, stability.

GW3EEX 144 *Old Road, Neath, Glam.* VFO-controlled 3.5, 7, 14 and 28 mc phone and CW.

G3FQU 29 *Bridge Way, Whitton, Twickenham, Middlesex.* 3541 kc CW, 0530-0615, 0715-0745 and 1815-2200 GMT.

G3GWJ 23 *Brookvale Road, Langley Mill, Notts.* 3.5 and 7 mc CW, VFO, 1900-2359 GMT.

G3GYR 6 *Council Houses, Rode Heath, Stoke-on-Trent, Staffs.* 1832 kc CW, evenings and weekends.

G3GYU 2 *Fir Street, Ramsbottom, Manchester.* 7 and 14 mc CW (7050 kc), evenings.

G3HCC 6 *Elmcroft Terrace, Colham Green Road, Hillingdon, Middlesex.* 14016 and 14078 kc CW, 1800-2300 GMT, and weekends.

G3HCK *The Beeches, London Road, Hurst Green, Sussex.* 1.8 and 3.5 mc CW, 1900-2359 GMT, and weekends.

KP4LT 263 *Gajate Street, Mayaguez, Puerto Rico.* Reports on 14 and 28 mc phone and CW.

KZ5PC *P.O. Box* 64, *Ancon, Panama Canal Zone.* 14 and 28 mc phone and CW reports.

KZ5WA *P.O. Box* 82, *Gamboa, Panama Canal Zone.* 14 and 28 mc phone and CW, 2100-2359 GMT, weekends 1500-2200 GMT.

OZ5KP *Borgergade* 3, *Silkeborg, Denmark.* 14 and 28 mc phone, 0800-1800 GMT.

OZ5U *Nymarksvej* 34, *blok* 1, *Nyborg, Denmark.* 3.5, 7 and 14 mc CW, 0530-0600 GMT.

OZ5YL } *S. Nielsen, Skamlebaek radio, Faarevejle,*
OZ9SN } *Denmark.* Modulation of 3.5 mc phone.

PAØYJ *Axelsestraat A.* 139, *Zaamslag, Netherlands.* 3.5 and 7 mc CW, 1200-1400 and 1700-2000 GMT

PK1TH 41 *Djalan Lembang, Djakarta, Java, Indonesia.* 28250, 28300, 28600 and 28800 kc phone, 0900-1500 GMT.

PY1DK *Avenida Duque de Caxias* 39, *Rio de Janeiro, Brazil.* Reports on 28 mc phone.

PY6BP *Rua Botelho Benjamin* 10, *Salvador, Bahia, Brazil.* 3.5, 7, 14, 21, 28 mc phone and CW.

SM2AQY *HjalmarL undbomsvaegen* 42, *Kiruna, Sweden.* 3.5, 7 and 14 mc CW, 1145-1215 and 1900-2300 GMT. Keying, tone and signal strength.

SM5AFO *Aluddsvaegen* 15, *St. Essingen, Stockholm, Sweden.* Reports on 7 mc CW.

SM5AFU *Hornsgatan* 51, *III, Stockholm, Sweden.* 3.5, 7, 14 and 28 mc CW, 1600-2300 GMT. Comparative reports.

SM5KV *Skillinggraend* 5, *Stockholm, Sweden.* 14 mc CW operation.

VE1IW 109 *Broad Street, St. John, New Brunswick, Canada.* 7030, 7175.7 and 7206 kc CW, 1400-0400 GMT. Details Wx and condx.

VE2JL 63 *Riverview Avenue, Ville La Salle, Montreal Que., Canada.* 7013, 7026 and 7031 kc CW, 2200-0400 GMT. Comparative reports.

VE8RY *Box* 453, *Whitehorse, Yukon, Canada.* 7 and 14 mc CW, 14 mc phone, 0700-1900 GMT. Quality.

VK2AIL *Connell Court, Connells Point Road, South Hurstville, N.S.W., Australia.* 7, 14, 28, 50, 144, 288 and 580 mc phone, 0630-0800 and 1830-2000 GMT.

VK3ND *R. Jonasson, Farnsworth Street, Castlemaine, Vic., Australia.* 14 and 28 mc phone, 0700-1000, 1500-1700 GMT. Quality and bandwidth.

VK5BY *Box* 1636*M, G.P.O., Adelaide, S. Australia.* Reports on 14 mc CW operation.

VQ4BM *P.O. Box* 1313, *Nairobi, Kenya.* 7, 14 and 28 mc phone and CW operation, VFO.

VQ4KRL *P.O. Box* 3956, *Nairobi, Kenya.* 14020 and 14080 kc CW, 1800-2100 GMT.

VQ5AU/M *P.O. Box* 355, *Kampala, Uganda.* 14 mc phone and CW, 1600 GMT. 7 and 14 mc phone, weekends. Quality and stability.

VS1CS 335 *Thomson Road, Singapore,* 11, *Malaya.* 14 and 28 mc phone and CW, 1100-1600 GMT.

VS6BN *Sgt. Dunn E. C., Sgts' Mess, R.A.F., Kaitak, Hong Kong.* 7, 14 and 28 mc phone and CW, 1000-2000 GMT.

W2ISS 118-36 224*th Street, St. Albans, N.Y., U.S.A.* 14 and 28 mc phone, 1500-2000 GMT.

W2KKL 552 *Rosedale Avenue, Bronx.* 61, *N.Y. U.S.A.* 14 mc CW, 1500-1900 GMT. Quality, keying, any chirp or harmonics.

W5OWG 125 *W. Main, Ardmore, Okla., U.S.A.* 14 mc phone and CW, 1230-1530 GMT Mon., Thurs., Fri.

W6UOF 14596 *Round Valley Drive, Sherman Oaks, Calif., U.S.A.* 3.5, 7, 14 and 28 mc phone and CW. Stability and key-clicks.

W8IQS 10055 *Lennon Road, Lennon, Mich., U.S.A.* 3.5, 7, 14 and 28 mc phone and CW.

W8VPA 2605 *Woodburn Ave., Cincinnati, Ohio, U.S.A.* 14 and 28 mc phone, weekends 1400-1600 GMT.

W8ZO 4500 *Washtenaw Avenue, Ypsilanti, Mich., U.S.A.* Reports on 28510 kc phone.

ZE3JJ *P.O. Box* 1557, *Salisbury, S. Rhodesia.* Reports on 7 mc CW operation.

ZL4GA 76 *Marlow Street, Dunedin, E.1., N. Zealand.* Detailed reports, CW and phone operation.

ZS3S *P.O. Box* 338, *Windhoek, South-West Africa.* 14 and 28 mc phone, 1600-2300 GMT.

ZS5KG *P.O. Box* 1902, *Durban, Natal, S. Africa.* 14 mc phone and CW, afternoons and evenings.

ZS6AAB *A.D.W.S., Waterkloof Air Stn., P.O. Odonata, Pretoria, S. Africa.* 14 mc CW, 1700-2000 GMT.

ZS6OO } *P.O. Box* 1482, *Johannesburg, S. Africa.*
ZS6RY } *P.O. Box* 168, *Tzaneen, S. Africa.* 7, 14, 28 and 50 mc phone and CW. Quality.

ZS6WW 48 *Surbiton Ave., Auckland Park, Johannesburg, S. Africa.* 3.5, 7, 14 and 28 mc phone.

4X4AT *P.O. Box* 5138, *Tel-aviv, Israel.* 7 and 14 mc phone and CW, 1600-2000 GMT.

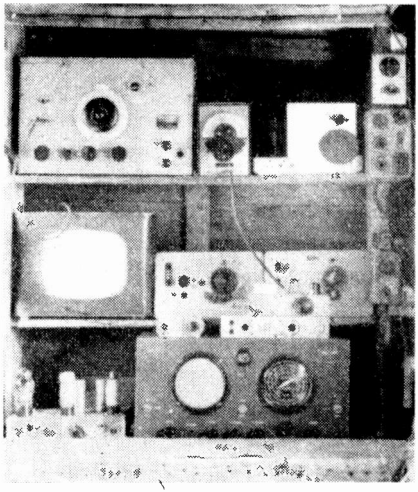
4X4CJ 4 *Nachlat-Benjamin Street, Tel-aviv, Israel.* 7, 14 and 28 mc phone and CW, Friday and Saturday 0500-0730 and 1400-2200 GMT. Stability and modulation.

4X4DF *A. Bar-giora, Ephratast Talpioth, Jerusalem, Israel.* 7010 and 14020 kc CW, 0600-0700 and 1700-2200 GMT.

9S4AX *Saarstr.* 9, *Saarbrucken* 3, *Saarland.* 3.5, 7, 14 and 28 mc phone and CW.

SWL Stations

NO. 38



AT this station, operated by J. Jones at 16 Silverbirch Road, Solihull, Warwickshire, the main receiver is a Hallicrafters "Sky Chief" covering 550 kc-18 mc—bottom centre in this photograph; above it are the 420 mc receiver and a 6J6 converter for 144 mc.

To pep up the station Rx on Twenty, a two-stage pre-selector is provided, and to bring in Ten on the Sky Chief, an RF-24 Unit modified for 28 mc is used as a converter. Other equipment includes an R.1224A, and two additional 2-valve pre-selectors, for 1.7 and 28 mc.

Aerials at present in use are: A 95-ft. long-wire running N-S at a height of 25-ft., and a dipole for Ten, also N-S and 15-ft. high.

Listening, which started in 1946, is confined to the amateur bands, and results to date show 134 countries heard in 35 zones, with just over 70 QSL cards held, representing 30 countries. Main interests are the 1.7, 14 and 28 mc bands, phone and CW, and the eventual objective is a transmitting licence; it is hoped that the 1951 R.A.E. will produce this.

The subject of these notes modestly describes himself as "one of the younger SWL's"—actually, he is barely 17, and on his record to date we can expect great things in the future.

WORLD RADIO HANDBOOK

The 1950/51 *World Radio Handbook* for Listeners (Publisher and Editor: O. Lund-Johansen, Copenhagen, Denmark) will make a noteworthy addition to the radio man's library, for it is an attractively illustrated reference book written in the English language, and its one hundred and twelve pages are packed with useful information concerning both medium and short wave stations throughout the world. Broadcasting stations are described in detail, whether they be in Greenland or Réunion, in Tahiti or Afghanistan, and quick reference is facilitated through countries being classified alphabetically within their respective continents. In our opinion, there is nothing quite like it on sale today, and we feel that it will supply the needs of the most ardent of radio enthusiasts. *World Radio Handbook* can be obtained (price 6s. 6d. plus 3d. postage) from Gage & Pollard, 49 Victoria Street, London, S.W.1.

How To Listen To The World is a subsidiary publication (price 1s. 6d.) containing information suitable for beginners, for it deals with the mechanism of short wave propagation, gives advice on how to use the short wave bands, and explains how to prepare a log-book and how to write up a report, using the appropriate international abbreviations.

R.H.G.

Keep in Touch — Read Short Wave Listener & Television Review Regularly

THE VHF END

by **A. A. MAWSE**

Receiver Noise Factor—

Reports and News—

The VHF Dinner—

Calls Heard and The Tables

THE November 1950 *Newsletter* of the Radio Amateur Scientific Observations (USA) contained some interesting facts regarding the minimum usable noise factor in VHF receivers. The noise factor of a receiver is by definition the ratio of signal-to-noise input power to signal-to-noise output power. The importance of this factor is dependent on the amount of external noise which is reaching the aerial from its surroundings. Even if man-made noise is eliminated, there still remains cosmic noise. This latter is not constant over the radio spectrum, nor is its source uniformly distributed over the sky. As frequency is increased, the external noise factor decreases, and therefore the Noise Factor of the receiver becomes of increasing importance. At 50 mc the average external noise factor is 14 dB, while at 144 mc it is only 1 dB. Although it becomes even less at higher frequencies, the present state of receiver design, available valves and circuit techniques cause the receiver noise factor to increase rapidly above 200 mc, with the result that 144 mc is about the ideal for obtaining a really low over-all noise factor. The RASO articles gives 2.3 dB as the maximum possible sensitivity to be expected from current designs of 144 mc receivers used with ideally matched aerials and no transmission line losses. Summing up, what this means to you and me is that on Two Metres we have our greatest opportunity to design and build efficient receivers, the performance of which will not be limited by cosmic noise.

The Month's News

Activity has varied greatly in different parts of the country and conditions have, in general, been poor. A reasonably high level of transmitting activity seems to exist along the South Coast from Brighton to Poole, and news reaches us of still more to come in this district. In the London area only a few stations appear to be regularly active, and the same applies to the Midlands and North generally. There has been some regular work in and around Cambridge and, as always, at Banwell down "Zumnierzet way." All this, of course, refers to Two Metres. On 70 cm regular schedule working is in progress in London and in Lancashire.

L. A. Whitmill (Harrow Weald) reports G2AVR of Bexhill as his best signal. G3DIV/A was also a good signal with him on January 10. From Eastbourne, J. E. Harman writes to tell us he is active once more. The receiver is still the G2IQ converter, which is as good as any tried, the only annoyance with it being the failure to make the 6J6 oscillator produce a real DC note. J.E.H. says all connecting leads are as short as he can make them and the circuit just bristles with RF chokes and decoupling condensers. A number of different 6J6's have been tried, but the result is just the same. He would welcome any suggestions for overcoming this trouble. The 4-element very-wide-spaced beam is still in use, but a 6-element stack with wire-netting reflector is envisaged for the near future. Some French stations have been heard, although on most occasions not at great strength. January 21 was an exception, and during the evening F8GH, F9AE and F9MX were solid S9 + signals. J.E.H. sends his congratulations to A. L. Mynett on attaining his transmitting licence and hopes he will not entirely forsake "The VHF End"—so do we.

P. J. Towgood (Bournemouth), with much constructional work on hand and at the same time a desire not to miss anything that might be happening on Two, has spent the month dashing to

and fro between the soldering iron and the 144 mc converter. He has a few things to say about "load-shedding," which forced him to instal an auto-trahsformer; he has found that 6.3 volt valves have considerable objection to being operated at 5.5 volts. At that voltage signals go down by quite a few S points and, in addition, the valve manufacturers give the lowest permissible working voltage of these valves as around 5.9 volts. P.J.T. is keeping a check on the Sutton Coldfield TV and endeavouring to correlate conditions on 58 mc and 144 mc. He sends a detailed account of his listening during January, from which it is noted than conditions were good to the Midlands on January 3, 7, 19, 20, 21 and 23. On the 21st, conditions were good all day with G6NB as the most outstanding signal. On several occasions he has heard the Southampton stations working into Devon.

In the Midlands, R. L. Bastin (Coventry) has been listening for the DX that just is not coming through. He has moved his QTH, but now has the old rig all neatly fitted up once more. A dipole for Two was been hastily erected in the loft, but the beams will be up again when the warmer days arrive. An RF27 unit is in temporary use for the receiver. So far, very few signals have been heard and local activity has been low. A CC converter is being constructed, using two 6AK5 RF stages, and he hopes to check this against a 6J6 circuit for noise factor comparison. He appeals for a few more keen VHF listeners to replace our old friends, R. Rew and A. L. Mynett, who have now removed to new pastures.

Up North

E. A. Lomax (Bolton) reported last month, but his letter was delayed in transit and so missed "VHF End." In it he commented on 1950 from the point of view of VHF in Lancashire. The summer months were disappointing, and he felt that the spring was the best part of the year. He included a list of stations heard during the Contest in November, which shows he would have scored around 200 points. In joining in the general congratulations to R.R. and A.L.M., now G3HAZ and G3HBW, he expresses the hope that he may be the first to send them a listener's report. His own report for January shows that activity in Lancashire has not been too good. January 4 and 5 provided a little DX from the South, with G2HCG, G3EHY and G6VX coming in well. The consistency with which G2BUJ (Swindon) and G3EHY (Banwell) are received in Bolton gives E.A.L. hope that 70 cm might be good over that same path.

A. H. Edgar (Newcastle-upon-Tyne) writes with still more joy this month to announce his reception of what to him

VHF CALLS HEARD

Two Metres

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

G2BUJ, 2DCI, 2FCV, 2HCG, 2HGR, 2OI, 2XS, 3AB, 3AGS, 3AHX, 3AOO, 3AUB, 3BA, 3BLP, 3BOC, 3BPJ, 3BY, 3CHY, 3CSC, 3CXD, 3DA, 3DUP, 3EHY, 3ELT, 3EMJ, 3FMI, 3GMX, 3PY, 4HT, 4LU, 5CP, 5RW, 6DP, 6VX, 6XM, 8ML, 8SB, GW2ADZ, 3DNN, 5MQ. (*December 25 to January 19, 6J6 into AR88, 10 mc IF, Aerial City Slicker N/S 40 feet high, 650 feet a.s.l.*)

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

G2FO, 3CYY, 8GL. (*January 1951, Mod. RF26 into S.640. "Short Wave Listener" w.s. 4-ele beam in roof space.*)

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

F8GH, 8MX, 8OB, 9AE, 9MX, G2AHP, 2AIQ, 2CIW, 2DI., 2HDZ, 2MV, 2WJ, 2XV, 3BCY, 3BLP, 3DJX, 3DUP, 3ECA, 3FD, 3GDR, 3GHI, 3GSE, 3GTH, 3HBW, 3WW, 4HT, 4MW, 5LK, 6CB, 6LL, 6LO/A, 6NB, 6PA, 6WU, 8KZ. (*January 1 to 22, G2IQ converter, 4-ele w.s. beam.*)

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

PHONE and CW: **50-100 miles:** G2AHP, 2ANT, 2YC, 3GDR, 3GHI, 3GSE, 4GR, 4HT, 5LQ, 5NF, 6CB, 6JK, 6KB, 6NB, 6UH, 6WU, 6XM,
100-150 miles: G2XV, 3ABA, 3BA, 3CGQ, 3WW, 4MW, 4NB. (*Rx: 6J6, 6J6, 2 x 6C4 converter into 9 mc Xtal controlled converter, into 1.6 mc IF/AF amp. Aerial: 4-Ele c/s beam, 22ft high. QTH 86ft. a.s.l. (All heard Jan. 1-23.)*

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

PHONE and CW: G2AIQ, 2FNW, 2HCG, 2IQ, 3BA, 3BLP, 3CHY, 3DUP, 3EMJ, 3FXD, 4HT, 6NB, 6VX, 6XM. (*Rx: G2IQ converter into "Commander," 4-ele Yagi 33ft. high. Dec. 30-Jan. 22.*)

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

G2AFB, 2AHP, 2ANT, 2AVR, 2BN, 2DD, 2DL, 2DPD, 2LW, 2MV, 2WJ, 2XC, 2XV, 2YC, 3AHB, 3BCY, 3BLP, 3CGB, 3CGQ, 3DIV/A, 3DUP, 3ECA, 3EYY, 3FD, 3FSD, 3FXG, 3GBO, 3GSE, 3MG, 4DC, 4HT, 5CD, 5DT, 5DS, 5KH, 5LK, 5NF, 5RD, 5TP, 6CB, 6JK, 6JP, 6KB, 6LR, 6VX, 6XM, 6WU, 8KZ, 8LG, 8TB. (*Rx: 6J6 Pre-Amp into RF27 into S.640. Aerial: 5-element beam. Jan. 1-Jan. 21.*)

Seventy Centimetres

A. W. Blandford, 1 Biggin Ave., Mitcham, Surrey.

PHONE: 2CIW, 2DD, 2FKZ, 2QY, 2RD, 2WS/A, 3ANA, 3BLP (Harmonic of 2 metres), 3BOB, 3CU, 3EIW, 3FP, 3GSM, 3FZL, 4CG, 5CD, 5DT, 5PY, 5RD, 5TP, 8KZ, 8SM. (*Rx: Modified 1294, 13-ele Yagi. 6 Counties.*)

is DX. G8GL (Northallerton) has been a regular signal with him since January 1 and, in addition, G2FO from Stockton has been heard. His local activity is, however, *nil*. Two unknown stations, one of them with a T2 carrier, have been heard in the band on occasions and have been entered in the log as "Thing No. 1" and "Thing No. 2." A.H.E. pleads for CW signing on Two; it would make his score bigger. He has considered changing the oscillator in his RF27 in order to improve the note, but has so far not done so, as he is somewhat afraid of losing the band! He asks for details of the G2IQ converter. (This circuit was published in *Short Wave Magazine* for August, 1949). The aerial is also soon to be raised above the roof level. Due to the steep slope of the ground around his house, A.H.E. wonders how many feet above ground his aerial will be. A cellar, 10 feet deep, under the house still further complicates this problem. Among his other comments, A.H.E. remarks: "In my opinion, the trouble taken to get going on VHF is worth it, because it really is an achievement." Finally, he remarks that Lancashire is the best part of the country for Two. Your conductor knows some who would disagree, but it must be admitted that the Counties Table, both in *Short Wave Magazine* and our own column, lend much support to that view.

A. W. Blandford (Mitcham) sends a list of 70 cm stations heard. These total 22 in 6 counties. G3BOB and G8KZ are new catches. J. E. Harman mentions that F8GH (Beauvais) and F9AE are both active on 70 cm. Their frequencies are around 434.7 mc and they have CC converters.

Congratulations to British Short Wave League members, A. L. Mynett (G3HBW), R. L. Bastin and E. A. Lomax, on gaining the first three VHF Counties Heard certificates issued by the BSWL. The qualifying standard for this award is 20 counties verified, with endorsements for additional counties heard.

In Conclusion

As an experiment, G2XC has suggested, in *Short Wave Magazine*, a two-metre activity week-end on March 10 and 11. Hours during which it is hoped there will be maximum activity are 1830 to midnight on the Saturday and 1000 to 1600 on Sunday. Your reports on these periods will be very welcome.

TWO-METRE COUNTIES HEARD

IN 1951

Starting Figure, 10

E. A. Lomax	17
A. W. Blandford	14
L. A. Whitmill	14
P. J. Towgood	13
W. C. Askew	10

Note: Only counties heard since January 1, 1951 may be claimed for this table.

(ALL TIME)

Starting Figure, 10

E. A. Lomax (Bolton)	38	
P. J. Towgood (Bournemouth) ...	37	(189)
A. W. Blandford (Mitcham) ...	28	(230)
L. A. Whitmill (Harrow Weald) ...	28	(291)
R. L. Bastin (Coventry)	25	(70)
W. C. Askew (Melton Mowbray) ...	19	
P. Finn (Iver)	17	

Note: Figures in brackets give total number of stations heard.

May we further remind you that there will be a VHF Dinner in London on April 14, organised by G3BLP for the Five Band Club. Any members of the VHF Listeners' Club who would like to attend (and they will be very welcome) should let your conductor know as soon as possible. The charge will be 11s. 6d.

Next month's reports should be sent to reach A. A. Mawse, *Short Wave Listener & Television Review*, 53 Victoria Street, London, S.W.1 *by* **February 22** at latest. The date for the following month will be **March 28.**

★ ★

IF IT FITS—WEAR IT

Congratulations to Maurice C. Hately, BSWL 2979, on obtaining his transmitting licence. His call-sign? It is G3HAT.

"GLOBE-KING"

Short Wave Kits and Components. Production fully booked up until new series commence Autumn, 1951. Watch this Magazine for later announcements:

JOHNSONS (Radio),

MACCLESFIELD.

WORLD WIDE RECEPTION OF SHORT WAVE PROGRAMMES

DX *broadcast*

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

DESPITE the unrest prevailing in the world today, it is gratifying to know that short wave listeners from the four corners of the earth will, without any thought of personal gain, co-operate in order to solve problems of mutual interest. This month we welcome an informative letter from the amateur VE8RY, J. W. Smith, of White Horse, Yukon Territory (A. R. P. Golding, of Picton, Ontario, has sent us further valuable details on the same topic) regarding the mystery broadcaster with the romantic slogan: "The Voice of the Golden North."

A.R.P.G. informs us that the North-West Territory and Yukon Radio System of the Royal Canadian Corps of Signals operates VED, Edmonton, Alberta, 8265 kc (which some of us have logged) as its key station, and there are subsidiary low-powered medium-wave transmitters operating from centres further north to maintain a service for the inhabitants of Canada's Northland. They are located as follows:—

Brochet, Manitoba, CFBW, 1340 kc;
Hay River, N.W. Territories, CFHR, 1230 kc;
Norman Wells, N.W.T., CFNW, 1240 kc;
Yellow Knife, N.W.T., CFYK, 1250 kc;
Dawson City, Yukon Territories, CFYT, 1400 kc;
White Horse, Y.T., CFWH, 1240 kc; and
Aklavik, N.W.T., CHAK, 1230 kc.

He writes: "These stations re-broadcast some of the VED programmes received on 8265 kc; if perchance anyone should hear any of these stations, they should send their reports to the key station: Headquarters, N.W.T. and Yukon Radio System, R.C. Signals, Edmonton, Alberta."

VE8RY sends this account from the *Saturday Night Magazine* for November 21, 1950: "During the winter months, when there is less bright sun and warm weather to distract the volunteer operators from the studio, CFYK—The Voice of the Golden North—Yellowknife, N.W.T., is on the air twelve hours a day. It is a highly involved co-operative set-up, unique in radio. Some equipment was supplied and installed by the North-West Territories and Yukon Radio System of the Royal Canadian Corps of Signals. (A recent overhaul resulted in output increase to 300 watts over the previous 150). A studio was set up in the cellar of the Administration Building occupied by the Department of Resources and Development. The Yellowknife Trustee Board gave a grant of $500. Later came donations from local organizations: volunteers became the staff. Thus was CFYK born last February. All operators are unpaid, and there are no commercials. Who are the volunteers? Anybody who wants to take a crack at operating, and that includes miners, accountants, housewives, school students, business men, nurses, and a cab-driver!"

Australia

J. C. Catch (South Shields) has logged the elusive VLX, Perth, 4897.8 kc, with morning music at 2205, followed by weather forecasts and programme preview at 2230. We continue to hear this one during the afternoon period here: on December 24 at 1505 there was carol-singing from Victoria Park, and at 1600, Midnight Mass from the R.C. Cathedral in Perth; at 1735 came the words: "This is the ABC from Perth—the time is twenty minutes to two." Normally, at 1515 you will hear Music for Meditation before the close at 1530, but on December 31, at 1555, a religious service was followed by a broadcast of H.M. The King's Australian Jubilee message,

after which the bells of the Anglican Cathedral in Perth rang in the New Year.

B. Mercer (Hulme, Manchester) has noted VLH3, 9580 kc with ABC and World News at 1300; from the same station, the bells of St. Paul's Cathedral in Melbourne were heard proclaiming the New Year at 1405 on December 31. B.M. gives VLA11 on the same frequency at 0730 for the Third Test Match, and adds: "This channel was about the best heard—strength being S9 most of the time." M. Milne (South Woodford, E.18) has been hearing VLQ3, Brisbane, 9660 kc, before the close down at 1330; on Christmas Day, at 1505, VLQ3 (Brisbane), VLX (Perth) and VLH3 (Melbourne) were all well heard with the King's Sandringham broadcast.

In connection with the Australian Jubilee celebrations, VLA6, 15200 kc, was audible at 1200 on December 31 with the send-off from Yass of the party attempting the re-staging of Captain Charles Sturt's hazardous exploration of the Murray River system in 1829—we heard the voice of the explorer's great-grandson, who is a member of the present expedition. VLA6 is regularly logged at 1300 on Sundays with the "Amateur Talent Programme," by G. Paton (Salford, Lancs.) and at 1400 daily by S. Neeld (Walton-on-Thames). Congratulations to R. Abrahams (Hounslow, Middsx.) on hearing a verbal acknowledgment of his letter in Radio Australia's Mailbag over VLG10 on 11760 kc.

Asia

B. Mercer has been fortunate in hearing JK13, Tokio, Japan, 6175 kc, with an AFRS broadcast between 0900 and 0945; there was an English News at 0900 and "Call for Music" with Dinah Shore at 0930. These AFRS broadcasts from Japan are as follows: 2100-0800 over JKI4, 11800 kc, and JKL2, 9605 kc; 0815-1415 over JKI3, 6175 kc, and JKL, 4860 kc. YDF, Djakarta, 6045 kc, was heard with call at 2330 by J. C. Catch, and he also logged Radio Ceylon on 11975 kc with the statement: "This is the most powerful commercial radio station in the world." Once, at 1445, R. A. Savill (Sevenoaks, Kent) heard this one with a programme commemorating the 25th Jubilee of Radio Ceylon. R. Abrahams spotted them with a quiz programme in aid of a Bombay hospital at 1420, at which time they were also audible on 9520 kc, and we heard them between 1600 and 1630 with a religious service over 7190 kc. G. Paton got the latest Test Match scores at 0315 from Radio Ceylon on 15120 kc. The British Far Eastern Broadcasting Service, Singapore, is sometimes audible on 9690 kc at 1415 with a programme summary. R. Abrahams heard them on 11880 kc at 1630, when the following channels were announced: 15300 kc, 11880 kc, and 6175 kc. M. Milne says that on Saturdays at 1445 their dance session is quite good.

Our own best effort has been the logging of Rangoon, Burma, on 6035 kc, with the reading of an English News by a female announcer at 1505. After this, a man read a list of items to be broadcast on the morrow and announced, finally: "This is The Burma Broadcasting Service—We are now closing down—Goodnight, Everybody." E. Kirby (Leeds 7) has logged the English broadcast of All-India Radio on 7155 kc at 1900, and R. A. Savill similarly on 9720 kc; B. Mercer says that their "Personality Parade" at this time is excellent value. We have logged APD, Dacca, Pakistan, 7140 kc, with Eastern music, followed by call and clock chimes for the hour at 1630.

Israel, 9000 kc and 6830 kc, relayed Midnight Mass, preceded by the bells, from the Church of the Annunciation, Nazareth, at 2207 on Christmas Eve: 4X4EA, Tel-Aviv, 6725 kc, is a strong signal at 1800 daily with News in Yiddish, the same feature being broadcast simultaneously on 6830 kc also. E. Kirby heard British subjects in Turkey sending seasonal greetings to their relatives in the United Kingdom at 2020 on December 24 over 9465 kc, and comments: "Surely this was a fine gesture." R. Abrahams says this broadcast period, 2100-2145, is equally well received over 7285 kc, and he is now awaiting a reply to his recently submitted report.

Africa

G. Paton logged Johannesburg IV on 9870 kc with News, Weather Reports and Programme Summary at 1700. We heard Johannesburg IV on 4800 kc with English News at 2000, and five minutes later the statement: "The next News will be broadcast at eight o'clock tomorrow morning." Pietermaritzburg, 4878 kc, was better than Johannesburg III, 4895 kc, with "Silent Night" at 1735 on December 22.

V3USE, Forest Side, Mauritius, 15060 kc, has been good on occasions around 1530-1730. Programmes are mostly in French, but on Sundays, at 1700, following the direction: "This is the Mauritius Broadcasting Service," there is a religious service until the close down with "God Save The King" at 1730. On January 1 they gave a New Year's Party in a studio, which was described as large; we heard Scottish songs, reels, selections on the bagpipes, readings from Sir Walter Scott and a greeting in Gaelic.

ZNB, Mafeking, 8230 kc, with its usual broadcast of musical recordings, was above the average at 1818 on January 13, at which time the announcer gave the serial numbers of the recordings just played and offered the titles of the next batch. Salisbury, Southern Rhodesia, 3320 kc, may be heard at 1815 with the announcement: "Here is the Rhodesia News, copyright reserved"; a South African Broadcasting Corporation News follows at 1820, then a reading of forthcoming events. The station closes at 2000 with the words: "We shall be back on the air tomorrow morning at half-past ten (0830 GMT); Good Night, Everybody," and the playing of the National Anthem. S. Neeld has logged Lourenço Marques as follows: CR7BV, 4819 kc, with Portuguese programme at 1835—CR7BU, 4932 kc, with English-sponsored programme at 1830. We heard the latter at 2200 on December 24 with the words: "From Lourenço Marques, a Merry Christmas to all the World," and at the same time, on December 31, sirens shrieked and Johannesburg's City Hall clock boomed twelve. On January 10 at 1800 we noted that CR7BU had moved to 4905 kc! The Portuguese broadcast has also been logged at 1830 over 15190 kc.

VQG, 4855 kc, in Nairobi, has improved of late, and at 1815 on December 22 announced that the South African Broadcasting Corporation would shortly inaugurate an additional short wave service for the African continent. VQG sometimes gives the direction: "This is Nairobi—Station of Cable and Wireless Limited." Both R. Abrahams and S. Neeld have located ZOY, Accra, Gold Coast, on 4915 kc. R.A. has heard a weather report and local News bulletin at 1745, and S.N. noted "God Save The King" at the close at 1800. R.A. also logged the French transmission on 9960 kc between 1840 and 1930 with the quarter-hour direction: "Ici Radio AEF Experimental." Arne Skoog (Stockholm) says that the transmitters on 17835 kc, 9970 kc and 6025 kc are located in Libreville and that the broadcasts extend from 1700 to 2000, being a local service for French Equatorial Africa.

C. Findley (Countesthorpe, Leics.) heard FHE3, Radio Dakar, 15347 kc, with English News at 1900, and the Pan-American Radio Tangier on 15048 kc at 1300. A letter verification from the latter states that the power is 5 kW and that the broadcast terminates with the playing of the Central American tune, "La Cucaracha," on a musical box. To quote: "As we are making various alterations to our antennae, we are only broadcasting for half-an-hour daily, at present from 1300 to 1330"; the address is: Pan-American Broadcasting System, Tangier, 39 Boulevard Pasteur, British Post Office Box 49, Tangier, International Zone of Morocco. We would like to add that another Tangier station, Radio Africa, is now using 7125 kc with powerful signals in the afternoons and evenings; the frequent direction is: "Radio Africa, Tangier."

North America

CKNC, 17820 kc, was observed by S. Neeld at 1545 on December 3 opening up its transmission to Europe with strong signals; at 1315 on January 8 he heard CBLX, 15090 kc, with the direction: "This is the Canadian Broadcasting Corporation." We logged CKRZ, 6060 kc, with Kenneth Housemann reading the English News at 2230. A. R. P. Golding informs us that reports for all CBC stations should now be sent to: 1125, Dorchester Street West, Montreal, Quebec. The transmitters included are: CBFA, CBFL, CBFO, CBFR, CBFW, CBFX CBFY, CBFZ, CBLX (all transmitters at Vercheres, Quebec); CHAC, CHLA, CHLS, CHOL, CKCS, CKCX, CKEX, CKLO, CKLX, CKNC, CKOB, CKRA, CKRP, CKRZ and CKXA (all transmitters at Sackville, New Brunswick).

In the United States, KRCA2, 6060 kc, has been logged closing at 1500 with the information that it is located at Dixon, California, and that KRCA1, 6185 kc, operates simultaneously. S. Neeld heard WABC5, 15130 kc, with Benny Goodman recordings at 1655, and WRCA6, 15150 kc, was once active at 1940 relaying the American ball-game between Tennessee and Texas from Dallas. C. Findley has received from

WWV, 15000 kc, a photograph of their transmitting station and data on the activities of the "Speaking Clock." *World Radio Handbook* says that Brazil has a station similar to WWV on 9370 kc, closing around 1700; it is operated by the Astronomical and Geophysical Institute of the University of Sao Paulo.

Central America

J. C. Catch has heard VP4RD, Port-of-Spain, 9625 kc, at 0001, with a talk about the Festival of Britain; its direction ran: "This is Radio Trinidad and Rediffusion Golden Network." C. Findley has received their card depicting the island of Trinidad in map form, and a letter from 4VEH, Haiti, the missionary station on 9884 kc. We understand that 4VEH has lately moved to 9730 kc and has an English session at 2330. J. C. Catch heard recordings from PJC2, Curacao, 5010 kc, at 0015, and a gong preceding Dutch announcements at 0033; he logs HI2T, Trujillo, 9738 kc, frequently, and at 2330 on January 9 its dance session closed to the strains of "Say It With Music." R. A. Savill says that this feature is actually a programme of popular English songs sung by the soprano, Maureen Brady. R.A.S. also heard TGWA, Guatemala City, 9760 kc. as early as 1900, and E. Lund (Morecambe) reports TGWA on 15170 kc at the unusual hour of 1300 with the slogan: "La Voz de Guatemala." TGNA, Guatemala's missionary station, is now operating on 6040 kc, 9660 kc and 11850 kc.

South America

Our latest letter from Argentina states that the following transmitters are in use for their International Service: LRA, 9690 kc (100 kW); LRA, 9455 kc (50 kW); LRA, 11880 kc (50 kW); LRA, 15290 kc (20 kW): their address is S.I.R.A., Calle Belgrano No. 184, Buenos Aires. G. Paton logged 11880 kc at 0001 and 9690 kc at 0130; R. A. Savill noted 15290 kc closing at 2045. R.A. hears a station on 11840 kc with the call: "LR3, Radio Belgrano, Buenos"; this is a medium-wave call, but J. C. Catch comes to the rescue by saying that, at 2250, this subsidiary call follows the true direction, "Radio Inconfidencial de Tucuman"—the station is actually LRT in Tucuman.

In Chile, CE920, Punta Arenas, 9200 kc, is reported by E. Lund to be clearly audible at 0100 with News in Spanish, followed by the slogan, "Radio Militar Austral"; and from HCJB, Ecuador, R. Abrahams and C. Findley are both recipients of a pair of miniature Indian moccasins and a programme schedule in return for reports submitted for 17890 kc and 15115 kc. R.A. requires the address for PZH5, Paramaribo, 5758 kc, which he logged with Dutch and English recordings at 2230 recently; it is: Prins Bernhard Zender, Algeneene, Vereeniging, Paramaribo, Surinam, S.A. YVKD, Caracas, 5060 kc, announced the slogan, "Radio Cultura," at 0045 on January 7, according to J. C. Catch; and YVKF, Ondas Populares, 4880 kc, is reported by R. Abrahams with an English commercial programme at 2300. B. Mercer mentions another Venezuelan on 4975 kc with the slogan, "Radio Rumbos," at 2345; the location is Caracas, but interference prevented identification by call-letter. *World Radio Handbook* offers Radio Maracay, YVLI, 3430 kc, on the air 1100-0300; and YVOC, Ecos del Torbes, San Cristobal, 3360 kc, with the schedule 1130-0230.

In Brazil, PRF6, Monaos, 4895 kc, has gongs and clear call at 2300 (and each quarter-hour after): "Radio Bare, Manaos, Amazonas"; and ZYM8, Radio Ribamar, Sao Luiz, 4785 kc, has a Portuguese News after its direction at midnight (J. C. Catch). ZYB8, Radiodifusora Sao Paulo, 11765 kc, put on a good musical programme at 2100; and ZYK2, Radio Jornal do Commercio, Recife, 6085 kc, between 0100 and 0120 gives Portuguese News and English announcements before closing down (B. Mercer). Both R. A. Savill and S. Neeld have logged PRL7, 9720 kc; R.A.S. once heard an English direction and a sponsored dance music programme from a hotel at 0130, and S.N. gives them an average S7 signal report around 2330. Finally, O. Lund-Johansen (Copenhagen) offers a new one in ZYZ5, Radio La Voz do Oeste, Cuiaba, operating on 4985 kc with a power of 500 watts.

Europe

We acknowledge an item about Denmark from *World Radio Handbook*. Denmark has a South American broadcast on Tuesdays, Thursdays and Saturdays from 0000 to 0100 over 9520 kc. A. Halvorsen (Oslo) again advises us on Radio Norway's short wave programmes; English announcements are included in the daily 1900-2000 transmission over LLP, 21670 kc; LLK, 11850 kc; LLG, 9610 kc; LLH, 9645

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kc; and there is an additional 15-20-minute English session each Sunday. R. Abrahams has logged the Finnish Radio English broadcasts on 17800 kc and 9555 kc at 1215 on weekdays only; he says they are loud and clear, but considers this time somewhat inconvenient for the majority of U.K. listeners; B. Mercer also heard OIX4, 15190 kc, at the same time.

S. Neeld has logged Radio Nacional de Espana on 7012 kc at 1900, but we do not think this one is operating in parallel with 9368 kc. S.N.'s verification letter for Radio Mediterraneo de Valencia is signed by Mayans Marco at Avenida Marques de Sotelo 2, Valencia; S.N. stresses that there is no English programme at 1950, though there is a Spanish-English language lesson at this time. R. A. Savill has received from the S.I.R. Group in Spain a copy of the Spanish radio publication, *Sintonia*, which gives comprehensive programmes of both Spanish and neighbouring stations well heard there on long and medium waves.

From Portugal, CSA34, 15147 kc, has replied to C. Findley with a card in three languages, namely, Portuguese, English and French; Lisbon is still using 15384 kc around 1610; at this time on January 17 we heard the voice of General Eisenhower saying: "I am delighted to be with you for the first time."

Lastly, there are several comments about the Forces Broadcasting Service operating from Malta. S. Neeld heard them on 11895 kc at 1500 with a Children's Corner feature; G. Paton found 7220 kc a good channel at 0530; and C. Findley has just received their verification and latest programme schedule. We have heard them on 3305 kc frequently around 1745 with the direction: "This is Your Forces Broadcasting Service, Middle-East," and one morning, at 0550, we found them back on their old spot of 4965 kc with the song: "You Can't Burn Your Candle At Both Ends." Listeners, Beware! Nevertheless, we shall be pleased to receive all your short wave reports for each and every hour of the day. Please write to: R. H. Greenland, *Short Wave Listener & Television Review*, 53 Victoria Street, London, S.W.1, and don't forget—the closing date is April 15.

SHORT WAVE BROADCAST STATIONS

Revision 30.78-31.53 Metres

Giving Frequency, Wavelength, Callsign and Location

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

Frequency	Wave-Length	Callsign	Location
9746	30·78		Omdurman, Sudan
9745	30·78	CSA26	Lisbon
9740	30·80	ZPA4	Asuncion, Paraguay
9738	30·80		Moscow
9737	30·81	HI2T	Trujillo, D.R.
9732	30·83	CE970	Valparaiso
9730	30·85	DZH7	Manila, P.I.
		4VEH	Cap Haitien, Haiti
			Leipzig
			Peking, China
9720	30·86	RW108	Moscow
		PRL7	Rio de Janeiro
9715	30·88	CR7BE	Lourenco Marques
		BFEBS	Singapore
9710	30·90		Moscow
9700	30·93	GWY	London
		WLWO8	Cincinnati, Ohio
		KCBR2	Los Angeles, Cal.
		WRUL2	Boston, Mass.
		FZF6	Fort-de-France, Mart'que
		CP25	La Paz, Bolivia
9695	30·94	JKM2	Kawachi, Japan
9694	30·95	FIQA	Tananarive
9690	30·96	GRX	London
		BFEBS	Singapore
		DZH5	Manila, P.I.
		LRA1	Buenos Aires
			Moscow
9680	30·99	VUD8	Delhi, India
		XEQQ	Mexico City
			Tangier
			Paris
9675	31·01	GWT	London
9670	31·02	KGEI1	San Francisco
		WRCA6	New York
9665	31·04	HEU3	Berne, Switzerland
			Vienna, Austria
9660	31·06	VLQ3	Brisbane, Queensland
		TGNA	Guatemala City
		EQC	Teheran, Iran
		LRX	Buenos Aires
		VUD8	Delhi, India
			Moscow
9655	31·08	HED5	Geneva, Switzerland
		JKI2	Nazaki, Japan
9650	31·09	WABC1	New York City
		VLB2	Shepparton, Victoria
		ZJM8	Limassol, Cyprus
			Honolulu, Hawaii
9646	31·10	HVJ	Vatican City
9645	31·10	LLH	Oslo, Norway
		TIFC	San Jose, Costa Rica
		HOJA	Chitre, Panama
			Karachi, Pakistan
			Djedda, Saudi-Arabia
9640	31·12	GVZ	London
		DZH2	Manila, P.I.
		CXA8	Montevideo, Uruguay
		COX4	Havana, Cuba
		YVKC	Caracas, Venezuela
		ZOY	Accra, Gold Coast
9635	31·13		Moscow
9630	31·15	VUD2	Delhi, India
		CKLO	Sackville, Canada
		VLT7	Port Moresby, New Guinea
		VP4RD	Port of Spain, Trinidad
		CP12	Sucre, Bolivia
			Rome, Italy
9625	31·17	GWO	London
		XEBT	Mexico City
9620	31·19	VUD5	Delhi, India
9620	31·19	DUH4	Manila, P.I.
		CXA6	Montevideo, Uruguay
		ETA	Addis Ababa, Ethiopia
			Paris
9617	31·20	KZCA	Salzburg, Austria
9615	31·20	VLB9	Shepparton, Victoria
		WRCA1	New York City
		TIPG	San Jose, Costa Rica
		CS5ST	Sao Tome
9610	31·22	LLG	Oslo, Norway
		ZYC8	Rio de Janeiro
		XERQ	Mexico City
		VLW5	Perth, W. Australia
		VLX3	Perth, W. Australia
		CBFX	Montreal, Canada.
			Goa, Port. India
			Warsaw
9607	31·23		Athens, Greece.
9605	31·23	ZRL	Cape Town
		JKL2	Yamata, Japan
		HP5J	Panama City
			Sao Paulo, Brazil
9600	31·25	KCBR1	Los Angeles, Cal.
		GRY	London
9593	31·27	CE960	Santiago, Chile
9590	31·28	PCJ	Hilversum
		VUD3	Delhi, India
		VUD7	Delhi, India
		VUM2	Madras, India
		VUM3	Madras, India
			Damascus, Syria
9580	31·32	GSC	London
		VLB9	Shepparton, Victoria
		VLH3	Melbourne, Victoria
9570	31·35	GWX	London
		WRUL4	Boston, Mass.
		KWID1	San Francisco
			Algiers
9567	31·36		Vienna, Austria
9565	31·36	VUD7	Delhi, India
		ZYK3	Pernambuco, Brazil
9560	31·38	JDB2	Kawachi, Japan
			Tangier
			Paris
9555	31·40	OIX2	Lahti, Finland
9550	31·41	WRCA4	New York City
		OLR3A	Prague
		VUB2	Bombay, India
		VUB3	Bombay, India
		YDQ2	Makassar, Celebes
		OAX4K	Lima, Peru
			Paris
9543	31·43	XEFT	Vera Cruz, Mexico
9540	31·45	LKJ	Tromso, Norway
		VLB5	Shepparton, Victoria
		VLR	Melbourne
			Munich
			Tangier
			Rangoon, Burma
9535	31·46	HER4	Berne
9530	31·48	WGEO1	Schenectady
		VUC2	Calcutta, Ihdia
		VUC3	Calcutta, India
9528	31·49		Warsaw, Poland
9525	31·50	GWJ	London
		ZBW3	Hong Kong
		HI2L	Trujillo, D.R.
9524	31·50		Saigon, Indo-China
9523	31·51		Johannesburg, S.A.
9520	31·51	OZF	Copenhagen, Denmark
		HJKF	Bogota, Colombia
			Colombo, Ceylon
9515	31·53	FIQA	Tananarive, Madag'car

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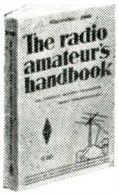

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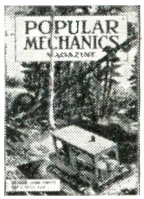

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